

# Current Condition Report for Old Growth Forest: Thompson Okanagan – Okanagan- Shuswap LRMP Area 2019 Analysis

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Ministry of  
Water, Land and  
Resource Stewardship

**CEF** Cumulative  
Effects  
Framework

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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 change was based on a local request and decision; 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 BC Government 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***

The development of this document involved a coordinated effort from many people at various stages, including the old growth forest analysis, reporting, interpretation, editing, and review. Assessment summaries and observations, including trends identified from CE datasets, were supported by conversations with regional staff. The following people are acknowledged for directly supporting this work: Traci Van Spengen, Darcie Fodor, Felice Griffiths, Melissa Luchetta, Lianne Scott, Rob Gowan, Rob Oostlander, Chelsea Enslow, and Susan Omelchuk.

# 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 legal and 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 Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) area where old growth forest is defined as 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 non-spatial legal targets established in the Provincial Non-Spatial Old Growth Order (PNOGO, 2004) with spatial non-legal OGMAs in place to manage the intent of PNOGO. The OSLRMP area has area-based targets (hectares) defined directly in Appendix 2 of PNOGO, rather than the percent-based targets used for most of the province. However, due to difficulties in accurately interpreting Appendix 2 Table 1, it was determined that this assessment would compare the current condition of old growth forest relative to the policy targets established in the Biodiversity Guidebook (BDG, 1995). There is no legal requirement for the management of mature forests; however, the CE assessment does provide current condition reporting on the mature forest that is guided through non-legal policy targets defined in the BDG.

There is a total of 1,874,907.8 hectares (ha) of CE-CFLB in the OSLRMP area, the majority of which is managed as Intermediate and Low BEO (47.3% and 37.5%, respectively). There are 240 AUs with a total of 1,862,914.7 ha of CE-CFLB with policy targets applied in this assessment. There is 11,993.1 ha of CE-CFLB with no old growth forest targets established across the OSLRMP area, primarily in the NDT5 (alpine or sparsely forested parkland) or it's a LU-BEC combination where no targets are assigned for these ecosystems.

## Assessment Results

The OSLRMP area has experienced many changes over the years, in particular natural disturbance events such as wildfires and mountain pine beetle. Recent wildfires, such as the 2021 White Rock Lake and the 2023 Grouse wildfire complex, have resulted in large scale shifts in seral stage distribution and ecosystem composition across the land base. However, age adjustments to seral stage associated with these wildfires are not included in this analysis due to limitations in the Vegetation Resources Inventory dataset.

Old growth forest covers 285,572.5 ha or 15.2% of the CE-CFLB and are generally located in the southern half of the OSLRMP area and near or within Parks and Protected Areas. Of the 240 AUs, 85 AUs (35%) have sufficient amounts of old growth forest compared to the policy targets (863,991.0 ha of CE-CFLB). There are six BEC variants where all AUs have sufficient old growth forest compared to the targets (118,610.6 ha of CE-CFLB). Of the 155 AUs not meeting the targets (65% of all AUs with a total CE-CFLB of 998,923.7 ha), 42 AUs have no old growth forest (70,643.9 ha of CE-CFLB). The dry, low elevation ecosystems (IDF and PP BEC zones) are furthest from the targets (251,631.4 ha and 28,509.0 ha of CE-CFLB, respectively). No LU had all AUs meeting the old growth forest targets.

Mature-plus-old forest covers 969,056.4 ha or 51.7% of the CE-CFLB located across the OSLRMP area. Of the 240 AUs, 228 AUs (95%) have sufficient amounts of mature-plus-old forest compared to the policy targets (1,833,179.0 ha of CE-CFLB), most of which have more than 125% of the target being met. There are 26 out of 36 BEC variants with all AUs meeting the targets. The 12 AUs not meeting the targets account for 29,735.7 ha of CE-CFLB, the majority of which are close to meeting the targets (75-100% of the target met). There is one AU (Upper Shuswap LU-High BEO-ICHmw2) not meeting the targets which has a relatively large CE-CFLB (21,217.8 ha), accounting for 71% of the CE-CFLB of AUs not meeting the targets.

There are 2,929 mapped non-legal OGMA's with a total OGMA area of 125,877.8 ha of which 123,787.1 ha is CE-CFLB. There are 1,308 OGMA's (45% of all OGMA's) that show some level of disturbance, of which 206 OGMA's (7%) have been disturbed beyond the allowable incursion limit, with 1,501.6 ha of total incurred OGMA area. The Mission LU has the largest number of incurred OGMA's (25 OGMA's), and the Trout LU has the largest total OGMA with incurred status (206.5 ha). Most incursions beyond the allowable limits were due to road development (55.3% or 829.8 ha of incurred OGMA area) followed by forest harvesting (e.g., cutblocks) (34.1% or 512.3 ha) 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 OGMA's are mature seral stage forests (51.4% or 64,663.8 ha) followed by old (34.3% or 43,131.3 ha), mid (9.5% or 11,932.0 ha), and early (3.2% or 4,046.5 ha) forests. There are three AUs that meet old growth forest policy targets within non-legal OGMA's, and 237 AUs that do not meet the targets within OGMA's, of which 73 AUs have no old growth forest within non-legal OGMA's boundaries. While there is sufficient old growth forest in most AUs compared to the targets (average 105% of the target met), it is generally not within the non-legal OGMA's (average 16% of the target met). Therefore, there may be old growth forest available outside the non-legal OGMA boundaries that could contribute to old growth forest targets if incorporated into OGMA's.

# TABLE OF CONTENTS

<b>Executive Summary</b> .....	<b>iv</b>
<b>List of Tables</b> .....	<b>viii</b>
<b>List of Figures</b> .....	<b>x</b>
<b>List of Acronyms</b> .....	<b>xi</b>
<b>Glossary</b> .....	<b>xiii</b>
<b>1 Introduction</b> .....	<b>1</b>
<b>2 Okanagan-Shuswap Overview</b> .....	<b>3</b>
2.1 Land Base Description .....	3
2.1.1 <i>Natural Disturbance Types</i> .....	5
2.1.2 <i>Biodiversity Emphasis Options</i> .....	7
2.1.3 <i>Biogeoclimatic Ecosystem Classifications</i> .....	8
2.1.4 <i>Seral Stage</i> .....	9
2.2 Cumulative Effects in the OSLRMP Area .....	11
2.2.1 <i>Land Use</i> .....	11
2.2.2 <i>Forest Harvesting</i> .....	11
2.2.3 <i>Natural Disturbances</i> .....	12
2.2.4 <i>Climate Change</i> .....	13
<b>3 Old Growth Forest Management in the OSLRMP Area</b> .....	<b>14</b>
3.1 Old Growth Forest Management History .....	14
3.2 Legal Old Growth Forest Order .....	15
3.2.1 <i>Old Growth Forest Targets</i> .....	15
3.2.2 <i>OGMA Incursions and Amendments</i> .....	16
3.3 Non-Legal Old Growth Forest Policy .....	17
3.3.1 <i>Mature-plus-Old Forest Targets</i> .....	18
<b>4 Current Condition Assessment Methodology</b> .....	<b>19</b>
4.1 Assessment Indicators .....	19
4.2 Assessment Units .....	21
4.3 Assessment Data .....	21
4.3.1 <i>OGMA Incursions</i> .....	21

<b>5</b>	<b>Assessment Results</b>	<b>23</b>
5.1	Amount of Old Growth Forest	23
5.1.1	<i>Total Amount of Old Growth Forest in the CE-CFLB</i>	23
5.1.2	<i>Current Condition of Old Growth Forest Compared to Policy Targets</i>	25
5.1.3	<i>Limitations</i>	37
5.1.4	<i>Summary and Observations</i>	37
5.2	Amount of Mature-plus-Old Forest	38
5.2.1	<i>Total Amount of Mature-plus-Old Forest in the CE-CFLB</i>	38
5.2.2	<i>Current Condition of Mature-plus-Old Forest Relative to the Policy Targets</i>	40
5.2.3	<i>Limitations</i>	47
5.2.4	<i>Summary and Observations</i>	47
5.3	Incursions into Non-Legal Old Growth Management Areas	47
5.3.1	<i>Overview of OGMA Incursions</i>	48
5.3.2	<i>Total Amount of Incursions into Non-Legal OGMAs</i>	48
5.3.5	<i>Summary and Observations</i>	55
5.4	Amount of Old Growth Forest in Non-Legal OGMAs Relative to Policy Targets	55
5.4.1	<i>Overview of Old Growth Forest in Non-Legal OGMAs</i>	56
5.4.2	<i>Amount of Old Growth Forest in Non-Legal OGMAs</i>	57
5.4.3	<i>Limitations</i>	57
5.4.4	<i>Summary and Observations</i>	58
<b>6</b>	<b>Opportunities for Improvement</b>	<b>59</b>
<b>7</b>	<b>Conclusion</b>	<b>61</b>
<b>8</b>	<b>References</b>	<b>62</b>
<b>9</b>	<b>Appendices</b>	<b>64</b>
	Appendix 1 – Summary of Assessment Results	64
	Appendix 2 – Denominator Table	66
	Appendix 3 – Indicator Tables	67
	<i>Amount of Old Growth Forest</i>	68
	<i>Amount of Mature-plus-Old Forest</i>	74
	<i>Incursions into Non-Legal OGMAs</i>	80
	Appendix 4 – Amount of Old Growth Forest in OGMAs	91

# LIST OF TABLES

<b>Table 1.</b> Summary of Area Designations in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	5
<b>Table 2.</b> Distribution of Natural Disturbance Types (NDT) in the Cumulative Effects Crown Forested Land Base (CE-CFLB) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	6
<b>Table 3.</b> Biodiversity Emphasis Option (BEO) by Landscape Unit (LU) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	8
<b>Table 4.</b> Current Seral Stage Distribution in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area Cumulative Effects Crown Forested Land Base (CE-CFLB) .....	10
<b>Table 5.</b> Old Growth Forest Policy Targets (%) and Age Definitions by Natural Disturbance Type (NDT) and Biogeoclimatic Ecosystem Classification (BEC) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	16
<b>Table 6.</b> Mature-plus-Old Forest Policy Targets (%) and Age Definition by Biodiversity Emphasis Option (BEO) and Biogeoclimatic Ecosystem Classification (BEC) Zone in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	18
<b>Table 7.</b> 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) .....	20
<b>Table 8.</b> Colour Scale for Interpreting Current Condition Maps and Target Status Categories as a Percentage of Legal (PNOGO) or Policy (BDG) Targets Met .....	21
<b>Table 9.</b> Amount Amount of Old Growth Forest in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area Cumulative Effects Crown Forested Land Base (CE-CFLB) by Biodiversity Emphasis Options (BEO) .....	25
<b>Table 10.</b> Assessment Units (AUs) with 0-125% of Old Growth Forest Compared to Policy Targets in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	27
<b>Table 11.</b> Summary of Assessment Units (AU) by Landscape Unit (LU) that are Meeting Policy Targets in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	34
<b>Table 12.</b> Summary of Assessment Units (AU) by Biodiversity Emphasis Option (BEO) Meeting Policy Targets .....	35
<b>Table 13.</b> Summary of Assessment Units (AU) by Biogeoclimatic Ecosystem Classification (BEC) Subzone or Variant that are Meeting Policy Targets in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	36
<b>Table 14.</b> Amount of Mature-plus-Old Forest in the Cumulative Effects Crown Forested Land Base (CE-CFLB) by Biodiversity Emphasis Options (BEO) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	40
<b>Table 15.</b> Assessment Units (AUs) with 0-125% of Mature-plus-Old Forest Compared to Policy Targets in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	42
<b>Table 16.</b> Summary of Assessment Units (AU) by Landscape Unit (LU) that are Meeting Policy Targets in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	44
<b>Table 17.</b> Summary of Assessment Units (AU) by Biodiversity Emphasis Option (BEO) that are Meeting Policy Targets in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	45
<b>Table 18.</b> Summary of Assessment Units (AU) by Biogeoclimatic Ecosystem Classification (BEC) Subzone or Variant that are Meeting Policy Targets in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	46



<b>Table 19.</b> Summary of All Incursions in Non-Legal Old Growth Management Areas (OGMAs) by Landscape Unit (LU) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	49
<b>Table 20.</b> Summary of Incursions in Non-Legal Old Growth Management Areas (OGMAs) that Exceed the Allowable Incursion Threshold in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	51
<b>Table 21.</b> Summary of Current Condition Assessment Results by Cumulative Effects (CE) Indicator in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	64
<b>Table 22.</b> Denominators used in the Current Condition Assessment by Cumulative Effects (CE) Indicator in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	66
<b>Table 23.</b> Assessment Units Compared to the Old Growth Forest Policy Targets by Landscape Unit (LU) and Biogeoclimatic Ecosystem Classification (BEC) Subzone or Variant in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	68
<b>Table 24.</b> Assessment Units Compared to the Mature-plus-Old Growth Forest Policy Targets by Landscape Unit (LU) and Biogeoclimatic Ecosystem Classification (BEC) Subzone or Variant in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	74
<b>Table 25.</b> Detailed Breakdown of Incursions in Non-Legal Old Growth Management Areas (OGMAs) that Exceed the Allowable Incursion Threshold by Disturbance Type in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	80
<b>Table 26.</b> Total Area of Old Growth Forest within Non-Legal Old Growth Management Areas (OGMAs) Compared to Policy Targets by Assessment Unit (AU) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	92

# LIST OF FIGURES

<b>Figure 1.</b> Ownership and Land Use Classifications in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	4
<b>Figure 2.</b> Distribution of Natural Disturbance Types (NDT) by Landscape Unit (LU) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	6
<b>Figure 3.</b> Biodiversity Emphasis Option (BEO) by Landscape Unit (LU) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	7
<b>Figure 4.</b> Distribution of Biogeoclimatic Ecosystem Classification (BEC) Subzone Variant (Version 11) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	9
<b>Figure 5.</b> Current Seral Stage Distribution in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	10
<b>Figure 6.</b> Percent of Cumulative Effects Crown Forest Land Base (CE-CFLB) that is Old Growth Forest by Assessment Unit (AU) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	24
<b>Figure 7.</b> Current Condition of Old Growth Forest as a Percent of Policy Target Met in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	26
<b>Figure 8.</b> Amount of Cumulative Effects Crown Forested Land Base (CE-CFLB) in each Cumulative Effects Indicator Condition as a Percentage of Old Growth Forest Policy Targets Met in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	33
<b>Figure 9.</b> Percent of Cumulative Effects Crown Forested Land Base (CE-CFLB) that is Mature-plus-Old Forest by Assessment Unit (AU) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	39
<b>Figure 10.</b> Current Condition of Mature-plus-Old Forest as a Percent of Policy Target Met in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	41
<b>Figure 11.</b> 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 Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	43
<b>Figure 12.</b> Incursions in Non-Legal Old Growth Management Areas (OGMAs) that Exceed the Allowable Incursion Threshold in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	50
<b>Figure 13.</b> Distribution of Incursions in Non-Legal Old Growth Management Areas (OGMAs) that Exceed the Allowable Incursion Threshold by Disturbance Type in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	53
<b>Figure 14.</b> Magnitude of Incursions into Non-Legal Old Growth Management Areas (OGMAs) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	54
<b>Figure 15.</b> Current Seral Stage of Forests in Non-Legal Old Growth Management Areas (OGMAs) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area .....	56

# LIST OF ACRONYMS

<b>AAC</b>	Allowable Annual Cut
<b>AU</b>	Assessment Unit
<b>B.C.</b>	British Columbia
<b>BCGW</b>	B.C. Geographic 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>FMLB</b>	Forest Management Land Base Indicator
<b>FRPA</b>	<i>Forest and Range Practices Act</i>
<b>FSP</b>	Forest Stewardship Plan
<b>LU</b>	Landscape Unit
<b>LUPG</b>	Landscape Unit Planning Guide
<b>MPB</b>	Mountain Pine Beetle
<b>NDT</b>	Natural Disturbance Type
<b>OGMA</b>	Old Growth Management Area
<b>OSLRMP</b>	Okanagan-Shuswap Land and Resource Management Plan
<b>PNOGO</b>	Provincial Non-Spatial Old Growth Order
<b>TFL</b>	Tree Farm Licence
<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

- BG** Bunchgrass
- ESSF** Engelmann Spruce-Subalpine Fir
- ICH** Interior Cedar-Hemlock
- IDF** Interior Douglas-Fir
- IMA** Interior Mountain-heather Alpine
- MS** Montane Spruce
- PP** Ponderosa Pine

## BEC Subzones

- |                                   |                                   |
|-----------------------------------|-----------------------------------|
| <b>dc</b> Dry Cold                | <b>vk</b> Very Wet Cool           |
| <b>dcp</b> Dry Cold Parkland      | <b>wc</b> Wet Cold                |
| <b>dcw</b> Dry Cold Woodland      | <b>wcp</b> Wet Cold Parkland      |
| <b>dk</b> Dry Cool                | <b>wcw</b> Wet Cold Woodland      |
| <b>dm</b> Dry Mild                | <b>wh</b> Wet Hot                 |
| <b>dw</b> Dry Warm                | <b>wk</b> Wet Cool                |
| <b>mh</b> Moist Hot               | <b>xc</b> Very Dry Cold           |
| <b>mk</b> Moist Cool              | <b>xcp</b> Very Dry Cold Parkland |
| <b>mw</b> Moist Warm              | <b>xcw</b> Very Dry Cold Woodland |
| <b>un</b> Undifferentiated        | <b>xh</b> Very Dry Hot            |
| <b>vc</b> Very Wet Cold           | <b>xk</b> Very Dry Cool           |
| <b>vcp</b> Very Wet Cold Parkland | <b>xm</b> Very Dry Mild           |
| <b>vcw</b> Very Wet Cold Woodland |                                   |

## BEC Variants

<b>1</b> Columbia Kettle Monashee Okanagan Shuswap Similkameen Thompson	<b>2</b> Cascade Monashee Slocan South Thompson Thompson	<b>3</b> North Thompson Thompson  <b>4</b> Selkirk Shuswap  <b>5</b> Granby
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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 ( <a href="#">Land Act</a> , <a href="#">RSBC</a> , 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 licences, woodlots, community forests, First Nations woodland licences), 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 (Province of B.C., 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 (MFLNRORD, 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 non-legal OGMA:
	<b>Legal OGMA-</b> OGMA's that have been declared in an old growth Ministerial Order. Forest licensees must incorporate the legal OGMA's into Forest Stewardship Plans (FSPs).
	<b>Non-legal OGMA-</b> OGMA's that have been mapped but not declared in an old growth order. Forest licensees may choose to incorporate the non-legal OGMA's into FSPs as a way of achieving the non-spatial order that is in effect in the management area where they operate.
<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's. 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's (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.

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.

<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).

<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.

This report interprets the current condition of old growth forest compared to the legal order targets established for old growth forest, as well as non-legal policy targets for mature-plus-old forest, 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>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 OKANAGAN-SHUSWAP OVERVIEW

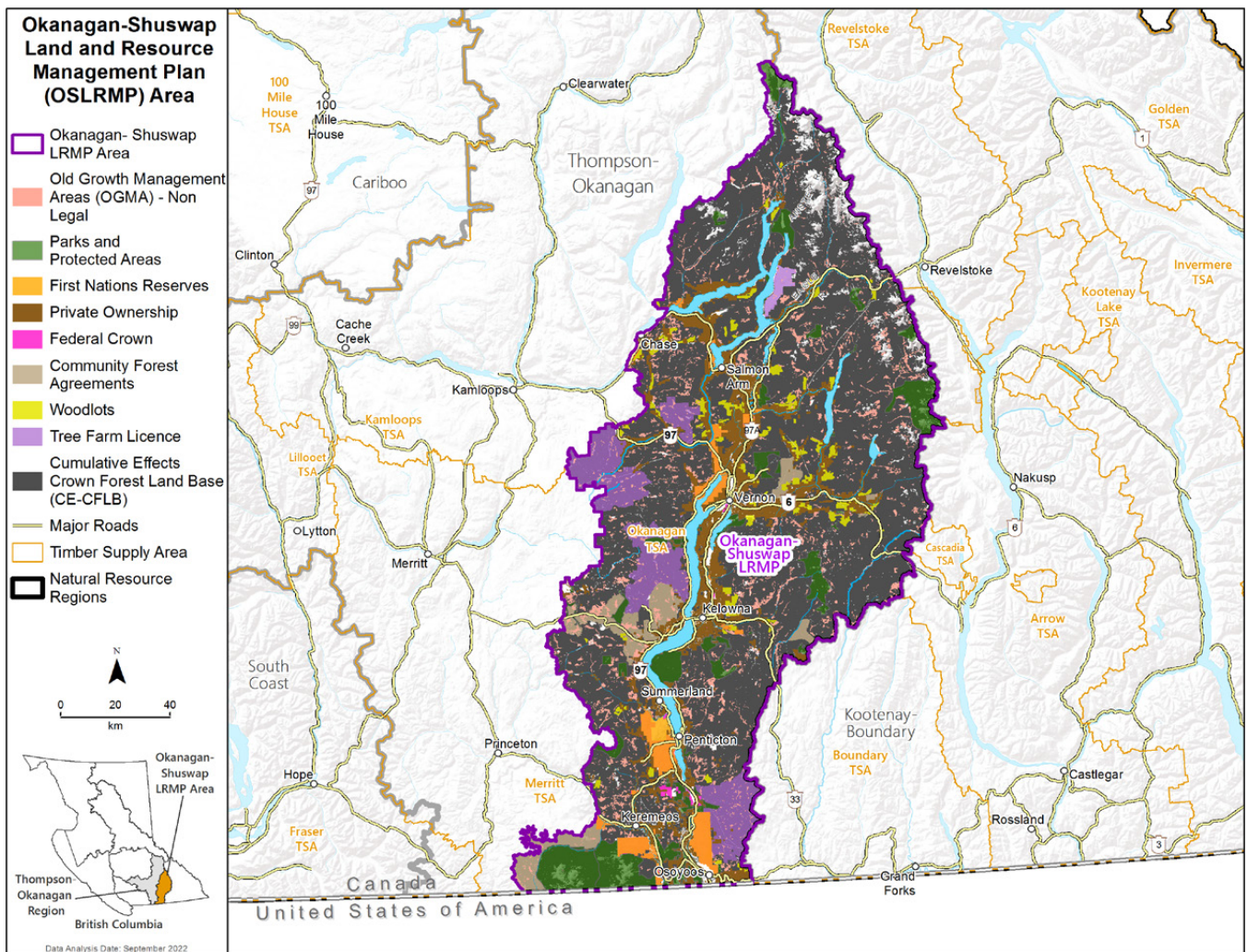
## 2.1 Land Base Description

This CE assessment was completed for the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) area which is in the southern interior of the province within the Thompson Okanagan Region (the Region) (Figure 1). The OSLRMP area is part of the Okanagan-Shuswap Natural Resource District (the District) and includes the communities of Kelowna, West Kelowna, Penticton, Vernon, and Salmon Arm. There are 28 First Nations communities whose traditional territories include areas within the OSLRMP area, most of which are associated with Syilx, Secwepemc, and Nlaka'pamux nation groups.

The OSLRMP area covers approximately 2.45 million hectares (ha) or 33% of the Region, from Shuswap Lake in the north to the United States border to the south and is bound by the Monashee Mountains to the east and the Okanagan Mountains to the west. It contains several large lakes, including Okanagan, Mabel, Shuswap, Kalamalka, Skaha, and Osoyoos Lakes. There are 103 Provincial Parks, Protected Areas, or Ecological Reserves with a total area of 189,950.3 ha (8% of the total OSLRMP area) (Table 1), more than half of which (115,205.7 ha) is within six protected areas: Cathedral Park, Snowy Protected Area, Monashee Park, Graystokes Park, Okanagan Mountain Park, and Upper Seymour River Park.

The varied climate and topography produce a range of vegetation and habitats across the land base, from wet interior hemlock and cedar forests in the north to the semi-arid sagebrush grasslands in the south. There are approximately 23 tree species within the OSLRMP area listed in the provincial Vegetation Resources Inventory (VRI), with large areas dominated by Douglas-fir, sub-alpine fir, lodgepole pine, and Engelmann spruce, as well as western red cedar, western hemlock, spruce, and ponderosa pine, with smaller components of larch and various deciduous species. In addition, there are 2,372.5 ha of Whitebark pine leading stands (as designated by the *Species at Risk Act*) mostly in the ESSF (Engelmann Spruce-Subalpine Fir) ecosystems of the xcw (Very Dry Cold Woodland), xcp (Very Dry Cold Parkland), and xc1 (Very Dry Cold Similkameen) variants. This landscape diversity results in habitats that support a variety of wildlife, including approximately 30 red- and blue-listed species, such as mountain caribou, mountain goat, great basin gopher snake, flammulated owl, and spotted bat.

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 OSLRMP area contains 1,874,907.8 ha of CE-CFLB, which is 77% of the gross OSLRMP area (Table 1). The Anstey LU-Low BEO has been excluded from this CE assessment because it is entirely within a Tree Farm Licence (TFL 33) and inventory data was not available in the VRI. As a result, the CE-CFLB could not be calculated and seral stage was not assigned, resulting in this LU being shown as "not assessed" throughout the report (sections 5.1, 5.2, and 5.4). However, there are non-legal OGMA's established in this LU and recent forest harvesting data was available, therefore this LU was included in the OGMA incursion indicator (section 5.3).



**Figure 1.** Ownership and Land Use Classifications in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) 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 and 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 the 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 CE-CFLB for the OSLRMP area is 1,874,907.8 ha, which is 77% of the gross OSLRMP area (Table 1). For comparison and to demonstrate the difference in CFLB definitions across provincial initiatives, the CFLB used for the 2022 Okanagan TSA Timber Supply Review was 1,505,437 ha (January 2021, page 7).

**Table 1. Summary of Area Designations in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.**

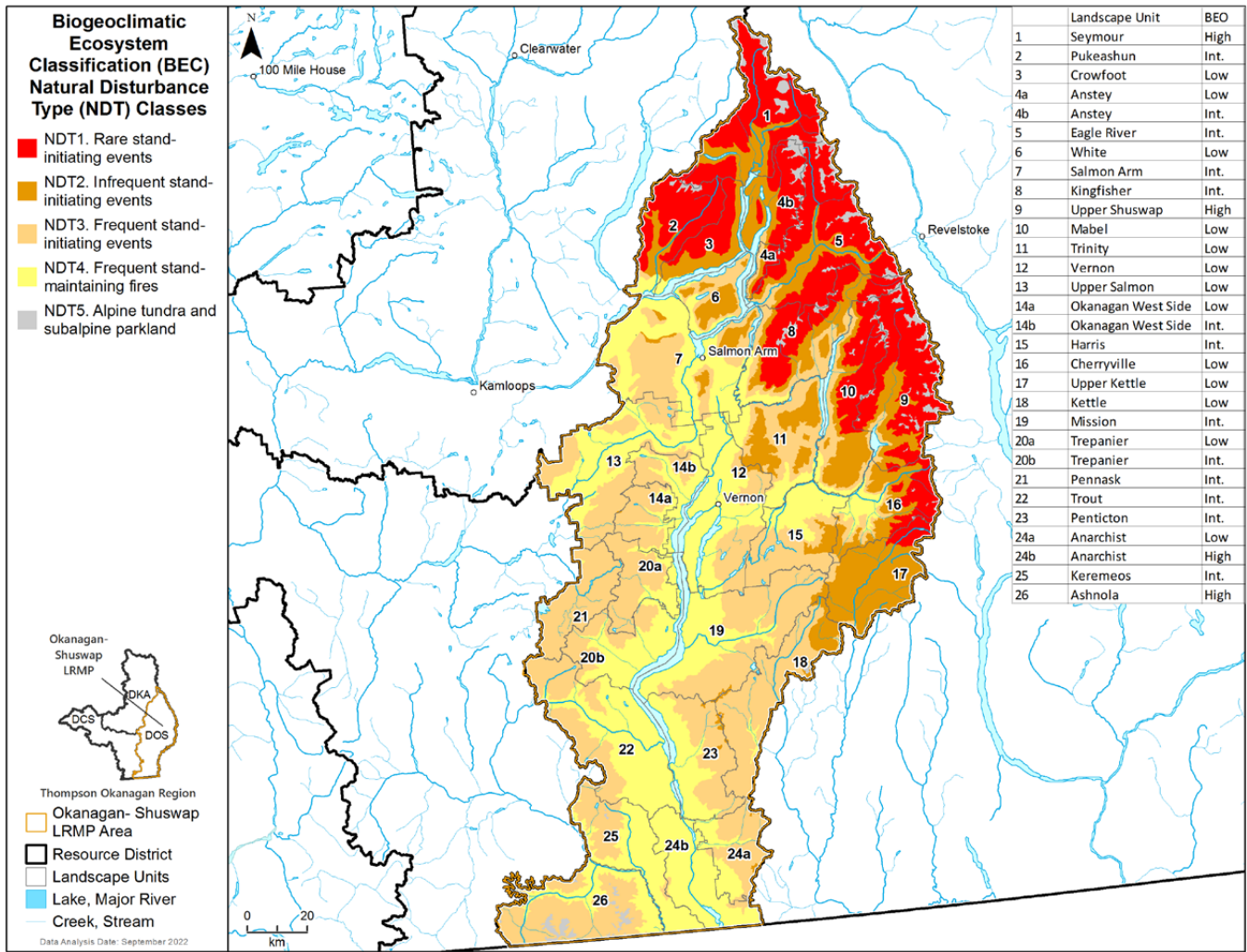
Land Base	Gross Area (ha) <sup>a</sup>	FMLB Area (ha)	Private Land (ha)	Area-Based Tenures (ha)	Provincial Parks & Protected Areas (ha)	CE-CFLB Area (ha)
OSLRMP Area	2,449,169.1	2,043,027.0	259,609.3	310,392.0	189,950.3	1,874,907.8

<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 Old Growth Cumulative Effects Crown Forested Land Base (CE-CFLB) and CE Assessment resultant dataset 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.

Historically, disturbance events such as wildfires, windthrow, and insects have been the predominant stand-initiating and stand-maintaining natural disturbance events. Of the five NDTs classified for the province, all occur in the OSLRMP area (Figure 2, Table 2). The most common natural disturbance types are NDT3 (frequent stand-initiating events) and NDT4 (frequent stand-maintaining events) (Table 2). 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 Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.

The total area of the CE-CFLB (1,874,907.8 ha) is classified by NDT in the OSLRMP area (Table 2). However, only NDT 1, 2, 3, and 4 contain old growth forest as defined by the PNOGO. The area associated with NDT5 is reported to show the distribution across the land base, however no age or old growth forest targets are assigned to these ecosystems in this CE assessment. The total amount of old growth forest in the CE-CFLB within the OSLRMP area is 285,572.5 ha.

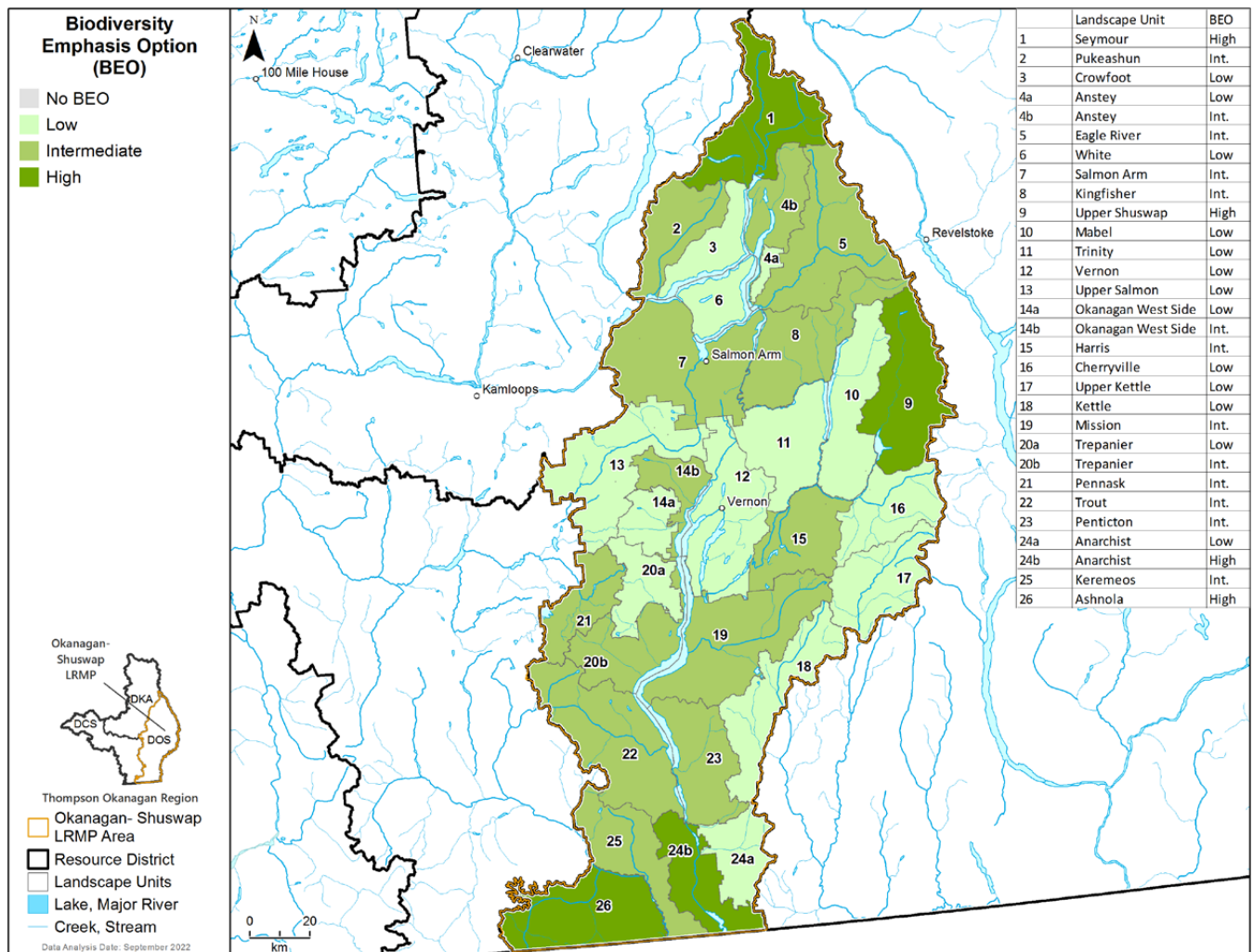
**Table 2.** Distribution of Natural Disturbance Types (NDT) in the Cumulative Effects Crown Forested Land Base (CE-CFLB) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.

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	437,391.0	392,496.2	53,716.6
NDT2	Infrequent stand-initiating events	349,742.5	321,447.0	15,079.4
NDT3	Frequent stand-initiating events	846,387.2	774,336.0	205,873.5
NDT4	Frequent stand-maintaining events	753,708.4	375,438.8	10,903.0
NDT5	Alpine and subalpine parkland	61,940.1	11,189.8	0.0
<b>Total</b>		<b>2,449,169.1</b>	<b>1,874,907.8</b>	<b>285,572.5</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 26 LUs within the OSLRMP area that were established and assigned a BEO using the Forest Practices Code’s Landscape Unit Planning Guidebook (LUPG, 1999) and the BDG through an OGMA project lead by the provincial government in cooperation with forest licensees and other interested parties in 2001. These established LUs and BEOs were subsequently adopted and made legal in PNOGO in 2004. The majority of LUs in the OSLRMP area are assigned as Intermediate and Low BEO (Figure 3, Table 3). There are four LUs assigned as High BEO: Seymour, Upper Shuswap, Anarchist, and Ashnola. In addition, there are four LUs assigned multiple BEOs to address local management objectives: Anstey, Okanagan West Side, Trepanier, and Anarchist (Table 3).



**Figure 3.** Biodiversity Emphasis Option (BEO) by Landscape Unit (LU) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.



**Table 3. Biodiversity Emphasis Option (BEO) by Landscape Unit (LU) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.**

Landscape Unit		BEO	Landscape Unit		BEO
1	Seymour	High	14b	Okanagan West Side	Intermediate
2	Pukeashun	Intermediate	15	Harris	Intermediate
3	Crowfoot	Low	16	Cherryville	Low
4a	Anstey	Low	17	Upper Kettle	Low
4b	Anstey	Intermediate	18	Kettle	Low
5	Eagle River	Intermediate	19	Mission	Intermediate
6	White	Low	20a	Trepanier	Low
7	Salmon Arm	Intermediate	20b	Trepanier	Intermediate
8	Kingfisher	Intermediate	21	Pennask	Intermediate
9	Upper Shuswap	High	22	Trout	Intermediate
10	Mabel	Low	23	Penticton	Intermediate
11	Trinity	Low	24a	Anarchist	High
12	Vernon	Low	24b	Anarchist	Low
13	Upper Salmon	Low	25	Keremeos	Intermediate
14a	Okanagan West Side	Low	26	Ashnola	High

### 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 more levels of refinement: subzone, variant, and phase. 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. 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.

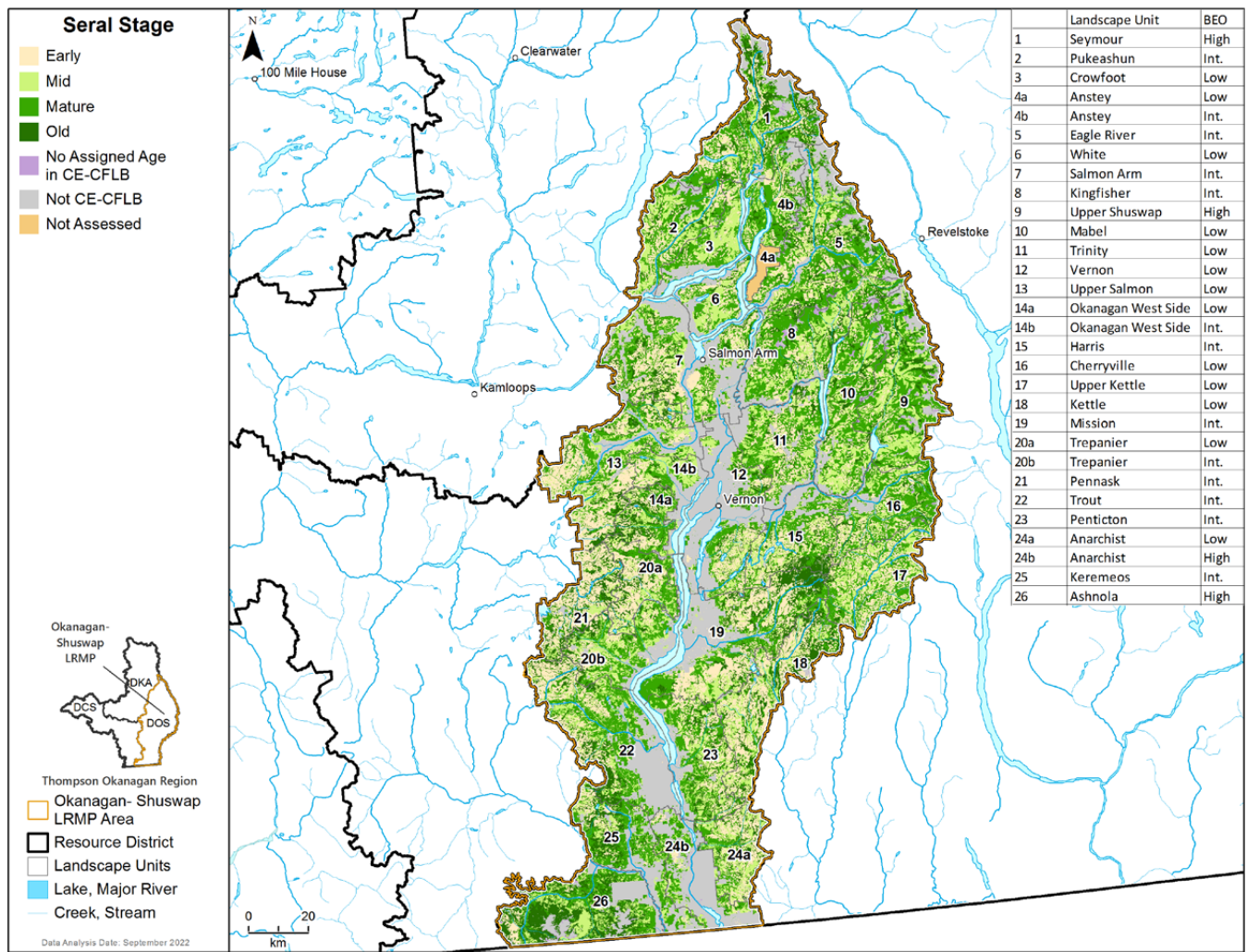
The old growth forest targets for the OSLRMP area are hectares-based and were made legal at the time of PNOGO establishment. This means that the BEC version (BEC version 5) at the time of PNOGO establishment was used to define the area-based targets within PNOGO. However, due to limitations with accurately interpreting the PNOGO for the OSLRMP area, the latest version of BEC (BEC version 11) was used to complete this assessment. See section 3.1 for a full description of how targets are established in PNOGO and section 3.2.1 for limitations in interpreting PNOGO for the OSLRMP area.

The topography of the OSLRMP area ranges from mountainous terrain in the east (Columbia) and west (Coast) to lower elevation forests and arid grasslands of the Okanagan Valley intersecting north to south. This diversity supports a range of ecosystems, including seven regional BEC zones which is further refined to 29 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.

Most of the OSLRMP area is within the Interior Cedar Hemlock (ICH, 753,220.6 ha or 30.8% of the gross OSLRMP area) and Engelmann Spruce-Subalpine Fir (ESSF, 688,684.1 ha or 28.1%) BEC zones, with the remainder largely within the Interior Douglas-fir (IDF, 427,473.6 ha or 17.5%) and Montane Spruce (MS, 391,014.3 ha or 16.0%), as well as the Ponderosa Pine (PP, 148,701.1 ha or 6.1%), Bunchgrass (BG, 24,062.0 ha or 1.0%), and Interior Mountain-heather Alpine (IMA, 16,013.5 ha or 0.7%) BEC zones.

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





**Figure 5.** Current Seral Stage Distribution in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.<sup>7</sup>

The seral stage distribution across the OSLRMP area shows general patterns of mid and mature forest throughout with higher amounts of early forest around Okanagan Lake and older forests at higher elevations (Figure 5). Seral stage ages are assigned for 99.4% of the CE-CFLB (Table 4). The remaining 0.6% was either within the Bunchgrass BEC zone (NDT4) or the NDT5 being in the CE-CFLB but lacking 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 Distribution in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area Cumulative Effects Crown Forested Land Base (CE-CFLB).

Seral Stage <sup>a</sup>	Total CE-CFLB Area (ha)	% of Total CE-CFLB Area
Early	509,083.0	27.2%
Mid	384,775.3	20.5%
Mature	683,483.9	36.5%
Old	285,572.5	15.2%
No seral stage assigned	11,993.1	0.6%
<b>Total</b>	<b>1,874,907.8</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 the NDT and BEC.

<sup>7</sup> The Anstey LU-Low BEO (LU 4a) is not assessed because it is entirely within TFL 33, as described in section 2.1.

## 2.2 Cumulative Effects in the OSLRMP Area

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

### 2.2.1 Land Use

The economy in the OSLRMP area is predominately based in agriculture, construction, education, forestry, manufacturing, retail, trade, and tourism. The area has a large processing sector with lumber mills, pulp mills, panel board plants, and pellet mills, along with smaller facilities that produce log homes, shakes and shingles, lumber, and fence posts. Crown range also provides forage for both livestock and wildlife, with grazing occurring across most of the land base. Recreation and tourism are widespread with numerous trails and water features that provide for hiking, biking, boating, fishing, hunting, snowmobiling, and skiing. The extensive amount of urban development and population growth in the southern Okanagan has also resulted in many rare, endangered, and threatened species (i.e., mountain caribou, western rattlesnake) and ecosystems (i.e., dry grasslands, climax cedar-hemlock forests).

The Region released An Assessment of Old Growth Management Areas Potentially Impacted by Non-Forest Tenure Activities in the Thompson Okanagan Region (MFLNRO, 2014b) to review human-caused (anthropogenic) disturbances within OGMA's across the Region from 2006 to 2013. This report indicated 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 Okanagan Timber Supply Area (TSA) is the designated 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, has been reduced in the most recent Timber Supply Review (TSR) as the response to the mountain pine beetle (MPB) epidemic was nearing completion and in recognition of the need for sustainable management of other forest values (MFLNRORD, 2022). The decision to reduce the AAC reflects changes to forest management practices in recognition of Sylix Okanagan forestry principles, limited harvesting in community watersheds, alternative harvesting practices in sensitive areas, cultural heritage resources, wildlife habitats, and a proposed national park reserve area. Effective January 27, 2022, the current AAC was set at 2,462,800 million cubic metres (m<sup>3</sup>), which is 20% below the previous AAC that included an uplift to allow for harvesting MPB-impacted stands.

In the Region's assessment of OGMA's potentially impacted by non-forest tenure activities from 2006 to 2013, the amount of disturbance due to forest harvesting activities was considered (MFLNRO, 2014a). The assessment showed an overall net increase in total OGMA area (over the Region) due to forestry licensee replacement practices. In general, at the time there had been minimal logging within OGMA's since the non-legal OGMA's were delineated in 2001.

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).

Non-legal OGMA's were designed in 2001 that were intended to mitigate threats to old growth forest from harvesting. While co-location of old growth forest biodiversity and other non-timber objectives often occurs, the impact of this management decision on old growth forests 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

This OSLRMP area has experienced many changes over the years, in particular due to natural disturbances such as wildfires and bark beetle infestations (e.g., MPB). There is a history of wildfire disturbances which have resulted in large-scale shifts in seral stage distribution and ecosystem composition across much of the Region. Recent wildfires have also affected the OSLRMP area resulting in impacts across the land base, including disturbances within OGMA's. Large wildfires in the past 25 years include the Okanagan Mountain Park (2003), Terrace Mountain (2009), Snowy Mountain (2018), White Rock Lake (2021), Nk'Mip Creek (2021), Thomas Creek (2021) wildfires, Keremeos Creek (2022), Crater Creek (2023), Bush Creek (2023), and Eagle Creek (2023), as well as the 2023 Grouse wildfire complex, which included the McDougall Creek, Walroy Lake, Clarke Creek, and Glen Lake wildfires (B.C. Wildfire Service, 2023).

The Region completed an Analysis of OGMA Areas within Fire Perimeters (MFLNRORD, 2020), and identified that between 2013 and 2019 the total OGMA area impacted by wildfires in the Okanagan-Shuswap District (which includes the OSLRMP area) was 3,902.7 ha. Wildfire disturbance was noted in 432 OGMA's, impacting 15% of all OGMA's in the District. Burn severity ratings for these OGMA's were medium (1,510.3 ha), low (1,251.3 ha), unburned (710.0 ha), high (274.8 ha), and unknown (156.3 ha), respectively.

How wildfires are represented in this CE assessment is limited due to the complications of how wildfires are represented in the VRI. The 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).

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 over-estimated, while the amount of early forest may be under-estimated.**

### 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 greater 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 intensification of 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 OSLRMP AREA

The PNOGO provides the consistent foundation of non-spatial legal targets for old growth forest management. In the OSLRMP area, old growth forests are managed the following way:

1. Non-spatial old growth forest targets legally established through the [Provincial Non-Spatial Old Growth Order](#) (PNOGO, 2004) that set retention targets by total area (hectares); and
2. Spatial non-legal OGMA's intended to manage the old growth forest area targets under PNOGO.

Refer to Appendix 3 (Table 23) for a complete summary of the old growth forest targets by assessment unit (AU) for the OSLRMP 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 OSLRMP 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. More information on old growth forest management in B.C. is provided in the [Old Growth Forest Management in British Columbia: Provincial Backgrounder](#) (2024). Refer to Appendix 3 (Table 24) for a complete summary of the mature-plus-old forest targets for the OSLRMP area.

## 3.1 Old Growth Forest Management History

The spatial non-legal OGMA's in the OSLRMP area were identified through a collaborative process lead by government staff and involving local licensed stakeholders and other interested parties during the LRMP process. The amount of old growth forest to be managed was identified during the OSLRMP process in 2001 for approximately 186,000 ha using the BDG as targets. An OGMA Advisory Committee was established in 2001 to carry out OGMA placement consistent with the objectives, strategies, and intent statements from the OSLRMP (objectives 3 and 4 in the Ecosystem Management – Forests section). In addition, the Landscape Unit Planning Guide (LUPG, 1999) provided a strict “rules-based” approach on how OGMA's were to be designed to mitigate impacts on timber supply (i.e., no more than 4% impact to timber supply). This required that all old growth forest retention targets be met (i.e., co-located) in areas with harvesting restrictions first (e.g., Parks, Ecological Reserves, Wildlife Habitat Areas, Ungulate Winter Ranges). Only after the old growth target is co-located could the remaining target area be designed as OGMA's in that 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.

OGMA selection across the OSLRMP area (all 26 LUs) was completed through the OGMA Advisory Committee and a group decision making model with the intent of providing the statutory decision maker with consensus recommendations. The resulting OGMA's were identified in 138,716 ha across the OSLRMP area including within TFLs. Old growth forests within Parks and Protected Areas were used to achieve the targets but were not spatially designated. As OGMA's were identified by LU, letters were provided to the District Manager with the approved non-legal OGMA locations. Once PNOGO was brought into legal effect in 2004, the targets (Appendix 2, Table 1) guiding the spatial non-legal OGMA's were made legal.

The OSLRMP contained directions to place an additional 25,000 ha of OGMA in the Seymour, Pukeashun, Anstey, and Eagle LUs for caribou objectives. This was comprised of 9,900 ha of THLB for core caribou reserves (within the Mountain Caribou Habitat Resource Management Zone) and 15,600 ha of the non-contributing land base across these four LUs. However, in 2006 this work was deferred pending recommendations from caribou habitat researchers and was not completed.

Additional changes to OGMA have occurred since time of PNOGO establishment. In response to the 2003 Okanagan Mountain Park wildfire, government staff started a process in 2007 to replace burned OGMA within the fire boundary. This was a facilitated process with licensees that was guided by the Regional OGMA replacement policy.<sup>8</sup> In the Penticton and Mission LUs, approximately 3,200 ha of OGMA was identified and replaced through this process. In addition, an OGMA co-location project was undertaken in 2016 by the District and forest licensees in response to increased levels of constraints on the land base from new legal designations (i.e., Mule Deer Winter Ranges) since OGMA were established. The spatial location of non-legal OGMA were reviewed and where multiple constraints occurred, OGMA were proposed to be relocated and co-located with other values while remaining consistent with the intent of the old growth objectives and minimizing impacts on the THLB. This project was completed on an OGMA-by-OGMA basis across the Okanagan TSA but not in all LUs, depending on participation by forest licensees, resulting in individual OGMA relocations.

In general, the PNOGO includes the option to reduce old forest retention in LUs with Low BEO by up to 2/3 and full targets do not need to be met for 240 years as a means to avoid impacting timber supply.<sup>9</sup> This 2/3 “draw down” is described further in the LUPG with the intent that full targets will be achieved by the end of the third rotation (i.e., 240 years). In the OSLRMP area, this allowable drawdown was not implemented when the OGMA were delineated because the targets were set before PNOGO was established. PNOGO states that for the Okanagan TSA, targets are specified in Appendix 2, Table 1, subject to sections 6-8, but does not include section 5 which allows the 2/3 drawdown in low BEOs. Therefore, it is interpreted that this drawdown does not apply to the Okanagan TSA (and subsequently the OSLRMP area). This CE assessment compares to the full old growth forest targets and does not consider the 2/3 drawdown allowed in Low BEOs.

Forest licensees are not obligated to use these spatial non-legal OGMA in their Forest Stewardship Plans (FSPs) if they can demonstrate how other results and/or strategies are implemented to meet old growth forest objectives. Licensees that use these non-legal OGMA in their FSPs have managed OGMA information and changes (i.e., incursions) over time for due diligence purposes and to ensure that incursion limits are not exceeded (see section 3.2.2).

## 3.2 Legal Old Growth Forest Order

Section 3 (old growth objectives for the Okanagan area) of the PNOGO is specific to the Okanagan TSA, with additional provisions on how old growth forest targets can be met outlined in section 6 (use of younger forest to meet old forest objectives), section 7 (recruitment and catastrophic natural disturbances), and section 8 (draft old growth management areas). For the Okanagan TSA, old growth forests are maintained by BEC subzone and variant in each LU to the amount specified (**area by hectare targets**) in Appendix 2, Table 1 (Okanagan Old Forest Retention Table).

### 3.2.1 Old Growth Forest Targets

In the OSLRMP area, old growth forest targets are legally established in the PNOGO Appendix 2 Table 1,<sup>10</sup> and are set by LU and BEC variant combinations with **area targets** defined by hectares. The LUs and associated BEOs are established under PNOGO Appendix 1 Table 1; however, Appendix 2 Table 1 does not have distinct targets for BEO, instead targets are provided by LU-BEC. The age of old growth forest is defined in PNOGO as per the OSLRMP (guided by the BDG) which defines age by NDT and BEC (Table 5). Section 6 of PNOGO states that for the Okanagan,<sup>11</sup> younger stands and preferably mature forests can be used to meet the targets where it can be demonstrated that equal or better conservation benefits would result.

<sup>8</sup> Old Growth Management Area Guidance Thompson Okanagan (ILMB, 2007) Regional OGMA guidance document.

<sup>9</sup> Implementation of the BDG was limited to a 4% impact on provincial timber supply as outlined in the 1996 Forest Practices Code Timber Supply Analysis. The old growth forest targets in the BDG were a negotiated outcome that deviated from expected natural conditions. Impacts to timber supply were further tempered by directing assignment of BEOs to each LU based on a distribution of 45% in Low BEO, 45% in Intermediate BEO, and 10% in High BEO.

<sup>10</sup> PNOGO Appendix 2: [https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/land-use-plans-and-objectives/biodiv-hab-mngt/bc\\_non-spatial\\_old\\_growth\\_fpc\\_30jun2004.pdf](https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/land-use-plans-and-objectives/biodiv-hab-mngt/bc_non-spatial_old_growth_fpc_30jun2004.pdf)

<sup>11</sup> Further technical information is provided in the [Old Growth Order Implementation Policy](#) (2004) such that in Intermediate and High BEO areas younger age classes (preferably age classes 6, 7, and 8 but potentially younger) may be used to comprise the old forest objective. Where younger age class stands are substituted it must be demonstrated that the younger stands are of equal or better conservation value.



The PNOGO Appendix 2 Table 1 defines specific area-based targets for the Okanagan, however there are gaps in interpretation of how these targets were spatially identified and that current spatial information does not align with the information provided in PNOGO. For example, Table 1 delineates targets for old and “recruit” THLB and NTHLB (i.e., non-contributing) hectares, as well as “increment” THLB hectares. However, there is no transparent documentation, supporting references, or tracking information to understand how each of these targets were implemented on the land base. Table 1 was based on information at the time, such as the THLB and BEC version 5, which have since been updated considering new information and management practices. Due to the difficulties interpreting Table 1 and the numerous gaps in understanding, it could not be explained with certainty and accuracy how PNOGO was implemented in order to use the PNOGO table in this assessment. Therefore, this CE assessment deferred to the BDG policy targets and age definitions as those were used as the foundational piece of information during the LRMP process, along with the latest version of BEC (version 11 at the time of this assessment).

The BDG policy targets provide a consistent foundation for current condition reporting of old growth forest as it establishes the minimum threshold for old growth forest representation that should be achieved in each AU. Table 5 only includes the NDT/BECs 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 (%) and Age Definitions by Natural Disturbance Type (NDT) and Biogeoclimatic Ecosystem Classification (BEC) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.

Natural Disturbance Type (NDT)	BEC Zone	Policy Target: % Old Growth Forest 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
NDT4	ICH	>13	>13	>19	>250
	IDF	>13	>13	>19	>250
	PP	>13	>13	>19	>250

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

### 3.2.2 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>12</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. OGMA establishment with known incursions was dependent on the process undertaken for OGMA development at that time. In the OSLRMP area, this included working in partnership with forest licensees and First Nations to minimize operational impacts while ensuring future timber supply was not isolated.

<sup>12</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.

Incursions into OGMA's vary across the province based on objectives in legal orders and regional policies. Guidance for incursions into OGMA's are provided in the [Old Growth Management Area Guidance Thompson Okanagan](#) (ILMB, 2007) Regional OGMA document. This applies where there are no legal orders with provisions for OGMA incursions, therefore it is the guidance applied to the OSLRMP area. **This Regional OGMA policy provides objectives that allow incursions for very specific reasons up to 10 ha or 10% of the area of the OGMA, whichever is less, for any single OGMA.** Any incursion beyond this threshold would likely result in the OGMA being replaced with an ecologically suitable area.

The overall goal is to retain the original OGMA as much as possible, however there may be circumstances where harvesting might be justified and the location of OGMA's may be amended. There are several reasons why incursions into OGMA's may occur (as outlined in the Regional policy), which include:

- Changing the boundary to improve OGMA and timber management or to better reflect logical, on the ground boundaries (e.g., use physical features such as roads, streams, old block boundaries, timber types);
- Improving harvest boundary alignment in a way that will contribute to the maintenance of the OGMA (e.g., to secure a more wind-firm boundary);
- Shifting the location of the contiguous area of the OGMA to improve the retention of old forest attributes as identified through a field assessment;
- Relocating the OGMA to capture old growth and/or biodiversity values better (e.g., where old seral or biodiversity values outside of an OGMA are found to exceed old seral or biodiversity values inside);
- Where there exists a compelling rationale to harvest and the incursion is minimal or an ecologically equivalent (equal or better old seral and biodiversity values) replacement opportunity exists; and,
- Where the incursion is significant, but there exists a compelling rationale and activities demonstrate reasonable consistency with the desired old seral conditions and will maintain biodiversity values.

Incursions/replacements are tracked by the forest licensees for due diligence purposes and to ensure that incursion limits are not exceeded as per the Regional policy. Changes to the spatial boundary of OGMA's are then submitted to the Okanagan Natural Resource District (NRD) which is used to update the provincial OGMA dataset in the B.C. Geographic Warehouse (BCGW). This means that OGMA incursions/replacements are not reviewed by the District (NRD) on an individual basis because the FSPs include language that replacement OGMA's must be equal to or better in terms of old growth forest biodiversity.

Through the OGMA establishment process, the LUPG included the provision that OGMA's will not have an impact on the status of existing mineral and gas permits and tenures. As such, these related exploration and development activities are permitted in OGMA's. These activities may proceed to the point of significantly impacting old growth forest values within OGMA's, and even though the activities are exempt from the Orders, OGMA amendment and replacement should be considered.

## 3.3 Non-Legal Old Growth Forest Policy

Provincial direction under the LUPG prioritized the management of the old growth forest value and at the time of the PNOGO establishment, mature-plus-old forest targets were not to be implemented. Consequently, mature-plus-old forest targets are not legal requirements in the OSLRMP area. Even though mature-plus-old forest policy 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's may need to be replaced. The [Biodiversity Guidebook](#) (BDG, 1995) provides policy targets used in this assessment. Refer to Appendix 3 (Table 24) for a complete summary of the mature-plus-old forest targets by AU for the OSLRMP area.

### 3.3.1 Mature-plus-Old Forest Targets

Mature-plus-old forest targets are incremental to old forest targets; additional old forest can be substituted for mature forest to meet targets. 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.**

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). 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 (%) and Age Definition by Biodiversity Emphasis Option (BEO) and Biogeoclimatic Ecosystem Classification (BEC) Zone in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) 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
NDT4	ICH	>17	>34	>51	>100
	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 (BDG) target is reported to provide the current condition of OGMAs. The results from this assessment are reported by AUs (a combination of LU, NDT, BEO and BEC to the subzone or variant) at multiple scales (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 Non-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 Non-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.<sup>a</sup>

## 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 legal or policy targets for old growth retention are applied (e.g., in PNOGO or 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 at multiple scales. 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 Legal (PNOGO) or 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>13</sup> These datasets were developed from publicly accessible data repositories, mainly the BCGW. The 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 and 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 not built on the ground or had variable road widths based on the local terrain. In the analysis, roads were applied

<sup>13</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](#).

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 inputs were combined into the CE Integrated Roads Layer (2019). 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 OGMAs 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.**

# 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 VRI dataset (data 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 legal orders or policy.

In the OSLRMP area, there are 240 AUs included in this assessment. The Anstey LU-Low BEO has been excluded from this CE assessment because it is entirely within a Tree Farm Licence (TFL 33) and inventory data was not available. As a result, the CE-CFLB could not be calculated and seral stage was not assigned, resulting in this LU being shown as “not assessed” throughout the report (sections 5.1, 5.2, and 5.4). However, there are non-legal OGMA established in this LU and recent forest harvesting data was available, therefore this LU was included in the OGMA incursion indicator (section 5.3). 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 legal targets for old growth forest. In the OSLRMP area, the old growth forest targets used to guide the amount of old growth forest required are defined in PNOGO. However, due to limitations in accurately interpreting the targets in PNOGO as discussed in section 3.2.1, the policy targets defined in the BDG are used in this assessment. The BDG policy targets provide a consistent foundation for current condition reporting of old growth forest as it establishes the minimum amount (hectares) threshold for old growth forest representation that should be achieved in each AU.

Old growth forest targets are set in the BDG by LU for each BEC variant with targets defined by forest age. Refer to Table 5 (section 3.2.1) for the age-based definitions of old growth forest. Appendix 3 (Table 23) provides a complete listing of the old growth targets (ha) applied to each AU (by LU-BEC) and reported by the total amount in the CE-CFLB to determine the current condition. It also provides a summary of the current amount of old growth forest compared to the BDG policy targets for all AUs in the OSLRMP area.

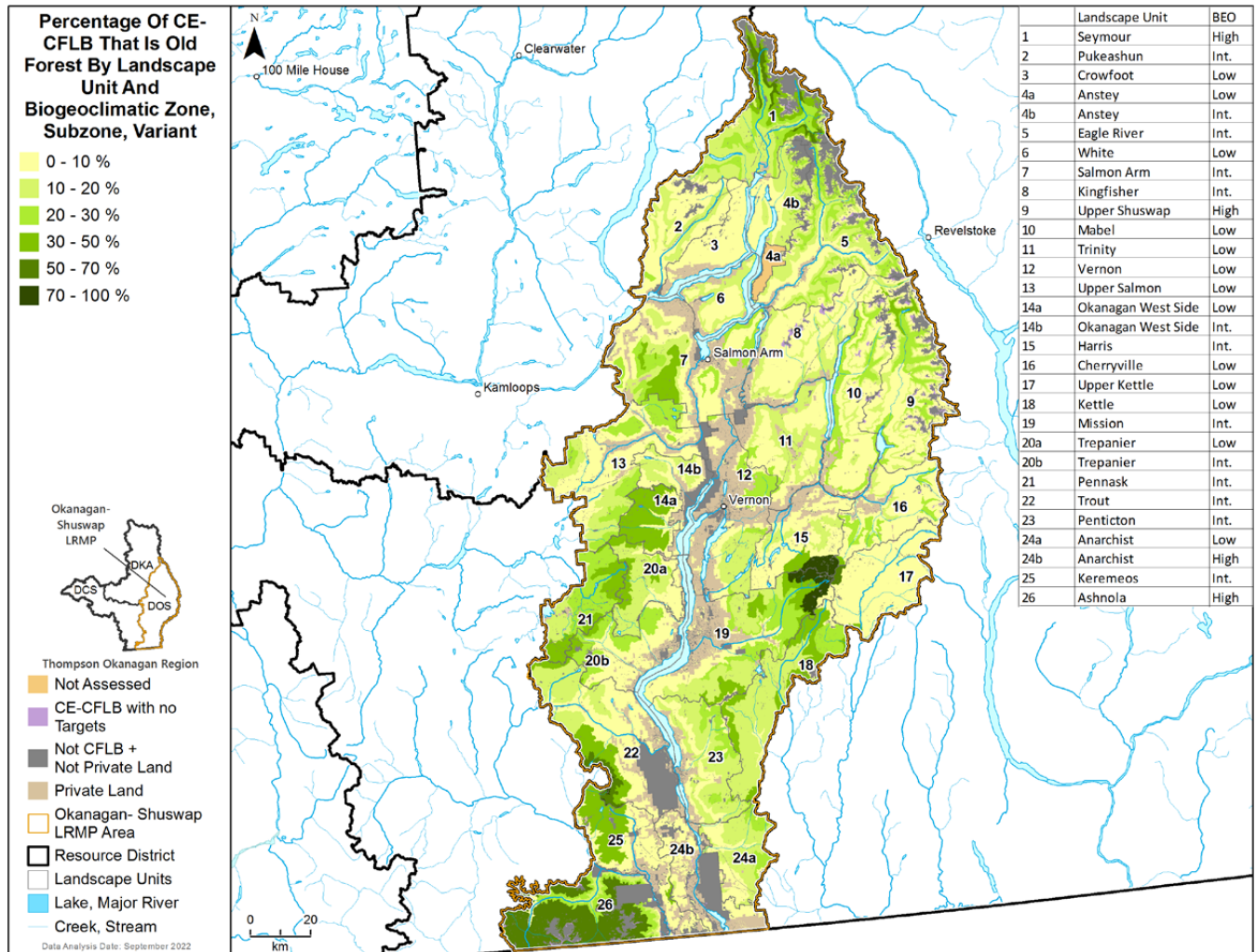
### 5.1.1 Total Amount of Old Growth Forest in the CE-CFLB

Overall, 15.2% (or 285,572.5 ha) of the total CE-CFLB across the OSLRMP area are old growth forests. Areas of the CE-CFLB with greater than 50% old growth forest are predominately in the southern half of the OSLRMP area and near or within Parks and Protected Areas (Figure 6). Note that Provincial Parks are 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.



The LUs with the highest percentage of old growth forest in the CE-CFLB are Ashnola, Pennask, and Kettle. However, most of the LUs show less than 20% of the old growth forest remaining. The LU with the largest amount of old growth forest (as a percent of the AU that is old) is the Ashnola LU which has 39,865.2 ha of old growth forest in the CE-CFLB (or 46.6% of the CE-CFLB).

For the old growth forest indicator, there is a total of 11,993.1 of CE-CFLB with no targets defined (purple in Figure 6) in several locations across the OSLRMP area. This is primarily in the NDT5 (11,189.8 ha) with some area in the NDT4 (803.3 ha) where no targets are assigned for these ecosystems.<sup>14</sup>



**Figure 6.** Percent of Cumulative Effects Crown Forest Land Base (CE-CFLB) that is Old Growth Forest by Assessment Unit (AU) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.<sup>15</sup>

Of the total CE-CFLB area of 1,874,907.8 ha, old growth forest targets have been assigned to 1,862,914.7 ha (Table 9). The total amount of old growth forest in the CE-CFLB is 285,572.5 ha, which is 15.2% of the total CE-CFLB (or 15.3% of the CE-CFLB with old targets). Old growth forests are distributed in the High (24.1%), Intermediate (15.0%), and Low (11.9%) BEOs.

<sup>14</sup> Ecosystems with no targets assigned are in the NDT4 are BGxh1 (803.3 ha), and in the NDT5 are ESSFdcp (229.0 ha), ESSPvcp (1,311.0 ha), ESSFwcp (8,301.2 ha), ESSFxc (1,126.9 ha), and IMAun (221.8 ha).

<sup>15</sup> The Anstey LU-Low BEO (LU 4a) is not assessed because it is entirely within TFL 33, as described in section 2.1.

The BDG policy guidance<sup>16</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 OSLRMP area, the proportion of the total CE-CFLB area assigned as Low, Intermediate, and High BEO is approximately 11.9%, 15.0%, and 24.1% respectively. Currently, the amount of CE-CFLB assigned to High BEO (24.1%) in the OSLRMP area is more than the recommended BDG target (10%). This equates to 285,245.6 ha assigned to High BEO in the OSLRMP area, 97,754.8 ha over the recommended target of 187,490.8 ha.

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

	OSLRMP Area	Biodiversity Emphasis Options (BEOs) in the CE-CFLB		
		High BEO	Intermediate BEO	Low BEO
# of Landscape Units (LUs) <sup>a</sup>	26	4	13	13
Gross TSA Area (ha) <sup>b</sup>	2,449,169.1	401,029.6	1,174,396.7	873,742.9
Total CE-CFLB Area (ha)	1,874,907.8	285,245.6	886,283.8	703,378.3
% Area of Total CE-CFLB	100%	15.2%	47.3%	37.5%
CE-CFLB Area (ha) with Old Growth Forest Policy Targets	1,862,914.7	279,334.2	881,861.1	701,719.3
Old Growth Forest CE-CFLB Area (ha)	285,572.5	68,668.3	133,204.3	83,699.9
% of Old Growth Forest in CE-CFLB	15.2%	24.1%	15.0%	11.9%

<sup>a</sup> There are four 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 of LUs shown for the OSLRMP area.

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

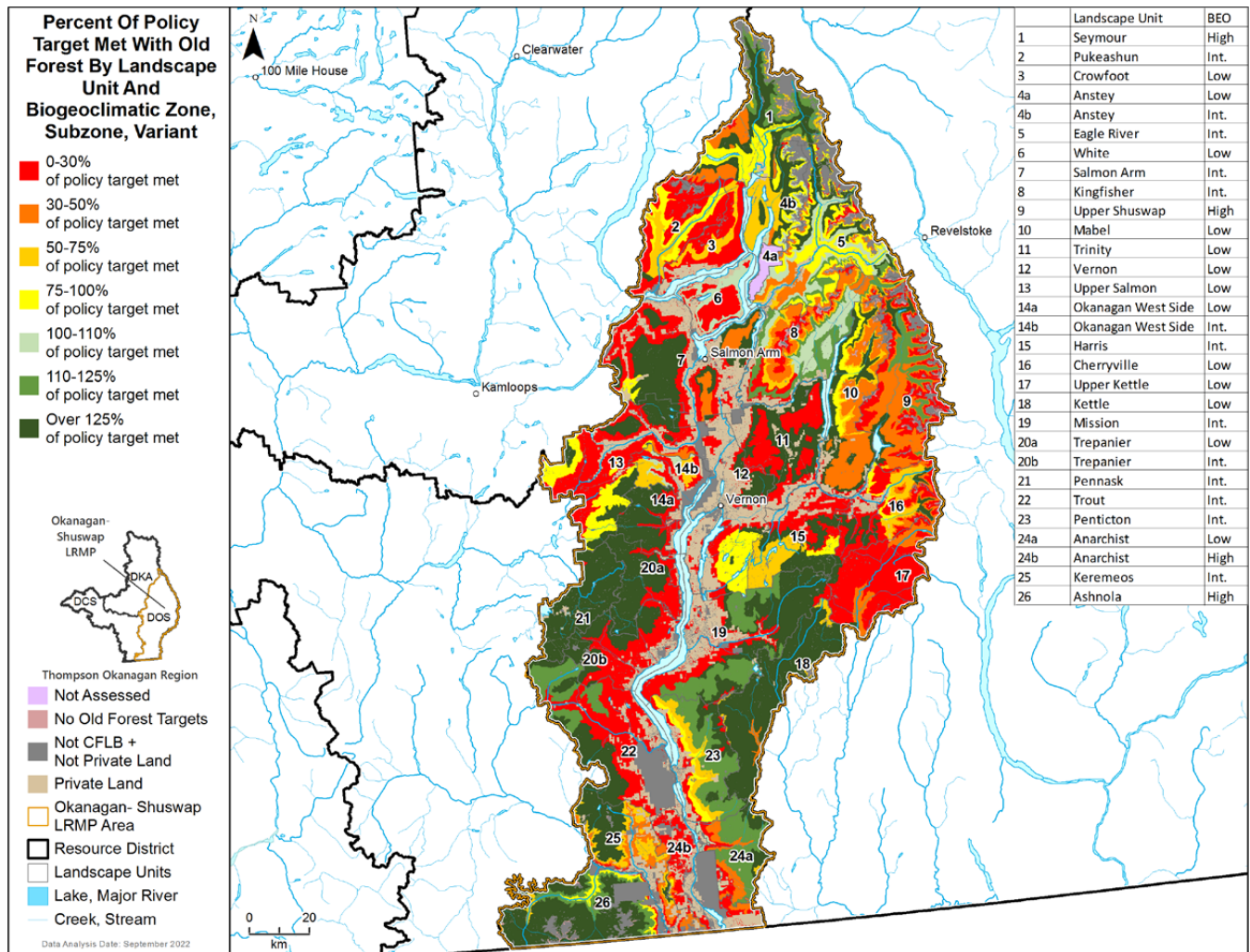
### 5.1.2 Current Condition of Old Growth Forest Compared to Policy Targets

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 BDG policy target met (Figure 7), as described in section 4. The following section provides a high-level summary of the old growth assessment results compared to policy targets by AU for the OSLRMP area. In this assessment, 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 forest as compared to the targets shows more old growth forest in the higher elevations and less in the lower elevations and valley bottoms (Figure 7). There is sufficient old growth forest to meet or exceed the targets in 35% of AUs (85 out of 240 AUs). Approximately one-quarter of all AUs (68 of 240 AUs, or 28%) have more than 125% of the target amount of old growth forest (see Appendix 3 Table 23). These AUs are mostly in the ESSF and ICH BEC zones in the southern half of the OSLRMP area, with approximately half of the CE-CFLB area in six LUs: Kettle (83,343.9 ha of CE-CFLB), Ashnola (63,152.2 ha), Trepanier (57,814.4 ha), Pennask (49,130.1 ha), Mission (47,690.2 ha), and Salmon Arm (46,326.8 ha).

There is insufficient old growth forest to meet targets in 65% of AUs (155 of 240 AUs). There are large areas with less than 30% of the target met in the lower elevation valley bottoms and in the eight LUs: Upper Kettle (61,311.3 ha of CE-CFLB in that LU-BEC), Upper Salmon (50,847.2 ha), Trout (44,784.2 ha), Trepanier (41,796.2 ha), Salmon Arm (34,348.3 ha), Pukeashun (33,630.0 ha), Trinity (32,815.6 ha), and Upper Shuswap (30,706.5 ha of CE-CFLB).

<sup>16</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.



**Figure 7. Current Condition of Old Growth Forest as a Percent of Policy Target Met in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.<sup>a, b</sup>**

<sup>a</sup> Any AUs with less than 100% of the target met are considered to be in deficit of old growth forest.  
<sup>b</sup> The Anstey LU-Low BEO (LU 4a) is not assessed because it is entirely within TFL 33, as described in section 2.1.

The 155 AUs with insufficient old growth forest compared to the policy targets cover a total of 998,923.7 ha of CE-CFLB; currently 49,592.2 ha of this CE-CFLB is old growth forest (Table 10). Of these, 25 AUs have less than 500 ha of CE-CFLB in the LU-BEC. This low amount of CE-CFLB will influence the ability for these AUs to meet the targets in the indicator reporting. The ESSF BEC zone contains the largest CE-CFLB area (339,322.7 ha) of AUs that do not meet the policy targets, as well as the ICH (308,984.0 ha) and IDF (251,631.4 ha) BEC zones.

There are 97 AUs with 0-30% of the target met that cover 527,524.8 ha of CE-CFLB, the majority of which are in the IDF (181,568.3 ha of CE-CFLB in that LU-BEC) and ESSF (180,946.4 ha) BEC zones, as well as the ICH (135,449.3 ha). Of these, there are 16 AUs that have more than 10,000 ha of CE-CFLB, of which six AUs have more than 20,000 ha of CE-CFLB. The largest AU with 0-30% of the target met is the Upper Salmon LU-Low BEO- IDFdk2 BEC variant which has 30,657.7 ha of CE-CFLB, of which 279.7 ha is currently old growth forest (7% of the target being met). In addition, 42 AUs (70,643.9 ha of CE-CFLB) have no old growth forest remaining to meet the targets.

There are 23 AUs with 30-50% of the target met that cover 190,440.0 ha of CE-CFLB (13,600.0 ha of which is old growth forest); the majority of these AUs are in the ESSF BEC zone (96,080.6 ha of CE-CFLB). There are 18 AUs with 50-75% of the target met that cover 126,247.0 ha of CE-CFLB (10,278.5 ha of which is old growth forest) in the ICH (45,252.1 ha), ESSF

(30,342.8 ha), IDF (27,768.5 ha), and MS (24,883.5 ha) BEC zones. There are 17 AUs with 75-100% of the target met that cover 154,711.9 ha of CE-CFLB (18,025.1 ha of which is old growth forest), primarily in the ICH (63,275.1 ha) BEC zone as well as the MS (42,863.3 ha) and ESSF (31,952.9 ha).

There are 85 AUs that have greater than 100% of the target met; seven AUs have 100-110% of the target met (59,086.7 ha of CE-CFLB) and 10 AUs have 110-125% of the target met (177,850.0 ha). There are 68 AUs that have more than 125% of the target old growth forest amount (Appendix 3, Table 23), 12 of which have more than 300% of the target met (43,070.6 ha of CE-CFLB). The largest AU meeting the old growth forest targets is in the Kettle LU (MSdm1) with 51,331.2 ha of CE-CFLB with 133.0% of the target being met (currently 9,556.2 ha of old growth forest).

**Table 10. Assessment Units (AUs) with 0-125% of Old Growth Forest Compared to Policy Targets in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) 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 (%)	Old Forest Policy Target (%)	% of Policy Target Met in AU
	BEC	Landscape Unit	BEO					
0 – 30%	ESSFdc1	Trinity	Low	1,689.1	0.0	0.0%	9%	0.0%
	ESSFdc1	Vernon	Low	272.0	0.0	0.0%	9%	0.0%
	ESSFdc1	White	Low	493.9	0.0	0.0%	9%	0.0%
	ESSFdcw	Mission	Intermediate	2,160.4	0.0	0.0%	9%	0.0%
	ESSFdcw	Okanagan West Side	Low	65.6	0.0	0.0%	9%	0.0%
	ESSFdcw	Penticton	Intermediate	1,276.0	0.0	0.0%	9%	0.0%
	ESSFdcw	Trinity	Low	66.0	0.0	0.0%	9%	0.0%
	ESSFdcw	Upper Salmon	Low	37.9	0.0	0.0%	9%	0.0%
	ESSFdcw	Vernon	Low	29.5	0.0	0.0%	9%	0.0%
	ESSFmh	Vernon	Low	1,065.5	0.0	0.0%	9%	0.0%
	ESSFmh	White	Low	1,347.1	0.0	0.0%	9%	0.0%
	ESSFvc	Anstey	Intermediate	249.1	0.0	0.0%	19%	0.0%
	ESSFwcw	Upper Kettle	Low	289.3	0.0	0.0%	19%	0.0%
	ICHmw2	Upper Kettle	Low	53.0	0.0	0.0%	9%	0.0%
	ICHmw5	Upper Shuswap	High	324.5	0.0	0.0%	13%	0.0%
	ICHmw5	Vernon	Low	32.4	0.0	0.0%	9%	0.0%
	ICHxm1	Kingfisher	Intermediate	1,793.0	0.0	0.0%	13%	0.0%
	ICHxm1	Mabel	Low	1,123.7	0.0	0.0%	13%	0.0%
	ICHxm1	Salmon Arm	Intermediate	14,114.9	0.0	0.0%	13%	0.0%
	ICHxm1	Trinity	Low	5,505.9	0.0	0.0%	13%	0.0%
	ICHxm1	White	Low	961.2	0.0	0.0%	13%	0.0%
	IDFdk1	Pennask	Intermediate	453.7	0.0	0.0%	13%	0.0%
	IDFdm1	Mission	Intermediate	3,151.4	0.0	0.0%	13%	0.0%
	IDFdm1	Vernon	Low	2,803.6	0.0	0.0%	13%	0.0%
	IDFmw2	Crowfoot	Low	321.3	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 (%)	Old Forest Policy Target (%)	% of Policy Target Met in AU
	BEC	Landscape Unit	BEO					
0 – 30%	IDFmw2	Pukeashun	Intermediate	3,493.2	0.0	0.0%	13%	0.0%
	IDFmw2	White	Low	614.7	0.0	0.0%	13%	0.0%
	IDFxb1	Harris	Intermediate	58.7	0.0	0.0%	13%	0.0%
	IDFxb1	Mission	Intermediate	5,224.1	0.0	0.0%	13%	0.0%
	IDFxb1	Okanagan West Side	Intermediate	1,148.6	0.0	0.0%	13%	0.0%
	IDFxb1	Okanagan West Side	Low	1,397.0	0.0	0.0%	13%	0.0%
	IDFxb1	Salmon Arm	Intermediate	271.8	0.0	0.0%	13%	0.0%
	IDFxb1	Trinity	Low	26.0	0.0	0.0%	13%	0.0%
	IDFxb1	Upper Salmon	Low	1,249.9	0.0	0.0%	13%	0.0%
	PPxb1	Mission	Intermediate	4,089.1	0.0	0.0%	13%	0.0%
	PPxb1	Vernon	Low	268.7	0.0	0.0%	13%	0.0%
	PPxb2	Salmon Arm	Intermediate	45.1	0.0	0.0%	13%	0.0%
	ICHxm1	Okanagan West Side	Intermediate	4,235.8	0.0	0.0%	13%	0.0%
	ESSFmh	Trinity	Low	4,327.4	0.0	0.0%	9%	0.0%
	ICHmw5	Cherryville	Low	2,817.5	0.0	0.0%	9%	0.0%
	PPxb1	Trepanier	Intermediate	1,692.2	0.0	0.0%	13%	0.0%
	IDFdk2	Trepanier	Low	5,411.4	0.2	0.0%	13%	0.0%
	IDFxb2	Salmon Arm	Intermediate	1,675.7	0.1	0.0%	13%	0.0%
	ESSFwcv	Cherryville	Low	2,736.8	0.2	0.0%	19%	0.0%
	IDFdk2	Okanagan West Side	Intermediate	3,337.8	0.5	0.0%	13%	0.1%
	ESSFdcw	Upper Kettle	Low	2,672.2	0.5	0.0%	9%	0.2%
	IDFxb1	Vernon	Low	5,053.9	1.7	0.0%	13%	0.3%
	IDFdk2	Trout	Intermediate	14,130.5	7.7	0.1%	13%	0.4%
	ICHxm1	Vernon	Low	7,258.1	5.7	0.1%	13%	0.6%
	ICHxm1	Harris	Intermediate	15,610.5	12.4	0.1%	13%	0.6%
	ICHxm1	Trepanier	Intermediate	4.1	0.0	0.1%	13%	0.7%
	ICHxm1	Trepanier	Low	1,893.9	2.2	0.1%	13%	0.9%
	PPxb1	Trout	Intermediate	5,435.4	8.5	0.2%	13%	1.2%
	IDFxb1	Trepanier	Intermediate	6,774.5	11.6	0.2%	13%	1.3%
	IDFxb2	Upper Salmon	Low	5,939.8	12.7	0.2%	13%	1.7%
ICHxm1	Mission	Intermediate	9,190.7	23.6	0.3%	13%	2.0%	
IDFdk2	Trepanier	Intermediate	23,089.3	61.8	0.3%	13%	2.1%	

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 (%)	Old Forest Policy Target (%)	% of Policy Target Met in AU
	BEC	Landscape Unit	BEO					
0 – 30%	ICHxm1	Upper Salmon	Low	5,315.4	16.5	0.3%	13%	2.4%
	ESSFmh	Harris	Intermediate	2,804.1	6.2	0.2%	9%	2.5%
	ICHxm1	Cherryville	Low	6,642.9	24.5	0.4%	13%	2.8%
	ESSFdc1	Upper Shuswap	High	266.0	1.0	0.4%	13%	2.9%
	ESSFwcw	Crowfoot	Low	2,555.4	15.1	0.6%	19%	3.1%
	IDFdm1	Anarchist	High	2,486.0	15.1	0.6%	19%	3.2%
	ESSFmh	Cherryville	Low	6,588.4	19.5	0.3%	9%	3.3%
	IDFdk1	Upper Salmon	Low	6,594.8	41.3	0.6%	13%	4.8%
	ICHmw5	White	Low	11,470.9	58.0	0.5%	9%	5.6%
	ICHmw5	Kingfisher	Intermediate	4,410.4	22.8	0.5%	9%	5.7%
	ESSFwc4	Cherryville	Low	5,704.0	62.9	1.1%	19%	5.8%
	IDFdk1	Trout	Intermediate	12,129.0	109.8	0.9%	13%	7.0%
	IDFdk2	Upper Salmon	Low	30,657.7	279.7	0.9%	13%	7.0%
	ESSFwcw	Upper Shuswap	High	13,249.4	260.5	2.0%	28%	7.0%
	ESSFwc4	Upper Kettle	Low	2,523.3	35.6	1.4%	19%	7.4%
	ESSFwcw	Pukeashun	Intermediate	5,242.2	101.7	1.9%	19%	10.2%
	PPxh1	Trepanier	Low	262.8	3.8	1.5%	13%	11.3%
	ESSFmh	Upper Kettle	Low	27,866.0	291.9	1.0%	9%	11.6%
	ICHmw3	Salmon Arm	Intermediate	1,839.6	19.4	1.1%	9%	11.7%
	IDFmw2	Salmon Arm	Intermediate	16,401.1	253.7	1.5%	13%	11.9%
	MSxk2	Upper Salmon	Low	1,051.8	19.7	1.9%	14%	13.4%
	IDFxb1	Trepanier	Low	2,668.0	47.2	1.8%	13%	13.6%
	ESSFwcw	Seymour	High	1,893.1	75.7	4.0%	28%	14.3%
	IDFxb1	Trout	Intermediate	13,089.3	243.5	1.9%	13%	14.3%
	PPxh1	Keremeos	Intermediate	2,670.1	50.0	1.9%	13%	14.4%
	PPxh1	Anarchist	High	8,113.2	233.0	2.9%	19%	15.1%
	PPxh1	Ashnola	High	952.9	27.5	2.9%	19%	15.2%
	IDFxb1	Anarchist	High	7,213.5	214.7	3.0%	19%	15.7%
	ICHmw3	Crowfoot	Low	12,690.8	179.8	1.4%	9%	15.7%
	ESSFwc2	Crowfoot	Low	8,150.1	301.2	3.7%	19%	19.5%
ESSFwcw	Kingfisher	Intermediate	8,905.1	338.6	3.8%	19%	20.0%	
ESSFwc4	Upper Shuswap	High	16,866.7	962.8	5.7%	28%	20.4%	

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 (%)	Old Forest Policy Target (%)	% of Policy Target Met in AU
	BEC	Landscape Unit	BEO					
0 – 30%	ICHxm1	Okanagan West Side	Low	6,958.9	191.9	2.8%	13%	21.2%
	ESSFdc1	Upper Kettle	Low	27,907.4	593.2	2.1%	9%	23.6%
	ESSFdc1	Cherryville	Low	4,081.3	87.0	2.1%	9%	23.7%
	ESSFvcw	Eagle River	Intermediate	2,671.7	127.2	4.8%	19%	25.0%
	IDFxb1	Anarchist	Low	4,701.9	166.6	3.5%	13%	27.3%
	ESSFwc2	Pukeashun	Intermediate	24,894.5	1,319.8	5.3%	19%	27.9%
	ICHmw5	Trinity	Low	21,201.2	536.3	2.5%	9%	28.1%
	PPxb1	Penticton	Intermediate	4,979.5	184.3	3.7%	13%	28.5%
30 – 50%	IDFdm1	Kettle	Low	1,918.0	82.4	4.3%	13%	33.1%
	ICHmw2	Eagle River	Intermediate	8,632.0	269.0	3.1%	9%	34.6%
	ESSFwc2	Seymour	High	14,230.5	1,494.3	10.5%	28%	37.5%
	IDFdm1	Anarchist	Low	8,963.9	449.8	5.0%	13%	38.6%
	ICHmw5	Mabel	Low	12,780.8	450.4	3.5%	9%	39.2%
	ESSFmh	Mabel	Low	6,167.7	218.1	3.5%	9%	39.3%
	ESSFvcw	Mabel	Low	7,440.3	557.4	7.5%	19%	39.4%
	ESSFwh1	Upper Kettle	Low	5,846.3	442.2	7.6%	19%	39.8%
	ESSFwc4	Mabel	Low	13,414.7	1,034.6	7.7%	19%	40.6%
	ICHmw5	Salmon Arm	Intermediate	8,050.3	296.9	3.7%	9%	41.0%
	IDFxb1	Keremeos	Intermediate	14,662.4	803.1	5.5%	13%	42.1%
	ICHmw2	Anstey	Intermediate	711.6	27.9	3.9%	9%	43.6%
	MSdm1	Anarchist	High	1,678.0	156.6	9.3%	21%	44.4%
	ICHmw3	Kingfisher	Intermediate	2,622.2	106.2	4.0%	9%	45.0%
	ICHmk1	Salmon Arm	Intermediate	2,439.7	153.9	6.3%	14%	45.0%
	ESSFvcw	Eagle River	Intermediate	6,531.8	562.4	8.6%	19%	45.3%
	ESSFwh1	Upper Shuswap	High	16,414.6	2,106.6	12.8%	28%	45.8%
	ESSFwh1	Cherryville	Low	7,894.3	718.5	9.1%	19%	47.9%
	ICHmw5	Upper Kettle	Low	6,408.6	277.9	4.3%	9%	48.2%
	ICHmw2	Upper Shuswap	High	21,217.8	1,332.8	6.3%	13%	48.3%
IDFdk1	Anarchist	High	2,129.7	199.8	9.4%	19%	49.4%	
ICHmk1	Upper Salmon	Low	2,144.3	148.8	6.9%	14%	49.6%	
ESSFwc4	Kingfisher	Intermediate	18,140.5	1,710.4	9.4%	19%	49.6%	
50 – 75%	IDFdk2	Ashnola	High	1,409.8	135.3	9.6%	19%	50.5%
	ESSFwh1	Kingfisher	Intermediate	10,429.5	1,015.2	9.7%	19%	51.2%
	ESSFdcw	Anarchist	Low	1,091.0	50.3	4.6%	9%	51.2%

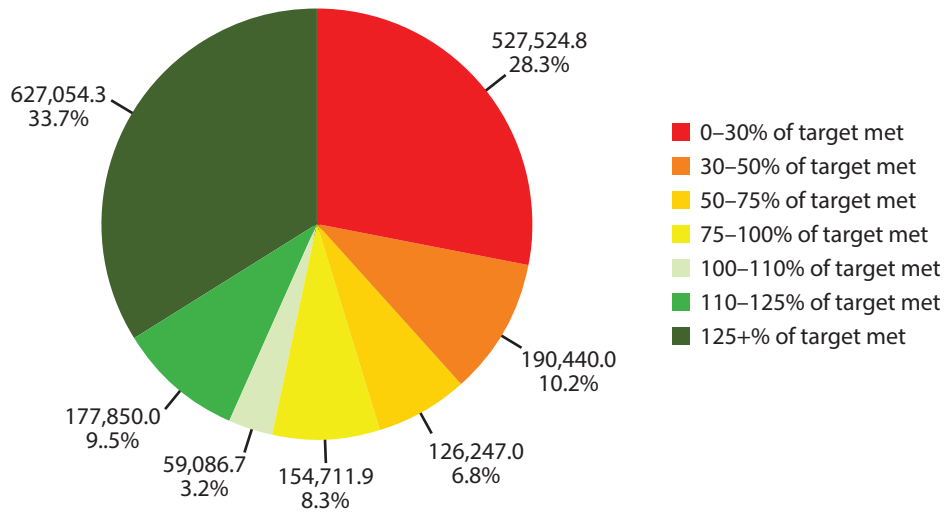
Column Calculations				A	B	C = B/A	D	E = C/D
Indicator Condition	Assessment Unit (AU)			LU/BEC Area in CE-CFLB (ha)	Existing Old Forest Area in AU (ha)	Existing Old Forest in AU (%)	Old Forest Policy Target (%)	% of Policy Target Met in AU
	BEC	Landscape Unit	BEO					
50 – 75%	ESSFdc2	Okanagan West Side	Intermediate	2,452.9	179.9	7.3%	14%	52.4%
	ICHwk1	Crowfoot	Low	8,676.5	599.0	6.9%	13%	53.1%
	ESSFvcw	Seymour	High	4,420.4	657.3	14.9%	28%	53.1%
	ICHmw2	Cherryville	Low	11,531.5	558.1	4.8%	9%	53.8%
	ESSFwh1	Mabel	Low	7,821.3	804.8	10.3%	19%	54.2%
	ESSFmh	Upper Shuswap	High	281.6	19.9	7.1%	13%	54.3%
	MSdm1	Harris	Intermediate	17,505.1	1,557.7	8.9%	14%	63.6%
	ESSFdcw	Kettle	Low	3,685.1	213.9	5.8%	9%	64.5%
	IDFdk1	Keremeos	Intermediate	13,056.0	1,106.7	8.5%	13%	65.2%
	ICHdw4	Eagle River	Intermediate	1,745.4	160.2	9.2%	14%	65.6%
	IDFdm1	Penticton	Intermediate	11,302.7	968.9	8.6%	13%	65.9%
	ESSFxc1	Anarchist	High	161.1	23.0	14.3%	21%	68.1%
	ICHmw3	Pukeashun	Intermediate	8,532.4	539.0	6.3%	9%	70.2%
	ICHmw3	Anstey	Intermediate	14,766.3	947.0	6.4%	9%	71.3%
	MSdm2	Okanagan West Side	Intermediate	7,378.4	742.1	10.1%	14%	71.8%
75 – 100%	IDFdk2	Salmon Arm	Intermediate	2,562.8	257.1	10.0%	13%	77.2%
	ICHmw3	Seymour	High	20,504.1	2,084.3	10.2%	13%	78.2%
	IDFhx1	Penticton	Intermediate	7,505.3	766.3	10.2%	13%	78.5%
	MSxk1	Anarchist	High	371.9	61.9	16.7%	21%	79.3%
	ESSFwc4	Eagle River	Intermediate	7,247.5	1,105.6	15.3%	19%	80.3%
	MSdm2	Upper Salmon	Low	24,145.5	2,719.8	11.3%	14%	80.5%
	ICHmw3	Eagle River	Intermediate	14,271.5	1,053.6	7.4%	9%	82.0%
	ICHdw4	Cherryville	Low	3,420.8	394.8	11.5%	14%	82.4%
	ESSFwc2	Anstey	Intermediate	7,232.0	1,139.9	15.8%	19%	83.0%
	ICHmw2	Mabel	Low	8,915.8	665.8	7.5%	9%	83.0%
	ICHwk1	Pukeashun	Intermediate	16,162.9	1,762.5	10.9%	13%	83.9%
	IDFhx1	Ashnola	High	6,552.5	1,059.2	16.2%	19%	85.1%
	ESSFdc1	Harris	Intermediate	3,152.0	244.2	7.7%	9%	86.1%
	ESSFvc	Eagle River	Intermediate	6,543.2	1,082.3	16.5%	19%	87.1%
	MSdm1	Vernon	Low	18,346.0	2,294.4	12.5%	14%	89.3%
ESSFwc2	Eagle River	Intermediate	7,660.6	1,311.9	17.1%	19%	90.1%	
ESSFvcw	Anstey	Intermediate	117.5	21.5	18.3%	19%	96.4%	
100 – 110%	ICHmk1	Okanagan West Side	Intermediate	4,604.3	651.3	14.1%	14%	101.0%
	ESSFwcw	Anstey	Intermediate	3,097.6	600.2	19.4%	19%	102.0%



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 (%)	Old Forest Policy Target (%)	% of Policy Target Met in AU
	BEC	Landscape Unit	BEO					
100 – 110%	ICHwk1	Eagle River	Intermediate	19,302.7	2,589.2	13.4%	13%	103.2%
	PPxh1	Anarchist	Low	1,629.8	219.4	13.5%	13%	103.5%
	ICHdw4	White	Low	11,139.6	1,637.8	14.7%	14%	105.0%
	ICHdw4	Anstey	Intermediate	754.5	111.1	14.7%	14%	105.2%
	ICHmw2	Kingfisher	Intermediate	18,558.1	1,812.9	9.8%	9%	108.5%
110 – 125%	IDFdk1	Ashnola	High	12,256.4	2,603.0	21.2%	19%	111.8%
	ESSFvc	Seymour	High	14,352.2	4,531.5	31.6%	28%	112.8%
	MSdm2	Trout	Intermediate	23,718.8	3,844.1	16.2%	14%	115.8%
	ICHdw4	Kingfisher	Intermediate	17,167.6	2,799.5	16.3%	14%	116.5%
	MSdm1	Mission	Intermediate	32,243.0	5,316.1	16.5%	14%	117.8%
	ESSFwh1	Eagle River	Intermediate	6,374.7	1,431.9	22.5%	19%	118.2%
	MSdm1	Anarchist	Low	22,822.4	3,795.9	16.6%	14%	118.8%
	MSdm1	Penticton	Intermediate	29,547.5	5,055.4	17.1%	14%	122.2%
	ICHwk1	Upper Shuswap	High	13,826.8	3,233.6	23.4%	19%	123.1%
	ICHwk1	Kingfisher	Intermediate	5,540.5	897.2	16.2%	13%	124.6%

Of the CE-CFLB with targets (1,862,914.7 ha), 46.4% (863,991.0 ha) is meeting or exceeding old growth forest policy targets, the majority of which (33.7% or 627,054.3 ha of the CE-CFLB) 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, 28.3% (527,524.8 ha) falls within the 0-30% target met category, 10.2% (190,440.0 ha) within the 30-50% category, 8.3% (154,711.9 ha) within the 75-100% category, and 6.8% (126,247.0 ha) in the 50-75% 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 Old Growth Forest Policy Targets Met in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.

**5.1.2.1 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, 35% of the AUs are meeting the old growth forest target. There are no LUs in their entirety that have sufficient amounts of old growth forest compared to the policy targets; the Pennask LU is the closest with 83% of its AUs meeting the targets. Out of the 26 LUs, only five LU’s have more than half of their respective AUs meeting the targets: Pennask (83%), Kettle (75%), Trout (60%), Ashnola (57%), and Keremeos (50%). There are eight LUs that contain less than 25% of the AUs meeting the targets: Cherryville (25%), Trinity (25%), Anarchist (23%), Upper Kettle (20%), Vernon (18%), Pukeashun (17%), White (17%), and Crowfoot (0%).

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

Assessment Unit (AU)		Total # of Assessment Units (AUs)	# of AUs Meeting Old Growth Forest Policy Targets	% of AUs Meeting Old Growth Forest Policy Targets <sup>a</sup>
Landscape Unit	BEO			
Anarchist	High / Low	13	3	23%
Anstey	Int.	9	4	44%
Ashnola	High	7	4	57%
Cherryville	Low	12	3	25%
Crowfoot	Low	5	0	0%
Eagle River	Intermediate	11	3	27%
Harris	Intermediate	8	3	38%
Keremeos	Intermediate	6	3	50%
Kettle	Low	8	6	75%
Kingfisher	Intermediate	10	4	40%
Mabel	Low	10	3	30%
Mission	Intermediate	9	4	44%
Okanagan West Side	Int. / Low	12	4	33%
Pennask	Intermediate	6	5	83%
Penticton	Intermediate	6	2	33%
Pukeashun	Intermediate	6	1	17%
Salmon Arm	Intermediate	13	4	31%
Seymour	High	7	3	43%
Trepanier	Int. / Low	14	6	43%
Trinity	Low	8	2	25%
Trout	Intermediate	10	6	60%
Upper Kettle	Low	10	2	20%
Upper Salmon	Low	13	4	31%
Upper Shuswap	High	10	3	30%
Vernon	Low	11	2	18%
White	Low	6	1	17%
<b>Total</b>	<b>26 LUs</b>	<b>240</b>	<b>85</b>	<b>35%</b>

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

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

This section would provide 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 the Low BEO units. The Intermediate and Low BEOs have the most CE-CFLB area, however only 40% and 31% of AUs, respectively, have sufficient old growth compared to the policy targets (Table 12). Currently 35% of AUs are meeting the policy targets, which equates to 46.4% of the CE-CFLB (863,991.0 ha).

**Table 12.** Summary of Assessment Units (AU) by Biodiversity Emphasis Option (BEO) Meeting Policy Targets.

	High BEO	Biodiversity Emphasis Options (BEO) in the CE-CFLB		
		Intermediate BEO	Low BEO	Total
# Assessment Units in BEO	31	107	102	240
# Assessment Units Meeting Policy Targets	10	43	32	85
% Assessment Units Meeting Policy Targets	32%	40%	31%	35%
Total CE-CFLB Area (ha) in Assessment Units with Policy Targets	279,334.2	881,861.1	701,719.3	1,862,914.7
CE-CFLB Area (ha) of Assessment Units Meeting Policy Targets	138,596.9	437,704.4	287,689.6	863,991.0

<sup>a</sup> There are four 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 OSLRMP area.

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

### 5.1.2.3 Biogeoclimatic Ecosystem Classification and Old Growth Forest Distribution Compared to Legal 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 high elevation forests (ESSF and MS BEC zones) and the northern portion of the OSLRMP area (ICH BEC zones), and furthest from the targets in low elevation valley bottoms (IDF and PP BEC zones).

In the CE-CFLB with targets, there is a total of 36 BEC subzone/variants, of which six BEC variants have 100% of the policy targets met with old growth forest: ESSFdc3, ESSFxc2, ESSFxcw, ICHmk2, ICHvk1, and MSdm3 (Table 13). The AUs in these six BEC variants cover 118,610.6 ha of CE-CFLB, of which 38.7% (45,929.3 ha of CE-CFLB) is old growth forest. The MS BEC zone has the most subzone/variants meeting the targets (15 out of 22 AUs), however this accounts for a relatively smaller portion of the total CE-CFLB (376,668.5 or 20% of the total CE-CFLB across the OSLRMP area).

There are 14 BEC subzone/variants that have 0% of AUs with sufficient old growth forest to meet the policy targets, with a total CE-CFLB of 586,055.3 ha of which 24,256.7 ha (4.1%) is old growth forest. The dry, low elevation forests (typical of the IDF and PP BEC zones) are generally not meeting targets (50 out of 52 AUs with 217,313.3 ha of CE-CFLB), the majority of which have less than 30% of the old growth forest target met.

The AUs not meeting targets are in primarily in the ICH (223,332.6 ha of CE-CFLB in the mw3, mw5, and xm1 variants) and the IDF (217,268.2 ha of CE-CFLB in the dk2, dm1, mw2, xh1, and xh2 variants) BEC zones, as well as the ESSF (144,512.8 ha of CE-CFLB in the dcw, vcw, wc2, and wc4 variants). There are no BEC variants in the IDF that have all AU's meeting targets; of the six variants in the OSLRMP area, five variants have 0% of the targets met and one variant (IDFdk1) has 17% of AUs meeting the targets.

**Table 13.** Summary of Assessment Units (AU) by Biogeoclimatic Ecosystem Classification (BEC) Subzone or Variant that are Meeting Policy Targets in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.

BEC Variant <sup>a</sup>	Total Area in BEC (ha)	Total CE-CFLB Area (ha) in BEC with Policy Targets	Existing Old Forest in CE-CFLB with Policy Targets (ha)	Existing Old Forest in CE-CFLB with Policy Targets (%)	# of Assessment Units (AUs) in BEC	# of AUs Meeting Policy Target	% of AU Meeting Policy Targets
ESSFdc1	45,673.2	44,827.1	2,458.1	5.5%	9	2	22%
ESSFdc2	108,955.8	107,475.5	33,965.5	31.6%	13	12	92%
ESSFdc3	19,328.2	18,971.0	5,673.7	29.9%	2	2	100%
ESSFdcw	12,208.7	11,083.7	264.7	2.4%	9	0	0%
ESSFmh	53,823.9	53,192.5	1,118.5	2.1%	9	1	11%
ESSFvc	28,418.4	21,144.5	5,613.8	26.5%	3	1	33%
ESSFvcw	16,624.1	7,209.7	806.0	11.2%	3	0	0%
ESSFwc2	63,965.5	62,167.7	5,567.1	9.0%	5	0	0%
ESSFwc4	66,519.0	63,896.6	4,911.8	7.7%	6	0	0%
ESSFwcw	66,332.1	51,940.9	2,511.9	4.8%	10	1	10%
ESSFwh1	56,015.4	54,780.7	6,519.3	11.9%	6	1	17%
ESSFxc1	59,809.2	55,171.2	29,428.8	53.3%	4	3	75%
ESSFxc2	29,052.7	27,775.2	16,465.6	59.3%	8	8	100%
ESSFxcw	14,610.2	10,380.6	6,769.6	65.2%	4	4	100%
ICHdw4	129,030.7	88,559.3	15,965.5	18.0%	9	7	78%
ICHmk1	74,974.3	72,589.4	16,661.4	23.0%	12	10	83%
ICHmk2	17,029.1	16,745.3	3,478.7	20.8%	3	3	100%
ICHmw2	72,127.6	69,619.9	4,666.5	6.7%	7	1	14%
ICHmw3	95,306.9	75,226.9	4,929.3	6.6%	7	0	0%
ICHmw5	68,091.5	67,496.7	1,642.3	2.4%	9	0	0%
ICHvk1	31,400.2	28,598.2	10,040.2	35.1%	5	5	100%
ICHwk1	104,389.4	102,757.9	17,746.5	17.3%	9	7	78%
ICHxm1	153,471.8	80,608.9	276.9	0.3%	14	0	0%
IDFdk1	52,182.4	46,619.6	4,060.6	8.7%	6	1	17%
IDFdk2	87,115.6	80,599.4	742.1	0.9%	7	0	0%
IDFdm1	35,407.1	30,625.6	1,516.3	5.0%	6	0	0%
IDFmw2	43,364.3	20,830.4	253.7	1.2%	4	0	0%
IDFhx1	191,423.8	77,597.2	3,313.9	4.3%	16	0	0%
IDFhx2	17,980.4	7,615.6	12.8	0.2%	2	0	0%
MSdm1	179,402.1	173,473.3	27,732.3	16.0%	7	4	57%
MSdm2	136,508.8	133,118.3	25,211.7	18.9%	7	5	71%
MSdm3	16,247.5	16,140.3	3,501.6	21.7%	2	2	100%
MSxk1	57,799.5	52,884.9	20,999.6	39.7%	5	4	80%
MSxk2	1,056.5	1,051.8	19.7	1.9%	1	0	0%
PPxh1	147,973.2	30,093.7	726.6	2.4%	10	1	10%
PPxh2	727.8	45.1	0.0	0.0%	1	0	0%
<b>Total</b>	<b>2,354,346.9</b>	<b>1,862,914.7</b>	<b>285,572.5</b>	<b>15.3%</b>	<b>240</b>	<b>85</b>	<b>35%</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.

### 5.1.3 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, 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 influenced 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 under-estimated, as the projected age is not reflective of the true age of the stand due to inventory methods and age projections based on the average age of a stand.

The PNOGO 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 variant. 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.

### 5.1.4 Summary and Observations

Old growth forest covers 15.2% of the CE-CFLB (285,572.5 ha), generally located in the southern half of the OSLRMP area and near or within Parks and Protected Areas. Of the 240 AUs in the OSLRMP area, 35% (85 AUs) have sufficient old growth forest compared to the policy targets, which accounts for 46.4% (863,991.0 ha) of the CE-CFLB area that has targets applied. Of the total 36 BEC subzones/variants, there are six BEC variants (ESSFdc3, ESSFxc2, ESSFxcw, ICHmk2, ICHvk1, and MSdm3) where all AUs have sufficient old growth forest compared to the targets, covering 118,610.6 ha of CE-CFLB.

The remaining 155 AUs (65%) that are not meeting the old growth forest targets cover 998,923.7 ha of CE-CFLB. By indicator condition, 97 AUs (527,524.8 ha of CE-CFLB) have 0-30% of the target met, 23 AUs (190,440.0 ha of CE-CFLB) have 30-50% of the target met, 18 AUs (126,247.0 ha of CE-CFLB) have 50-75% of the target met, and 17 AUs (154,711.9 ha) have 75-100% of the target met. There are 42 AUs (70,643.9 ha of CE-CFLB) that have no old growth forest remaining to meet the targets. No LU had all AUs meeting the targets.

The AUs with insufficient old growth forest occur across the OSLRMP area in all LUs but are especially common in the dry, low elevation valley bottoms (IDF and PP BEC zones). The IDF (all subzones) has 251,631.4 ha of CE-CFLB across 40 AUs and the PP (all subzones) has 28,509.0 ha of CE-CFLB across 10 AUs that are currently not meeting the targets. The majority of these AUs have less than 30% of the old growth forest targets met.

The current condition of old growth forest is the collective result of current and historic anthropogenic and natural disturbances. There is a history of wildfires and natural disturbances in the area, including pest and insect damage, that has impacted and resulted in areas without old growth forest stands. Forest harvesting has occurred in all LUs and this may include salvage harvest in response to natural disturbances. There could be a variety of factors influencing the current condition old growth forest, including operationally accessible ground for forest harvesting to other resource development opportunities given to both major urban and rural communities (e.g., recreation, urban expansion,

agriculture development). Combined with past natural disturbances, the current condition of old growth forest may warrant further investigation to understand the underlying reasons.

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. In addition, the targets identified in the OSLRMP were not fully realized in the implementation of PNOGO. Approximately 186,000 ha was identified in OSLRMP and brought into PNOGO, however only 138,716 ha of non-legal OGMAs were spatialized. This potentially puts old growth forest biodiversity at risk, which may have been increased due to recent wildfires, resulting in uncertainty in the seral distribution that remains on the land base.

## 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. In the OSLRMP area, the mature-plus-old policy (i.e., non-legal) targets used in this CE assessment originated from the BDG. 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 underrepresented.

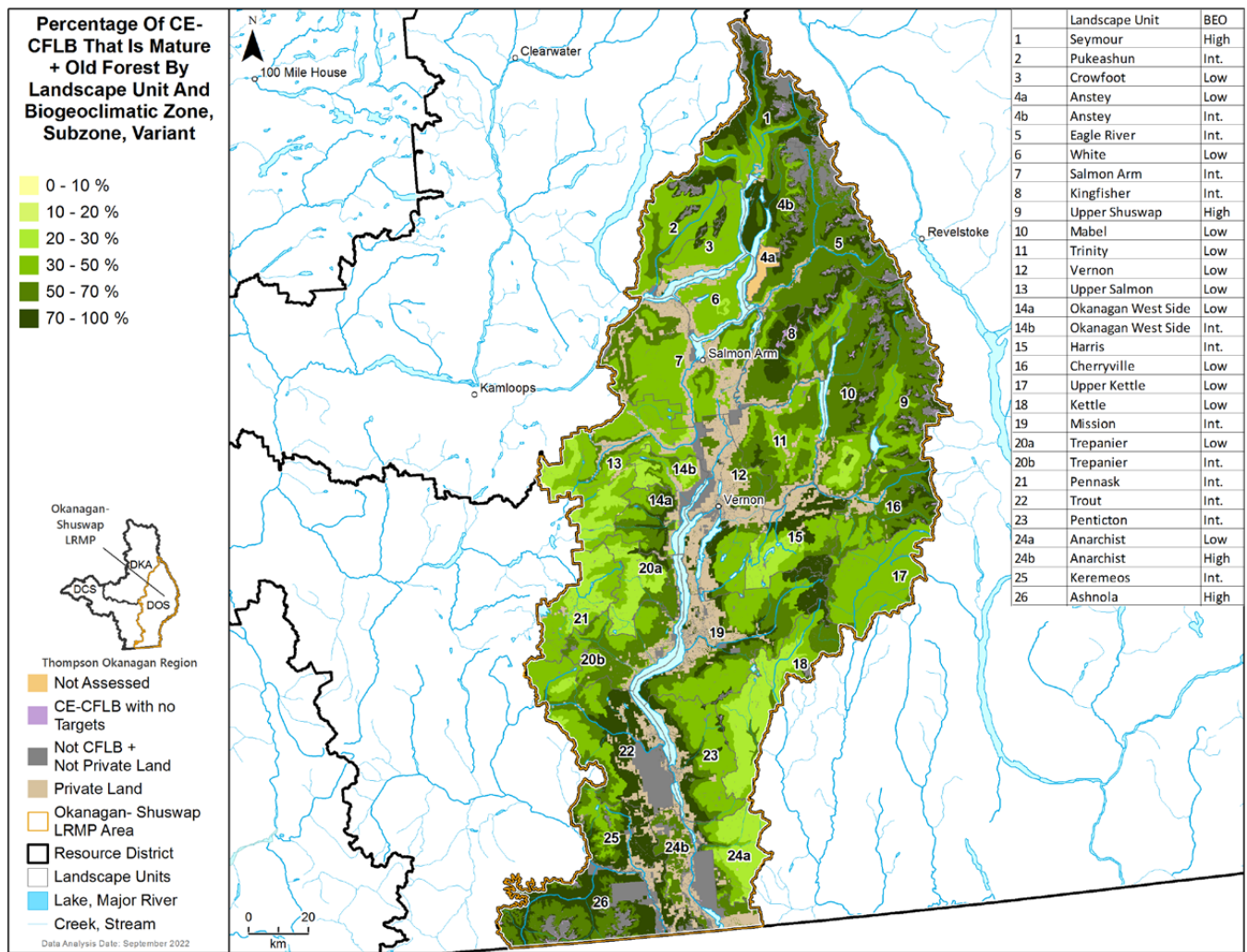
Mature-plus-old forest targets are set in the BDG by LU for each NDT, BEC, and BEO combination with targets defined by forest age. Refer to Table 6 (section 3.3.1) for the age-based definitions of mature-plus-old forest. Appendix 3 (Table 24) provides a complete listing of the mature-plus-old forest policy targets (%) applied to each AU and the total amount in the CE-CFLB used to determine the current condition.

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

In contrast to the old growth forest indicator, there are higher proportions of mature-plus-old forest distributed across the OSLRMP area (Figure 9). Overall, 51.7% (or 969,056.4 ha) of the total CE-CFLB is mature-plus-old growth forest. Areas of the CE-CFLB with greater than 50% mature-plus-old growth forest are in the higher elevation areas in the northern (Anstey, Eagle River, Upper Shuswap, Seymour, and Kingfisher LUs) and southern (Ashnola, Keremeos, Mission, and Trout LUs) portions of the OSLRMP area.

Similarly to the old growth forest target, there is a total of 11,993.1 ha of CE-CFLB with no targets across the OSLRMP area. This is primarily in the NDT5 (11,189.8 ha) with some area in the NDT4 (803.3 ha) where no targets are assigned for these ecosystems.<sup>17</sup>

<sup>17</sup> Ecosystems with no targets assigned are in the NDT4 are BGxh1 (803.3 ha), and in the NDT5 are ESSFdcp (229.0 ha), ESSPvc (1,311.0 ha), ESSFwcp (8,301.2 ha), ESSFxc (1,126.9 ha), and IMAun (221.8 ha).



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

<sup>a</sup> The Anstey LU-Low BEO (LU 4a) is not assessed because it is entirely within TFL 33, as described in section 2.1.

Of the total CE-CFLB area of 1,874,907.8 ha, mature-plus-old growth forest policy targets have been assigned to 1,862,914.7 ha (Table 14). The total amount of mature-plus-old growth forest in the CE-CFLB is 969,056.4 ha, which 51.7% of the total CE-CFLB (or 52.0% of the CE-CFLB with mature-plus-old targets). The difference between the amounts of old growth forest and mature-plus-old forest is consistent across BEOs, with the High BEO increasing from 24.1% to 62.5%, the Intermediate BEO increasing from 15.0% to 53.1%, and the Low BEO increasing from 11.9% to 45.5%.



**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 Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.

	OSLRMP Area	Biodiversity Emphasis Options (BEOs) in the CE-CFLB		
		High BEO	Intermediate BEO	Low BEO
# of Landscape Units (LUs) <sup>a</sup>	26	4	13	13
Gross Area (ha) <sup>b</sup>	2,449,169.1	401,029.6	1,174,396.7	873,742.9
Total CE-CFLB Area (ha)	1,874,907.8	285,245.6	886,283.8	703,378.3
CE-CFLB Area (ha) with Policy Targets	1,862,914.7	279,334.2	881,861.1	701,719.3
Mature-plus-Old Forest CE-CFLB Area (ha)	969,056.4	178,328.1	470,396.4	320,331.9
% of Mature-plus-Old in CE-CFLB	51.7%	62.5%	53.1%	45.5%

<sup>a</sup> There are four 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 OSLRMP area.

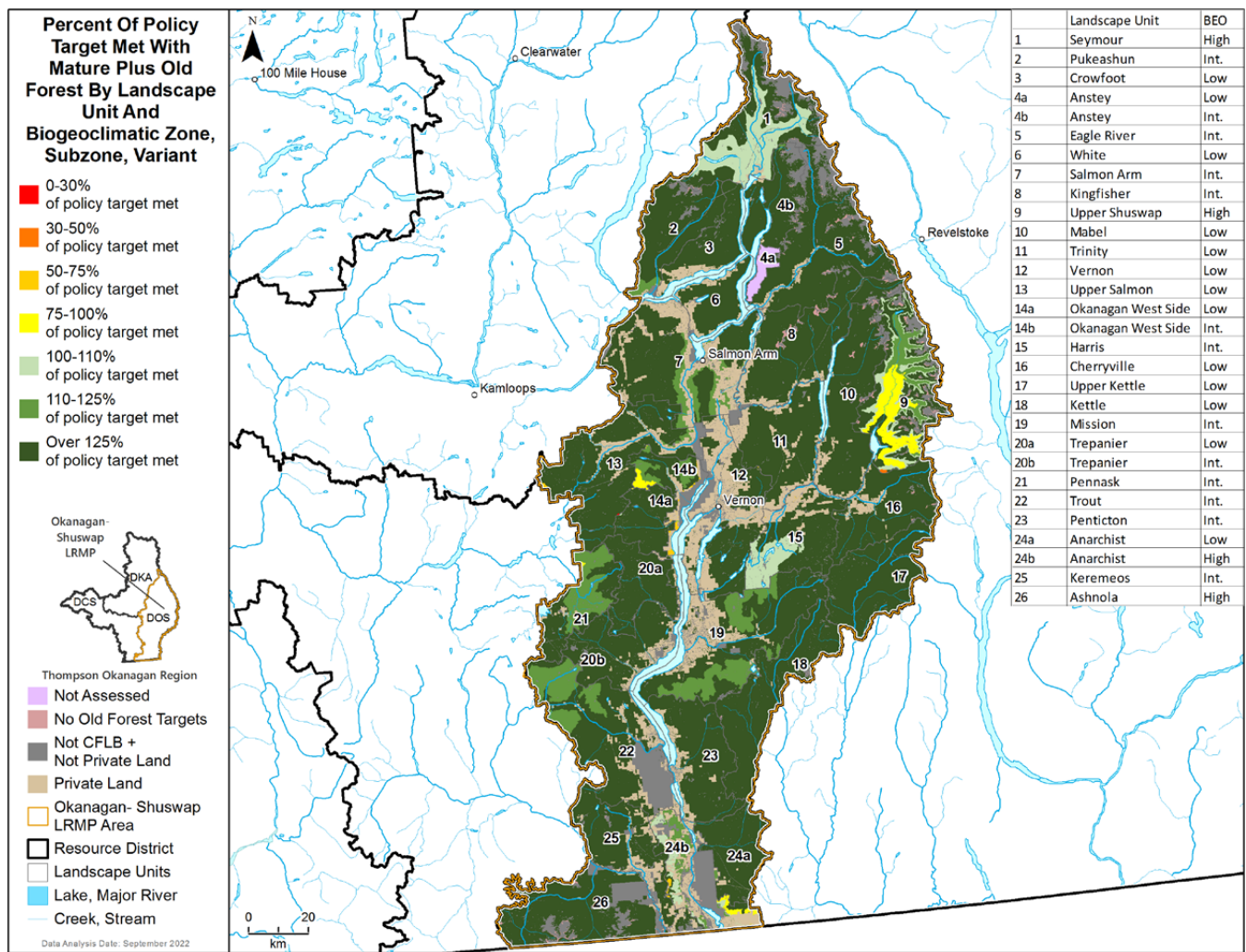
<sup>b</sup> The gross TSA area is provided for information and context only.

### 5.2.2 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 BDG policy target met (Figure 10), as described in section 4. The following section provides a high-level summary of the mature-plus-old forest assessment results compared to policy targets by AU for the OSLRMP area. In this assessment, AUs with less than 100% of the target met are considered to be in deficit of mature-plus-old forest.

In general, AUs are meeting the mature-plus-old forest policy targets across the CE-CFLB (Figure 10). There is sufficient mature-plus-old forest to meet or exceed the targets in 95% of AUs (228 out of 240 AUs). Except for areas in a few LUs, such as Anarchist, Harris, Pennask, and Upper Shuswap, the majority of the OSLRMP area has more than 125% mature-plus-old forest compared to the policy targets (see Appendix 3 Table 24).

There is insufficient mature-plus-old forest to meet targets in 5% of AUs (12 out of 240 AU). The AUs not meeting targets are fairly distributed between the target categories, however the largest CE-CFLB area (26,610.4 ha) is associated with 75-100% target category.



**Figure 10. Current Condition of Mature-plus-Old Forest as a Percent of Policy Target Met in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.<sup>a, b</sup>**

<sup>a</sup> Any AUs with less than 100% of the target met are considered to be in deficit of mature-plus-old forest.  
<sup>b</sup> The Anstey LU-Low BEO (LU 4a) is not assessed because it is entirely within TFL 33, as described in section 2.1.

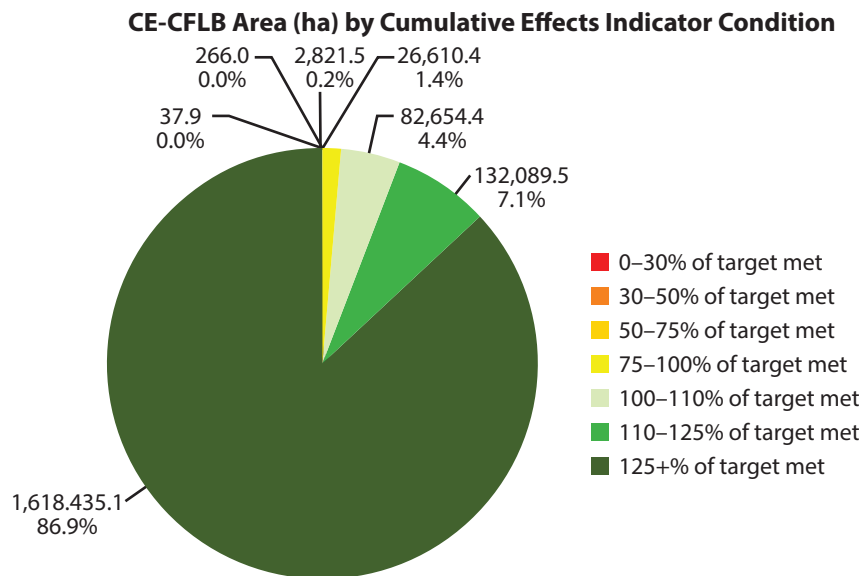
The 12 AUs with insufficient mature-plus-old forest to meet policy targets cover a total of 29,735.7 ha of CE-CFLB; currently 11,915.5 ha of this CE-CFLB is mature-plus-old forest (Table 15). The majority of the CE-CFLB of these AUs are close to meeting targets (26,610.4 ha of CE-CFLB with 75-100% of the target met). There is one AU with a relatively large CE-CFLB (21,217.8 ha in the Upper Shuswap LU-High BEO-ICHmw2 BEC variant), which is 71% of the CE-CFLB of AUs not meeting the targets. There are five AUs with more than 1,000 ha of CE-CFLB and the remaining seven AUs are relatively small (less than 500 ha).

There is one AUs with 0-30% of the target met (total CE-CFLB of 37.9 ha), one AU with 30-50% of the target met (266.0 ha of CE-CFLB), six AUs with 50-75% of the target met (2,821.5 ha of CE-CFLB), and four AUs with 75-100% of the target met (26,610.4 ha of CE-CFLB). Of the remaining 228 AUs that have greater than 100% of the target met (Appendix 3 Table 24), seven AUs have 100-110% of the target met (82,654.4 ha of CE-CFLB), 11 AUs have 110-125% of the target met (132,089.5 ha), and 210 AUs have more than 125% of the target met (1,618,435.1 ha). Of the AUs meeting targets, 63 AUs have more than 200% of the target mature-plus-old forest amount, 45 AUs have more than 300% of the target met, and 24 AUs have more than 400% of the target met.

**Table 15.** Assessment Units (AUs) with 0-125% of Mature-plus-Old Forest Compared to Policy Targets in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) 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%	ESSFdcw	Upper Salmon	Low	37.9	0.4	1.0%	14%	7.1%
30 – 50%	ESSFdc1	Upper Shuswap	High	266.0	53.0	19.9%	42%	47.4%
50 – 75%	MSxk2	Upper Salmon	Low	1,051.8	79.5	7.6%	14%	54.0%
	ESSFxc1	Anarchist	High	161.1	29.7	18.5%	34%	54.3%
	ESSFdcw	Vernon	Low	29.5	2.4	8.3%	14%	59.2%
	IDFxb1	Harris	Int.	58.7	13.7	23.3%	34%	68.6%
	MSxk1	Anarchist	High	371.9	106.3	28.6%	39%	73.3%
	IDFxb1	Okanagan West Side	Int.	1,148.6	287.6	25.0%	34%	73.6%
75 – 100%	IDFdk1	Pennask	Int.	453.7	122.0	26.9%	34%	79.1%
	ESSFdc2	Okanagan West Side	Int.	2,452.9	516.1	21.0%	23%	91.5%
	ICHmw2	Upper Shuswap	High	21,217.8	9,458.7	44.6%	46%	96.9%
	IDFdm1	Anarchist	High	2,486.0	1,246.0	50.1%	51%	98.3%
100 – 110%	ICHmw3	Seymour	High	20,504.1	9,433.3	46.0%	46%	100.0%
	IDFxb1	Anarchist	High	7,213.5	3,857.6	53.5%	51%	104.9%
	ICHwk1	Seymour	High	20,669.7	11,182.7	54.1%	51%	106.1%
	ESSFdcw	Okanagan West Side	Low	65.6	9.8	14.9%	14%	106.7%
	ESSFwh1	Upper Shuswap	High	16,414.6	9,496.4	57.9%	54%	107.1%
	MSdm1	Harris	Int.	17,505.1	4,883.7	27.9%	26%	107.3%
	ESSFmh	Upper Shuswap	High	281.6	128.7	45.7%	42%	108.8%
110 – 125%	MSdm2	Okanagan West Side	Int.	7,378.4	2,116.5	28.7%	26%	110.3%
	IDFmw2	Pukeashun	Int.	3,493.2	1,322.8	37.9%	34%	111.4%
	MSdm2	Pennask	Int.	23,577.0	6,872.4	29.1%	26%	112.1%
	PPxb1	Anarchist	High	8,113.2	4,794.8	59.1%	51%	115.9%
	ESSFvc	Anstey	Int.	249.1	105.8	42.5%	36%	118.0%
	MSdm1	Mission	Int.	32,243.0	9,976.0	30.9%	26%	119.0%
	IDFxb1	Upper Salmon	Low	1,249.9	254.9	20.4%	17%	120.0%
	ICHxm1	Salmon Arm	Int.	14,114.9	5,759.7	40.8%	34%	120.0%
	MSdm2	Trout	Int.	23,718.8	7,439.7	31.4%	26%	120.6%
	ICHwk1	Upper Shuswap	High	13,826.8	8,735.4	63.2%	51%	123.9%
ESSFdc2	Trout	Int.	4,125.2	1,182.3	28.7%	23%	124.6%	

The majority (98.4%) of the CE-CFLB has sufficient mature-plus-old forest compared to the policy targets (1,833,179.0 ha of CE-CFLB); the majority of which has more than 125% of the target met (1,618,435.1 ha or 86.9% of the CE-CFLB) (Figure 11). Of the remaining CE-CFLB, 1.6% (29,735.7 ha) is not meeting targets, primarily in the 75-100% target met category (26,610.4 ha). There is a relatively small percentage of the total CE-CFLB with 0-30% (0.0% or 37.9 ha), 30-50% (0.01%), and 50-75% (0.2%) of the target met.



**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 Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.

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

This section provides an overview of the assessment results summarized by LU; Table 16 shows the status of mature-plus-old forest as compared to policy targets for all LUs. Overall, 95% of AUs are meeting the mature-plus-old forest targets. Of the 26 LUs with targets assigned, 19 LUs have all their respective AUs with sufficient mature-plus-old forest compared to targets. The remaining seven LUs are close to meeting the targets, ranging from 77% of AUs meeting targets in the Anarchist LU to 91% in the Vernon LU.

This is an overall improvement from the old growth forest indicator where no LU had all AUs meeting the policy targets, and only five LUs had more than half of the respective AUs (more than 50%) meeting the targets. The LUs that are not meeting the mature-plus-old forest targets are: Anarchist (77%), Upper Shuswap (80%), Okanagan West Site (83%), Pennask (83%), Upper Salmon (85%), Harris (88%), and Vernon (91%).

**Table 16.** Summary of Assessment Units (AU) by Landscape Unit (LU) that are Meeting Policy Targets in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) 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>
Anarchist	High / Low	13	10	77%
Anstey	Int.	9	9	100%
Ashnola	High	7	7	100%
Cherryville	Low	12	12	100%
Crowfoot	Low	5	5	100%
Eagle River	Intermediate	11	11	100%
Harris	Intermediate	8	7	88%
Keremeos	Intermediate	6	6	100%
Kettle	Low	8	8	100%
Kingfisher	Intermediate	10	10	100%
Mabel	Low	10	10	100%
Mission	Intermediate	9	9	100%
Okanagan West Side	Int. / Low	12	10	83%
Pennask	Intermediate	6	5	83%
Penticton	Intermediate	6	6	100%
Pukeashun	Intermediate	6	6	100%
Salmon Arm	Intermediate	13	13	100%
Seymour	High	7	7	100%
Trepanier	Int. / Low	14	14	100%
Trinity	Low	8	8	100%
Trout	Intermediate	10	10	100%
Upper Kettle	Low	10	10	100%
Upper Salmon	Low	13	11	85%
Upper Shuswap	High	10	8	80%
Vernon	Low	11	10	91%
White	Low	6	6	100%
<b>Total</b>	-	<b>240</b>	<b>228</b>	<b>95%</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.

### 5.2.2.2 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. There is no BEO that has all their respective AUS with sufficient amounts of mature-plus-old forest to meet the policy targets (Table 17). Most AUs in the Low (97%) and Intermediate (96%) BEO designations are meeting targets, while 84% of AUs in the High BEO are meeting targets. The Low and Intermediate BEO have the greatest CE-CFLB of AUs meeting targets with 99.8% (700,600.2 ha) and 99.5% (877,747.3 ha) respectively, while the High BEO has 91.2% (254,831.5 ha) of the CE-CFLB meeting targets.

**Table 17.** Summary of Assessment Units (AU) by Biodiversity Emphasis Option (BEO) that are Meeting Policy Targets in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.

	Biodiversity Emphasis Options (BEOs) in the CE-CFLB			
	High BEO	Intermediate BEO	Low BEO	Total
# Assessment Units (AUs) in BEO	31	107	102	240
# AUs Meeting Policy Target	26	103	99	228
% AUs Meeting Policy Targets	84%	96%	97%	95%
CE-CFLB Area (ha) in AUs with Targets	279,334.2	881,861.1	701,719.3	1,862,914.7
CE-CFLB Area (ha) in AUs Meeting Policy Targets	254,831.5	877,747.3	700,600.2	1,833,179.0

### 5.2.2.3 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. In general, the amount of mature-plus-old forest is at or exceeding policy targets in the higher elevations (ESSF and MS BEC zones) and the wetter ecosystems in the northern half of the OSLRMP area (ICH BEC zone), and furthest from the targets in the dry, low elevation valleys (IDF BEC zone). The exception to this is the PP BEC zone where both BEC variants (PPxh1 and PPxh2) have all AUs meeting the targets, however this is a relatively small CE-CFLB (30,138.8 ha) across 11 AUs, primarily in the PPxh1.

Of the 36 BEC subzone/variants in the OSLRMP area, there are 26 BEC variants with all AUs (100%) meeting the mature-plus-old forest targets (Table 18). The remaining 10 BEC variants are close to meeting the targets, ranging from 75% of AUs meeting targets in the ESSFxc1 to 92% in the ESSFdc2. The exception to this is the MSxk2 where no (0%) AUs are meeting the mature-plus-old forest targets; however, there is only one AU associated with this BEC variant with a total CE-CFLB of 1,051.8 ha. This is an overall improvement from the old growth forest indicator where only six BEC variants were meeting the old growth forest targets.

**Table 18.** Summary of Assessment Units (AU) by Biogeoclimatic Ecosystem Classification (BEC) Subzone or Variant that are Meeting Policy Targets in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.

BEC Variant <sup>a</sup>	Total Area in BEC (ha)	Total CE-CFLB Area (ha)	Existing Mature-plus-Old Forest in CE-CFLB (ha)	Existing Mature-plus-Old Forest in CE-CFLB (%)	# Assessment Units (AUs)	# of AUs Meeting Policy Target	% of AUs Meeting Policy Targets
ESSFdc1	45,673.2	44,827.1	21,642.6	48%	9	8	89%
ESSFdc2	108,955.8	107,475.5	42,277.8	39%	13	12	92%
ESSFdc3	19,328.2	18,971.0	7,641.9	40%	2	2	100%
ESSFdcw	12,208.7	11,083.7	7,507.5	68%	9	7	78%
ESSFmh	53,823.9	53,192.5	20,928.3	39%	9	9	100%
ESSFvc	28,418.4	21,144.5	15,477.9	73%	3	3	100%
ESSFvcw	16,624.1	7,209.7	5,981.3	83%	3	3	100%
ESSFwc2	63,965.5	62,167.7	35,010.8	56%	5	5	100%
ESSFwc4	66,519.0	63,896.6	42,320.1	66%	6	6	100%
ESSFwcw	66,332.1	51,940.9	43,530.3	84%	10	10	100%
ESSFwh1	56,015.4	54,780.7	31,127.0	57%	6	6	100%
ESSFxc1	59,809.2	55,171.2	33,506.1	61%	4	3	75%
ESSFxc2	29,052.7	27,775.2	19,012.3	68%	8	8	100%
ESSFxcw	14,610.2	10,380.6	7,508.3	72%	4	4	100%
ICHdw4	129,030.7	88,559.3	45,418.1	51%	9	9	100%
ICHmk1	74,974.3	72,589.4	37,592.1	52%	12	12	100%
ICHmk2	17,029.1	16,745.3	8,047.6	48%	3	3	100%
ICHmw2	72,127.6	69,619.9	35,417.5	51%	7	6	86%
ICHmw3	95,306.9	75,226.9	40,729.3	54%	7	7	100%
ICHmw5	68,091.5	67,496.7	31,230.6	46%	9	9	100%
ICHvk1	31,400.2	28,598.2	17,438.5	61%	5	5	100%
ICHwk1	104,389.4	102,757.9	54,747.5	53%	9	9	100%
ICHxm1	153,471.8	80,608.9	47,652.9	59%	14	14	100%
IDFdk1	52,182.4	46,619.6	31,628.9	68%	6	5	83%
IDFdk2	87,115.6	80,599.4	42,254.0	52%	7	7	100%
IDFdm1	35,407.1	30,625.6	16,526.4	54%	6	5	83%
IDFmw2	43,364.3	20,830.4	12,052.7	58%	4	4	100%
IDFvh1	191,423.8	77,597.2	54,884.7	71%	16	14	88%
IDFvh2	17,980.4	7,615.6	4,268.1	56%	2	2	100%
MSdm1	179,402.1	173,473.3	54,632.0	31%	7	7	100%
MSdm2	136,508.8	133,118.3	43,160.1	32%	7	7	100%
MSdm3	16,247.5	16,140.3	6,385.8	40%	2	2	100%
MSxk1	57,799.5	52,884.9	30,978.0	59%	5	4	80%
MSxk2	1,056.5	1,051.8	79.5	8%	1	0	0%
PPxh1	147,973.2	30,093.7	20,431.7	68%	10	10	100%
PPxh2	727.8	45.1	28.2	62%	1	1	100%
<b>TOTAL</b>	<b>2,354,346.9</b>	<b>1,862,914.7</b>	<b>969,056.4</b>	<b>52%</b>	<b>240</b>	<b>228</b>	<b>95%</b>

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

### 5.2.3 Limitations

The limitations associated with the mature-plus-old forest indicator are largely a result of the interpretation of the 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.

### 5.2.4 Summary and Observations

Overall, 51.7% (969,056.4 ha) of the CE-CFLB is comprised of mature-plus-old forest, with high proportions of mature-plus-old forest across the OSLRMP area. 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 35% of AUs (85 out of 240 AUs) meeting the old growth forest policy targets, to 95% of AUs (228 out of 242 AUs) meeting the mature-plus-old forest policy targets. At the LU scale including mature forest increased the percentage of the CE-CFLB meeting targets from 46.4% (863,991.0 ha of CE-CFLB) to 98.4% (1,833,179.0 ha of CE-CFLB). There are 26 out of the 36 BEC variants that meet the mature-plus-old forest targets, while the remaining 10 BEC variants are close to meeting the targets (more than 75% of AUs meeting targets), with the exception to this is the MSxk2 (one AU not meeting the targets with a total CE-CFLB of 1,051.8 ha).

In the PNOGO, there are 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 variant. These provisions may have been applied in the AUs with not enough old growth forest to meet the targets to minimize the socio-economic impacts to forest operations. Further inquiry into the assessment results could examine whether these provisions have been applied appropriately.

## 5.3 Incursions into Non-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 and 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 except for 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 in 2019.** Refer to section 4.3.1 for more information regarding how disturbances were considered in this assessment.



### 5.3.1 Overview of OGMA Incursions

The OSLRMP area does not have legally established OGMA, however there are spatial non-legal OGMA that are currently being managed to and applied in this assessment. The [Old Growth Management Area Guidance Thompson Okanagan \(2007\)](#) regional OGMA guidance applies in absence of a legal order in the OSLRMP area and sets allowable incursion limits. **The regional guidance objectives allow incursions, for very specific reasons up to 10 ha of 10% of an OGMA, whichever is less, for any single OGMA.** Any incursion beyond this threshold would likely result in the OGMA being replaced with an ecologically suitable area. At the very least, all OGMA incursions beyond the threshold limits should trigger further inquiry. Refer to section 3.2.2 for more information regarding OGMA incursions.

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 area incurred relative to OGMA size and reflects the potential impacts to 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. Appendix 3 (Table 25) provides a complete listing of all OGMA incursion types reported by individual OGMA.

### 5.3.2 Total Amount of Incursions into Non-Legal OGMA

There are 2,929 non-legal OGMA across all LUs (including Anstey LU-Low BEO, see footnote in Table 19) with a total OGMA area of 125,877.8 ha and a CE-CFLB of 123,787.1 ha. Without comparison to the regional guidance allowable incursion thresholds, all LU's with OGMA have incursions with a total of 1,308 OGMA (45% of all OGMA) with some degree of incursion disturbance (Table 19). There are 1,621 OGMA with no incursions being reported in this assessment. The total area of all incursions in the 1,308 OGMA is 2,798.1 ha which is 2.2% of the total OGMA area. The Vernon LU has the highest percentage of incurred OGMA (75%), while an additional 10 LUs have more than half of OGMA with incursions: Penticton (59%), Salmon Arm (59%), Trinity (59%), Mission (55%), Trepanier (55%), Crowfoot (54%), Upper Salmon (53%), Kettle (52%), Pennask (52%), and Trout (51%). The four LUs with the greatest total incurred OGMA area are Trout (340.2 ha), Mission (273.9 ha), Salmon Arm (255.1 ha), and Trepanier (219.9 ha).

**Table 19.** Summary of All Incursions in Non-Legal Old Growth Management Areas (OGMAs) by Landscape Unit (LU) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.

Landscape Unit	Summary of Incursions			Summary by Total OGMA Area			Summary by CE-CFLB Area		
	Total # of OGMAs <sup>a</sup>	Total # of OGMAs with Incursions <sup>b</sup>	% of OGMAs 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 (%)
Anarchist	185	89	48%	4,318.4	142.8	3.3%	4,152.6	105.6	2.5%
Anstey, Int.	43	12	28%	910.4	11.9	1.3%	910.0	11.9	1.3%
Anstey, Low <sup>d</sup>	28	8	29%	302.6	1.4	0.5%	-	-	-
Ashnola	79	23	29%	2,448.0	36.3	1.5%	2,414.6	34.6	1.4%
Cherryville	65	20	31%	2,403.1	68.1	2.8%	2,383.1	60.4	2.5%
Crowfoot	34	18	53%	1,496.6	19.2	1.3%	1,493.0	19.2	1.3%
Eagle River	202	42	21%	4,846.6	113.6	2.3%	4,797.7	112.0	2.3%
Harris	150	68	45%	5,841.3	137.2	2.3%	5,809.4	136.6	2.4%
Keremeos	130	54	42%	5,185.7	61.5	1.2%	5,144.8	59.1	1.1%
Kettle	102	53	52%	3,590.0	90.2	2.5%	3,550.1	85.9	2.4%
Kingfisher	139	52	37%	7,878.6	101.6	1.3%	7,842.3	100.4	1.3%
Mabel	62	23	37%	3,385.4	28.9	0.9%	3,263.7	27.3	0.8%
Mission	191	106	55%	8,206.8	273.9	3.3%	8,151.4	268.8	3.3%
Okanagan West Side	108	47	44%	4,438.3	99.1	2.2%	4,334.7	93.3	2.2%
Pennask	149	78	52%	5,783.5	145.5	2.5%	5,724.1	144.1	2.5%
Penticton	145	86	59%	8,045.3	189.9	2.4%	8,008.3	187.6	2.3%
Pukeashun	36	17	47%	1,961.7	36.4	1.9%	1,959.6	35.8	1.8%
Salmon Arm	176	104	59%	9,613.9	255.1	2.7%	9,595.3	254.4	2.7%
Seymour	128	46	36%	5,115.8	86.3	1.7%	5,037.3	69.3	1.4%
Trepanier	147	81	55%	8,200.9	219.9	2.7%	7,913.6	200.3	2.5%
Trinity	29	17	59%	1,642.6	30.6	1.9%	1,642.1	30.6	1.9%
Trout	186	95	51%	9,942.5	340.2	3.4%	9,861.0	332.2	3.4%
Upper Kettle	76	31	41%	3,440.5	56.3	1.6%	3,427.4	56.2	1.6%
Upper Salmon	163	86	53%	5,461.8	114.4	2.1%	5,417.3	110.6	2.0%
Upper Shuswap	146	38	26%	9,237.4	63.2	0.7%	8,778.0	63.2	0.7%
Vernon	49	37	76%	1,161.3	46.5	4.0%	1,157.4	45.5	3.9%
White	23	10	43%	1,018.8	27.9	2.7%	1,018.4	27.9	2.7%
<b>TOTAL</b>	<b>2929</b>	<b>1308</b>	<b>45%</b>	<b>125,877.8</b>	<b>2,798.1</b>	<b>2.2%</b>	<b>123,787.1</b>	<b>2,672.6</b>	<b>2.2%</b>

<sup>a</sup> There are OGMAs that span multiple LUs. Therefore, each value in the "Total # of OGMAs" and "# of OGMAs with Incursions" columns are independent of the others in such a way that they do not sum together to equal the total number shown for the OSLRMP area.

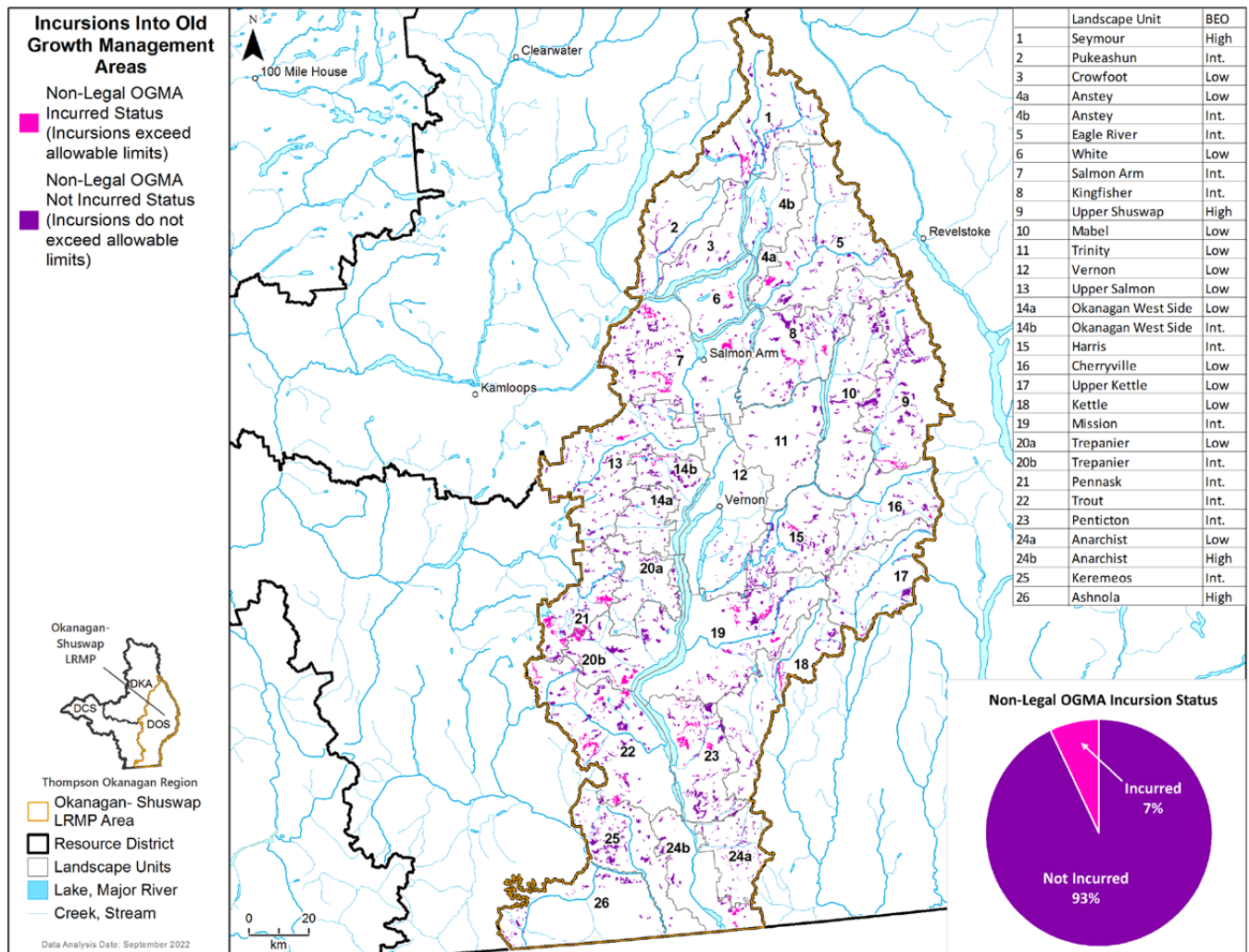
<sup>b</sup> Includes all incursions into the OGMA, regardless of any thresholds defined in legal orders or regional policies.

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

<sup>d</sup> The Anstey LU is separated by Low and Intermediate BEO to reflect the portion of the LU that is entirely within TFL 33 where inventory data was not available and therefore CE-CFLB and seral stage could not be calculated. However, non-legal OGMAs are established throughout this LU and disturbance data was available, allowing the OGMA incursion indicator to be reported here.

### 5.3.3 Incursions into Non-Legal OGMA's Compared to Allowable Thresholds in Policy

Comparing the incursions into non-legal OGMA's against the allowable thresholds in the regional guidance resulted in 7% of all non-legal OGMA's (206 out of 2,929 total OGMA's) identified as disturbed beyond the acceptable threshold limits (Figure 12, Table 20).



**Figure 12.** Incursions in Non-Legal Old Growth Management Areas (OGMA's) that Exceed the Allowable Incursion Threshold in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.<sup>a</sup>

<sup>a</sup> The insert pie chart illustrates the proportion of non-legal OGMA's with incursions that exceed the allowable threshold.

There are 206 OGMA's with incursions that exceed the allowable limits as per the regional guidance occur across all LUs (Table 20). The total area of OGMA's that are in an incurred status (e.g., above allowable threshold) is 23,013.7 ha with the total incursion footprint in these OGMA's of 1,501.6 ha (6.5% of the total OGMA area). Mission LU has the largest number of occurrences of incurred OGMA's (25 OGMA's), however the largest total OGMA area with incurred status is the Trout LU (206.5 ha). There are five additional LUs with more than 100 ha of incurred OGMA status: Mission (188.5 ha), Salmon Arm (152.5 ha), Trepanier (126.9 ha), Penticton (114.8 ha), and Pennask (102.1 ha).

**Table 20.** Summary of Incursions in Non-Legal Old Growth Management Areas (OGMAs) that Exceed the Allowable Incursion Threshold in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.

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)	
Anarchist	11	6%	602.4	76.1	485.4	40.0	Roads, Urban, Oil & Gas Infrastructure, Forest Harvesting
Anstey, Int.	4	9%	24.6	6.9	24.3	6.9	Forest Harvesting, Roads
Anstey, Low <sup>b</sup>	2	7%	6.1	0.7	-	-	Roads
Ashnola	5	6%	37.9	26.5	37.8	26.5	Forest Harvesting, Roads
Cherryville	4	6%	212.6	41.4	204.2	33.8	Agriculture & Clearing, Roads, Forest Harvesting, Urban, Rights of Way, Power
Crowfoot	3	9%	39.4	5.4	39.4	5.4	Roads
Eagle River	5	2%	829.8	76.4	827.3	74.9	Forest Harvesting, Roads, Rail, Rights of Way, Power
Harris	9	6%	451.8	41.6	450.9	41.6	Roads, Forest Harvesting
Keremeos	6	5%	32.0	8.2	31.5	7.7	Mining and Extraction, Roads, Forest Harvesting, Agriculture & Clearing
Kettle	7	7%	669.8	49.8	657.3	48.9	Forest Harvesting, Roads, Power, Rights of Way, Urban, Mining and Extraction
Kingfisher	6	4%	1,146.3	36.9	1,145.8	36.8	Roads, Rights of Way, Power, Forest Harvesting
Mabel	1	2%	43.4	10.6	43.4	10.6	Forest Harvesting
Mission	25	13%	2,244.6	188.5	2,226.0	184.0	Roads, Forest Harvesting, Rights of Way, Power, Urban
Okanagan West Side	4	4%	450.2	46.4	401.8	41.4	Roads, Rights of Way, Power, Forest Harvesting
Pennask	19	13%	2,673.5	102.1	2,645.0	101.0	Roads, Forest Harvesting, Mining and Extraction, Rights of Way, Power
Penticton	13	9%	2,182.2	114.8	2,167.7	113.8	Roads, Forest Harvesting, Urban, Oil & Gas Infrastructure, Rights of Way, Power
Pukeashun	2	6%	21.9	2.9	21.6	2.8	Roads, Agriculture & Clearing
Salmon Arm	14	8%	3,397.1	152.5	3,394.3	152.2	Roads, Forest Harvesting, Agriculture & Clearing, Oil & Gas Infrastructure

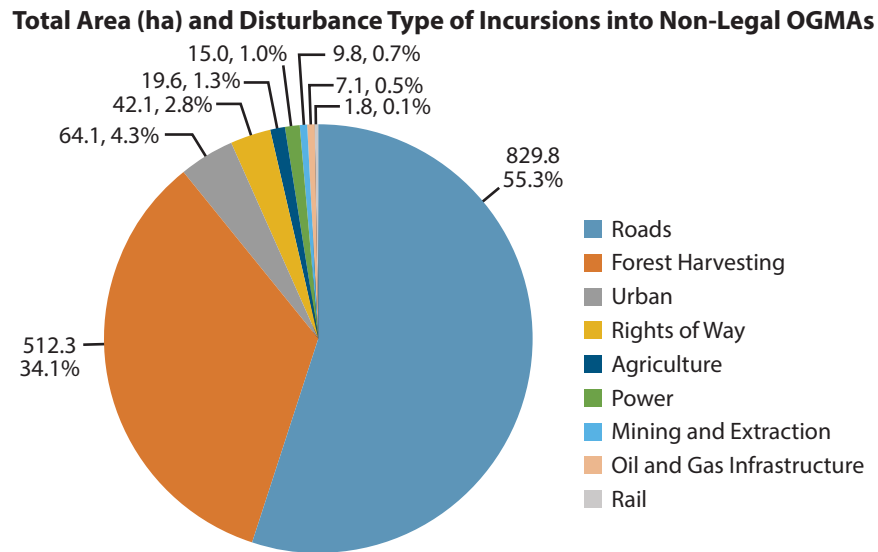
Landscape Unit	Total OGMAs		Total Area (ha)		Total CE-CFLB Area (ha)		Disturbance Type
	# of OGMAs with Incursions Over Threshold	% of OGMAs with Incursions Over Threshold	Total OGMA area with Incurred Status (ha)	Total Incurred Area in OGMA (ha) <sup>a</sup>	Total OGMA CE-CFLB Area with Incurred Status (ha)	Total Incurred OGMA CE-CFLB Area (ha)	
Seymour	6	5%	1,151.6	52.6	1,132.1	39.2	Roads, Urban, Rights of Way, Power, Forest Harvesting, Rail
Trepanier	12	8%	1,792.5	126.9	1,579.2	113.3	Forest Harvesting, Roads, Urban, Oil & Gas Infrastructure, Rights of Way, Power
Trinity	1	3%	9.4	2.1	9.4	2.1	Roads
Trout	24	13%	3,108.7	206.5	3,081.9	205.1	Roads, Forest Harvesting, Rights of Way, Urban, Power, Oil & Gas Infrastructure
Upper Kettle	2	3%	138.3	14.9	138.0	14.8	Forest Harvesting, Roads
Upper Salmon	12	7%	681.8	56.3	675.3	54.7	Roads, Rights of Way, Forest Harvesting, Power
Upper Shuswap	4	3%	677.3	21.9	677.3	21.9	Roads, Forest Harvesting
Vernon	6	12%	99.9	13.7	99.9	13.7	Forest Harvesting, Roads, Rights of Way
White	4	17%	288.6	18.9	288.6	18.9	Forest Harvesting
<b>TOTAL</b>	<b>206</b>	<b>7.0%</b>	<b>23,013.7</b>	<b>1,501.6</b>	<b>22,485.5</b>	<b>1,411.9</b>	

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

<sup>b</sup> The Anstey LU is separated by Low and Intermediate BEO to reflect the portion of the LU that is entirely within TFL 33 where inventory data was not available and therefore CE-CFLB and seral stage could not be calculated. However, non-legal OGMAs are established throughout this LU and disturbance data was available, allowing the OGMA incursion indicator to be reported here.

**5.3.3.1 Disturbance Type of Incursions in Non-Legal OGMA**

A total area of 1,5016 ha (1,411.9 ha of CE-CFLB) of incursions in non-legal OGMA was identified in this assessment that are beyond the allowable incursion limits (Table 20). Most incursions that exceeded the allowable threshold were due to road development (829.8 ha or 55.3%) followed by forest harvesting (512.3 ha or 34.1%) (Figure 13). Incursions were also due to urban development (64.1 ha), rights-of-ways (42.1 ha), agriculture (19.6 ha), power (15.0 ha), mining and extraction (9.8 ha), oil and gas infrastructure (7.1 ha), and rail (1.8 ha). See Appendix 3 Table 25 for further details regarding disturbance types by LU.



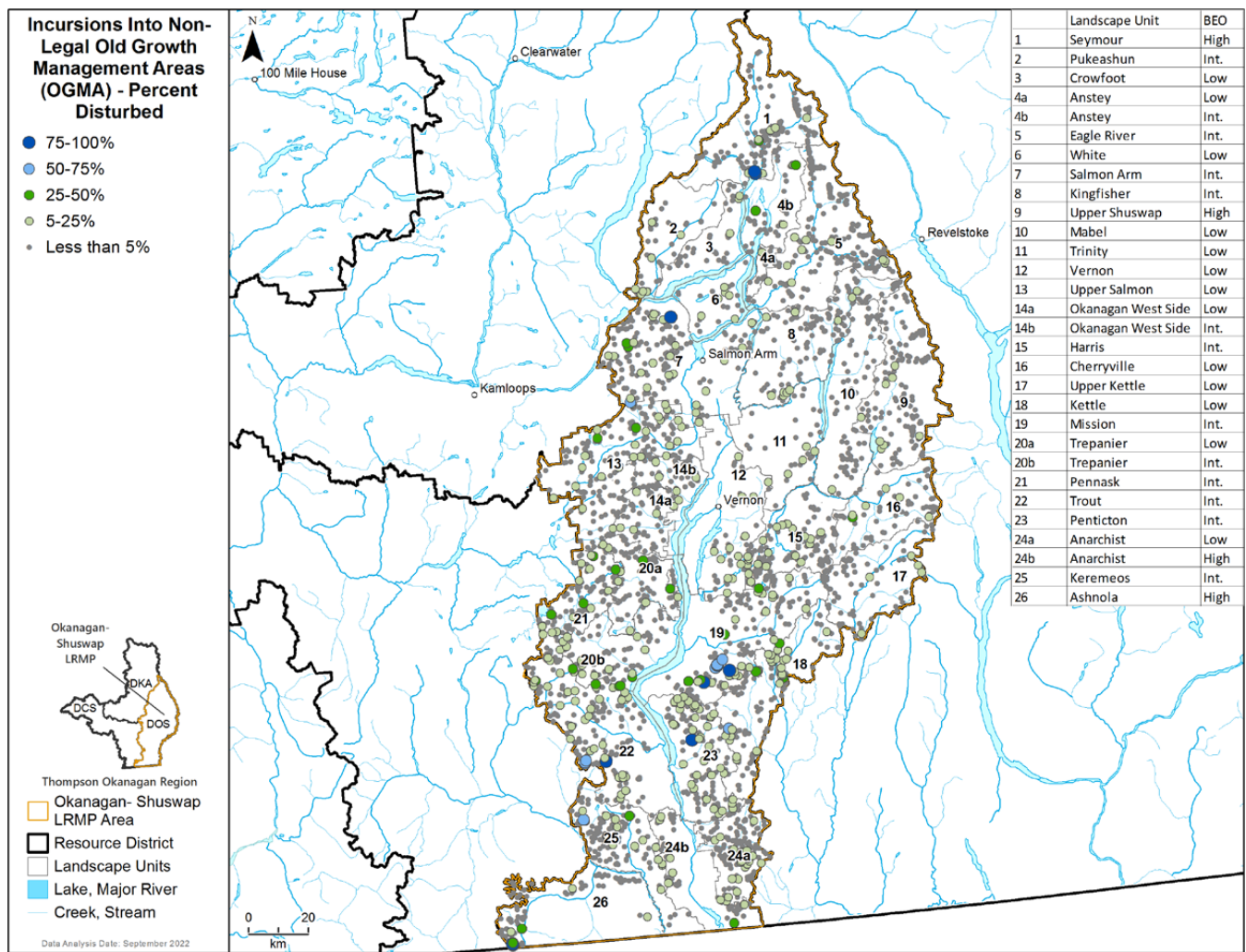
**Figure 13.** Distribution of Incursions in Non-Legal Old Growth Management Areas (OGMA) that Exceed the Allowable Incursion Threshold by Disturbance Type in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.

**5.3.3.2 Incursion Magnitude in Non-Legal OGMA**

Magnitude of incursions in OGMA is assessed to determine the overall impact based on the size of the OGMA and the scale of disturbance within the OGMA (e.g., the smaller the OGMA, the greater the potential impact to the OGMA, including the indirect impacts of disturbances on interior forest condition habitat from edge effect).

In the OSLRMP area, most non-legal OGMA (904 out of 1,308 total OGMA) have incursions that disturb less than 5% of the total OGMA area (Figure 14), followed by incursions that disturb 5 to 25% of the total OGMA area (353 out of 1,308 OGMA, 235 of which disturb 5 to 10% of the total OGMA area). There are 32 OGMA with incursions that disturb 25 to 50% of the total OGMA area, nine OGMA with 50 to 75% of the OGMA incurred, and 10 OGMA with more than 75% of the OGMA incurred. The OGMA with larger incursions (over 75% in Figure 14), are south of Kelowna, west of Penticton, and north of Salmon Arm.

The largest incursion occurs in the Trepanier LU with 67.9 ha of total incurred area within an individual OGMA (21% of the OGMA) due to forest harvesting, roads, right-of-way, and urban development (Table 25). The next largest incursion occurs in the Eagle River LU with 60.2 ha of total incurred area within an individual OGMA (10% of the OGMA) due to forest harvesting and roads. In addition, there are 19 OGMA where more than 50% of the total OGMA area was incurred. Most of these 19 OGMA are less than 10.0 ha, while the largest OGMA is 44.2 ha with a total incurred area of 24.8 ha in the Mission LU that was largely due to roads and forest harvesting.



**Figure 14.** Magnitude of Incursions into Non-Legal Old Growth Management Areas (OGMAs) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.

### 5.3.4 Limitations

This report assesses the amount of incursions into OGMA due to anthropogenic (human-caused) disturbances. At this time, they do not report on incursions due to natural disturbances for the OGMA incursion indicator 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 non-legal OGMA and those that occurred more than 20 years before the assessment were removed. As a result, this assessment may over-estimate the amount of incursions due to the inclusion of 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 built on the ground, 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 s 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 2,929 spatial non-legal OGMA s across the OSLRMP area with a total OGMA area of 125,877.8 ha, of which 123,787.1 ha is CE-CFLB. Of these, 1,308 OGMA s (45%) show some level of disturbance impacting a total OGMA area of 2,798.1 ha (without comparison to the allowable incursion threshold). Vernon LU has the highest percentage of incurred OGMA s (75%), while an additional 10 LUs have more than half of OGMA s with incursions. The four LUs with the greatest total incurred OGMA area are Trout (340.2 ha), Mission (273.9 ha), Salmon Arm (255.1 ha), and Trepanier (219.9 ha).

There are 206 OGMA s (7% of all OGMA s) with incursions that exceed the allowable limits as per the regional guidance, impacting 23,013.7 ha of total OGMA area with the total incursion footprint in these OGMA s of 1,501.6 ha. Mission LU has the largest number of occurrences of incurred OGMA s (25 OGMA s), however the largest total OGMA area with incurred status is the Trout LU (206.5 ha). Most incursions that exceeded the allowable threshold were due to road development (829.8 ha or 55.3%) followed by forest harvesting (512.3 ha or 34.1%). Incursions were also due to urban development (64.1 ha), rights-of-ways (42.1 ha), agriculture (19.6 ha), power (15.0 ha), mining and extraction (9.8 ha), oil and gas infrastructure (7.1 ha), and rail (1.8 ha).

Incursions into OGMA s 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 regional guidance is being maintained and if OGMA s need to be replaced or monitored. In addition, OGMA s were intended to have long-term monitoring, however, such monitoring of effectiveness and incursions has not occurred in the OSLRMP area to date. These OGMA incursion assessment results are the beginnings for future monitoring opportunities.

## 5.4 Amount of Old Growth Forest in Non-Legal OGMA s Relative to Policy Targets

OGMA s (legal and non-legal) are the implementation strategy used to meet old growth forest retention targets. Identifying how much old growth forest exists within OGMA s relative to BDG policy targets can assess whether OGMA s are currently achieving old growth retention targets in the CE-CFLB. In addition, assessing how much mature forest exists within OGMA s 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 OGMA s while mitigating impacts to timber supply. Old growth forest retention targets were to be met first in areas with harvesting restrictions (i.e., parks, wildlife habitat areas) before identifying areas for spatial OGMA s in the LU-B. If there was not enough old growth forest in the LU-BEC to meet the policy target, then the next oldest available forest (generally mature forest) could be recruited.

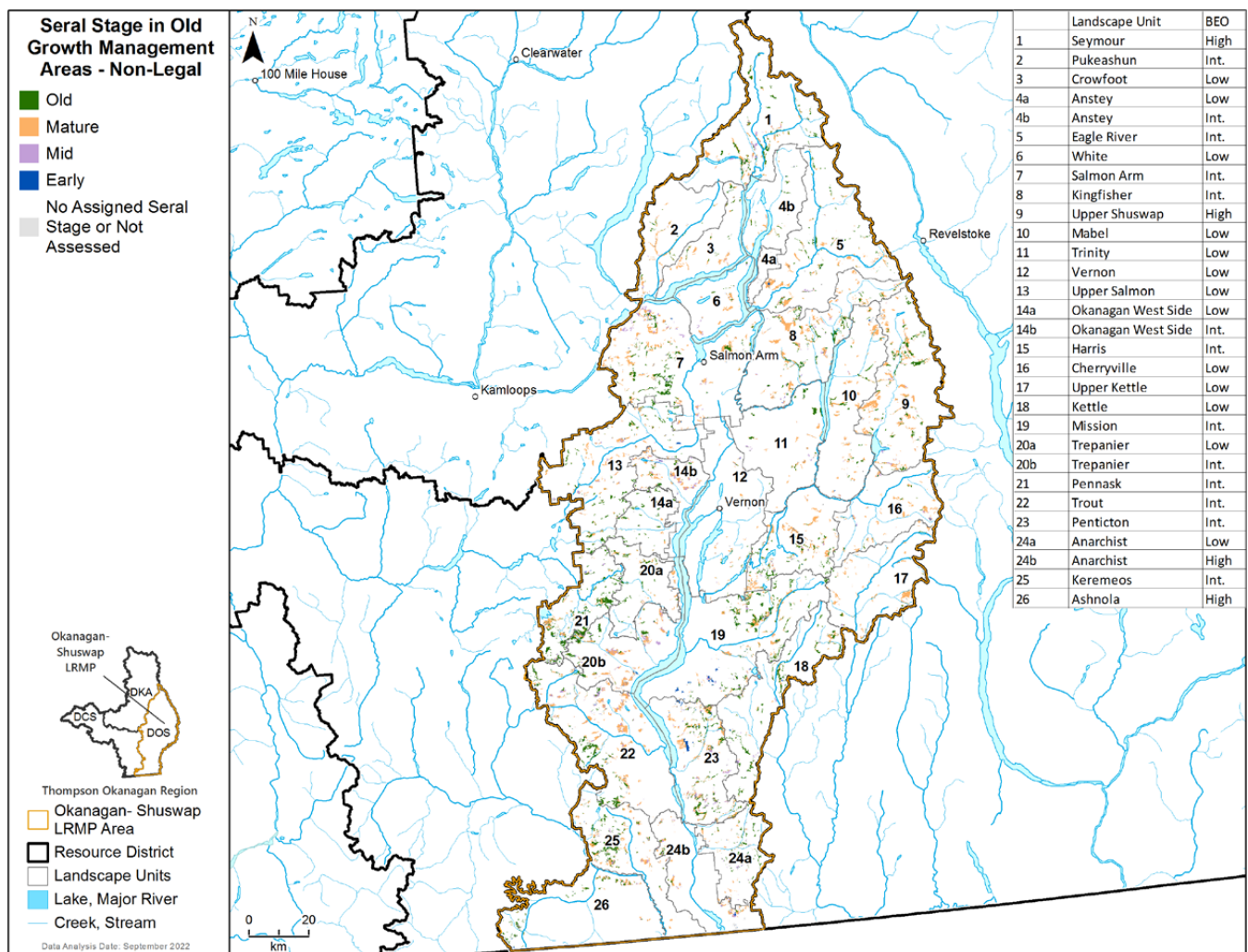
**While this assessment includes the amount of old growth forest within other protected areas as part of the overall old growth forest available in each AU, it does not specifically report on the area and amount of old growth forest co-located within these other no-harvest designation areas (e.g., wildlife habitat areas, ungulate winter ranges, parks). Therefore, where the results indicate that the area or amount of old growth forest in OGMA s is not sufficient to meet policy 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 regional OGMA policy states that OGMA are to be managed to the polygon (area) to meet the distribution of old growth forest for each LU-BEC (e.g., AU). The regional guidance does not require the management of the seral stage within OGMA. The intent of OGMA was to meet the target amount of old growth forest under PNOGO. If OGMA are legally established, the assumption is that the total area within OGMA meets the old growth forest seral stage targets under PNOGO (or the BDG). **This assessment is intended to provide a starting point for further analysis and inquiry to examine how OGMA designations are meeting targets for old growth forest retention.**

### 5.4.1 Overview of Old Growth Forest in Non-Legal OGMA

The seral stage in non-legal OGMA shows a general pattern of old seral stage forest dispersed across the OSLRMP area (Figure 15), particularly in the south with larger areas of old growth forest in OGMA along the western boundary. There are 2,929 mapped non-legal OGMA across all LUs with a total OGMA area of 125,877.8 ha and a CE-CFLB of 123,787.1 ha. Overall, half of the total area of OGMA are mature seral stage (51.4% or 64,663.8 ha) followed by old (34.3% or 43,131.3 ha), mid (9.5% or 11,932.0 ha), and early (3.2% or 4,046.5 ha) seral forests, as well as 1,801.6 ha (1.4%) with no seral stage was assigned. In addition, there is 302.6 ha of area that was not assessed in the Anstey LU-Low BEO due to this LU being entirely within TFL 33 (as discussed in section 2.1).



**Figure 15.** Current Seral Stage of Forests in Non-Legal Old Growth Management Areas (OGMA) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.<sup>a</sup>

<sup>a</sup> The Anstey LU-Low BEO (LU 4a) is not assessed because it is entirely within TFL 33, as described in section 2.1.

### 5.4.2 Amount of Old Growth Forest in Non-Legal OGMA

Appendix 4 Table 26 provides a summary of the entire OSLRMP area with the current amount of old growth forest compared to the policy (BDG) targets for all AUs with targets and established OGMA (i.e., LU-BECs with no old growth targets or AUs without OGMA are not included). The total CE-CFLB area in OGMA identified here (123,773.6 ha) differs from the OGMA incursion indicator (123,787.1 ha in Table 19) by 13.5 ha because there is area within OGMA that does not have old growth targets (e.g., BG BEC zone or NDT5).

Of the 240 AUs, three AUs are meeting the old growth forest policy targets within non-legal OGMA (1,699.9 ha of CE-CFLB in OGMA). All three AUs are in an ESSF BEC variant with a total CE-CFLB of 7,825.5 ha of which 3,313.0 ha is old growth forest (with 1,249.5 ha of this within OGMA). These three AUs meeting the targets within the non-legal OGMA occur in the two LUs: Keremeos (ESSFxcw with 138% of the target met) and Pennask (ESSFxc2 with 106% of the target met and ESSFxcw with 110% of the target met). Both LUs are designated as Intermediate BEO.

In contrast, there are 237 AUs that do not meet the targets (122,073.7 ha of CE-CFLB in OGMA). Of these, there are 73 AUs with no old growth forest within the CE-CFLB of non-legal OGMA boundaries, however 28 of these AUs have no CE-CFLB within the OGMA. Of the 237 AUs not meeting the targets, 82 AUs have no old growth forest identified within the OGMA but have some old growth forest available elsewhere on the landscape that could be contributing to targets (i.e., old growth forest is in the CE-CFLB of that LU-BEC however it is outside the current OGMA boundaries).

The general trend across the OSLRMP area indicates on average there are enough old growth forests available across the CE-CFLB (average 105% of the target being met) than there are currently within non-legal OGMA (average 16% of the target being met). **This suggests there are old growth forests available across the land base to contribute to the policy targets that are currently not within the non-legal OGMA boundaries.** However, this is also stated with caution as this is an average of all AUs with a range of variation between AUs (e.g., 585% of the target met to 0.1% of the target met). Regardless, there is risk in managing just enough old growth forest in an AU compared to the targets as a single activity or incursion could cumulatively cause the AU to no longer meet the targets.

### 5.4.3 Limitations

It is unclear if the non-legal OGMA in the OSLRMP area will be converted to legal designations. 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 non-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 old seral forest dispersed across the OSLRMP area, particularly in the south with larger areas of old growth forest in OGMA along the western boundary. Overall, most of the area in OGMA are mature seral stage forests (51.4% or 64,663.8 ha) followed by old (34.3% or 43,131.3 ha), mid (9.5% or 11,932.0 ha), and early (3.2% or 4,046.5 ha) forests.

There are three AUs that are meeting old growth forest policy targets within non-legal OGMA (i.e., total old growth in OGMA is enough to meet targets). All of these are in an ESSF BEC variant and LUs designated as Intermediate BEO: Keremeos (ESSFxcw) and Pennask (ESSFxc2 and ESSFxcw) LUs. There are 237 AUs not meeting the targets within OGMA. Of these, 73 AUs have no old growth forest within the CE-CFLB of non-legal OGMA boundaries.

While there are enough old growth forests in most LUs compared to the policy targets, it is generally not occurring within the non-legal OGMA (average 16% of the target being met). Old growth forest available in the CE-CFLB outside of the established OGMA boundaries could contribute to these targets (average 105% of the targets met). The lack of old growth forest within OGMA in the majority of AUs suggests that current placement of non-legal OGMA is not fully capitalizing on the available old growth forest on the landscape to meet the targets.

# 6 OPPORTUNITIES FOR IMPROVEMENT

The following opportunities related to old growth forest management are identified for consideration:

1. Review current non-legal OGMA locations and seral stage within OGMAs in AUs that do not contain sufficient old growth forest to meet legal targets. The establishment of OGMAs was intended to retain old growth forest attributes and should be reviewed to better understand if the intended outcomes are being achieved. Further investigation into the values being managed for within these OGMAs is required (i.e., areas may have been selected for cultural values).
2. This assessment shows a general trend of sufficient old growth forest available across many AUs (i.e., the CE-CFLB across the OSLRMP area) but not necessarily within the non-legal OGMAs. Determine if there is an opportunity to adjust the non-legal OGMA boundaries to capture more old growth forest that will better support old growth forest biodiversity objectives.
3. Review the current process in place for the tracking and monitoring of OGMA incursions and amendments to ensure the original intent of the OGMAs are maintained.
4. Identify opportunities to integrate the findings of this report, including the CE assessment results and data into planning and decision-making processes.
5. Old growth forest targets for the Okanagan are set directly within PNOGO as area-based (i.e., hectares) targets based on information at the time (2004). A thorough review of PNOGO for the management of old growth forest on this land base should be completed to consider new information since PNOGO was established, such as changes to the BEC and THLB. In addition, how PNOGO is interpreted and the overall inability to replicate targets with certainty is of concern, and it is unclear how PNOGO is being monitored and implemented over time. This presents an opportunity for reviewing the original intent of this provincial order for the Okanagan land base.

Additional considerations to improve old growth forest management includes:

- CE assessments present the opportunity to develop trend analyses over time to support the monitoring and tracking of current condition of old growth forest. Consider re-assessing the OSLRMP area when new information becomes available or when there are significant changes on the land base.
- When available, consider reviewing the results of the Forest Biodiversity CE assessment to determine how hazards to forest biodiversity could potentially be mitigated through the legal management of old growth (e.g., are non-legal OGMAs ecologically intact old growth forest ecosystems, are there opportunities to ensure recruitment for continued representation of old growth forest by maintaining intact mature forest).
- Complete OGMA impact assessments to better understand the direct and indirect implications of disturbances in OGMAs to determine if the intent of the OGMAs are still being maintained and to identify appropriate mitigation strategies. This includes:
  - Anthropogenic disturbances directly within the OGMA;
  - Residual impacts of resource management activities in the landscape adjacent to the OGMA (e.g., edge effects and isolated OGMAs); and
  - Natural disturbance events within OGMAs as well as the surrounding landscape.
- Review and update the regional OGMA amendment policy to ensure rigour and transparency around tracking and monitoring of incursions into OGMAs. This update should include how the policy will recognize cumulative impacts in OGMAs and incorporate improved knowledge and science regarding old growth forest.
- Communicate the results of this report to enable consideration of cumulative impacts to old growth forest in natural resource sector permitting and authorizations, where appropriate.

## 6 Opportunities for Improvement

- Although this assessment may indicate surplus amounts (hectares) of old growth and mature forest to sufficiently meet legal or policy targets in several ecosystems, the remaining old growth forest may be highly fragmented or retained in small patches. The presence and location of these old growth forests should be reviewed further to understand what attributes are being maintained in these landscapes and how they contribute to the current state of the land base.
- Consider how old growth management can support climate resilience, mitigation, and adaptation. Remaining patches of old growth forest may provide refugia at the landscape level and support ecosystem resilience as the climate changes. Although small, fragmented patches of old growth forest are not ideal for maintaining functional biodiversity, these areas should become a management priority, particularly in ecosystems with no other old growth forest representation. Additionally, it is well supported in the literature that old growth forests store large amounts of carbon, and their preservation can support carbon management and climate mitigation strategies.

# 7 CONCLUSION

Overall, 15.2% (285,572.5 ha of CE-CFLB) has been identified as old growth forests across the OSLRMP area. The greatest representation of old and mature forests is in the southern half of the OSLRMP area and near or within Parks and Protected Areas. The higher elevation forests tend to have lower landscape level disturbances which should allow old growth forest to persist over time.

Currently 35% of assessment units (AUs) meet the policy (BDG) targets for old growth forest (85 out of 240 AUs), while 155 AUs (65%) are not meeting old growth forest targets, 42 of which have no old growth forest remaining. The dry, low elevation forests (typical of the IDF and PP BEC zones) are generally not meeting targets (50 out of 52 AUs with 217,313.3 ha of CE-CFLB), the majority of which have less than 30% of the old growth forest target met. There are no landscape units (LUs) with all AUs meeting the old growth forest targets. There are generally more mature-plus-old forests in the CE-CFLB (51.7%) distributed across the OSLRMP area (969,056.4 ha of CE-CFLB). These mature seral forests could contribute as recruitment forest in addition to meeting the mature-plus-old forest policy targets. Currently 95% of AUs (228 out of 240 AUs) meet the policy targets for mature-plus-old forest.

The OSLRMP area does not have legally established OGMA, however spatial non-legal OGMA are available to manage old growth forest biodiversity. There are 2,929 non-legal OGMA, of which 1,308 OGMA (45%) have some level of disturbance, while 206 OGMA (7%) have incursions that exceed the allowable limits, impacting 1,501.6 ha of OGMA area within 23,013.7 ha of the total OGMA area. Most incursions disturbed less than 5% of the OGMA and were primarily due to road development (55.3%) followed by forest harvesting (e.g., cutblocks) (34.1%). In addition, OGMA have been impacted by wildfires across the land base, however this was not included in the assessment as a disturbance type.

There is a general pattern of old seral forest dispersed across the OSLRMP area, particularly in the south with larger areas of old growth forest in OGMA along the western boundary. Overall, most of the area in OGMA are mature (51.4%) seral stage forests followed by old growth (34.3%), mid (9.5%), and early (3.2%) forests. In general, there appears to be more old growth forest available across the land base (average 105% of the policy target met) than within the non-legal OGMA boundaries (average 16% of the policy target met). 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 current non-legal OGMA locations should be considered to meet targets and account for natural disturbances over time.

Old growth forest, mature-plus-old forest, and OGMA 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 OGMA to determine if additional management strategies (e.g., amendment, replacement) is required.

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# 9 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 OSLRMP area.

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

Assessment Questions
<b>Amount of Old Growth Forest</b>
<p><i>What is the current amount of old growth forest in the CE-CFLB? Where is old growth forest located on the land base?</i></p> <ul style="list-style-type: none"> <li>▪ 15.2% of CE-CFLB is old growth forest, which covers 285,572.5 ha of total CE-CFLB.</li> <li>▪ Generally found in the southern portion of the OSLRMP area, as well as near or within Parks and Protected Areas.</li> <li>▪ The highest percentages of old growth forest exist in the Ashnola, Pennask, and Kettle LUs.</li> </ul>
<p><i>Which AUs meet the targets with old forest?</i></p> <ul style="list-style-type: none"> <li>▪ 85 out of 240 AUs (35%) meet the policy targets. These AUs account for 46.4% (863,991.0 ha) of the total CE-CFLB. Most of these AUs (627,054.3 ha of CE-CFLB) have more than 125% of the target being met.</li> <li>▪ Generally found in higher elevation forests and the southern half of the OSLRMP area.</li> <li>▪ 6 out of 36 BEC subzones/variants have all units meeting the targets: ESSFdc3, ESSFxc2, ESSFxcw, ICHmk2, ICHvk1, and MSdm3. These AUs cover 118,610.6 ha of CE-CFLB, of which 38.7% (45,929.3 ha) is old growth forest.</li> </ul>
<p><i>Which AUs are flagged for further consideration?</i></p> <ul style="list-style-type: none"> <li>▪ 155 out of 245 AUs (65%) do not meet old growth forest policy targets. These AUs cover a total of 998,923.7 ha of CE-CFLB.</li> <li>▪ 42 AUs have no old growth forest to meet targets, covering a total of 70,643.9 ha of CE-CFLB.</li> <li>▪ 14 out of 36 BEC variants have no AUs (0%) meeting the targets.</li> <li>▪ Dry, low elevation ecosystems (IDF and PP BEC zones) are furthest from targets, with 50 out of 52 AUs (217,313.3 ha of CE-CFLB) not meeting the targets, the majority of which have less than 30% of the target met.</li> <li>▪ No LUs have all AUs meeting the targets.</li> </ul>
<p><i>What are some of the possible reasons for the current condition?</i></p> <ul style="list-style-type: none"> <li>▪ Natural disturbance – history of insect and pest damage as well as recent and historical wildfires that burnt extensive areas, leaving large areas without old growth stands.</li> <li>▪ Land use history – forest harvesting, possibly including salvage in response to natural disturbances.</li> </ul>
<b>Amount of Mature-plus-Old Forest</b>
<p><i>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?</i></p> <ul style="list-style-type: none"> <li>▪ 51.7% of CE-CFLB is mature-plus-old growth forest, which covers 969,056.4 ha of total CE-CFLB.</li> <li>▪ Mature-plus-old forest is generally found in the higher elevations in the northern and southern portions of the OSLRMP area.</li> </ul>
<p><i>Which AUs meet the policy targets with mature-plus-old forest?</i></p> <ul style="list-style-type: none"> <li>▪ 228 out of 240 assessment units (95%) meet policy targets. These AUs account for 98.4% (1,833,179.0 ha) of the total CE-CFLB and are found across the land base.</li> <li>▪ Except for a few LUs (i.e., Anarchist, Harris, Pennask, Upper Shuswap), most of the OSLRMP area has more than 125% of the target met (210 out of 240 AUs).</li> <li>▪ 26 out of 36 BEC variants have all units meeting the policy targets.</li> <li>▪ 19 out of 26 LUs have all units meeting the policy targets.</li> <li>▪ At the AU scale, including mature forest in the current condition assessment increased the percentage of AUs meeting targets from 35% to 95% (from 46.4% to 98.4% of the CE-CFLB).</li> </ul>

### Assessment Questions

*Which AUs are flagged for further consideration?*

- 12 out of 240 assessment units (5%) do not meet targets. These AUs account for 1.6% (29,735.7 ha) of the total CE-CFLB.
- The majority of the CE-CFLB associated with these AUs (4 AUs with a total of 26,610.4 ha of CE-CFLB) are close to meeting the targets (75-100% of the target met).
- 1 AU (Upper Shuswap LU-High BEO-ICHmw2 BEC variant) has a relatively large CE-CFLB (21,217.8 ha), which is 71% of the CE-CFLB of AUs not meeting the targets.
- There is 1 AUs with 0-30% of the target met (total CE-CFLB of 37.9 ha), 1 AU with 30-50% (266.0 ha), and 6 AUs with 50-75% (2,821.5 ha).

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

- In general, targets are being met across the OSLRMP area for mature-plus-old forest.

### Incursions into Non-Legal OGMA

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

- There are 2,929 spatial non-legal OGMA in the OSLRMP area with a total OGMA area of 125,877.8 ha of which 123,787.1 ha is CE-CFLB.
- 1,308 OGMA (45% of all OGMA) have some level of incursion (no incursion threshold applied), impacted a total OGMA incursion area of 2,798.1 ha (2.2% of the total OGMA area).
- The Vernon LU has the highest percentage of incurred OGMA (75%), while an additional 10 LUs have more than have of OGMA with incursions: Penticton, Salmon Arm, Trinity, Mission, Trepanier, Crowfoot, Upper Salmon, Kettle, Pennask, and Trout.

*Do they exceed the Order threshold?*

- 206 OGMA (7%) have incursions exceeding the allowable incursion limits, impacting a total OGMA incursion area of 1,501.6 ha (6.5% of the total OGMA area) over a total OGMA area of 23,013.7 ha.
- Mission LU has the largest number of incurred OGMA (25 OGMA); however, the largest incursion is in the Trepanier LU with 67.9 ha of total incurred area within an individual OGMA.
- Some of these incursions are historical and were known and considered acceptable at the time of OGMA establishment.

*What is the type of incursion into OGMA?*

- Most incursions that exceed the allowable incursion limits were due to road development (829.8 ha or 55.3%) followed by forest harvesting (e.g., cutblocks) (512.3 ha or 34.1%); however, roads may have already been present when the OGMA was established.
- Incursions were also due to urban development (64.1 ha or 4.3%), rights-of-way (42.1 ha or 2.8%), agriculture (19.6 ha or 1.3%), power (15.0 ha or 1.0%), mining and extraction (9.8 ha or 0.7%), oil and gas infrastructure (7.1 ha or 0.5%), and rail (1.8 ha or 0.1%).
- OGMA have also been impacted by wildfires (outside scope of assessment).

*What is the magnitude of incursions into OGMA (total % incurred)?*

- Most incursions disturb less than 5% of the total OGMA area.
- 1,621 OGMA had no incursions.
- 904 OGMA fall within the <5% magnitude category.
- 353 OGMA fall within the 5-25% magnitude category.
- 32 OGMA fall within the 25-50% magnitude category.
- 9 OGMA fall within the 50-75% magnitude category.
- 10 OGMA fall within the >75% magnitude category.

### Amount of Old Forest in Non-Legal OGMA

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

- The majority of non-legal OGMA are mature seral stage (51.4% or 64,663.8 ha total OGMA area) followed by old (34.3% or 43,131.3 ha), mid (9.5% or 11,932.0 ha), and early (3.2% or 4,046.5 ha) seral forests, as well as 1,801.6 ha (1.4%) with no seral stage assigned.
- There is a general pattern of old seral forest dispersed across the OSLRMP area, particularly in the south with larger areas of old growth forest in OGMA along the western boundary.

*Which OGMA meet and do not meet targets by BEC subtype or variant within each LU?*

- 3 AUs are meeting the policy targets in non-legal OGMA (1,699.9 ha of CE-CFLB), all within the ESSF with a total CE-CFLB of 7,825.5 ha, of which 3,313.0 ha is old growth forest.
- 237 AUs are not meeting the policy targets in non-legal OGMA. Of these, there are 73 AUs with no old growth forest within the non-legal OGMA boundaries.
- Despite this, there is old growth forest available outside the non-legal OGMA boundaries that could contribute to these policy targets if incorporated into OGMA.

## 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 area of the OGMA. The sub-totals are provided in Table 22 to show how areas contribute to the total CE-CFLB area and an area breakdown for non-legal OGMAs for CE Indicators 3 and 4.

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

CE Indicator	Results Section	Description	Sub-totals (ha)	Totals (ha)
			Total Gross Area in OSLRMP area	
		Total CE-CFLB in OSLRMP area		<b>1,874,907.8</b>
Old Growth and Mature-plus-Old Forests (Indicators 1 & 2)	5.1 & 5.2	CE-CFLB with No Targets (NDT5)	11,189.8	
		CE-CFLB with No Targets (NDT4)	803.3	
		Total CE-CFLB with No Targets		11,993.1
		Total CE-CFLB with Policy Targets		<b>1,862,914.7</b>
Incursions into OGMAs (Indicator 3)	5.3	Gross Area in Non-Legal OGMAs	125,877.8	
		Gross Area in Legal OGMAs	-	
		Total Gross Area in OGMAs (ALL)		<b>125,877.8</b>
Old Growth in OGMAs (Indicator 4)	5.4	CE-CFLB Area in Non-Legal OGMAs	123,787.1	
		CE-CFLB Area in Legal OGMAs	-	
		Total CE-CFLB Area in OGMAs (ALL)		<b>123,787.1</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 Forest Indicator: 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+%

In the old growth forest and the mature-plus-old forest indicators, an additional colour theme is presented that also illustrates the current condition of old growth forest or mature-plus-old forest by showing the percent of the CE-CFLB that is old growth or mature-plus-old forest 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 Forest and Mature + Old Forest	Current Amount of Old Forest or Mature + 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 policy targets for all AUs. The amount of CE-CFLB that is old growth forest within that AU (LU, BEO, and BEC) is shown as a percentage of the total CE-CFLB for that AU (column B/A) using the gradient scale 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 from Table 8 above.

**Table 23.** Assessment Units Compared to the Old Growth Forest Policy Targets by Landscape Unit (LU) and Biogeoclimatic Ecosystem Classification (BEC) Subzone or Variant in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.

COLUMN CALCULATIONS:			A	A*C	B	C	B/A	(B/A)/C
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Policy Target Old (ha)	Existing Old (ha)	Policy Target Old (%)	Existing Old (%)	% of Policy Target Met
Anarchist	High	ESSFxc1	161.1	33.8	23.0	21%	14.3%	68.1%
		IDFdk1	2,129.7	404.6	199.8	19%	9.4%	49.4%
		IDFdm1	2,486.0	472.3	15.1	19%	0.6%	3.2%
		IDFhx1	7,213.5	1,370.6	214.7	19%	3.0%	15.7%
		MSdm1	1,678.0	352.4	156.6	21%	9.3%	44.4%
		MSxk1	371.9	78.1	61.9	21%	16.7%	79.3%
		PPxh1	8,113.2	1,541.5	233.0	19%	2.9%	15.1%
	Low	ESSFdc2	7,967.7	1,115.5	1,631.0	14%	20.5%	146.2%
		ESSFdcw	1,091.0	98.2	50.3	9%	4.6%	51.2%
		IDFdm1	8,963.9	1,165.3	449.8	13%	5.0%	38.6%
		IDFhx1	4,701.9	611.2	166.6	13%	3.5%	27.3%
		MSdm1	22,822.4	3,195.1	3,795.9	14%	16.6%	118.8%
		PPxh1	1,629.8	211.9	219.4	13%	13.5%	103.5%
Anstey <sup>a</sup>	Int.	ESSFvc	249.1	47.3	0.0	19%	0.0%	0.0%
		ESSFvcw	117.5	22.3	21.5	19%	18.3%	96.4%
		ESSFwc2	7,232.0	1,374.1	1,139.9	19%	15.8%	83.0%
		ESSFwcw	3,097.6	588.5	600.2	19%	19.4%	102.0%
		ICHdw4	754.5	105.6	111.1	14%	14.7%	105.2%
		ICHmw2	711.6	64.0	27.9	9%	3.9%	43.6%
		ICHmw3	14,766.3	1,329.0	947.0	9%	6.4%	71.3%
		ICHvk1	2,413.7	313.8	653.2	13%	27.1%	208.2%
		ICHwk1	9,678.1	1,258.1	1,588.8	13%	16.4%	126.3%
Ashnola	High	ESSFxc1	36,265.1	7,615.7	20,860.8	21%	57.5%	273.9%
		ESSFxcw	7,092.9	1,489.5	4,903.7	21%	69.1%	329.2%
		IDFdk1	12,256.4	2,328.7	2,603.0	19%	21.2%	111.8%
		IDFdk2	1,409.8	267.9	135.3	19%	9.6%	50.5%
		IDFhx1	6,552.5	1,245.0	1,059.2	19%	16.2%	85.1%
		MSxk1	19,794.2	4,156.8	10,275.8	21%	51.9%	247.2%
		PPxh1	952.9	181.0	27.5	19%	2.9%	15.2%
Cherryville	Low	ESSFdc1	4,081.3	367.3	87.0	9%	2.1%	23.7%
		ESSFmh	6,588.4	593.0	19.5	9%	0.3%	3.3%
		ESSFwc4	5,704.0	1,083.8	62.9	19%	1.1%	5.8%

COLUMN CALCULATIONS:			A	A*C	B	C	B/A	(B/A)/C
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Policy Target Old (ha)	Existing Old (ha)	Policy Target Old (%)	Existing Old (%)	% of Policy Target Met
Cherryville	Low	ESSFwcw	2,736.8	520.0	0.2	19%	0.0%	0.0%
		ESSFwh1	7,894.3	1,499.9	718.5	19%	9.1%	47.9%
		ESSFxc2	620.8	86.9	281.9	14%	45.4%	324.3%
		ICHdw4	3,420.8	478.9	394.8	14%	11.5%	82.4%
		ICHmk1	6,555.8	917.8	1,482.6	14%	22.6%	161.5%
		ICHmw2	11,531.5	1,037.8	558.1	9%	4.8%	53.8%
		ICHmw5	2,817.5	253.6	0.0	9%	0.0%	0.0%
		ICHwk1	2,845.6	369.9	761.3	13%	26.8%	205.8%
		ICHxm1	6,642.9	863.6	24.5	13%	0.4%	2.8%
Crowfoot	Low	ESSFwc2	8,150.1	1,548.5	301.2	19%	3.7%	19.5%
		ESSFwcw	2,555.4	485.5	15.1	19%	0.6%	3.1%
		ICHmw3	12,690.8	1,142.2	179.8	9%	1.4%	15.7%
		ICHwk1	8,676.5	1,127.9	599.0	13%	6.9%	53.1%
		IDFmw2	321.3	41.8	0.0	13%	0.0%	0.0%
Eagle River	Int.	ESSFvc	6,543.2	1,243.2	1,082.3	19%	16.5%	87.1%
		ESSFvcw	2,671.7	507.6	127.2	19%	4.8%	25.0%
		ESSFwc2	7,660.6	1,455.5	1,311.9	19%	17.1%	90.1%
		ESSFwc4	7,247.5	1,377.0	1,105.6	19%	15.3%	80.3%
		ESSFwcw	6,531.8	1,241.0	562.4	19%	8.6%	45.3%
		ESSFwh1	6,374.7	1,211.2	1,431.9	19%	22.5%	118.2%
		ICHdw4	1,745.4	244.4	160.2	14%	9.2%	65.6%
		ICHmw2	8,632.0	776.9	269.0	9%	3.1%	34.6%
		ICHmw3	14,271.5	1,284.4	1,053.6	9%	7.4%	82.0%
		ICHvk1	14,689.1	1,909.6	3,928.3	13%	26.7%	205.7%
		ICHwk1	19,302.7	2,509.4	2,589.2	13%	13.4%	103.2%
Harris	Int.	ESSFdc1	3,152.0	283.7	244.2	9%	7.7%	86.1%
		ESSFdc2	3,542.3	495.9	1,456.5	14%	41.1%	293.7%
		ESSFmh	2,804.1	252.4	6.2	9%	0.2%	2.5%
		ESSFxc2	5,374.4	752.4	4,081.9	14%	76.0%	542.5%
		ICHmk1	9,475.8	1,326.6	1,756.6	14%	18.5%	132.4%
		ICHxm1	15,610.5	2,029.4	12.4	13%	0.1%	0.6%
		IDFxh1	58.7	7.6	0.0	13%	0.0%	0.0%
		MSdm1	17,505.1	2,450.7	1,557.7	14%	8.9%	63.6%
Keremeos	Int.	ESSFxc1	11,513.4	1,611.9	4,261.5	14%	37.0%	264.4%
		ESSFxcw	2,017.0	282.4	977.7	14%	48.5%	346.2%
		IDFdk1	13,056.0	1,697.3	1,106.7	13%	8.5%	65.2%
		IDFxh1	14,662.4	1,906.1	803.1	13%	5.5%	42.1%
		MSxk1	10,841.1	1,517.8	4,523.1	14%	41.7%	298.0%
		PPxh1	2,670.1	347.1	50.0	13%	1.9%	14.4%
Kettle	Low	ESSFdc1	6,305.4	567.5	1,436.1	9%	22.8%	253.1%
		ESSFdc2	19,810.3	2,773.4	7,563.3	14%	38.2%	272.7%
		ESSFdcw	3,685.1	331.7	213.9	9%	5.8%	64.5%

COLUMN CALCULATIONS:			A	A*C	B	C	B/A	(B/A)/C
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Policy Target Old (ha)	Existing Old (ha)	Policy Target Old (%)	Existing Old (%)	% of Policy Target Met
Kettle	Low	ESSFmh	2,744.7	247.0	562.9	9%	20.5%	227.9%
		ESSFxc2	623.1	87.2	253.8	14%	40.7%	290.9%
		ICHmk1	2,529.1	354.1	790.9	14%	31.3%	223.4%
		IDFdm1	1,918.0	249.3	82.4	13%	4.3%	33.1%
		MSdm1	51,331.2	7,186.4	9,556.2	14%	18.6%	133.0%
Kingfisher	Int.	ESSFwc4	18,140.5	3,446.7	1,710.4	19%	9.4%	49.6%
		ESSFwcw	8,905.1	1,692.0	338.6	19%	3.8%	20.0%
		ESSFwh1	10,429.5	1,981.6	1,015.2	19%	9.7%	51.2%
		ICHdw4	17,167.6	2,403.5	2,799.5	14%	16.3%	116.5%
		ICHmw2	18,558.1	1,670.2	1,812.9	9%	9.8%	108.5%
		ICHmw3	2,622.2	236.0	106.2	9%	4.0%	45.0%
		ICHmw5	4,410.4	396.9	22.8	9%	0.5%	5.7%
		ICHvk1	345.8	44.9	144.4	13%	41.8%	321.2%
		ICHwk1	5,540.5	720.3	897.2	13%	16.2%	124.6%
ICHxm1	1,793.0	233.1	0.0	13%	0.0%	0.0%		
Mabel	Low	ESSFdc1	660.1	59.4	96.6	9%	14.6%	162.5%
		ESSFmh	6,167.7	555.1	218.1	9%	3.5%	39.3%
		ESSFwc4	13,414.7	2,548.8	1,034.6	19%	7.7%	40.6%
		ESSFwcw	7,440.3	1,413.7	557.4	19%	7.5%	39.4%
		ESSFwh1	7,821.3	1,486.0	804.8	19%	10.3%	54.2%
		ICHdw4	13,245.9	1,854.4	2,770.3	14%	20.9%	149.4%
		ICHmw2	8,915.8	802.4	665.8	9%	7.5%	83.0%
		ICHmw5	12,780.8	1,150.3	450.4	9%	3.5%	39.2%
		ICHwk1	6,055.1	787.2	1,388.5	13%	22.9%	176.4%
ICHxm1	1,123.7	146.1	0.0	13%	0.0%	0.0%		
Mission	Int.	ESSFdc2	15,672.9	2,194.2	5,344.2	14%	34.1%	243.6%
		ESSFdcw	2,160.4	194.4	0.0	9%	0.0%	0.0%
		ESSFxc2	9,092.8	1,273.0	6,673.2	14%	73.4%	524.2%
		ICHmk1	22,924.6	3,209.4	5,185.9	14%	22.6%	161.6%
		ICHxm1	9,190.7	1,194.8	23.6	13%	0.3%	2.0%
		IDFdm1	3,151.4	409.7	0.0	13%	0.0%	0.0%
		IDFhx1	5,224.1	679.1	0.0	13%	0.0%	0.0%
		MSdm1	32,243.0	4,514.0	5,316.1	14%	16.5%	117.8%
		PPxh1	4,089.1	531.6	0.0	13%	0.0%	0.0%
Okanagan West Side	Int.	ESSFdc2	2,452.9	343.4	179.9	14%	7.3%	52.4%
		ICHmk1	4,604.3	644.6	651.3	14%	14.1%	101.0%
		ICHxm1	4,235.8	550.7	0.0	13%	0.0%	0.0%
		IDFdk2	3,337.8	433.9	0.5	13%	0.0%	0.1%
		IDFhx1	1,148.6	149.3	0.0	13%	0.0%	0.0%
	MSdm2	7,378.4	1,033.0	742.1	14%	10.1%	71.8%	
	Low	ESSFdc2	10,239.5	1,433.5	3,484.6	14%	34.0%	243.1%
ESSFdcw		65.6	5.9	0.0	9%	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)	Policy Target Old (ha)	Existing Old (ha)	Policy Target Old (%)	Existing Old (%)	% of Policy Target Met
Okanagan West Side	Low	ICHmk1	5,273.2	738.3	2,338.1	14%	44.3%	316.7%
		ICHxm1	6,958.9	904.7	191.9	13%	2.8%	21.2%
		IDFxf1	1,397.0	181.6	0.0	13%	0.0%	0.0%
		MSdm2	9,286.2	1,300.1	3,309.1	14%	35.6%	254.5%
Pennask	Int.	ESSFdc2	10,682.0	1,495.5	3,696.9	14%	34.6%	247.2%
		ESSFxc2	5,472.2	766.1	2,212.1	14%	40.4%	288.8%
		ESSFxcw	336.2	47.1	123.2	14%	36.6%	261.8%
		IDFdk1	453.7	59.0	0.0	13%	0.0%	0.0%
		MSdm2	23,577.0	3,300.8	5,013.8	14%	21.3%	151.9%
		MSxk1	9,062.7	1,268.8	1,777.3	14%	19.6%	140.1%
Penticton	Int.	ESSFdc2	11,031.2	1,544.4	2,744.0	14%	24.9%	177.7%
		ESSFdcw	1,276.0	114.8	0.0	9%	0.0%	0.0%
		IDFdm1	11,302.7	1,469.3	968.9	13%	8.6%	65.9%
		IDFxf1	7,505.3	975.7	766.3	13%	10.2%	78.5%
		MSdm1	29,547.5	4,136.7	5,055.4	14%	17.1%	122.2%
		PPxf1	4,979.5	647.3	184.3	13%	3.7%	28.5%
Pukeashun	Int.	ESSFwc2	24,894.5	4,730.0	1,319.8	19%	5.3%	27.9%
		ESSFwcw	5,242.2	996.0	101.7	19%	1.9%	10.2%
		ICHmk2	890.8	124.7	206.5	14%	23.2%	165.6%
		ICHmw3	8,532.4	767.9	539.0	9%	6.3%	70.2%
		ICHwk1	16,162.9	2,101.2	1,762.5	13%	10.9%	83.9%
		IDFmw2	3,493.2	454.1	0.0	13%	0.0%	0.0%
Salmon Arm	Int.	ESSFdc3	12,606.3	1,764.9	4,083.4	14%	32.4%	231.4%
		ICHdw4	10,492.2	1,468.9	2,316.7	14%	22.1%	157.7%
		ICHmk1	2,439.7	341.6	153.9	14%	6.3%	45.0%
		ICHmk2	13,250.4	1,855.1	2,618.8	14%	19.8%	141.2%
		ICHmw3	1,839.6	165.6	19.4	9%	1.1%	11.7%
		ICHmw5	8,050.3	724.5	296.9	9%	3.7%	41.0%
		ICHxm1	14,114.9	1,834.9	0.0	13%	0.0%	0.0%
		IDFdk2	2,562.8	333.2	257.1	13%	10.0%	77.2%
		IDFmw2	16,401.1	2,132.1	253.7	13%	1.5%	11.9%
		IDFxf1	271.8	35.3	0.0	13%	0.0%	0.0%
		IDFxf2	1,675.7	217.8	0.1	13%	0.0%	0.0%
		MSdm3	9,977.9	1,396.9	2,125.1	14%	21.3%	152.1%
		PPxf2	45.1	5.9	0.0	13%	0.0%	0.0%
Seymour	High	ESSFvc	14,352.2	4,018.6	4,531.5	28%	31.6%	112.8%
		ESSFvcw	4,420.4	1,237.7	657.3	28%	14.9%	53.1%
		ESSFwc2	14,230.5	3,984.6	1,494.3	28%	10.5%	37.5%
		ESSFwcw	1,893.1	530.1	75.7	28%	4.0%	14.3%
		ICHmw3	20,504.1	2,665.5	2,084.3	13%	10.2%	78.2%
		ICHvk1	8,181.1	1,554.4	4,408.2	19%	53.9%	283.6%
		ICHwk1	20,669.7	3,927.2	4,926.4	19%	23.8%	125.4%



COLUMN CALCULATIONS:			A	A*C	B	C	B/A	(B/A)/C
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Policy Target Old (ha)	Existing Old (ha)	Policy Target Old (%)	Existing Old (%)	% of Policy Target Met
Trepanier	Int.	ESSFdc2	1,539.0	215.5	679.2	14%	44.1%	315.2%
		ESSFxc2	1,893.7	265.1	851.4	14%	45.0%	321.1%
		ICHxm1	4.1	0.5	0.0	13%	0.1%	0.7%
		IDFdk2	23,089.3	3,001.6	61.8	13%	0.3%	2.1%
		IDFxm1	6,774.5	880.7	11.6	13%	0.2%	1.3%
		MSdm2	20,252.7	2,835.4	4,867.5	14%	24.0%	171.7%
		PPxm1	1,692.2	220.0	0.0	13%	0.0%	0.0%
	Low	ESSFdc2	8,344.8	1,168.3	3,073.9	14%	36.8%	263.1%
		ICHmk1	1,024.5	143.4	285.1	14%	27.8%	198.8%
		ICHxm1	1,893.9	246.2	2.2	13%	0.1%	0.9%
		IDFdk2	5,411.4	703.5	0.2	13%	0.0%	0.0%
		IDFxm1	2,668.0	346.8	47.2	13%	1.8%	13.6%
		MSdm2	24,759.6	3,466.3	4,715.2	14%	19.0%	136.0%
		PPxm1	262.8	34.2	3.8	13%	1.5%	11.3%
Trinity	Low	ESSFdc1	1,689.1	152.0	0.0	9%	0.0%	0.0%
		ESSFdcw	66.0	5.9	0.0	9%	0.0%	0.0%
		ESSFmh	4,327.4	389.5	0.0	9%	0.0%	0.0%
		ICHdw4	27,403.3	3,836.5	4,877.4	14%	17.8%	127.1%
		ICHmk1	2,211.1	309.6	546.2	14%	24.7%	176.4%
		ICHmw5	21,201.2	1,908.1	536.3	9%	2.5%	28.1%
		ICHxm1	5,505.9	715.8	0.0	13%	0.0%	0.0%
		IDFxm1	26.0	3.4	0.0	13%	0.0%	0.0%
Trout	Low	ESSFdc2	4,125.2	577.5	770.1	14%	18.7%	133.3%
		ESSFxc1	7,231.7	1,012.4	4,283.4	14%	59.2%	423.1%
		ESSFxc2	3,043.3	426.1	1,229.8	14%	40.4%	288.6%
		ESSFxcw	934.4	130.8	765.0	14%	81.9%	584.8%
		IDFdk1	12,129.0	1,576.8	109.8	13%	0.9%	7.0%
		IDFdk2	14,130.5	1,837.0	7.7	13%	0.1%	0.4%
		IDFxm1	13,089.3	1,701.6	243.5	13%	1.9%	14.3%
		MSdm2	23,718.8	3,320.6	3,844.1	14%	16.2%	115.8%
		MSxk1	12,815.1	1,794.1	4,361.5	14%	34.0%	243.1%
		PPxm1	5,435.4	706.6	8.5	13%	0.2%	1.2%
Upper Kettle	Low	ESSFdc1	27,907.4	2,511.7	593.2	9%	2.1%	23.6%
		ESSFdcw	2,672.2	240.5	0.5	9%	0.0%	0.2%
		ESSFmh	27,866.0	2,507.9	291.9	9%	1.0%	11.6%
		ESSFwc4	2,523.3	479.4	35.6	19%	1.4%	7.4%
		ESSFwcw	289.3	55.0	0.0	19%	0.0%	0.0%
		ESSFwh1	5,846.3	1,110.8	442.2	19%	7.6%	39.8%
		ESSFxc2	1,654.8	231.7	881.5	14%	53.3%	380.5%
		ICHmk1	1,106.4	154.9	442.6	14%	40.0%	285.7%
		ICHmw2	53.0	4.8	0.0	9%	0.0%	0.0%
		ICHmw5	6,408.6	576.8	277.9	9%	4.3%	48.2%

COLUMN CALCULATIONS:			A	A*C	B	C	B/A	(B/A)/C
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Policy Target Old (ha)	Existing Old (ha)	Policy Target Old (%)	Existing Old (%)	% of Policy Target Met
Upper Salmon	Low	ESSFdc2	11,779.2	1,649.1	3,288.8	14%	27.9%	199.4%
		ESSFdc3	6,364.7	891.1	1,590.3	14%	25.0%	178.5%
		ESSFdcw	37.9	3.4	0.0	9%	0.0%	0.0%
		ICHmk1	2,144.3	300.2	148.8	14%	6.9%	49.6%
		ICHmk2	2,604.1	364.6	653.5	14%	25.1%	179.2%
		ICHxm1	5,315.4	691.0	16.5	13%	0.3%	2.4%
		IDFdk1	6,594.8	857.3	41.3	13%	0.6%	4.8%
		IDFdk2	30,657.7	3,985.5	279.7	13%	0.9%	7.0%
		IDFhx1	1,249.9	162.5	0.0	13%	0.0%	0.0%
		IDFhx2	5,939.8	772.2	12.7	13%	0.2%	1.7%
		MSdm2	24,145.5	3,380.4	2,719.8	14%	11.3%	80.5%
		MSdm3	6,162.4	862.7	1,376.5	14%	22.3%	159.5%
MSxk2	1,051.8	147.2	19.7	14%	1.9%	13.4%		
Upper Shuswap	High	ESSFdc1	266.0	34.6	1.0	13%	0.4%	2.9%
		ESSFmh	281.6	36.6	19.9	13%	7.1%	54.3%
		ESSFwc4	16,866.7	4,722.7	962.8	28%	5.7%	20.4%
		ESSFwcw	13,249.4	3,709.8	260.5	28%	2.0%	7.0%
		ESSFwh1	16,414.6	4,596.1	2,106.6	28%	12.8%	45.8%
		ICHdw4	3,190.0	669.9	897.8	21%	28.1%	134.0%
		ICHmw2	21,217.8	2,758.3	1,332.8	13%	6.3%	48.3%
		ICHmw5	324.5	42.2	0.0	13%	0.0%	0.0%
		ICHvk1	2,968.5	564.0	906.2	19%	30.5%	160.7%
ICHwk1	13,826.8	2,627.1	3,233.6	19%	23.4%	123.1%		
Vernon	Low	ESSFdc1	272.0	24.5	0.0	9%	0.0%	0.0%
		ESSFdc2	288.6	40.4	53.1	14%	18.4%	131.4%
		ESSFdcw	29.5	2.7	0.0	9%	0.0%	0.0%
		ESSFmh	1,065.5	95.9	0.0	9%	0.0%	0.0%
		ICHmk1	12,300.5	1,722.1	2,879.5	14%	23.4%	167.2%
		ICHmw5	32.4	2.9	0.0	9%	0.0%	0.0%
		ICHxm1	7,258.1	943.6	5.7	13%	0.1%	0.6%
		IDFdm1	2,803.6	364.5	0.0	13%	0.0%	0.0%
		IDFhx1	5,053.9	657.0	1.7	13%	0.0%	0.3%
		MSdm1	18,346.0	2,568.4	2,294.4	14%	12.5%	89.3%
PPxh1	268.7	34.9	0.0	13%	0.0%	0.0%		
White	Low	ESSFdc1	493.9	44.4	0.0	9%	0.0%	0.0%
		ESSFmh	1,347.1	121.2	0.0	9%	0.0%	0.0%
		ICHdw4	11,139.6	1,559.5	1,637.8	14%	14.7%	105.0%
		ICHmw5	11,470.9	1,032.4	58.0	9%	0.5%	5.6%
		ICHxm1	961.2	125.0	0.0	13%	0.0%	0.0%
IDFmw2	614.7	79.9	0.0	13%	0.0%	0.0%		
<b>Total</b>			<b>1,862,914.7</b>	<b>271,769.3</b>	<b>285,572.5</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

<sup>a</sup> The Anstey LU-Low BEO is not assessed because it is entirely within TFL 33, as described in section 2.1.

## 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 policy targets for all AUs. The amount of CE-CFLB that is mature-plus-old forest within that AU (LU, BEO, and BEC) is shown as a percentage of the total CE-CFLB for that AU (column C/A), using the gradient scale 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 from Table 8 above.

**Table 24.** Assessment Units Compared to the Mature-plus-Old Growth Forest Policy Targets by Landscape Unit (LU) and Biogeoclimatic Ecosystem Classification (BEC) Subzone or Variant in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.

COLUMN CALCULATIONS:			A	A*C	B	C	C/A	C/B
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Policy Target Mat+Old (ha)	Existing Mat+Old (ha)	Policy Target Mat+Old (%)	Existing Mat+Old (%)	% of Policy Target Met
Anarchist	High	ESSFxc1	161.1	54.8	29.7	34%	18.5%	54.3%
		IDFdk1	2,129.7	1,086.1	1,420.8	51%	66.7%	130.8%
		IDFdm1	2,486.0	1,267.9	1,246.0	51%	50.1%	98.3%
		IDFhx1	7,213.5	3,678.9	3,857.6	51%	53.5%	104.9%
		MSdm1	1,678.0	654.4	902.6	39%	53.8%	137.9%
		MSxk1	371.9	145.0	106.3	39%	28.6%	73.3%
		PPxh1	8,113.2	4,137.7	4,794.8	51%	59.1%	115.9%
	Low	ESSFdc2	7,967.7	1,115.5	1,772.9	14%	22.3%	158.9%
		ESSFdcw	1,091.0	152.7	250.1	14%	22.9%	163.7%
		IDFdm1	8,963.9	1,523.9	3,865.2	17%	43.1%	253.6%
		IDFhx1	4,701.9	799.3	2,826.0	17%	60.1%	353.6%
		MSdm1	22,822.4	3,195.1	5,823.0	14%	25.5%	182.2%
		PPxh1	1,629.8	277.1	1,224.7	17%	75.1%	442.0%
		Anstey <sup>a</sup>	Int.	ESSFvc	249.1	89.7	105.8	36%
ESSFvcw	117.5			42.3	116.1	36%	98.8%	274.4%
ESSFwc2	7,232.0			2,603.5	4,399.4	36%	60.8%	169.0%
ESSFwcw	3,097.6			1,115.1	2,764.2	36%	89.2%	247.9%
ICHdw4	754.5			173.5	340.7	23%	45.2%	196.3%
ICHmw2	711.6			220.6	449.3	31%	63.1%	203.7%
ICHmw3	14,766.3			4,577.6	10,368.3	31%	70.2%	226.5%
ICHvk1	2,413.7			820.7	1,186.4	34%	49.2%	144.6%
ICHwk1	9,678.1			3,290.5	5,267.7	34%	54.4%	160.1%
Ashnola	High	ESSFxc1	36,265.1	12,330.1	23,207.3	34%	64.0%	188.2%
		ESSFxcw	7,092.9	2,411.6	5,383.0	34%	75.9%	223.2%
		IDFdk1	12,256.4	6,250.7	9,019.2	51%	73.6%	144.3%
		IDFdk2	1,409.8	719.0	1,041.6	51%	73.9%	144.9%
		IDFhx1	6,552.5	3,341.7	5,784.3	51%	88.3%	173.1%
		MSxk1	19,794.2	7,719.7	14,249.6	39%	72.0%	184.6%
		PPxh1	952.9	486.0	788.3	51%	82.7%	162.2%
Cherryville	Low	ESSFdc1	4,081.3	571.4	2,146.5	14%	52.6%	375.7%
		ESSFmh	6,588.4	922.4	2,779.2	14%	42.2%	301.3%
		ESSFwc4	5,704.0	1,083.8	4,451.1	19%	78.0%	410.7%

COLUMN CALCULATIONS:			A	A*C	B	C	C/A	C/B
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Policy Target Mat+Old (ha)	Existing Mat+Old (ha)	Policy Target Mat+Old (%)	Existing Mat+Old (%)	% of Policy Target Met
Cherryville	Low	ESSFwcw	2,736.8	520.0	2,445.4	19%	89.4%	470.3%
		ESSFwh1	7,894.3	1,499.9	4,963.5	19%	62.9%	330.9%
		ESSFxc2	620.8	86.9	283.8	14%	45.7%	326.5%
		ICHdw4	3,420.8	478.9	2,092.1	14%	61.2%	436.9%
		ICHmk1	6,555.8	917.8	2,655.7	14%	40.5%	289.4%
		ICHmw2	11,531.5	1,729.7	7,153.9	15%	62.0%	413.6%
		ICHmw5	2,817.5	422.6	1,628.1	15%	57.8%	385.2%
		ICHwk1	2,845.6	483.8	1,717.2	17%	60.3%	355.0%
		ICHxm1	6,642.9	1,129.3	4,287.6	17%	64.5%	379.7%
Crowfoot	Low	ESSFwc2	8,150.1	1,548.5	3,133.0	19%	38.4%	202.3%
		ESSFwcw	2,555.4	485.5	1,914.5	19%	74.9%	394.3%
		ICHmw3	12,690.8	1,903.6	5,879.0	15%	46.3%	308.8%
		ICHwk1	8,676.5	1,475.0	2,988.2	17%	34.4%	202.6%
		IDFmw2	321.3	54.6	251.7	17%	78.3%	460.8%
Eagle River	Int.	ESSFvc	6,543.2	2,355.6	4,078.0	36%	62.3%	173.1%
		ESSFvcw	2,671.7	961.8	2,112.2	36%	79.1%	219.6%
		ESSFwc2	7,660.6	2,757.8	5,631.9	36%	73.5%	204.2%
		ESSFwc4	7,247.5	2,609.1	4,345.8	36%	60.0%	166.6%
		ESSFwcw	6,531.8	2,351.4	5,780.8	36%	88.5%	245.8%
		ESSFwh1	6,374.7	2,294.9	3,881.4	36%	60.9%	169.1%
		ICHdw4	1,745.4	401.4	818.5	23%	46.9%	203.9%
		ICHmw2	8,632.0	2,675.9	5,298.6	31%	61.4%	198.0%
		ICHmw3	14,271.5	4,424.2	8,392.1	31%	58.8%	189.7%
		ICHvk1	14,689.1	4,994.3	7,950.6	34%	54.1%	159.2%
ICHwk1	19,302.7	6,562.9	11,063.6	34%	57.3%	168.6%		
Harris	Int.	ESSFdc1	3,152.0	882.6	1,874.5	28%	59.5%	212.4%
		ESSFdc2	3,542.3	814.7	1,650.3	23%	46.6%	202.6%
		ESSFmh	2,804.1	785.1	1,239.2	28%	44.2%	157.8%
		ESSFxc2	5,374.4	1,236.1	4,831.8	23%	89.9%	390.9%
		ICHmk1	9,475.8	2,179.4	4,073.2	23%	43.0%	186.9%
		ICHxm1	15,610.5	5,307.6	10,982.7	34%	70.4%	206.9%
		IDFhx1	58.7	19.9	13.7	34%	23.3%	68.6%
		MSdm1	17,505.1	4,551.3	4,883.7	26%	27.9%	107.3%
Keremeos	Int.	ESSFxc1	11,513.4	2,648.1	5,615.6	23%	48.8%	212.1%
		ESSFxcw	2,017.0	463.9	1,205.7	23%	59.8%	259.9%
		IDFdk1	13,056.0	4,439.1	10,442.2	34%	80.0%	235.2%
		IDFhx1	14,662.4	4,985.2	11,680.7	34%	79.7%	234.3%
		MSxk1	10,841.1	2,818.7	6,524.4	26%	60.2%	231.5%
		PPxh1	2,670.1	907.8	1,905.0	34%	71.3%	209.8%
Kettle	Low	ESSFdc1	6,305.4	882.8	3,464.2	14%	54.9%	392.4%
		ESSFdc2	19,810.3	2,773.4	8,477.9	14%	42.8%	305.7%
		ESSFdcw	3,685.1	515.9	2,678.6	14%	72.7%	519.2%
		ESSFmh	2,744.7	384.3	1,678.0	14%	61.1%	436.7%

COLUMN CALCULATIONS:			A	A*C	B	C	C/A	C/B
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Policy Target Mat+Old (ha)	Existing Mat+Old (ha)	Policy Target Mat+Old (%)	Existing Mat+Old (%)	% of Policy Target Met
Kettle	Low	ESSFxc2	623.1	87.2	526.0	14%	84.4%	602.9%
		ICHmk1	2,529.1	354.1	1,288.2	14%	50.9%	363.8%
		IDFdm1	1,918.0	326.1	978.1	17%	51.0%	300.0%
		MSdm1	51,331.2	7,186.4	15,368.2	14%	29.9%	213.9%
Kingfisher	Int.	ESSFwc4	18,140.5	6,530.6	12,869.3	36%	70.9%	197.1%
		ESSFwcw	8,905.1	3,205.8	7,752.8	36%	87.1%	241.8%
		ESSFwh1	10,429.5	3,754.6	5,772.9	36%	55.4%	153.8%
		ICHdw4	17,167.6	3,948.5	9,139.2	23%	53.2%	231.5%
		ICHmw2	18,558.1	5,753.0	7,686.8	31%	41.4%	133.6%
		ICHmw3	2,622.2	812.9	1,420.6	31%	54.2%	174.8%
		ICHmw5	4,410.4	1,367.2	2,650.6	31%	60.1%	193.9%
		ICHvk1	345.8	117.6	242.4	34%	70.1%	206.2%
		ICHwk1	5,540.5	1,883.8	2,888.6	34%	52.1%	153.3%
		ICHxm1	1,793.0	609.6	1,046.4	34%	58.4%	171.7%
Mabel	Low	ESSFdc1	660.1	92.4	370.7	14%	56.2%	401.1%
		ESSFmh	6,167.7	863.5	1,673.9	14%	27.1%	193.9%
		ESSFwc4	13,414.7	2,548.8	8,014.0	19%	59.7%	314.4%
		ESSFwcw	7,440.3	1,413.7	6,808.4	19%	91.5%	481.6%
		ESSFwh1	7,821.3	1,486.0	4,447.1	19%	56.9%	299.3%
		ICHdw4	13,245.9	1,854.4	6,895.7	14%	52.1%	371.8%
		ICHmw2	8,915.8	1,337.4	5,332.5	15%	59.8%	398.7%
		ICHmw5	12,780.8	1,917.1	5,802.5	15%	45.4%	302.7%
		ICHwk1	6,055.1	1,029.4	3,684.8	17%	60.9%	358.0%
ICHxm1	1,123.7	191.0	606.8	17%	54.0%	317.7%		
Mission	Okanagan West Side	ESSFdc2	15,672.9	3,604.8	6,368.5	23%	40.6%	176.7%
		ESSFdcw	2,160.4	604.9	1,738.3	28%	80.5%	287.4%
		ESSFxc2	9,092.8	2,091.3	7,749.3	23%	85.2%	370.5%
		ICHmk1	22,924.6	5,272.6	12,340.1	23%	53.8%	234.0%
		ICHxm1	9,190.7	3,124.8	6,560.0	34%	71.4%	209.9%
		IDFdm1	3,151.4	1,071.5	1,836.9	34%	58.3%	171.4%
		IDFhx1	5,224.1	1,776.2	3,216.8	34%	61.6%	181.1%
		MSdm1	32,243.0	8,383.2	9,976.0	26%	30.9%	119.0%
		PPxh1	4,089.1	1,390.3	2,942.6	34%	72.0%	211.7%
Okanagan West Side	Int.	ESSFdc2	2,452.9	564.2	516.1	23%	21.0%	91.5%
		ICHmk1	4,604.3	1,059.0	2,307.4	23%	50.1%	217.9%
		ICHxm1	4,235.8	1,440.2	1,972.7	34%	46.6%	137.0%
		IDFdk2	3,337.8	1,134.9	1,446.8	34%	43.3%	127.5%
		IDFhx1	1,148.6	390.5	287.6	34%	25.0%	73.6%
		MSdm2	7,378.4	1,918.4	2,116.5	26%	28.7%	110.3%
	Low	ESSFdc2	10,239.5	1,433.5	4,831.3	14%	47.2%	337.0%
		ESSFdcw	65.6	9.2	9.8	14%	14.9%	106.7%
		ICHmk1	5,273.2	738.3	3,511.9	14%	66.6%	475.7%
		ICHxm1	6,958.9	1,183.0	5,076.1	17%	72.9%	429.1%

COLUMN CALCULATIONS:			A	A*C	B	C	C/A	C/B
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Policy Target Mat+Old (ha)	Existing Mat+Old (ha)	Policy Target Mat+Old (%)	Existing Mat+Old (%)	% of Policy Target Met
Okanagan West Side	Low	IDFhx1	1,397.0	237.5	918.5	17%	65.8%	386.8%
		MSdm2	9,286.2	1,300.1	4,960.0	14%	53.4%	381.5%
Pennask	Int.	ESSFdc2	10,682.0	2,456.9	3,959.5	23%	37.1%	161.2%
		ESSFxc2	5,472.2	1,258.6	2,344.2	23%	42.8%	186.3%
		ESSFxcw	336.2	77.3	123.9	23%	36.8%	160.1%
		IDFdk1	453.7	154.3	122.0	34%	26.9%	79.1%
		MSdm2	23,577.0	6,130.0	6,872.4	26%	29.1%	112.1%
		MSxk1	9,062.7	2,356.3	3,907.2	26%	43.1%	165.8%
Penticton	Int.	ESSFdc2	11,031.2	2,537.2	5,246.5	23%	47.6%	206.8%
		ESSFdcw	1,276.0	357.3	935.5	28%	73.3%	261.8%
		IDFdm1	11,302.7	3,842.9	6,478.1	34%	57.3%	168.6%
		IDFhx1	7,505.3	2,551.8	5,607.4	34%	74.7%	219.7%
		MSdm1	29,547.5	7,682.4	12,107.8	26%	41.0%	157.6%
		PPxh1	4,979.5	1,693.0	3,608.3	34%	72.5%	213.1%
Pukeashun	Int.	ESSFwc2	24,894.5	8,962.0	11,830.9	36%	47.5%	132.0%
		ESSFwcw	5,242.2	1,887.2	4,292.0	36%	81.9%	227.4%
		ICHmk2	890.8	204.9	417.1	23%	46.8%	203.6%
		ICHmw3	8,532.4	2,645.0	4,272.8	31%	50.1%	161.5%
		ICHwk1	16,162.9	5,495.4	7,219.4	34%	44.7%	131.4%
		IDFmw2	3,493.2	1,187.7	1,322.8	34%	37.9%	111.4%
Salmon Arm	Int.	ESSFdc3	12,606.3	2,899.4	4,943.6	23%	39.2%	170.5%
		ICHdw4	10,492.2	2,413.2	5,698.2	23%	54.3%	236.1%
		ICHmk1	2,439.7	561.1	907.1	23%	37.2%	161.7%
		ICHmk2	13,250.4	3,047.6	6,571.5	23%	49.6%	215.6%
		ICHmw3	1,839.6	570.3	963.1	31%	52.4%	168.9%
		ICHmw5	8,050.3	2,495.6	3,378.9	31%	42.0%	135.4%
		ICHxm1	14,114.9	4,799.1	5,759.7	34%	40.8%	120.0%
		IDFdk2	2,562.8	871.3	1,696.1	34%	66.2%	194.7%
		IDFmw2	16,401.1	5,576.4	10,192.9	34%	62.1%	182.8%
		IDFhx1	271.8	92.4	186.0	34%	68.4%	201.3%
		IDFhx2	1,675.7	569.8	1,014.0	34%	60.5%	178.0%
		MSdm3	9,977.9	2,594.3	3,943.7	26%	39.5%	152.0%
		PPxh2	45.1	15.3	28.2	34%	62.5%	183.7%
Seymour	High	ESSFvc	14,352.2	7,750.2	11,294.0	54%	78.7%	145.7%
		ESSFvcw	4,420.4	2,387.0	3,753.0	54%	84.9%	157.2%
Seymour	High	ESSFwc2	14,230.5	7,684.5	10,015.6	54%	70.4%	130.3%
		ESSFwcw	1,893.1	1,022.3	1,542.8	54%	81.5%	150.9%
		ICHmw3	20,504.1	9,431.9	9,433.3	46%	46.0%	100.0%
		ICHvk1	8,181.1	4,172.3	5,923.3	51%	72.4%	142.0%
		ICHwk1	20,669.7	10,541.6	11,182.7	51%	54.1%	106.1%

COLUMN CALCULATIONS:			A	A*C	B	C	C/A	C/B
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Policy Target Mat+Old (ha)	Existing Mat+Old (ha)	Policy Target Mat+Old (%)	Existing Mat+Old (%)	% of Policy Target Met
Trepanier	Int.	ESSFdc2	1,539.0	354.0	774.5	23%	50.3%	218.8%
		ESSFxc2	1,893.7	435.6	1,055.8	23%	55.8%	242.4%
		ICHxm1	4.1	1.4	2.4	34%	58.2%	171.3%
		IDFdk2	23,089.3	7,850.4	12,762.5	34%	55.3%	162.6%
		IDFxf1	6,774.5	2,303.3	4,336.0	34%	64.0%	188.2%
		MSdm2	20,252.7	5,265.7	8,257.2	26%	40.8%	156.8%
		PPxf1	1,692.2	575.4	826.6	34%	48.8%	143.7%
	Low	ESSFdc2	8,344.8	1,168.3	3,192.0	14%	38.3%	273.2%
		ICHmk1	1,024.5	143.4	606.8	14%	59.2%	423.1%
		ICHxm1	1,893.9	322.0	1,609.7	17%	85.0%	500.0%
		IDFdk2	5,411.4	919.9	2,876.0	17%	53.1%	312.6%
		IDFxf1	2,668.0	453.6	1,622.7	17%	60.8%	357.8%
		MSdm2	24,759.6	3,466.3	6,889.5	14%	27.8%	198.8%
		PPxf1	262.8	44.7	209.5	17%	79.7%	469.1%
Trinity	Low	ESSFdc1	1,689.1	236.5	1,211.1	14%	71.7%	512.2%
		ESSFdcw	66.0	9.2	37.9	14%	57.5%	410.9%
		ESSFmh	4,327.4	605.8	2,305.9	14%	53.3%	380.6%
		ICHdw4	27,403.3	3,836.5	13,280.9	14%	48.5%	346.2%
		ICHmk1	2,211.1	309.6	1,172.8	14%	53.0%	378.8%
		ICHmw5	21,201.2	3,180.2	10,799.0	15%	50.9%	339.6%
		ICHxm1	5,505.9	936.0	3,056.9	17%	55.5%	326.6%
		IDFxf1	26.0	4.4	5.8	17%	22.4%	131.7%
Trout	Int.	ESSFdc2	4,125.2	948.8	1,182.3	23%	28.7%	124.6%
		ESSFxc1	7,231.7	1,663.3	4,653.5	23%	64.3%	279.8%
		ESSFxc2	3,043.3	700.0	1,339.9	23%	44.0%	191.4%
		ESSFxcw	934.4	214.9	795.7	23%	85.2%	370.2%
		IDFdk1	12,129.0	4,123.9	8,734.4	34%	72.0%	211.8%
		IDFdk2	14,130.5	4,804.4	7,552.8	34%	53.5%	157.2%
		IDFxf1	13,089.3	4,450.3	10,451.5	34%	79.8%	234.8%
		MSdm2	23,718.8	6,166.9	7,439.7	26%	31.4%	120.6%
		MSxk1	12,815.1	3,331.9	6,190.3	26%	48.3%	185.8%
PPxf1	5,435.4	1,848.0	3,971.3	34%	73.1%	214.9%		
Upper Kettle	Low	ESSFdc1	27,907.4	3,907.0	12,261.7	14%	43.9%	313.8%
		ESSFdcw	2,672.2	374.1	1,854.5	14%	69.4%	495.7%
		ESSFmh	27,866.0	3,901.2	10,280.5	14%	36.9%	263.5%
		ESSFwc4	2,523.3	479.4	1,225.9	19%	48.6%	255.7%
		ESSFwcw	289.3	55.0	255.6	19%	88.4%	465.1%
		ESSFwh1	5,846.3	1,110.8	2,565.7	19%	43.9%	231.0%
		ESSFxc2	1,654.8	231.7	881.5	14%	53.3%	380.5%
		ICHmk1	1,106.4	154.9	569.8	14%	51.5%	367.8%
		ICHmw2	53.0	8.0	37.7	15%	71.1%	474.0%
ICHmw5	6,408.6	961.3	2,867.8	15%	44.7%	298.3%		

COLUMN CALCULATIONS:			A	A*C	B	C	C/A	C/B
Landscape Unit	BEO	BEC Variant	CE-CFLB Area (ha)	Policy Target Mat+Old (ha)	Existing Mat+Old (ha)	Policy Target Mat+Old (%)	Existing Mat+Old (%)	% of Policy Target Met
Upper Salmon	Low	ESSFdc2	11,779.2	1,649.1	4,182.2	14%	35.5%	253.6%
		ESSFdc3	6,364.7	891.1	2,698.3	14%	42.4%	302.8%
		ESSFdcw	37.9	5.3	0.4	14%	1.0%	7.1%
		ICHmk1	2,144.3	300.2	907.5	14%	42.3%	302.3%
		ICHmk2	2,604.1	364.6	1,059.0	14%	40.7%	290.5%
		ICHxm1	5,315.4	903.6	1,907.1	17%	35.9%	211.1%
		IDFdk1	6,594.8	1,121.1	1,890.3	17%	28.7%	168.6%
		IDFdk2	30,657.7	5,211.8	14,878.3	17%	48.5%	285.5%
		IDFxm1	1,249.9	212.5	254.9	17%	20.4%	120.0%
		IDFxm2	5,939.8	1,009.8	3,254.1	17%	54.8%	322.3%
		MSdm2	24,145.5	3,380.4	6,624.8	14%	27.4%	196.0%
		MSdm3	6,162.4	862.7	2,442.2	14%	39.6%	283.1%
		MSxk2	1,051.8	147.2	79.5	14%	7.6%	54.0%
Upper Shuswap	High	ESSFdc1	266.0	111.7	53.0	42%	19.9%	47.4%
		ESSFmh	281.6	118.3	128.7	42%	45.7%	108.8%
		ESSFwc4	16,866.7	9,108.0	11,414.1	54%	67.7%	125.3%
		ESSFwcw	13,249.4	7,154.7	9,973.9	54%	75.3%	139.4%
		ESSFwh1	16,414.6	8,863.9	9,496.4	54%	57.9%	107.1%
		ICHdw4	3,190.0	1,084.6	1,680.1	34%	52.7%	154.9%
		ICHmw2	21,217.8	9,760.2	9,458.7	46%	44.6%	96.9%
		ICHmw5	324.5	149.3	276.3	46%	85.1%	185.1%
		ICHvk1	2,968.5	1,513.9	2,135.7	51%	71.9%	141.1%
ICHwk1	13,826.8	7,051.7	8,735.4	51%	63.2%	123.9%		
Vernon	Low	ESSFdc1	272.0	38.1	110.8	14%	40.7%	290.9%
		ESSFdc2	288.6	40.4	123.9	14%	43.0%	306.8%
		ESSFdcw	29.5	4.1	2.4	14%	8.3%	59.2%
		ESSFmh	1,065.5	149.2	512.5	14%	48.1%	343.6%
		ICHmk1	12,300.5	1,722.1	7,251.7	14%	59.0%	421.1%
		ICHmw5	32.4	4.9	32.1	15%	98.9%	659.6%
		ICHxm1	7,258.1	1,233.9	4,332.1	17%	59.7%	351.1%
		IDFdm1	2,803.6	476.6	2,122.1	17%	75.7%	445.2%
		IDFxm1	5,053.9	859.2	3,835.2	17%	75.9%	446.4%
		MSdm1	18,346.0	2,568.4	5,570.7	14%	30.4%	216.9%
		PPxm1	268.7	45.7	160.4	17%	59.7%	351.3%
White	Low	ESSFdc1	493.9	69.1	150.1	14%	30.4%	217.1%
		ESSFmh	1,347.1	188.6	330.5	14%	24.5%	175.2%
		ICHdw4	11,139.6	1,559.5	5,472.7	14%	49.1%	350.9%
		ICHmw5	11,470.9	1,720.6	3,795.4	15%	33.1%	220.6%
		ICHxm1	961.2	163.4	452.7	17%	47.1%	277.1%
		IDFmw2	614.7	104.5	285.2	17%	46.4%	273.0%
<b>Total</b>			<b>1,862,914.7</b>	<b>500,736.9</b>	<b>969,056.4</b>		<b>52%</b>	<b>194%</b>

<sup>a</sup> The Anstey LU-Low BEO is not assessed because it is entirely within TFL 33, as described in section 2.1.



## Incursions into Non-Legal OGMA's

Table 25 is provided as additional detail for the OGMA indicator to show a summary of incursions into non-legal OGMA's that exceed the allowable incursion threshold by disturbance type. An OGMA may have multiple incursions reported within them; these are represented in the table below with multiple records for an individual OGMA ID. For example, the OGMA "KAM\_TOK\_26" has two recorded instances of incursions that create a total disturbance of 41.5 ha. Where multiple incursions are reported, a "total disturbance" row is provided that summarizes all incursions within that individual OGMA.

**Table 25. Detailed Breakdown of Incursions in Non-Legal Old Growth Management Areas (OGMA's) that Exceed the Allowable Incursion Threshold by Disturbance Type in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.**

Landscape Unit	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
Anarchist	KAM_TOK_26	122.8	6.2	7.9	6%	4.2	67%	Roads
				33.6	27%	1.3	21%	Urban
				41.5	34%	5.4	88%	Total Disturbance
	KAM_TOK_53	309.2	309.2	1.4	0.4%	1.4	0.4%	Forest Harvesting
				13.7	4%	13.7	4%	Roads
				15.1	5%	15.1	5%	Total Disturbance
	KAM_TOK_69	91.0	91.0	0.1	0.1%	0.1	0.1%	Forest Harvesting
				9.7	11%	9.7	11%	Roads
				9.8	11%	9.8	11%	Total Disturbance
	KAM_TOK_146	3.9	3.8	0.5	12%	0.5	12%	Roads
	KAM_TOK_160	7.2	7.2	1.1	15%	1.1	15%	Roads
	KAM_TOK_164	4.2	4.2	0.5	12%	0.5	12%	Roads
	KAM_TOK_174	36.1	36.1	1.6	4%	1.6	4%	Oil & Gas
				2.2	6%	2.2	6%	Roads
				3.8	11%	3.8	11%	Total Disturbance
	KAM_TOK_199	3.0	3.0	0.4	13%	0.4	13%	Roads
	KAM_TOK_226	4.7	4.7	0.6	13%	0.6	13%	Roads
	KAM_TOK_342	1.8	1.8	0.3	18%	0.3	15%	Roads
	KAM_TOK_364	18.4	18.4	2.6	14%	2.6	14%	Roads
Anstey <sup>a</sup>	KAM_TOK_2571	3.1	0.0	0.4	12%	-	-	Roads
	KAM_TOK_2600	3.0	0.3	0.3	11%	-	-	Roads
	KAM_TOK_2729	5.4	5.4	2.6	48%	2.6	48%	Roads
	KAM_TOK_2813	14.0	13.8	0.4	3%	0.4	3%	Forest Harvesting
				1.5	10%	1.4	10%	Roads
				1.8	13%	1.8	13%	Total Disturbance
	KAM_TOK_2814	5.2	5.1	2.4	46%	2.4	47%	Forest Harvesting
0.1				2%	0.1	1%	Roads	
2.5				48%	2.5	49%	Total Disturbance	
Ashnola	KAM_TOK_2	16.3	16.3	16.2	99%	16.2	100%	Forest Harvesting
	KAM_TOK_3	5.1	5.1	5.0	99%	5.0	99%	Forest Harvesting
	KAM_TOK_6	6.4	6.3	2.6	40%	2.6	41%	Forest Harvesting
	KAM_TOK_17	3.1	3.1	0.5	17%	0.5	17%	Forest Harvesting
				0.5	17%	0.5	17%	Roads
				1.1	34%	1.1	34%	Total Disturbance
KAM_TOK_86	7.0	7.0	1.6	23%	1.6	23%	Forest Harvesting	

Landscape Unit	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
Cherryville	KAM_TOK_1590	13.2	6.9	6.5	49%	0.6	9%	Forest Harvesting
	KAM_TOK_1596	91.5	91.5	11.8	13%	11.8	13%	Roads
	KAM_TOK_1612	85.2	85.2	17.1	20%	17.1	20%	Agriculture & Clearing
				3.6	4%	3.6	4%	Roads
				20.7	24%	20.7	24%	Total Disturbance
	KAM_TOK_3042	22.8	20.7	0.03	0.1%	0.0	0%	Power
				1.6	7%	0.6	11%	Roads
				0.1	0.4%	0.0	0%	Rights of Way
				0.6	3%	0.0	0%	Urban
				2.3	10%	0.6	3%	Total Disturbance
Crowfoot	KAM_TOK_2684	9.0	9.1	1.4	15%	1.4	15%	Roads
	KAM_TOK_2748	18.6	18.6	2.0	11%	2.0	11%	Roads
	KAM_TOK_2753	11.7	11.7	2.0	17%	2.0	17%	Roads
Eagle River	KAM_TOK_2498	16.8	14.4	1.5	9%	0.0	0%	Roads
				0.9	5%	0.9	6%	Forest Harvesting
				2.4	14%	0.9	6%	Total Disturbance
	KAM_TOK_2510	592.2	592.2	46.2	8%	46.2	8%	Forest Harvesting
				14.0	2%	14.0	2%	Roads
				60.2	10%	60.2	10%	Total Disturbance
	KAM_TOK_2558	205.0	205.0	8.9	4%	8.9	4%	Forest Harvesting
				2.1	1%	2.1	1%	Roads
				11.1	5%	11.1	5%	Total Disturbance
	KAM_TOK_2564	14.1	14.1	1.0	7%	1.0	7.3%	Power
0.1				1%	0.1	0.6%	Roads	
1.3				10%	1.3	9.6%	Rights of Way	
2.5				17%	2.5	17%	Total Disturbance	
KAM_TOK_2626	1.7	1.7	0.3	20%	0.3	20%	Roads	
Harris	KAM_TOK_1330	7.9	7.8	1.4	17%	1.4	17%	Roads
	KAM_TOK_1340	8.0	8.0	0.5	7%	0.5	7%	Forest Harvesting
				0.6	7%	0.6	7%	Roads
				1.1	14%	1.1	14%	Total Disturbance
	KAM_TOK_1364	15.0	15.0	2.1	14%	2.1	14%	Roads
	KAM_TOK_1398	4.7	4.7	0.7	14%	0.7	14%	Forest Harvesting
	KAM_TOK_1424	1.8	1.8	0.4	25%	0.4	25%	Roads
	KAM_TOK_1519	12.4	12.4	1.4	11%	1.4	11%	Roads
	KAM_TOK_1534	33.5	33.6	3.4	10%	3.4	10%	Roads
	KAM_TOK_1546	8.3	8.3	0.02	0.2%	0.02	0.2%	Forest Harvesting
0.9				10%	0.9	10%	Roads	
0.9				11%	0.9	11%	Total Disturbance	
KAM_TOK_1573	360.1	359.3	30.3	8%	30.3	8%	Roads	
Keremeos	KAM_TOK_229	3.3	3.3	0.4	11%	0.4	11%	Roads
	KAM_TOK_344	10.1	10.0	1.1	11%	1.1	10.7%	Forest Harvesting
				0.5	5%	0.4	3.7%	Mining and Extraction
				0.1	1%	0.0	0.4%	Roads
			1.6	16%	1.5	15%	Total Disturbance	

Landscape Unit	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	
Keremeos	KAM_TOK_353	5.3	5.2	3.0	55%	2.8	54%	Mining and Extraction	
				0.7	13%	0.7	14%	Roads	
				3.7	69%	3.5	68%	Total Disturbance	
	KAM_TOK_355	8.0	8.0	1.0	13%	1.0	13%	Roads	
	KAM_TOK_370	3.4	3.2	0.8	22%	0.6	18%	Agriculture & Clearing	
				0.6	17%	0.6	18%	Roads	
				1.3	39%	1.2	36%	Total Disturbance	
	KAM_TOK_3027	1.9	1.9	0.2	11%	0.2	11%	Roads	
	Kettle	KAM_TOK_609	17.1	17.1	11.0	64%	11.0	64%	Forest Harvesting
					0.8	5%	0.8	5%	Roads
11.8					69%	11.8	69%	Total Disturbance	
KAM_TOK_807		4.5	4.5	0.8	17%	0.8	17%	Forest Harvesting	
				0.6	13%	0.6	13%	Roads	
				1.4	30%	1.4	30%	Total Disturbance	
KAM_TOK_830		334.1	322.7	20.9	6%	20.9	6%	Forest Harvesting	
				0.3	0%	0.3	0%	Roads	
				21.2	6%	21.2	7%	Total Disturbance	
KAM_TOK_859		6.9	6.9	0.02	0.2%	0.02	0.2%	Forest Harvesting	
				1.0	14%	1.0	14%	Roads	
				1.0	15%	1.0	15%	Total Disturbance	
KAM_TOK_902		287.6	287.6	10.7	4%	10.7	4%	Forest Harvesting	
KAM_TOK_903		3.5	3.3	0.8	22%	0.7	22%	Roads	
KAM_TOK_919		16.1	15.2	1.75	11%	1.8	12%	Forest Harvesting	
				0.01	0%	0.0	0%	Mining and Extraction	
				0.4	3%	0.0	0%	Power	
				0.3	2%	0.3	2%	Roads	
				0.4	3%	0.1	1%	Rights of Way	
	0.1			1%	0.0	0%	Urban		
	3.0			19%	2.1	14%	Total Disturbance		
KAM_TOK_2056	31.1	31.1	3.6	12%	3.6	12%	Roads		
KAM_TOK_2072	12.5	12.5	0.8	6%	0.8	6%	Roads		
			0.4	4%	0.4	4%	Rights of Way		
			1.3	10%	1.3	10%	Total Disturbance		
KAM_TOK_2079	26.4	26.4	2.1	8%	2.1	8%	Roads		
			0.6	2%	0.6	2%	Rights of Way		
			2.7	10%	2.7	10%	Total Disturbance		
KAM_TOK_2220	731.6	731.2	0.01	0%	0.01	0%	Forest Harvesting		
			13.9	2%	13.9	2%	Roads		
			13.9	2%	13.9	2%	Total Disturbance		
KAM_TOK_2229	341.5	341.5	15.0	4%	15.0	4%	Roads		
KAM_TOK_2462	3.2	3.1	0.1	4%	0.1	2.5%	Power		
			0.1	2%	0.0	0.3%	Roads		
			0.3	9%	0.3	8.6%	Rights of Way		
			0.5	15%	0.4	11%	Total Disturbance		

Landscape Unit	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
<b>Mabel</b>	KAM_TOK_1705	43.4	43.4	10.6	24%	10.6	24%	Forest Harvesting
	KAM_TOK_786	15.1	15.1	2.6	17%	2.6	17%	Forest Harvesting
	KAM_TOK_790	0.9	0.9	0.1	13%	0.1	13%	Forest Harvesting
				0.6	67%	0.6	67%	Roads
				0.7	80%	0.7	80%	Total Disturbance
	KAM_TOK_791	3.5	3.5	1.4	41%	1.4	41%	Forest Harvesting
	KAM_TOK_802	7.0	7.0	2.1	30%	2.1	31%	Forest Harvesting
	KAM_TOK_803	40.7	40.7	2.4	6%	2.4	6%	Forest Harvesting
				1.6	4%	1.6	4%	Roads
				0.2	1%	0.2	1%	Urban
				4.2	10%	4.2	10%	Total Disturbance
	KAM_TOK_828	57.2	57.2	5.9	10%	5.9	10%	Forest Harvesting
				2.4	4%	2.4	4%	Roads
				8.3	15%	8.3	15%	Total Disturbance
	KAM_TOK_860	1.8	1.8	1.8	100%	1.8	100%	Forest Harvesting
	KAM_TOK_862	58.9	58.9	14.7	25%	14.7	25%	Forest Harvesting
				0.03	0%	0.03	0%	Power
				7.2	12%	7.2	12%	Roads
				22.0	37%	22.0	37%	Total Disturbance
	KAM_TOK_876	44.2	44.2	24.5	55%	24.5	55%	Forest Harvesting
0.3				1%	0.3	1%	Roads	
24.8				56%	24.8	56%	Total Disturbance	
KAM_TOK_877	32.8	32.6	6.1	19%	6.1	19%	Forest Harvesting	
			0.01	0%	0.01	0%	Roads	
			6.1	19%	6.1	19%	Total Disturbance	
KAM_TOK_883	1.9	1.9	1.5	77%	1.5	77%	Forest Harvesting	
			0.2	9%	0.2	9%	Roads	
			1.6	86%	1.6	86%	Total Disturbance	
KAM_TOK_884	0.8	0.8	0.4	52%	0.4	52%	Forest Harvesting	
KAM_TOK_912	0.1	0.1	0.1	58%	0.1	60%	Roads	
KAM_TOK_937	2.6	2.6	0.4	15%	0.4	15%	Roads	
KAM_TOK_956	278.6	276.6	0.3	0%	0.3	0%	Power	
			12.7	5%	12.6	5%	Roads	
			13.0	5%	12.9	5%	Total Disturbance	
KAM_TOK_970	3.8	3.8	0.1	3%	0.1	3%	Forest Harvesting	
			0.4	12%	0.4	12%	Power	
			0.4	11%	0.4	11%	Rights of Way	
			1.0	26%	1.0	26%	Total Disturbance	
KAM_TOK_991	286.5	285.3	2.7	1%	2.7	1%	Power	
			8.9	3%	8.8	3%	Roads	
			3.4	1%	3.4	1%	Rights of Way	
			15.0	5%	14.9	5%	Total Disturbance	
KAM_TOK_1001	14.8	14.8	1.6	10%	1.6	10%	Roads	
KAM_TOK_1002	4.4	4.4	1.5	34%	1.5	34%	Roads	

Landscape Unit	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	
Mission	KAM_TOK_1075	208.4	202.8	0.4	0%	0.4	0%	Forest Harvesting	
				16.5	8%	12.2	6%	Roads	
				16.8	8%	12.6	6%	Total Disturbance	
	KAM_TOK_1110	353.0	344.2	0.2	0.1%	0.2	0.1%	Forest Harvesting	
				0.2	0.1%	0.2	0.1%	Power	
				12.2	3%	12.1	4%	Roads	
				12.7	4%	12.6	4%	Total Disturbance	
	KAM_TOK_1168	773.9	773.0	0.1	0%	0.1	0%	Forest Harvesting	
				43.7	6%	43.7	6%	Roads	
				43.8	6%	43.8	6%	Total Disturbance	
	KAM_TOK_1169	6.4	6.4	0.7	11%	0.7	11%	Roads	
	KAM_TOK_1195	4.3	4.3	1.3	30%	1.3	30%	Forest Harvesting	
	Okanagan West Side	KAM_TOK_1702	61.1	16.7	6.5	11%	1.5	9%	Roads
		KAM_TOK_1827	232.3	231.8	0.3	0.1%	0.3	0.1%	Forest Harvesting
					2.2	1%	2.2	1%	Power
8.6					4%	8.6	4%	Roads	
10.8					5%	10.8	5%	Rights of Way	
21.8					9%	21.8	9%	Total Disturbance	
KAM_TOK_1839		72.6	69.9	0.3	0.5%	0.3	0.4%	Power	
				9.2	13%	9.2	13%	Roads	
				9.5	13%	9.5	14%	Total Disturbance	
KAM_TOK_1842		84.2	83.5	1.2	1%	1.2	1%	Forest Harvesting	
				7.3	9%	7.3	9%	Roads	
				8.6	10%	8.6	10%	Total Disturbance	
Pennask		KAM_TOK_922	2.4	2.4	0.3	12%	0.3	12%	Roads
		KAM_TOK_992	29.9	29.9	0.03	0.1%	0.03	0.1%	Forest Harvesting
					3.1	10%	3.1	10%	Roads
	3.1				10%	3.1	10%	Total Disturbance	
	KAM_TOK_1009	11.3	11.3	1.3	11%	1.3	11%	Roads	
	KAM_TOK_1011	151.4	150.5	0.3	0.2%	0.3	0.2%	Forest Harvesting	
				6.4	4%	5.7	4%	Mining and Extraction	
				7.6	5%	7.4	5%	Roads	
				14.3	9%	13.3	9%	Total Disturbance	
	KAM_TOK_1034	14.1	14.1	1.2	8%	1.2	8%	Forest Harvesting	
				0.4	3%	0.4	3%	Roads	
				1.6	11%	1.6	11%	Total Disturbance	
	KAM_TOK_1055	651.9	647.6	2.3	0.3%	2.3	0.4%	Forest Harvesting	
				19.1	3%	19.0	3%	Roads	
				21.4	3%	21.2	3%	Total Disturbance	
KAM_TOK_1068	1.2	1.2	0.4	35%	0.4	35%	Roads		
KAM_TOK_1096	3.1	3.1	0.5	15%	0.5	15%	Roads		
KAM_TOK_1116	3.3	3.3	1.3	39%	1.3	39%	Forest Harvesting		
KAM_TOK_1161	923.3	907.9	0.1	0%	0.1	0%	Forest Harvesting		
			15.0	2%	15.0	2%	Roads		
			15.1	2%	15.1	2%	Total Disturbance		

Landscape Unit	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
Pennask	KAM_TOK_1303	27.8	27.2	4.7	17%	4.7	17%	Forest Harvesting
				1.7	6%	1.7	6%	Roads
				6.4	23%	6.4	23%	Total Disturbance
	KAM_TOK_1318	3.6	3.6	0.7	19%	0.7	19%	Forest Harvesting
	KAM_TOK_1354	11.7	11.7	2.5	21%	2.5	21%	Forest Harvesting
	KAM_TOK_1425	7.0	7.0	2.6	37%	2.6	37%	Forest Harvesting
	KAM_TOK_1492	10.0	10.0	0.3	3%	0.3	3%	Forest Harvesting
				1.0	11%	1.0	11%	Roads
				1.4	14%	1.4	14%	Total Disturbance
	KAM_TOK_2978	8.1	8.1	0.02	0.2%	0.02	0.2%	Forest Harvesting
				0.2	2%	0.2	2.0%	Roads
				0.9	11%	0.9	10.7%	Rights of Way
				1.0	13%	1.0	13%	Total Disturbance
	KAM_TOK_2983	16.9	16.9	4.3	26%	4.3	26%	Forest Harvesting
				0.1	1%	0.1	1%	Roads
4.5				27%	4.5	27%	Total Disturbance	
KAM_TOK_405	9.1	9.1	1.2	14%	1.2	14%	Roads	
KAM_TOK_489	15.5	15.5	2.1	13%	2.1	13%	Roads	
KAM_TOK_494	62.3	62.3	6.8	11%	6.8	11%	Roads	
KAM_TOK_509	30.1	30.1	3.4	11%	3.4	11%	Roads	
			0.3	1%	0.3	1%	Rights of Way	
			3.7	12%	3.7	12%	Total Disturbance	
KAM_TOK_557	360.8	360.8	8.3	2%	8.3	2%	Forest Harvesting	
			13.8	4%	13.8	4%	Roads	
			22.2	6%	22.2	6%	Total Disturbance	
KAM_TOK_566	7.5	7.5	5.0	67%	5.0	67%	Forest Harvesting	
			0.8	11%	0.8	11%	Roads	
			5.8	78%	5.8	78%	Total Disturbance	
KAM_TOK_574	794.7	793.1	1.2	0.2%	1.2	0.2%	Oil & Gas	
			27.8	3%	27.7	3%	Roads	
			0.3	0%	0.03	0%	Rights of Way	
			29.3	4%	29.0	4%	Total Disturbance	
KAM_TOK_625	243.5	243.5	7.7	3%	7.7	3%	Forest Harvesting	
			7.8	3%	7.8	3%	Roads	
			15.5	6%	15.5	6%	Total Disturbance	
KAM_TOK_627	542.1	529.3	5.8	1%	5.8	1%	Forest Harvesting	
			0.6	0%	0.1	0%	Oil & Gas	
			5.0	1%	4.8	1%	Rights of Way	
			11.3	2%	10.6	2%	Total Disturbance	
KAM_TOK_670	5.0	5.0	0.6	12%	0.6	12%	Roads	
KAM_TOK_709	6.5	6.5	0.1	1%	0.1	1%	Roads	
			0.7	12%	0.7	12%	Rights of Way	
			0.8	12%	0.8	12%	Total Disturbance	

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Penticton	KAM_TOK_713	63.1	63.0	0.01	0%	0.01	0%	Forest Harvesting	
				0.1	0.1%	0.1	0.1%	Power	
				1.4	2%	1.4	2%	Roads	
				6.9	11%	6.9	11%	Urban	
				8.3	13%	8.3	13%	Total Disturbance	
Pukeashun	KAM_TOK_2449	12.1	12.1	0.6	5%	0.6	5%	Agriculture & Clearing	
				1.2	10%	1.2	10%	Roads	
				1.8	15%	1.8	15%	Total Disturbance	
	KAM_TOK_2470	9.8	9.6	1.1	11%	1.0	10%	Roads	
Salmon Arm	KAM_TOK_1993	120.3	120.3	8.8	7%	8.8	7%	Forest Harvesting	
				3.3	3%	3.3	3%	Roads	
				12.1	10%	12.1	10%	Total Disturbance	
		KAM_TOK_2039	1.5	1.5	0.8	56%	0.8	56%	Roads
	KAM_TOK_2125	1066.1	1065.0	0.2	0%	0.2	0%	Forest Harvesting	
				33.3	3%	33.3	3%	Roads	
				33.4	3%	33.4	3%	Total Disturbance	
	KAM_TOK_2126	90.4	90.4	11.5	13%	11.5	13%	Forest Harvesting	
				0.4	0.4%	0.4	0.4%	Roads	
				11.9	13%	11.9	13%	Total Disturbance	
		KAM_TOK_2159	34.2	34.2	3.7	11%	3.7	11%	Roads
	KAM_TOK_2193	26.6	26.6	0.8	3%	0.8	3%	Oil & Gas	
				3.0	11%	3.0	11%	Roads	
				3.8	14%	3.8	14%	Total Disturbance	
		KAM_TOK_2227	11.2	11.2	3.5	31%	3.5	31%	Forest Harvesting
	KAM_TOK_2240	5.6	4.8	1.2	21%	0.9	18%	Agriculture & Clearing	
				0.4	7%	0.4	8%	Roads	
				1.5	27%	1.2	26%	Total Disturbance	
	KAM_TOK_2257	1195.7	1195.2	9.7	1%	9.6	1%	Forest Harvesting	
				23.9	2%	23.9	2%	Roads	
33.6				3%	33.5	3%	Total Disturbance		
KAM_TOK_2352	87.5	87.5	4.4	5%	4.4	5%	Forest Harvesting		
			4.8	5%	4.8	5%	Roads		
			9.2	11%	9.2	11%	Total Disturbance		
	KAM_TOK_2365	10.9	10.9	10.1	92%	10.1	92%	Forest Harvesting	
	KAM_TOK_2369	13.5	13.5	1.7	13%	1.7	13%	Roads	
	KAM_TOK_2384	7.8	7.8	0.9	11%	0.9	11%	Roads	
KAM_TOK_2410	726.0	725.6	1.2	0%	1.2	0%	Forest Harvesting		
			25.1	3%	25.1	3%	Roads		
			26.3	4%	26.3	4%	Total Disturbance		
Seymour	KAM_TOK_2786	1.3	0.5	0.3	26%	0.3	64%	Roads	
				1.0	74%	0.2	36%	Urban	
				1.3	100%	0.5	100%	Total Disturbance	

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Seymour	KAM_TOK_2787	2.7	0.1	0.3	11%	0.0	0%	Rail	
				0.6	24%	0.0	0%	Urban	
				0.9	35%	0.0	0%	Total Disturbance	
	KAM_TOK_2788	100.7	93.2	6.1	6%	4.4	5%	Roads	
				6.2	6%	1.8	2%	Urban	
				12.3	12%	6.2	7%	Total Disturbance	
	KAM_TOK_2789	6.4	0.3	0.01	0.1%	0.0	0%	Rail	
				5.0	79%	0.02	6%	Urban	
				5.0	79%	0.0	6%	Total Disturbance	
	KAM_TOK_2848	1032.9	1030.4	0.4	0%	0.4	0%	Forest Harvesting	
				29.5	3%	29.5	3%	Roads	
				1.2	0%	0.6	0%	Urban	
				31.1	3%	30.5	3%	Total Disturbance	
	KAM_TOK_2873	7.6	7.6	0.8	10%	0.8	10%	Power	
				1.1	15%	1.1	15%	Rights of Way	
				1.9	25%	1.9	25%	Total Disturbance	
	Trepanier	KAM_TOK_765	1.9	1.9	0.5	27%	0.5	27%	Roads
		KAM_TOK_773	11.5	11.4	0.01	0%	0.01	0%	Power
2.5					22%	2.5	22%	Roads	
0.5					4%	0.4	3%	Urban	
3.0					26%	2.9	26%	Total Disturbance	
KAM_TOK_814		2.1	0.6	0.9	42%	0.5	80%	Roads	
				0.0	1%	0.0	0%	Urban	
				0.9	43%	0.5	80%	Total Disturbance	
KAM_TOK_823		472.8	414.9	4.6	1%	4.6	1%	Forest Harvesting	
				17.1	4%	16.6	4%	Roads	
				21.7	5%	21.2	5%	Total Disturbance	
KAM_TOK_864		325.2	238.3	58.05	18%	55.9	23%	Forest Harvesting	
				9.2	3%	3.9	2%	Roads	
				0.05	0%	0.01	0%	Rights of Way	
				0.6	0.2%	0.01	0%	Urban	
				67.9	21%	59.9	25%	Total Disturbance	
KAM_TOK_896		8.8	8.8	0.5	6%	0.5	6%	Forest Harvesting	
				0.4	4%	0.4	4%	Roads	
	0.7			8%	0.7	8%	Urban		
	1.6			19%	1.6	19%	Total Disturbance		
KAM_TOK_906	11.3	11.3	0.03	0%	0.03	0%	Forest Harvesting		
			1.1	10%	1.1	10%	Roads		
			1.2	10%	1.2	10%	Total Disturbance		
KAM_TOK_1200	24.9	24.9	10.4	42%	10.4	42%	Forest Harvesting		
KAM_TOK_1373	5.3	5.3	0.4	7%	0.4	7%	Forest Harvesting		
			1.2	23%	1.2	23%	Roads		
			1.6	30%	1.6	30%	Total Disturbance		
Trinity	KAM_TOK_1755	9.4	9.4	2.1	22%	2.1	22%	Roads	



Landscape Unit	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
Trout	KAM_TOK_425	5.4	5.4	0.6	10%	0.6	10%	Roads
	KAM_TOK_441	485.1	485.1	16.0	3%	16.0	3%	Roads
	KAM_TOK_449	10.1	10.1	1.5	15%	1.5	15%	Roads
	KAM_TOK_476	6.8	6.8	1.0	14%	1.0	14%	Roads
	KAM_TOK_481	121.5	121.5	4.3	4%	4.3	4%	Forest Harvesting
				1.3	1%	1.3	1%	Power
				5.5	4%	5.5	4%	Roads
				2.0	2%	2.0	2%	Rights of Way
				1.2	1%	1.2	1%	Urban
				14.1	12%	14.1	12%	Total Disturbance
	KAM_TOK_483	2.4	2.4	0.1	5%	0.1	5%	Rights of Way
				0.2	8%	0.2	8%	Urban
				0.3	13%	0.3	12%	Total Disturbance
	KAM_TOK_505	0.6	0.6	0.4	65%	0.4	65%	Roads
	KAM_TOK_513	0.7	0.7	0.5	68%	0.5	68%	Roads
	KAM_TOK_519	6.4	6.4	6.4	100%	6.4	100%	Forest Harvesting
	KAM_TOK_521	1.5	1.5	1.0	67%	1.0	67%	Roads
	KAM_TOK_556	4.1	4.1	0.6	14%	0.6	14%	Roads
	KAM_TOK_561	481.9	481.9	8.5	2%	8.5	2%	Forest Harvesting
				0.0	0%	0.0	0%	Power
				17.8	4%	17.8	4%	Roads
				26.3	5%	26.3	5%	Total Disturbance
	KAM_TOK_569	4.6	4.6	1.0	22%	1.0	22%	Forest Harvesting
	KAM_TOK_578	533.5	533.5	0.3	0%	0.3	0%	Forest Harvesting
				13.1	2%	13.1	2%	Roads
				13.4	3%	13.4	3%	Total Disturbance
	KAM_TOK_715	4.2	4.2	0.5	12%	0.5	12%	Roads
	KAM_TOK_718	34.3	33.8	4.8	14%	4.8	14%	Roads
				0.5	1%	0.5	1%	Rights of Way
				5.3	16%	5.3	16%	Total Disturbance
	KAM_TOK_727	256.2	252.6	6.6	3%	6.6	3%	Forest Harvesting
				0.5	0.2%	0.3	0.1%	Power
7.4				3%	7.3	3%	Roads	
14.5				6%	14.2	6%	Total Disturbance	
KAM_TOK_780	1.1	1.1	0.4	35%	0.4	35%	Roads	
KAM_TOK_789	129.3	128.3	0.8	1%	0.8	1%	Forest Harvesting	
			0.3	0%	0.2	0%	Power	
			8.2	6%	8.2	6%	Roads	
			2.7	2%	2.6	2%	Rights of Way	
			12.0	9%	11.8	9%	Total Disturbance	
KAM_TOK_792	3.2	3.2	0.8	24%	0.8	24%	Forest Harvesting	
			0.4	11%	0.4	11%	Roads	
			1.1	35%	1.1	35%	Total Disturbance	

Landscape Unit	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
Trout	KAM_TOK_797	1.7	1.7	0.1	3%	0.1	3%	Forest Harvesting
				0.3	16%	0.3	16%	Roads
				0.3	19%	0.3	19%	Total Disturbance
	KAM_TOK_879	191.6	187.9	37.6	20%	37.6	20%	Forest Harvesting
				0.7	0%	0.6	0%	Power
				11.2	6%	11.1	6%	Roads
				49.4	26%	49.3	26%	Total Disturbance
	KAM_TOK_897	450.7	450.7	0.7	0%	0.7	0%	Forest Harvesting
				12.5	3%	12.5	3%	Roads
13.2				3%	13.2	3%	Total Disturbance	
Upper Kettle	KAM_TOK_1023	128.1	128.1	10.1	8%	10.1	8%	Forest Harvesting
				3.0	2%	3.0	2%	Roads
				13.0	10%	13.0	10%	Total Disturbance
	KAM_TOK_1298	10.2	10.0	1.9	19%	1.8	18%	Roads
Upper Salmon	KAM_TOK_1559	3.0	2.0	0.3	10%	0.3	16%	Forest Harvesting
	KAM_TOK_1668	26.3	26.3	1.7	7%	1.7	7%	Roads
				2.5	10%	2.5	9%	Rights of Way
				4.2	16%	4.2	16%	Total Disturbance
	KAM_TOK_1725	179.2	179.2	3.9	2%	3.9	2%	Forest Harvesting
				1.9	1%	1.9	1%	Power
				3.2	2%	3.2	2%	Roads
				9.7	5%	9.7	5%	Rights of Way
				18.8	10%	18.8	10%	Total Disturbance
	KAM_TOK_1785	10.3	10.3	1.1	10%	1.1	10%	Roads
	KAM_TOK_1787	14.8	12.5	1.6	11%	1.6	13%	Roads
	KAM_TOK_1853	51.7	51.7	1.5	3%	1.5	3%	Power
				3.7	7%	3.7	7%	Roads
				3.2	6%	3.2	6%	Rights of Way
				8.4	16%	8.4	16%	Total Disturbance
	KAM_TOK_1918	8.0	8.0	1.3	17%	1.3	17%	Forest Harvesting
				0.7	9%	0.7	9%	Roads
				2.0	26%	2.0	26%	Total Disturbance
	KAM_TOK_1931	326.9	326.9	7.4	2%	7.4	2%	Forest Harvesting
				4.6	1%	4.6	1%	Roads
12.0				4%	12.0	4%	Total Disturbance	
KAM_TOK_1953	3.9	3.6	1.3	32%	1.3	35%	Forest Harvesting	
KAM_TOK_2006	26.1	26.1	2.7	10%	2.7	10%	Roads	
KAM_TOK_2023	22.7	20.0	2.6	11%	1.1	5%	Roads	
KAM_TOK_2035	8.8	8.8	1.4	15%	1.4	15%	Forest Harvesting	
Upper Shuswap	KAM_TOK_1811	618.1	618.1	13.5	2%	13.5	2%	Roads
	KAM_TOK_1907	35.2	35.2	3.7	10%	3.7	10%	Roads
	KAM_TOK_2088	20.2	20.2	3.3	16%	3.3	16%	Forest Harvesting
				0.9	5%	0.9	5%	Roads
				4.2	21%	4.2	21%	Total Disturbance
KAM_TOK_2107	3.8	3.8	0.5	13%	0.5	13%	Roads	

Landscape Unit	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
Vernon	KAM_TOK_1263	19.7	19.7	0.9	5%	0.9	5%	Forest Harvesting
				1.6	8%	1.6	8%	Roads
				0.1	1%	0.1	1%	Rights of Way
				2.6	13%	2.6	13%	Total Disturbance
	KAM_TOK_1450	16.7	16.7	1.8	11%	1.8	11%	Forest Harvesting
	KAM_TOK_1525	2.9	2.9	0.4	12%	0.4	12%	Roads
	KAM_TOK_1674	46.2	46.2	4.6	10%	4.6	10%	Forest Harvesting
				2.1	5%	2.1	5%	Roads
				6.7	15%	6.7	15%	Total Disturbance
	KAM_TOK_1682	8.3	8.3	0.9	11%	0.9	11%	Roads
KAM_TOK_1731	6.2	6.2	1.4	22%	1.4	22%	Forest Harvesting	
White	KAM_TOK_2376	13.4	13.4	2.3	17%	2.3	17%	Roads
	KAM_TOK_2455	10.9	10.9	1.2	11%	1.2	11%	Roads
	KAM_TOK_2457	251.8	251.8	13.8	5%	13.8	5%	Roads
	KAM_TOK_2474	12.6	12.6	1.6	13%	1.6	13%	Roads

<sup>a</sup> The Anstey LU-Low BEO is assessed because incursion data was available for this area, as described in section 2.1.

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 Unit	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
Mission / Penticton	KAM_TOK_731	85.4	85.4	7.9	9%	7.9	9%	Forest Harvesting
				1.0	1%	1.0	1%	Oil & Gas
				0.0	0%	0.0	0%	Power
				3.1	4%	3.1	4%	Roads
				12.0	14%	12.0	14%	Total Disturbance
Pennask / Trepanier	KAM_TOK_988	362.5	356.5	0.1	0%	0.1	0%	Power
				18.1	5%	18.1	5%	Roads
				0.01	0%	0.0	0%	Rights of Way
				18.2	5%	18.2	5%	Total Disturbance
	KAM_TOK_1043	1324.6	1274.9	0.9	0%	0.9	0%	Forest Harvesting
				15.7	1%	15.5	1%	Roads
				16.6	1%	16.4	1%	Total Disturbance
Trepanier / Trout	KAM_TOK_759	410.1	373.7	10.1	2%	9.7	3%	Forest Harvesting
				1.9	0%	1.7	0%	Oil & Gas
				16.1	4%	14.0	4%	Roads
				5.6	1%	3.3	1%	Urban
				33.7	8%	28.7	8%	Total Disturbance

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

The following presents the current condition of CE-CFLB within non-legal OGMA at the landscape (AU) and OGMA (old growth forest within OGMA boundaries) level. Reporting is on how the OGMA itself is meeting the policy (BDG) 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 non-legal OGMA (column E), and the amount of old growth forest within OGMA (column F) relative to the policy target for old growth forest (column B) for all AUs with targets and established OGMA (i.e., AUs with no old growth targets or without OGMA are not included in the indicator).

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 policy 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 Anarchist LU-Low BEO-ESSFdc2, there is currently 1,631.0 ha of old growth forest in the CE-CFLB which equates to 146% of old growth forest compared to targets. This translates to this AU having 1.46 times more old growth forest available than required by the BDG.

The OGMA polygon level (column E and E/C) provides the total amount of CE-CFLB (ha) within the OGMA and compares that CE-CFLB area to the policy 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 be old growth forest. Although the policy (BDG) 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 context for evaluating if OGMA delineation captured enough area to meet the targets, regardless of forest age.

For example: in the Anarchist LU-Low BEO-ESSFdc2, there is currently 356.1 ha of CE-CFLB in OGMA which equates to 32% of old growth forest compared to targets. This means if all the CE-CFLB in OGMA was old growth forest, it would account for 32% 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 policy target. It is important to note that if column F/C is 0% but there is CE-CFLB area and OGMA associated with that LU-BEC, this means that there is currently no old growth forest within the OGMA but may exist outside of the OGMA boundary. As a result, the OGMA with 0% are currently not contributing to the old growth forest targets.

For example: in the Anarchist LU-Low BEO-ESSFdc2, there is 317.2 ha of old growth forest in the CE-CFLB within OGMA which equates to 28% of the target met with old growth forest. This means that only 28% of the target is being met within the OGMA with old seral stage forests.

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 (AUs) 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 within Non-Legal Old Growth Management Areas (OGMAs) Compared to Policy Targets by Assessment Unit (AU) in the Okanagan-Shuswap Land and Resource Management Plan (OSLRMP) Area.

COLUMN CALCULATIONS:		Old Targets			Current Amount and Percents of Old					
		A	B	A*B=C	D	D/C	E	E/C	F	F/C
Landscape Unit, BEO	BEC Variant	Total BEC CE-CFLB (ha)	Policy Target Old (ha)	Policy Target Old CE-CFLB Area (%)	Current CE-CFLB Area of Old (ha)	Current CE-CFLB Area of Old (% of Policy Target)	Current CE-CFLB Area in OGMA (ha)	Current CE-CFLB Area in OGMA (% of Policy Target)	Current CE-CFLB Area of Old in OGMA (ha)	Current CE-CFLB Area of Old in OGMA (% of Policy Target)
Anarchist, High	ESSFxc1	161.1	21%	33.8	23.0	68%	20.1	59%	10.2	30%
	IDFdK1	2,129.7	19%	404.6	199.8	49%	398.8	99%	124.3	31%
	IDFdM1	2,486.0	19%	472.3	15.1	3%	512.7	109%	-	0%
	IDFhx1	7,213.5	19%	1370.6	214.7	16%	736.7	54%	53.2	4%
	MSdm1	1,678.0	21%	352.4	156.6	44%	327.0	93%	47.3	13%
	MSxk1	371.9	21%	78.1	61.9	79%	37.9	49%	21.2	27%
	PPxh1	8,113.2	19%	1541.5	233.0	15%	152.3	10%	2.0	0.1%
Anarchist, Low	ESSFdc2	7,967.7	14%	1115.5	1,631.0	146%	356.1	32%	317.2	28%
	ESSFdcw	1,091.0	9%	98.2	50.3	51%	20.3	21%	-	0%
	IDFdM1	8,963.9	13%	1165.3	449.8	39%	324.6	28%	59.2	5%
	IDFhx1	4,701.9	13%	611.2	166.6	27%	259.7	42%	19.2	3%
	MSdm1	22,822.4	14%	3195.1	3,795.9	119%	988.0	31%	511.5	16%
	PPxh1	1,629.8	13%	211.9	219.4	104%	18.5	9%	-	0%
Anstey, Int. <sup>a</sup>	ESSFvc	249.1	19%	47.3	0.0	0%	-	0%	-	0%
	ESSFvcw	117.5	19%	22.3	21.5	96%	-	0%	-	0%
	ESSFwc2	7,232.0	19%	1374.1	1,139.9	83%	1.3	0%	-	0%
	ESSFwcw	3,097.6	19%	588.5	600.2	102%	-	0%	-	0%
	ICHdw4	754.5	14%	105.6	111.1	105%	27.2	26%	4.8	5%
	ICHmw2	711.6	9%	64.0	27.9	44%	44.6	70%	4.6	7%
	ICHmw3	14,766.3	9%	1329.0	947.0	71%	504.4	38%	113.1	9%
	ICHvk1	2,413.7	13%	313.8	653.2	208%	52.9	17%	31.9	10%
ICHwk1	9,678.1	13%	1258.1	1,588.8	126%	279.6	22%	163.2	13%	
Ashnola, High	ESSFxc1	36,265.1	21%	7615.7	20,860.8	274%	531.9	7%	391.4	5%
	ESSFxcw	7,092.9	21%	1489.5	4,903.7	329%	130.7	9%	98.7	7%
	IDFdK1	12,256.4	19%	2328.7	2,603.0	112%	591.0	25%	169.8	7%
	IDFdK2	1,409.8	19%	267.9	135.3	50%	19.8	7%	5.6	2%
	IDFhx1	6,552.5	19%	1245.0	1,059.2	85%	194.7	16%	35.0	3%
	MSxk1	19,794.2	21%	4156.8	10,275.8	247%	946.4	23%	715.7	17%
	PPxh1	952.9	19%	181.0	27.5	15%	-	0%	-	0%
Cherryville, Low	ESSFdc1	4,081.3	9%	367.3	87.0	24%	177.3	48%	9.1	2%
	ESSFmh	6,588.4	9%	593.0	19.5	3%	271.4	46%	15.4	3%
	ESSFwc4	5,704.0	19%	1083.8	62.9	6%	430.7	40%	2.8	0.3%
	ESSFwcw	2,736.8	19%	520.0	0.2	0%	87.6	17%	-	0%
	ESSFwh1	7,894.3	19%	1499.9	718.5	48%	257.1	17%	22.2	1%

		Old Targets			Current Amount and Percents of Old					
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)	Policy Target Old (ha)	Policy Target Old CE-CFLB Area (%)	Current CE-CFLB Area of Old (ha)	Current CE-CFLB Area of Old (% of Policy Target)	Current CE-CFLB Area in OGMA (ha)	Current CE-CFLB Area in OGMA (% of Policy Target)	Current CE-CFLB Area of Old in OGMA (ha)	Current CE-CFLB Area of Old in OGMA (% of Policy Target)
Cherryville, Low	ESSFxc2	620.8	14%	86.9	281.9	324%	-	0%	-	0%
	ICHdw4	3,420.8	14%	478.9	394.8	82%	40.7	8%	-	0%
	ICHmk1	6,555.8	14%	917.8	1,482.6	162%	189.2	21%	93.0	10%
	ICHmw2	11,531.5	9%	1037.8	558.1	54%	471.8	45%	51.4	5%
	ICHmw5	2,817.5	9%	253.6	0.0	0%	51.3	20%	-	0%
	ICHwk1	2,845.6	13%	369.9	761.3	206%	135.5	37%	25.4	7%
	ICHxm1	6,642.9	13%	863.6	24.5	3%	267.6	31%	-	0%
Crowfoot, Low	ESSFwc2	8,150.1	19%	1548.5	301.2	19%	333.0	22%	47.2	3%
	ESSFwcw	2,555.4	19%	485.5	15.1	3%	60.5	12%	56.5	12%
	ICHmw3	12,690.8	9%	1142.2	179.8	16%	497.9	44%	-	0%
	ICHwk1	8,676.5	13%	1127.9	599.0	53%	601.6	53%	247.9	22%
	IDFmw2	321.3	13%	41.8	0.0	0%	-	0%	-	0%
Eagle River, Int.	ESSFvc	6,543.2	19%	1243.2	1,082.3	87%	1.1	0%	0.5	0%
	ESSFvcw	2,671.7	19%	507.6	127.2	25%	-	0%	-	0%
	ESSFwc2	7,660.6	19%	1455.5	1,311.9	90%	21.1	1%	4.6	0.3%
	ESSFwc4	7,247.5	19%	1377.0	1,105.6	80%	-	0%	-	0%
	ESSFwcw	6,531.8	19%	1241.0	562.4	45%	-	0%	-	0%
	ESSFwh1	6,374.7	19%	1211.2	1,431.9	118%	52.7	4%	36.6	3%
	ICHdw4	1,745.4	14%	244.4	160.2	66%	92.0	38%	29.1	12%
	ICHmw2	8,632.0	9%	776.9	269.0	35%	1,297.2	167%	150.6	19%
	ICHmw3	14,271.5	9%	1284.4	1,053.6	82%	1,048.9	82%	420.7	33%
	ICHvk1	14,689.1	13%	1909.6	3,928.3	206%	707.2	37%	421.9	22%
ICHwk1	19,302.7	13%	2509.4	2,589.2	103%	1,577.6	63%	308.0	12%	
Harris, Int.	ESSFdc1	3,152.0	9%	283.7	244.2	86%	341.8	120%	68.8	24%
	ESSFdc2	3,542.3	14%	495.9	1,456.5	294%	109.2	22%	48.7	10%
	ESSFmh	2,804.1	9%	252.4	6.2	2%	201.5	80%	-	0%
	ESSFxc2	5,374.4	14%	752.4	4,081.9	543%	270.5	36%	259.6	35%
	ICHmk1	9,475.8	14%	1326.6	1,756.6	132%	992.1	75%	394.5	30%
	ICHxm1	15,610.5	13%	2029.4	12.4	1%	1,835.3	90%	-	0%
	IDFhx1	58.7	13%	7.6	0.0	0%	0.8	10%	-	0%
	MSdm1	17,505.1	14%	2450.7	1,557.7	64%	2,058.3	84%	850.6	35%
Keremeos, Int.	ESSFxc1	11,513.4	14%	1611.9	4,261.5	264%	770.6	48%	610.4	38%
	ESSFxcw	2,017.0	14%	282.4	977.7	346%	525.5	186%	388.6	138%
	IDFdk1	13,056.0	13%	1697.3	1,106.7	65%	1,540.7	91%	192.1	11%
	IDFhx1	14,662.4	13%	1906.1	803.1	42%	922.0	48%	118.7	6%
	MSxk1	10,841.1	14%	1517.8	4,523.1	298%	1,350.4	89%	932.1	61%
	PPxh1	2,670.1	13%	347.1	50.0	14%	35.5	10%	-	0%

		Old Targets			Current Amount and Percents of Old					
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)	Policy Target Old (ha)	Policy Target Old CE-CFLB Area (%)	Current CE-CFLB Area of Old (ha)	Current CE-CFLB Area of Old (% of Policy Target)	Current CE-CFLB Area in OGMA (ha)	Current CE-CFLB Area in OGMA (% of Policy Target)	Current CE-CFLB Area of Old in OGMA (ha)	Current CE-CFLB Area of Old in OGMA (% of Policy Target)
Kettle, Low	ESSFdc1	6,305.4	9%	567.5	1,436.1	253%	406.5	72%	238.97	42%
	ESSFdc2	19,810.3	14%	2773.4	7,563.3	273%	491.2	18%	426.6	15%
	ESSFdcw	3,685.1	9%	331.7	213.9	64%	14.9	4%	2.6	1%
	ESSFmh	2,744.7	9%	247.0	562.9	228%	335.3	136%	124.2	50%
	ESSFxc2	623.1	14%	87.2	253.8	291%	-	0%	-	0%
	ICHmk1	2,529.1	14%	354.1	790.9	223%	169.7	48%	133.4	38%
	IDFdm1	1,918.0	13%	249.3	82.4	33%	78.6	32%	22.4	9%
	MSdm1	51,331.2	14%	7186.4	9,556.2	133%	2,054.0	29%	1,418.5	20%
Kingfisher, Int.	ESSFwc4	18,140.5	19%	3446.7	1,710.4	50%	1,937.3	56%	258.8	8%
	ESSFwcw	8,905.1	19%	1692.0	338.6	20%	630.7	37%	50.1	3%
	ESSFwh1	10,429.5	19%	1981.6	1,015.2	51%	1,192.0	60%	262.4	13%
	ICHdw4	17,167.6	14%	2403.5	2,799.5	116%	1,327.1	55%	662.2	28%
	ICHmw2	18,558.1	9%	1670.2	1,812.9	109%	1,632.6	98%	711.5	43%
	ICHmw3	2,622.2	9%	236.0	106.2	45%	125.3	53%	44.4	19%
	ICHmw5	4,410.4	9%	396.9	22.8	6%	241.8	61%	1.7	0.4%
	ICHvk1	345.8	13%	44.9	144.4	321%	65.1	145%	27.8	62%
	ICHwk1	5,540.5	13%	720.3	897.2	125%	642.4	89%	171.8	24%
	ICHxm1	1,793.0	13%	233.1	0.0	0%	47.1	20%	-	0%
Mabel, Low	ESSFdc1	660.1	9%	59.4	96.6	163%	118.0	199%	46.2	78%
	ESSFmh	6,167.7	9%	555.1	218.1	39%	179.5	32%	57.6	10%
	ESSFwc4	13,414.7	19%	2548.8	1,034.6	41%	600.8	24%	78.8	3%
	ESSFwcw	7,440.3	19%	1413.7	557.4	39%	596.8	42%	18.8	1%
	ESSFwh1	7,821.3	19%	1486.0	804.8	54%	336.1	23%	129.6	9%
	ICHdw4	13,245.9	14%	1854.4	2,770.3	149%	184.5	10%	85.0	5%
	ICHmw2	8,915.8	9%	802.4	665.8	83%	418.9	52%	82.6	10%
	ICHmw5	12,780.8	9%	1150.3	450.4	39%	385.6	34%	71.0	6%
	ICHwk1	6,055.1	13%	787.2	1,388.5	176%	401.4	51%	179.7	23%
ICHxm1	1,123.7	13%	146.1	0.0	0%	42.1	29%	-	0%	
Mission, Int.	ESSFdc2	15,672.9	14%	2194.2	5,344.2	244%	802.9	37%	501.3	23%
	ESSFdcw	2,160.4	9%	194.4	0.0	0%	116.1	60%	-	0%
	ESSFxc2	9,092.8	14%	1273.0	6,673.2	524%	351.6	28%	324.2	25%
	ICHmk1	22,924.6	14%	3209.4	5,185.9	162%	2,697.4	84%	1,138.9	35%
	ICHxm1	9,190.7	13%	1194.8	23.6	2%	878.5	74%	21.3	2%
	IDFdm1	3,151.4	13%	409.7	0.0	0%	-	0%	-	0%
	IDFxh1	5,224.1	13%	679.1	0.0	0%	64.4	9%	-	0%
	MSdm1	32,243.0	14%	4514.0	5,316.1	118%	3,240.6	72%	1,699.8	38%
PPxh1	4,089.1	13%	531.6	0.0	0%	-	0%	-	0%	

COLUMN CALCULATIONS:		Old Targets			Current Amount and Percents of Old					
		A	B	A*B=C	D	D/C	E	E/C	F	F/C
Landscape Unit, BEO	BEC Variant	Total BEC CE-CFLB (ha)	Policy Target Old (ha)	Policy Target Old CE-CFLB Area (%)	Current CE-CFLB Area of Old (ha)	Current CE-CFLB Area of Old (% of Policy Target)	Current CE-CFLB Area in OGMA (ha)	Current CE-CFLB Area in OGMA (% of Policy Target)	Current CE-CFLB Area of Old in OGMA (ha)	Current CE-CFLB Area of Old in OGMA (% of Policy Target)
Okanagan West Side, Int.	ESSFdc2	2,452.9	14%	343.4	179.9	52%	272.4	79%	73.0	21%
	ICHmk1	4,604.3	14%	644.6	651.3	101%	611.5	95%	179.2	28%
	ICHxm1	4,235.8	13%	550.7	0.0	0%	705.2	128%	-	0%
	IDFdk2	3,337.8	13%	433.9	0.5	0%	554.6	128%	-	0%
	IDFxh1	1,148.6	13%	149.3	0.0	0%	114.1	76%	-	0%
	MSdm2	7,378.4	14%	1033.0	742.1	72%	824.1	80%	206.3	20%
Okanagan West Side, Low	ESSFdc2	10,239.5	14%	1433.5	3,484.6	243%	348.5	24%	311.5	22%
	ESSFdcw	65.6	9%	5.9	0.0	0%	3.7	62%	-	0%
	ICHmk1	5,273.2	14%	738.3	2,338.1	317%	261.8	35%	221.9	30%
	ICHxm1	6,958.9	13%	904.7	191.9	21%	315.8	35%	52.4	6%
	IDFxh1	1,397.0	13%	181.6	0.0	0%	-	0%	-	0%
	MSdm2	9,286.2	14%	1300.1	3,309.1	255%	323.3	25%	253.1	19%
Pennask, Int.	ESSFdc2	10,682.0	14%	1495.5	3,696.9	247%	1,057.7	71%	915.9	61%
	ESSFxc2	5,472.2	14%	766.1	2,212.1	289%	1,114.7	146%	809.3	106%
	ESSFxcw	336.2	14%	47.1	123.2	262%	59.7	127%	51.6	110%
	IDFdk1	453.7	13%	59.0	0.0	0%	25.8	44%	-	0%
	MSdm2	23,577.0	14%	3300.8	5,013.8	152%	2,047.1	62%	1,393.2	42%
	MSxk1	9,062.7	14%	1268.8	1,777.3	140%	1,419.1	112%	479.6	38%
Penticton, Int.	ESSFdc2	11,031.2	14%	1544.4	2,744.0	178%	1,621.3	105%	687.5	45%
	ESSFdcw	1,276.0	9%	114.8	0.0	0%	500.7	436%	-	0%
	IDFdm1	11,302.7	13%	1469.3	968.9	66%	1,315.3	90%	260.7	18%
	IDFxh1	7,505.3	13%	975.7	766.3	79%	1,458.0	149%	340.3	35%
	MSdm1	29,547.5	14%	4136.7	5,055.4	122%	2,810.2	68%	1,081.3	26%
	PPxh1	4,979.5	13%	647.3	184.3	28%	301.6	47%	16.7	3%
Pukeashun, Int.	ESSFwc2	24,894.5	19%	4730.0	1,319.8	28%	26.2	1%	8.8	0.2%
	ESSFwcw	5,242.2	19%	996.0	101.7	10%	-	0%	-	0%
	ICHmk2	890.8	14%	124.7	206.5	166%	97.4	78%	60.8	49%
	ICHmw3	8,532.4	9%	767.9	539.0	70%	1,033.7	135%	136.4	18%
	ICHwk1	16,162.9	13%	2101.2	1,762.5	84%	475.7	23%	216.4	10%
	IDFmw2	3,493.2	13%	454.1	0.0	0%	326.6	72%	-	0%
Salmon Arm, Int.	ESSFdc3	12,606.3	14%	1764.9	4,083.4	231%	1,479.8	84%	1,252.5	71%
	ICHdw4	10,492.2	14%	1468.9	2,316.7	158%	678.3	46%	343.1	23%
	ICHmk1	2,439.7	14%	341.6	153.9	45%	58.2	17%	6.7	2%
	ICHmk2	13,250.4	14%	1855.1	2,618.8	141%	1,659.9	89%	797.1	43%
	ICHmw3	1,839.6	9%	165.6	19.4	12%	373.4	226%	0.2	0.1%
	ICHmw5	8,050.3	9%	724.5	296.9	41%	1,169.6	161%	238.5	33%



		Old Targets			Current Amount and Percents of Old					
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)	Policy Target Old (ha)	Policy Target Old CE-CFLB Area (%)	Current CE-CFLB Area of Old (ha)	Current CE-CFLB Area of Old (% of Policy Target)	Current CE-CFLB Area in OGMA (ha)	Current CE-CFLB Area in OGMA (% of Policy Target)	Current CE-CFLB Area of Old in OGMA (ha)	Current CE-CFLB Area of Old in OGMA (% of Policy Target)
Salmon Arm, Int.	ICHxm1	14,114.9	13%	1834.9	0.0	0%	617.0	34%	-	0%
	IDFdk2	2,562.8	13%	333.2	257.1	77%	266.9	80%	45.1	14%
	IDFmw2	16,401.1	13%	2132.1	253.7	12%	2,221.2	104%	71.2	3%
	IDFhx1	271.8	13%	35.3	0.0	0%	42.3	120%	-	0%
	IDFhx2	1,675.7	13%	217.8	0.1	0%	262.0	120%	-	0%
	MSdm3	9,977.9	14%	1396.9	2,125.1	152%	759.8	54%	458.5	33%
	PPxh2	45.1	13%	5.9	0.0	0%	6.7	114%	-	0%
Seymour, High	ESSFvc	14,352.2	28%	4018.6	4,531.5	113%	36.4	1%	28.6	1%
	ESSFvcw	4,420.4	28%	1237.7	657.3	53%	-	0%	-	0%
	ESSFwc2	14,230.5	28%	3984.6	1,494.3	38%	13.2	0%	1.5	0%
	ESSFwcw	1,893.1	28%	530.1	75.7	14%	-	0%	-	0%
	ICHmw3	20,504.1	13%	2665.5	2,084.3	78%	3,269.3	123%	1,096.1	41%
	ICHvk1	8,181.1	19%	1554.4	4,408.2	284%	706.5	45%	569.1	37%
	ICHwk1	20,669.7	19%	3927.2	4,926.4	125%	1,011.9	26%	381.7	10%
Trepanier, Int.	ESSFdc2	1,539.0	14%	215.5	679.2	315%	223.2	104%	127.4	59%
	ESSFxc2	1,893.7	14%	265.1	851.4	321%	248.3	94%	193.9	73%
	ICHxm1	4.1	13%	0.5	0.0	1%	-	0%	-	0%
	IDFdk2	23,089.3	13%	3001.6	61.8	2%	2,421.1	81%	29.5	1%
	IDFhx1	6,774.5	13%	880.7	11.6	1%	1,119.6	127%	10.7	1%
	MSdm2	20,252.7	14%	2835.4	4,867.5	172%	1,874.3	66%	1,292.4	46%
	PPxh1	1,692.2	13%	220.0	0.0	0%	322.5	147%	-	0%
Trepanier, Low	ESSFdc2	8,344.8	14%	1168.3	3,073.9	263%	440.9	38%	433.7	37%
	ICHmk1	1,024.5	14%	143.4	285.1	199%	75.2	52%	47.9	33%
	ICHxm1	1,893.9	13%	246.2	2.2	1%	42.7	17%	-	0%
	IDFdk2	5,411.4	13%	703.5	0.2	0%	188.8	27%	-	0%
	IDFhx1	2,668.0	13%	346.8	47.2	14%	113.2	33%	34.1	10%
	MSdm2	24,759.6	14%	3466.3	4,715.2	136%	842.6	24%	570.8	16%
	PPxh1	262.8	13%	34.2	3.8	11%	1.1	3%	1.0	3%
Trinity, Low	ESSFdc1	1,689.1	9%	152.0	0.0	0%	-	0%	-	0%
	ESSFdcw	66.0	9%	5.9	0.0	0%	-	0%	-	0%
	ESSFmh	4,327.4	9%	389.5	0.0	0%	0.2	0%	-	0%
	ICHdw4	27,403.3	14%	3836.5	4,877.4	127%	912.2	24%	533.1	14%
	ICHmk1	2,211.1	14%	309.6	546.2	176%	24.0	8%	1.5	0.5%
	ICHmw5	21,201.2	9%	1908.1	536.3	28%	623.0	33%	222.0	12%
	ICHxm1	5,505.9	13%	715.8	0.0	0%	82.7	12%	-	0%
	IDFhx1	26.0	13%	3.4	0.0	0%	-	0%	-	0%

COLUMN CALCULATIONS:		Old Targets			Current Amount and Percents of Old					
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Trout, Int.	ESSFdc2	4,125.2	14%	577.5	770.1	133%	180.2	31%	60.9	11%
	ESSFxc1	7,231.7	14%	1012.4	4,283.4	423%	619.6	61%	569.1	56%
	ESSFxc2	3,043.3	14%	426.1	1,229.8	289%	87.1	20%	83.6	20%
	ESSFxcw	934.4	14%	130.8	765.0	585%	22.3	17%	21.7	17%
	IDFdk1	12,129.0	13%	1576.8	109.8	7%	1,218.2	77%	12.2	1%
	IDFdk2	14,130.5	13%	1837.0	7.7	0%	1,460.5	80%	1.7	0.1%
	IDFhx1	13,089.3	13%	1701.6	243.5	14%	1,480.9	87%	64.6	4%
	MSdm2	23,718.8	14%	3320.6	3,844.1	116%	2,203.9	66%	1,076.3	32%
	MSxk1	12,815.1	14%	1794.1	4,361.5	243%	1,849.9	103%	1,510.0	84%
PPxh1	5,435.4	13%	706.6	8.5	1%	738.3	104%	1.2	0.2%	
Upper Kettle, Low	ESSFdc1	27,907.4	9%	2511.7	593.2	24%	1,619.5	64%	113.0	4%
	ESSFdcw	2,672.2	9%	240.5	0.5	0%	239.2	99%	-	0%
	ESSFmh	27,866.0	9%	2507.9	291.9	12%	653.1	26%	36.7	1%
	ESSFwc4	2,523.3	19%	479.4	35.6	7%	94.0	20%	-	0%
	ESSFwcw	289.3	19%	55.0	0.0	0%	15.6	28%	-	0%
	ESSFwh1	5,846.3	19%	1110.8	442.2	40%	243.5	22%	73.2	7%
	ESSFxc2	1,654.8	14%	231.7	881.5	380%	53.2	23%	52.6	23%
	ICHmk1	1,106.4	14%	154.9	442.6	286%	113.6	73%	99.1	64%
	ICHmw2	53.0	9%	4.8	0.0	0%	-	0%	-	0%
ICHmw5	6,408.6	9%	576.8	277.9	48%	395.6	69%	83.7	15%	
Upper Salmon, Low	ESSFdc2	11,779.2	14%	1649.1	3,288.8	199%	884.5	54%	780.5	47%
	ESSFdc3	6,364.7	14%	891.1	1,590.3	178%	359.6	40%	307.9	35%
	ESSFdcw	37.9	9%	3.4	0.0	0%	-	0%	-	0%
	ICHmk1	2,144.3	14%	300.2	148.8	50%	116.8	39%	28.3	9%
	ICHmk2	2,604.1	14%	364.6	653.5	179%	202.3	55%	186.3	51%
	ICHxm1	5,315.4	13%	691.0	16.5	2%	95.8	14%	16.5	2%
	IDFdk1	6,594.8	13%	857.3	41.3	5%	185.7	22%	4.1	0.5%
	IDFdk2	30,657.7	13%	3985.5	279.7	7%	1,671.0	42%	114.8	3%
	IDFhx1	1,249.9	13%	162.5	0.0	0%	100.6	62%	0.3	0.2%
	IDFhx2	5,939.8	13%	772.2	12.7	2%	489.9	63%	-	0%
	MSdm2	24,145.5	14%	3380.4	2,719.8	80%	917.7	27%	483.1	14%
	MSdm3	6,162.4	14%	862.7	1,376.5	160%	350.9	41%	245.7	28%
MSxk2	1,051.8	14%	147.2	19.7	13%	42.6	29%	2.1	1%	

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Upper Shuswap, High	ESSFdc1	266.0	13%	34.6	1.0	3%	-	0%	-	0%
	ESSFmh	281.6	13%	36.6	19.9	54%	-	0%	-	0%
	ESSFwc4	16,866.7	28%	4722.7	962.8	20%	1,658.2	35%	235.6	5%
	ESSFwcw	13,249.4	28%	3709.8	260.5	7%	1,133.9	31%	94.1	3%
	ESSFwh1	16,414.6	28%	4596.1	2,106.6	46%	1,773.4	39%	589.0	13%
	ICHdw4	3,190.0	21%	669.9	897.8	134%	348.1	52%	141.4	21%
	ICHmw2	21,217.8	13%	2758.3	1,332.8	48%	1,918.5	70%	366.9	13%
	ICHmw5	324.5	13%	42.2	0.0	0%	11.2	27%	-	0%
	ICHvk1	2,968.5	19%	564.0	906.2	161%	44.3	8%	32.4	6%
ICHwk1	13,826.8	19%	2627.1	3,233.6	123%	1,881.7	72%	916.1	35%	
Vernon, Low	ESSFdc1	272.0	9%	24.5	0.0	0%	-	0%	-	0%
	ESSFdc2	288.6	14%	40.4	53.1	131%	31.9	79%	1.6	4%
	ESSFdcw	29.5	9%	2.7	0.0	0%	-	0%	-	0%
	ESSFmh	1,065.5	9%	95.9	0.0	0%	10.4	11%	-	0%
	ICHmk1	12,300.5	14%	1722.1	2,879.5	167%	218.5	13%	88.2	5%
	ICHmw5	32.4	9%	2.9	0.0	0%	-	0%	-	0%
	ICHxm1	7,258.1	13%	943.6	5.7	1%	119.5	13%	-	0%
	IDFdm1	2,803.6	13%	364.5	0.0	0%	55.7	15%	-	0%
	IDFhx1	5,053.9	13%	657.0	1.7	0%	67.3	10%	-	0%
	MSdm1	18,346.0	14%	2568.4	2,294.4	89%	654.2	25%	262.9	10%
PPxh1	268.7	13%	34.9	0.0	0%	-	0%	-	0%	
White, Low	ESSFdc1	493.9	9%	44.4	0.0	0%	49.4	111%	-	0%
	ESSFmh	1,347.1	9%	121.2	0.0	0%	51.8	43%	-	0%
	ICHdw4	11,139.6	14%	1559.5	1,637.8	105%	337.2	22%	99.7	6%
	ICHmw5	11,470.9	9%	1032.4	58.0	6%	485.4	47%	30.8	3%
	ICHxm1	961.2	13%	125.0	0.0	0%	86.9	70%	-	0%
	IDFmw2	614.7	13%	79.9	0.0	0%	7.7	10%	-	0%
<b>TOTAL</b>		<b>1,862,914.7</b>		<b>271,769.3</b>	<b>285,572.5</b>	<b>105%</b>	<b>123,773.6</b>	<b>46%</b>	<b>43,131.1</b>	<b>16%</b>



Ministry of  
Water, Land and  
Resource Stewardship

**CEF** Cumulative  
Effects  
Framework