

2019 Annual Report

Sustainable Forest Management Plan

Canfor Kootenay Operations



Canadian Forest Products Ltd.
Kootenay Operations



November 16th, 2020

Executive Summary

Canfor's Kootenay Division is certified under two Sustainable Forest Management Certification schemes. The Radium and Wynndel Forest Licenses (FL A18979 and FL A20214, respectively) are currently certified under the Sustainable Forestry Initiative (SFI). The Wynndel portion of the East Kootenay Operating area is not covered in this report. The rest of Canfor's Kootenay Operating Area is certified under the Forest Stewardship Council (FSC) BC 2005 Standard.

This is the seventeenth Annual Report for the Canfor East Kootenay Region, and the fourth under the current Sustainable Forest Management Plan (SFMP, Version 5.0), and summarizes the progress and performance made by Canfor to achieve the results within the SFMP. The FSC portion of the Kootenay Division is currently transitioning from the FSC-BC standard to the FSC National Forest Stewardship Standard of Canada (2018). This transition includes revisions/additions to current Indicators and Targets in order to align with the new standard. These updates will be detailed in Annual Reports until the SFMP undergoes a full update, anticipated to be complete by 2022.

Each of the four main value areas – ecological, economic, social, and Indigenous People – has a suite of associated measures and targets. This report provides information that demonstrates Canfor's performance relative to the indicators. The following table summarizes Canfor's overall achievements of meeting the assigned targets.

Table 1: Indicator Summary

Classification	Ecological	Economic & Social	Indigenous Peoples
Number of Indicators Achieved	30	11	4
Number of Indicators Pending	1	0	0
No Change from Current Condition in SFMP	3	0	0
Number of Indicators Not Met	3	0	1
Number of Indicators dropped	2	2	0
Total	39	13	5

None of the indicators not met were legal requirements, nor did they have significant environmental impacts. In each case, follow-up and corrective actions have been completed to minimize the likelihood of the incident occurring again.

The indicators not met included:

- 1) Indicator 18 - a raptor stick nest in TFL18, although it was protected with a large reserve, did not have the species using it determined nor a timing restriction prescribed as per the Sites of Biological Significance SWP. Thus, the target of having 100% of site plans following appropriate SWPs for sites of biological significance was not met (12/13 = 92%).
- 2) Indicator 21 – Four of five blocks treated for invasive plants in 2018 were followed up in 2019, which meant our target of having 100% of all blocks followed up was not met. The missing block was due to a miscommunication and will be surveyed in 2020.

2019 Annual Report – Canfor Kootenay Operations

- 3) Indicator 26 – Large Coarse Woody Debris targets were not met in all Licences for all site types. How this indicator is being monitored is currently being assessed, as sampling methods are thought not to reflect the variability of density and piece size present on sites.
- 4) Indicator 47 – 5 blocks within Cultural and Conservation Value Areas that were to have all veteran trees prescribed for retention had fewer than all prescribed, due to procedure not followed. As a result, the definition of veteran tree has been clarified in the CCVF management strategies and communicated to appropriate staff.

Table of Contents

EXECUTIVE SUMMARY	2
1.0 INTRODUCTION	7
SFM Framework	7
Focused and Public Review	8
Kootenay Forest Management Units	8
2.0 STRATEGIC LEVEL	9
Criterion 1 – Biological Diversity	12
Element 1.1 – Ecosystem Diversity	12
Indicator 1 – Ecosystem Representation	12
Indicator 2 – Protected Reserves	13
Indicator 3 – Patch Size Distribution	15
Indicator 4 – Distribution of Forest Type	15
Indicator 5 – Old and Mature Forest Retention	17
Indicator 6 – Seral and Structural Stages Relative to the Range of Natural Variability	18
Indicator 7 – Interior Forest Habitat	19
Indicator 8 – Green Tree and Snag Retention	20
Indicator 9 – Wildlife Tree Patch Retention	21
Indicator 10 – High Value Snags	22
Indicator 11 – Riparian Management	22
Element 1.2 – Species Diversity & Element 1.3 – Genetic Diversity	23
Indicator 12 – Species of Management Concern – Habitat Protection	23
Indicator 13 – Species of Management Concern – Habitat Suitability	24
Indicator 14 – Tree Seed	25
Indicator 15 – Natural Regeneration	26
Indicator 16 – Mix of Species Planted	27
Indicator 17 – Managing for Species Diversity during Tree Thinning	27
Element 1.4 – Protected Areas and Sites of Special Biological and Cultural Significance	27
Indicator 2 – Protected Reserves	27
Indicator 18 – Sites of Biological Significance	27
Indicator 19 – High Conservation Value Areas	28
Criterion 2 – Ecosystem Condition and Productivity	30
Element 2.1 – Forest Ecosystem Condition and Productivity	30
Indicator 20 – Reforestation Success	30
Indicator 16 – Mix of Species Planted	30
Indicator 21 – Invasive Plants	30
Indicator 23 – Landslides	31
Indicator 24 – Land Conversion	32
Criterion 3 – Soil and Water	33
Element 3.1 – Soil Quality and Quantity	33
Indicator 26 – Detrimental Soil Disturbance	33
Indicator 27 – Coarse Woody Debris	33
Element 3.2 – Water Quality and Quantity	34
Indicator 28 – Sensitive Watersheds	34
Indicator 29 – Stream Crossing Sedimentation Control	35
Criterion 4 – Role in Global Ecological Cycles	36
Element 4.1 – Carbon Uptake and Storage	36
Indicator 20 – Reforestation Success	36
Indicator 14 – Tree Seed	36
Indicator 30 – Climate Change Adaptation	37
Element 4.2 – Forest Land Conversion	39
Indicator 22 – Permanent Access Structures	39

2019 Annual Report – Canfor Kootenay Operations

Indicator 24 – Land Conversion	39
Criterion 5 – Economic and Social Benefits.....	40
Element 5.1 – Timber and Non-timber Benefits	40
Indicator 25 – Volume Harvested Vs. Allocated	40
Indicator 31 – Primary and By-Products.....	41
Indicator 32 – Identified Non-Timber Forest Benefits.....	42
Indicator 33 – Overlapping Tenures	42
Element 5.2 – Communities and Sustainability	43
Indicator 34 – Local Procurement of Goods & Services	43
Indicator 35 – Corporate Sponsorships, Donations and Scholarships.....	43
Indicator 36 – Environmental & Safety Training	44
Indicator 37 – Direct & Indirect Employment	44
Criterion 6 – Society’s Responsibility	46
Element 6.1 – Fair and Effective Decision-making.....	46
Indicator 38 – PAG Satisfaction	46
Indicator 39 – Educational Opportunities – Information/Training.....	46
Indicator 39 – Educational Opportunity	46
Indicator 40 – SFM Monitoring Report.....	46
Indicator 41 – Third Party Verification	47
Indicator 44 – Indigenous Peoples Understanding of Plans	47
Element 6.2 – Safety	48
Indicator 42 – Certified Safety Program	48
Criterion 7 – Indigenous Relations	49
Element 7.1 – Indigenous Peoples and Treaty Rights.....	49
Indicator 43 – Indigenous Peoples Awareness Training.....	49
Indicator 44 – Indigenous Peoples Understanding of Plans	49
Element 7.2 – Respect for Indigenous Peoples Forest Values, Knowledge and Uses.....	51
Indicator 45 – Level of Indigenous Peoples Participation in the Forest Economy.....	51
Indicator 46 – Evidence of Understanding and Use of Indigenous Peoples Knowledge	52
Indicator 47 – Level of Management and/or Protection for Indigenous Peoples Culturally Important Sites, Practices and Activities.....	52
APPENDICES	54
Appendix I. Common Ecosystem Type Representation within HCVFs	54
Appendix II. IDFdm2 and PPdh BEC Variant Representation within HCVFs	55
Appendix III Invasive Plant Management Strategy	57

Figures

Figure 1. Percentage of CAD Spent Locally in FSC and SFI DFA's 2013-2019	43
Figure 2. Summary of Indigenous Peoples Woodlands contracts in CAD, 2016-2019	51

Tables

Table 1: Woodlands Administrative Organization (since 2018)	8
Table 2: Forest Management Units (Tenures /Licences) for Kootenay Woodlands (2019)	8
Table 3: Kootenay DFA Criteria, Element & Indicators – Ecological Values	9
Table 4: Kootenay DFA Criteria, Element & Indicators – Economic & Social Values.....	10
Table 5: Summary of results of Protected Areas Analysis and Actions	13
Table 6: Harvesting Above Operability Line or on Unique/Ecologically Sensitive Sites	14
Table 7: Target Patch Size Distributions for the NDTs in Canfor’s DFA	15
Table 8: Definitions of broad forest types.....	16
Table 9: Percent distribution of broad type by BEC by Forest License as of September 2016	16
Table 10: Median OGMA/MMA polygon size by ecosection in the DFA.....	19

2019 Annual Report – Canfor Kootenay Operations

Table 11: FSC-BC Indicator 6.3.9 minimum retention levels of dominant and co-dominant trees within each cutblock area (>200 m wide or 100 ha in aggregate).....	20
Table 12: Percentage of blocks meeting green tree and snag retention targets in FSC certified areas between 2009 and 2019.....	20
Table 13: % WTP by Major Forest License for blocks with harvest completed between April 1st 2019 and March 31st 2020.....	21
Table 14: Summary of HVS observations as part of 2016 HCVF Effectiveness Monitoring Program.....	22
Table 15: Number of blocks harvested in 2019 following SWPs for SoMC when block overlaps with habitat for SoMC.....	23
Table 16: Natural Regeneration within 2019 Free-Growing cutblocks	26
Table 17: Summary of planting by licence in 2019.....	27
Table 18: Number and percentage of blocks following SWPs for Sites of Biological Significance (SBS) for blocks harvested in 2018 that overlap with a SBS.....	28
Table 19: Summary or HCVA management strategy review for cutblocks harvested in the 2019 calendar year.....	28
Table 20: Summary of invasive plant treatments by blocks in 2019.....	31
Table 21: Percent Permanent Access Structures for Landscape Units in the DFA	31
Table 22: Current FSC Certified DFA – by TSA	32
Table 23: Mean and Median pieces per hectare of Coarse Woody Debris >20 cm diameter and >10 m long for blocks harvested in 2019	34
Table 24: Hydrological Assessments	34
Table 25: Harvest Results – 2019	41
Table 26: Radium Employment 2014-2019.....	44
Table 27: Kootenay FSC DFA Employment 2014-2019.....	44
Table 28: Summary CCVF management strategy review for cutblocks harvested in the 2019 calendar year.....	53

1.0 Introduction

Canfor's Sustainable Forest Management is based upon a set of local criteria, indicators, measures and targets; initially developed in 2003 from a review of national and internationally recognized frameworks of sustainable forest management and updated periodically. A corresponding set of strategies in the company's Sustainable Forest Management Plan (SFMP) specify how Canfor will achieve those goals throughout their Kootenay Defined Forest Area (DFA, please refer to Section 3.0 of the SFMP for a detailed description). The Criteria¹, Indicators² and strategies described in the SFMP are consistent with the company's environmental program and are intended to satisfy many aspects of the Canfor's Forest Stewardship Council (FSC) forest management standard, and Sustainable Forestry Initiative (SFI) requirements and guidance. The Wynndel license (FL A20214) is not included in these results.

Canfor's Annual Report (AR) is a companion document to the current SFMP and is an important aspect of the long-term evaluation, assessment and monitoring of the SFMP's effectiveness. As part of the continuous improvement and Adaptive Management principle, it is a critical part of the feedback loop in the Sustainable Forest Management Framework and process. The Annual Report presents information about Canfor's Woodlands operations in the Kootenay Region in four broad categories – First Nations, environmental, economic and social. The statistical information and commentary are intended to report on the status of the goals in the SFMP.

Many of the larger wood products customers require that a forest company have third party certification for their woodlands operations. Canfor in the East Kootenay maintains both SFI and FSC. The FSC portion of the Kootenay Division is currently transitioning from the FSC-BC standard to the FSC National Forest Stewardship Standard of Canada (referred to as "NFSS", FSC-STD-CAN-01-2018 V 1-0). This transition includes revisions/additions to current Indicators and Targets in order to align with the NFSS. These updates will be detailed in Annual Reports until the SFMP undergoes a full update, anticipated in 2022 (5 years since last revision).

SFM Framework

Canfor's Sustainable Forest Management Framework uses a *Criteria and Indicator* approach to achieve its forest management objectives. Initially Criteria are established for *Ecological, Social, and Economic* values, and several key Indicators identified for each criterion. For each indicator a measurable target is also established. Assuming suitable indicators have been chosen for each criterion, and an appropriate cost-effective means to measure the value has been established - planned measurements can be made and compiled for analysis. The *Sustainable Forest Management Plan: Canfor Kootenay Operations* (December 2017) contains the full set of local Criteria, Indicators, Measures and Targets. The current SFMP outlines the strategies that will be implemented, and an approach for monitoring each target.

Often in forestry the measurements and frequency of information collected will vary depending upon what is being collected, and why. As Canfor implements, and reports on the targets set out it will be possible to evaluate the suitability of each measure toward meeting the desired outcome. From this information, Canfor will be able to determine appropriate and necessary changes to the SFMP, and applicable operational practices. In a practicable sense, it is Canfor's intention to establish longer-term (five year) trends/data and information with regard to the established indicators and strategies. This will

¹ Criteria – are broad management statements that can be demonstrated through the repeated, long-term measurement of associated indicators.

² Indicators – are used to help assess the success of meeting the sustainable forest management criteria and are periodically monitored to assess their suitability to represent the intent of the criteria.

2019 Annual Report – Canfor Kootenay Operations

provide useful guidance for periodic plan revisions and, where necessary, changes to the criteria, indicators and measures of sustainability.

Focused and Public Review

An important goal of the Annual Report is to document and inform our managers and resource staff on our progress toward meeting the sustainable forest management goals. On-going improvements to Canfor's forest management practices also rely upon informed advice and participation from a wide range of interests, as well as directly affected parties with regard to our forest activities. As such our Woodlands staff seeks input on an on-going basis, both formally and informally through numerous processes. Each year this report is made available for comments and stakeholder input, through our various advisory and consultation process including being posted to the Canfor corporate website.

Kootenay Forest Management Units

In March 2012, Canfor acquired Tembec's major forest licenses in the Kootenay Region. More recently, in April 2016, Canfor completed the acquisition of Wynndel Box and Lumber (WynnWood). Canfor's primary forest tenures in the East Kootenay were FSC certified beginning in the fall of 2004. Canfor's Radium license, FL A18979, and the WynnWood tenure are Sustainable Forestry Initiative (SFI) certified. In addition, over the past several years, an assortment of additional non-renewable, renewable and minor licences have been issued to Canfor by the province. In some cases, Canfor manages these tenures on behalf of their owner, such as a First Nation business or organization. Often these minor tenures are not included in the SFMP nor are they within the scope of Canfor's Forest Management certifications. The 'Management Unit' (MU³) descriptions in this report are based on the provincial government licenses and tenures. Using this approach allows for Annual reporting of the results for all Canfor's forest management units/tenures, regardless of being 'certified' or not.

Table 1: Woodlands Administrative Organization (since 2018)

Timber Supply Area (TSA)	Major Tenures Licences	Certified
Tree Farm Licence 14	TFL 14	FSC
Invermere TSA	FL A18978	FSC
Invermere TSA	FL A18979	SFI
Kootenay Lake TSA	FL A20212	FSC
Cranbrook TSA	FL A19040	FSC
Kootenay Lake TSA	FL A20214	SFI

Table 2: Forest Management Units (Tenures /Licences) for Kootenay Woodlands (2019)

Minor Tenures		Timber Supply Area (TSA)	Certified
NRFL A86246	Lower Kootenay Band	Kootenay Lake TSA	FSC
NRFL A86450	Skookumchuk Pasture	Invermere TSA	No
NRFL A84741	Rouse Pasture	Cranbrook TSA	No
NRFL A81369	Nupqu Inv	Invermere TSA	FSC
NRFL A81368	Kinbasket Dev Corp	Cranbrook TSA	FSC
NRFL A82929	NUPQU	Cranbrook TSA	FSC
NRFL A88226	Tobacco Plains	Cranbrook TSA	FSC
NRFL A82928	Tobacco Plains	Cranbrook TSA	FSC

³ Management Unit is the term used by FSC to describe the area of the forest that is certified.

2019 Annual Report – Canfor Kootenay Operations

Minor Tenures		Timber Supply Area (TSA)	Certified
FL A91306	?Aq'am	Cranbrook TSA	FSC
FL A91307	Tobacco Plains	Cranbrook TSA	FSC
FL A91309	Lower Kootenay Band	Kootenay Lake TSA	FSC
FL A91308	Akisqnuk Band	Invermere TSA	FSC
FL A90310	Shuswap Indian Band	Invermere TSA	SFI
K1W	Ktunaxa Nation Council	Federal Dominion Coal – Block Lands	No

2.0 Strategic Level

The strategic level for SFM establishes broad management objectives or sustainability criteria over as large an area as possible over a long-time frame (from 100 to 300 years). At this level, the overall strategy for the DFA is defined.

The Canadian Council of Forest Ministers (CCFM) Criteria and Indicators (C&I) and the Forest Stewardship Council FSC-BC Standards guided the development of the SFM Criteria and Indicators that were used as a starting point for the original SFM Plan (2004). The current SFMP aligns with Canfor core indicators and FSC-BC Standard, October 2005. Even though the C&I numbering structure follows the CSA Standard (which Canfor is no longer certified under), many of the locally developed Indicators address the specific requirements of the FSC Standard.

The establishment of Criteria, Elements, Indicators and Targets is undertaken at the strategic level. They can be used both to gauge the sustainability of strategic alternatives and assess broad trade-offs. Elicitation and consideration of stakeholder and public views on the indicators and targets, and the priorities amongst them, are an important component of this level. The information and strategies developed at the strategic level are used to guide the tactical and operational level activities.

A summary listing of locally important Criteria, Elements, and Indicators for the Ecological (Table 3), Economic and Social (Table 4) Values are provided below.

Table 3: Kootenay DFA Criteria, Element & Indicators – Ecological Values

C1. Biological Diversity
1.1 Ecosystem Diversity
1 – Ecosystem Representation
2 – Protected Reserves
3 – Patch Size Distribution by Natural Disturbance Type
4 – Distribution of Forest Type
5 – Old and Mature Forest Retention
6 – Seral and Structural Stages Relative to RNV
7 – Interior Forest Habitat
8 – Green Tree and Snag Retention
9 – Landscape Unit Wildlife Tree Patch Retention
10 – High Value Snags (<i>dropped in 2019</i>)
11 – Riparian Management
1.2 & 1.3 Species & Genetic Diversity
12 – Species of Management Concern – Habitat Protection
13 – Species of Management Concern – Habitat Suitability
14 – Tree Seed
15 – Natural Regeneration
16 – Mix of Species Planted
17 – Managing for Species Diversity during Tree Thinning

1.4 Protected Areas & Sites
2 – Protected Reserves
18 – Sites of Biological Significance
19 – High Conservation Value Forests
47 – Level of Management &/or Protection – Indigenous Peoples Culturally Important Sites, Practices & Activities
C2. Ecosystem Condition & Productivity
2.1 Forest Ecosystem Condition and Productivity
20 – Reforestation Success
16 – Mix of Species Planted
21 – Invasive Plant Species
22 – Permanent Access Structures
23 – Landslides
24 – Land Conversion
25 – Volume Harvested Vs. Allocated
C3. Soil & Water
3.1 Soil Quality & Quantity
3.1 Soil Quality & Quantity
26 – Detrimental Soil Disturbance
27 – Coarse Woody Debris
3.2 Water Quality & Quantity
28 – Sensitive Watersheds
29 – Stream Crossing Sedimentation Control
C4. Role of Global Ecological Cycles
4.1 Carbon Uptake and Storage
5 – Retention of Existing Old Forest
20 – Reforestation Success
14 – Tree Seed
30 – Climate Change Adaptation
4.2 Forest Land Conversion
22 – Permanent Access Structures
24 – Land Conversion

Table 4: Kootenay DFA Criteria, Element & Indicators – Economic & Social Values

C5. Economic & Social Benefits
5.1 Timber & Non-Timber Benefits
25 – Volume Harvested Vs. Allocated
31 – Primary And By-Products
32 – Non-Timber Benefits
33 – Overlapping Tenures
5.2 Communities & Sustainability
34 – Investment In Local Communities – Local Procurement
35 – Investment In Local Communities – Sponsorships, Donations and Scholarships
36 – Environmental & Safety Training
37 – Direct & Indirect Employment
C6. Society's Responsibility
6.1 Fair & Effective Decision-Making
38 – PAG Satisfaction (<i>dropped in 2019</i>)
39 – Educational Opportunities – Information/Training
40 – SFM Monitoring Report Public
41 – Third Party Verification

2019 Annual Report – Canfor Kootenay Operations

6.2 Safety

42 – Certified Safety Program

C7. Indigenous Relations

7.1 Indigenous Peoples & Treaty Rights

43 – Indigenous Peoples Awareness Training

44 – Indigenous Peoples Understanding of the Plans

7.2 Indigenous Peoples Forest Values, Knowledge & Uses

45 – Level of Indigenous Peoples Participation in the Forest Economy

46 – Evidence of Understanding and Use of Indigenous Peoples Knowledge

47 – Level of Management &/or Protection – Indigenous Peoples Culturally Important Sites, Practices & Activities

Criterion 1 – Biological Diversity

Element 1.1 – Ecosystem Diversity

Indicator 1 – Ecosystem Representation

Indicator Statement	Target (Variance)	Results
Representation of ecosystem groups across the DFA	Rare Ecosystems – Reserve (0 ha with harvest or roads)	Achieved
	Uncommon Ecosystems – Reserve and/or retain high levels of structural retention for those ecosystems below target levels	Achieved
	Common Ecosystems – Maintain at least 25% of each ecosystem in the NHLB (Non-Harvestable Land base) or under an ecosystem restoration or High Conservation Value Forest management regime.	Achieved – Five of eight ecosystems have >25% in NHLB; the two of the three below 25% have HCVFs designated within them up to target levels. Group 4 will be re-assessed against targets after representation analysis re-done.

The results for this indicator for Rare and Uncommon Ecosystems are based on data from cutblocks harvested (Harvest Complete) between 1 January 2019 and 31 December 2019. GIS overlay analysis indicated that no blocks contained Rare Ecosystems within their net area (the area of the block that is harvested, not including reserves), thus achieving the target for Rare Ecosystems. A list of Rare Ecosystems can be found in Table 32 in the SFMP, under the Ecosystem Representation Indicator 1.

Three blocks had field-verified uncommon types greater 0.25 ha. In all cases, verified overlap was protected in Wildlife tree patches. Two blocks were predicted to overlap more than 0.25 ha with uncommon ecosystem types, but were unable to be field verified (due to extreme fire damage). Protection measures included protection of riparian features through wildlife tree patches and winter harvest to minimize ground disturbance.

Two of the three common ecosystems that are below the NHLB target of 25% include the BEC variants which have been identified as those being the furthest from historic conditions, and which require ecosystem restoration to restore their conservation value and habitat for threatened and endangered species. Simply identifying areas to protect from logging as part of a protected reserves network will not achieve the ecological goals for these ecosystems, because, on most sites, trees have encroached and ingrown onto the grasslands and Open Forest within them and must be removed to restore the ecological function of the site. There are several HCVFs that overlap with these common ecosystems and have ecosystem restoration as their management strategy. The amount of overlap between these common ecosystem types and HCVFs has been calculated and compared against the amounts to be added to NHLB, harvested under Ecosystem Management, or HCVF Management to meet targets as listed in Table 37 of the SFMP. The area of HCVFs in common ecosystem types was much greater than the target amount; details of this analysis are found in Appendix I.

2019 Annual Report – Canfor Kootenay Operations

In addition, one common ecosystem group (Group 4, Circum-mesic ICHdw/dm) requires an additional 730 ha to be added to NHLB, harvested under Ecosystem Restoration, or HCVF Management to meet targets as listed in Table 37 of the SFMP. Estimates for actual vs. target areas for this group will be calculated after the new BECs are finalized and the representation analysis has been redone.

Indicator 2 – Protected Reserves

Indicator Statement	Target (Variance)	Results
Percent of area in protected reserves, by BGC variant and management unit, within the DFA	12 – 24%	Achieved, with consideration of HCVFs in the IDFdm2 and PPdh. Analysis to be re-run in 2020.

The specific targets for each BEC/ecological unit within each Licence unit are shown in Tables 39-42 of the SFMP, together with the surpluses and deficits relative to the targets. Table 5 and Table 6 below provide a summary of the results and the actions taken to address any deficits that exist. This indicator is only specific to the FSC Standard.

Deficits relative to targets were primarily found within the lowest elevation BGC variants; the PPdh2 and IDFdm2. In these ecosystems, restoration, rather than protection, is often required in order to maintain native species and ecological processes. This is because of the change in fire regimes since European settlement, and the resultant increase in tree ingrowth and encroachment onto grasslands and open forests (See SFMP Section 4.3 The Range of Natural Variability for more detail). Thus, a key strategy for meeting protected area targets in these variants is the application of ecosystem restoration logging (following the Best Management Practices for Ecosystem Restoration), followed by prescribed burning, rather than setting areas aside as protected reserves. Since there are many HCVFs in these BEC variants that have ecosystem restoration as their management strategy, in 2016 the deficits were examined relative to HCVF amounts. The area of HCVFs in these BEC variants was much greater than the deficit area; details are found in Appendix II.

Table 5: Summary of results of Protected Areas Analysis and Actions

Management Unit (MU)	Total BEC Variants/ Ecological units in MU	No. BEC variants where target not achieved by reserves alone	BEC variants below target	Actions taken to address deficits
TFL 14	9	2	ICHwm1, ICHmk1	Additional reserves established to meet target levels
A18978	8	2	IDFdm2, PPdh2	HCVFs designated in these BECs to meet target levels
A18979	22	2	IDFdm2, MSdk2	IDFdm2 – HCVFs designated to target level, MSdk – additional reserves established to meet target
A19040/ A20212	18	2	IDFdm2, PPdh2	HCVFs designated to meet target levels

Changes in this indicator occur gradually in most BEC variants, due to the large area of the unit relative to the small amount harvested each year in that unit. Thus, this analysis is re-done every 10 years, or within 2 years of a new TSR being completed. Until the new analysis is completed, the amount of

2019 Annual Report – Canfor Kootenay Operations

harvesting in the inoperable area is being tracked. Since the inoperable is treated as a reserve in the analysis, harvesting within it depletes the area of reserves and could cause some BEC units to fall below target. For further explanation, see Indicator 2 in the SFMP.

In 2019, GIS overlay analysis indicated 53 blocks had some amount of harvesting above the operability line, ranging from 0.01 ha to 78.1 ha. All variants in which harvesting occurred above the operability line had large surpluses of protected reserves (Table 6), meaning that the small amount of activity that occurred did not create any deficits with respect to targets. In addition, no harvesting or road building above the operability line occurred on any unique or ecologically sensitive sites, including rare and uncommon ecosystem groups, caribou habitat, and whitebark pine leading stands (Impact on special values, Table 6).

The protected reserves analysis will be run within two years of the legal adoption of new mapping of BEC variants.

Table 6: Harvesting Above Operability Line or on Unique/Ecologically Sensitive Sites

License Management Unit	BEC variant ¹	Surplus Reserves ² (ha)	Area (ha) impacted by harvesting		Current Reserves (Surplus minus harvest-to-date)	Impact 2007-2019 on special values?
			2019	2007-2018		
TFL 14	ESSFdk	1,822	0	16	1,805	No
	ESSFwm	5,033	0	2	5,031	No
A18978 (includes MF72, A81369)	ESSFdk	49,080	5	253	48,847	No
	MSdk	8,984	4	64	8,924	No
	ICHmk	289	0	10	279	No
	IDFdm2	1,401*	2	3	1,401	No
	ESSFdku	23,531	0	6	23,525	No
A18979** (includes A90310)	ESSFdk	55,455	168	727	54,934	No
	ICHmk	8,282	7	68	8,225	No
	IDFdm2	861	0	0	861	No
	MSdk	9329	23	97	9,256	No
A19040 and A20212 (includes A80321, A91308, K1W)	ESSFdk	66,321	21	1159	65,269	No
	ESSFdm	22,968	0	141	22,828	No
	ESSFwm	20,717	54	30	20,741	No
	MSdk1/2	8,965	147	535	8,586	No
	ICHdm	9,772	120	230	9,662	No
	ICHdw1	1,491	10	20	1,481	No
	ICHmk1	3,392	23	114	3,301	No
	IDFdm2	11,684	0	17	11,674	No

¹ BEC variants not included in this table that are known to occur within the areas have not been impacted by harvesting.

² Surplus reserves come from 2006 data for TFL 14 and A18978, and from 2012 data for A19040 and A20212

*Considering HCVF as reserves, as per the Protected Areas report.

**Area impacted by harvesting for 2014-2017 only

2019 Annual Report – Canfor Kootenay Operations

Indicator 3 – Patch Size Distribution

Indicator Statement	Target (Variance)	Results
Patch size distribution by Natural Disturbance Type (NDT), within Ecosections	Trend towards patch size distribution targets as defined in the Biodiversity Guidebook (Table 21), by Natural Disturbance Type (NDT) within Ecosections, over the mid-term (20-50 yrs)	Trend to be evaluated in 2020

Patch size distributions have been re-run for the entire East Kootenay Operating area as a result of the 2017 and 2018 wildfires, and are up to date as of December 2018. The 2017 and 2018 wildfires shifted patch size distributions in several Ecosections (Ecosections 1, 4, 5, 7, 9, 14, 15, 16). The updated information has been communicated and made available to Planning and Permitting staff, and will be used to influence planning decisions going forward. Further detail has also been added to the Planning and Permitting SFMP checklist requiring additional investigation into patch size targets on a block by block basis.

This information will also be used to inform revisions to the SFMP Patch Size Strategy, anticipated in 2020.

Table 7: Target Patch Size Distributions for the NDTs in Canfor's DFA

NDT2		NDT3		NDT4	
Patch size (ha)	Target Percentage Range	Patch size (ha)	Target Percentage Range	Patch size (ha)	Target Percentage Range
<40	30-40	<40	15-25	<40	30-40
40-80	30-40	40-250	20-40	40-80	30-40
80-250	20-40	250-1000	30-50	80-250	20-30
250+	0-5	1000+	10-20	250+	5-15

Indicator 4 – Distribution of Forest Type

Indicator Statement	Target (Variance)	Results
Percent distribution of forest type across the DFA	No significant decline (> 10% of the total amount) in broadleaf or mixedwood types by BEC zone, over a 10-year period	N/A – Trend to be evaluated in 2020

The area under analysis included the entire landbase in the DFA, excluding private land, provincial parks, and woodlots. The broad forest types are defined in Table 8, further information for which is found in the current SFMP. Estimates for percent composition are derived from a combination of the BC Land Cover Classification Scheme (subset of the VRI data), BEC, and harvest data.

This indicator will be reported out on a 5-year basis, based on calculations done by the Woodlands Information Management (WIM) team using VRI data updated with the Reporting Silviculture Updates and Land Status Tracking System (RESULTS). WIM has a standardized code for this calculation that they follow (available from the WIM team or GIS Analyst). Reporting on a more frequent basis is not necessary because the indicator will change very slowly due to the large scale of the analysis (licence-

2019 Annual Report – Canfor Kootenay Operations

wide) and the relatively small changes that occur each year in each category. The current (as of September 2016) percent distribution of forest type across the DFA by major licence is shown in Table 9.

Table 8: Definitions of broad forest types

Forest Type	Description
0 – 10 Years	Recently disturbed areas, either from harvesting or natural disturbance (i.e. fires more than 3 years old). Too early in succession to classify confidently as mixedwood, deciduous or conifer leading.
11 – 30 Years	
Conifer*	Percent composition conifer is at least 75%
Mixed*	Neither deciduous nor conifer has percent composition greater than 75%
Deciduous*	Percent composition deciduous is at least 75%
Non-Forest	Vegetated areas with than 10% tree cover, predominantly grassland areas
Non-Productive (Natural)	Areas that do not fall into the other broad categories; also includes alpine BECs, avalanche paths, naturally non-vegetated areas
Roads and Landing	Temp constructed roads, spur roads, FSRs, gravel mainlines, paved roads, and landings
Water	Areas classified by the VRI as water

All five licences are dominated by conifer stands, and there are small percentages of broadleaf and mixedwood stands. Over the next five years, no significant declines in the total amount of broadleaf or mixedwood types are expected to occur as Canfor does not target hardwoods for harvest.

Table 9: Percent distribution of broad type by BEC by Forest License as of September 2016

Forest License	Forest Type and Age Class	BEC zone						Grand Total
		ESSF	ICH	IDF	IMA*	MS	PP	
A18978	0 - 10 Years	3%	17%	9%	0%	8%	13%	16477
	11 - 30 Years	11%	14%	19%	0%	22%	11%	43329
	Conifer 31 - 90 Years	9%	28%	19%	0%	23%	23%	44064
	Conifer >90 Years	33%	29%	27%	0%	36%	24%	98569
	Mixed 31 - 90 Years	0%	2%	2%	0%	1%	1%	1484
	Mixed > 90 Years	0%	1%	0%	0%	0%	0%	541
	Deciduous 31 - 90 Years	0%	0%	1%	0%	1%	0%	876
	Deciduous > 90 Years	0%	0%	0%	0%	0%	0%	116
	Non-Forest	1%	0%	1%	0%	0%	1%	3061
	Non-Productive (Natural)	42%	6%	11%	100%	6%	21%	95341
	Roads	1%	3%	2%	0%	2%	2%	3712
	Landings	0%	1%	0%	0%	0%	0%	523
	Water	0%	0%	9%	0%	1%	4%	4796
A18979	0 - 10 Years	1%	6%	4%	0%	10%	0%	12505
	11 - 30 Years	5%	15%	15%	0%	19%	0%	30998
	Conifer 31 - 90 Years	7%	18%	17%	0%	19%	0%	37051
	Conifer >90 Years	37%	49%	29%	0%	42%	0%	119054
	Mixed 31 - 90 Years	0%	1%	1%	0%	0%	0%	1009
	Mixed > 90 Years	0%	0%	1%	0%	1%	0%	910
	Deciduous 31 - 90 Years	0%	1%	1%	0%	0%	0%	661
	Deciduous > 90 Years	0%	0%	1%	0%	0%	0%	413
	Non-Forest	0%	0%	2%	0%	0%	0%	1408
	Non-Productive (Natural)	49%	6%	21%	100%	6%	0%	162544

2019 Annual Report – Canfor Kootenay Operations

Forest License	Forest Type and Age Class	BEC zone						
		ESSF	ICH	IDF	IMA*	MS	PP	Grand Total
	Roads	0%	2%	2%	0%	2%	0%	3304
	Landings	0%	0%	0%	0%	0%	0%	20
	Water	0%	2%	7%	0%	1%	0%	4588
A19040	0 - 10 Years	2%	7%	8%	0%	8%	23%	33921
	11 - 30 Years	5%	11%	16%	0%	13%	14%	57634
	Conifer 31 - 90 Years	21%	39%	22%	0%	41%	10%	194600
	Conifer >90 Years	24%	27%	38%	0%	25%	27%	189221
	Mixed 31 - 90 Years	0%	3%	1%	0%	1%	0%	5058
	Mixed > 90 Years	0%	1%	1%	0%	1%	1%	2065
	Deciduous 31 - 90 Years	0%	1%	0%	0%	0%	0%	1475
	Deciduous > 90 Years	0%	1%	0%	0%	0%	0%	859
	Non-Forest	0%	0%	2%	0%	0%	6%	3762
	Non-Productive (Natural)	48%	6%	10%	100%	7%	14%	259711
	Roads	0%	2%	2%	0%	2%	2%	6860
	Landings	0%	0%	0%	0%	0%	0%	1149
	Water	0%	2%	1%	0%	1%	3%	4739
A20212	0 - 10 Years	2%	8%	0%	0%	0%	0%	6112
	11 - 30 Years	9%	10%	0%	0%	0%	0%	10542
	Conifer 31 - 90 Years	41%	49%	0%	0%	0%	0%	49917
	Conifer >90 Years	39%	27%	0%	0%	0%	0%	34775
	Mixed 31 - 90 Years	0%	1%	0%	0%	0%	0%	769
	Mixed > 90 Years	0%	0%	0%	0%	0%	0%	295
	Deciduous 31 - 90 Years	0%	0%	0%	0%	0%	0%	192
	Deciduous > 90 Years	0%	0%	0%	0%	0%	0%	229
	Non-Forest	1%	1%	0%	0%	0%	0%	1077
	Non-Productive (Natural)	7%	1%	0%	0%	0%	0%	3489
	Roads	1%	2%	0%	0%	0%	0%	1286
	Landings	0%	0%	0%	0%	0%	0%	186
	Water	0%	0%	0%	0%	0%	0%	151
TFL14	0 - 10 Years	6%	13%	21%	0%	29%	0%	15451
	11 - 30 Years	3%	24%	10%	0%	14%	0%	8455
	Conifer 31 - 90 Years	3%	11%	34%	0%	16%	0%	11338
	Conifer >90 Years	20%	44%	14%	0%	27%	0%	32426
	Mixed 31 - 90 Years	0%	1%	9%	0%	1%	0%	1398
	Mixed > 90 Years	0%	1%	3%	0%	1%	0%	551
	Deciduous 31 - 90 Years	0%	0%	0%	0%	0%	0%	7
	Deciduous > 90 Years	0%	0%	0%	0%	0%	0%	46
	Non-Forest	0%	0%	0%	0%	0%	0%	45
	Non-Productive (Natural)	67%	0%	6%	100%	9%	0%	78463
	Roads	1%	4%	3%	0%	3%	0%	1930
	Landings	0%	1%	0%	0%	1%	0%	307
	Water	0%	0%	1%	0%	0%	0%	180

*IMA stands for "Interior Mountain-heather Alpine"

Indicator 5 – Old and Mature Forest Retention

Indicator Statement	Target (Variance)	Results
Amounts of old and	a) Full compliance with the mature and old	Achieved

2019 Annual Report – Canfor Kootenay Operations

mature stands by landscape unit and BEC variant	targets as defined in the Kootenay Boundary Higher Level Plan Order (KBHLPO)	
	b) Spatial identification of stands to meet KBHLPO targets (no more than -0.3% variance)	Achieved

The area of forest currently present in identified Old Growth Management Areas (OGMAs) and Mature Management Areas (MMAs) relative to targets specified in the Kootenay Boundary Higher Level Plan Order (2002) and subsequent amendments (2005) has been assessed for the Invermere, Cranbrook, and Kootenay Lake TSAs; as well as TFL14. For all areas sufficient spatial OGMAs and MMAs have been deployed for each Landscape Unit BEC Variant combination to meet KBHLPO targets, thus targets a) and b) of this indicator have been achieved.

Indicator 6 – Seral and Structural Stages Relative to the Range of Natural Variability

Indicator Statement	Target (Variance)	Results
Area of old, mature and early seral stands, by ecosystem (BEC subzone) grouping, for current and future time periods relative to the Range of Natural Variability	To be compatible with (either within or moving towards) the Range of Natural Variability	Achieved

This indicator is assessed through a model which compares the area of each seral stage to that expected under historic disturbance regimes, and which is expected over the next 250 years under current harvest practices (TSR III). A detailed description of the model and its assumptions is provided in the SFMP under this indicator.

Results of the model showed that:

- For most ecosystem types (BEC groupings), the amount of early seral stands and mature stands are currently below historic amounts, and,
- The amounts of mid- and old seral stands are currently above or similar to historic amounts.
- Under current management, trends in seral stage are toward historic conditions for most ecosystem types and seral stages, except that there is a trend towards more old forests than existed historically.

It is important to note that the model did not incorporate any effects of climate change. Future climate trends are expected to differ from historic and current ones in that fires and insect pest outbreaks are projected to increase in frequency and severity as the climate warms and summers become hotter and drier (see Indicator 4.1.4 – Climate Change Adaptation in the SFMP for a discussion). Although the model projects a trend toward more old forests than existed historically, it is expected that effects of climate change will lead to an increase in disturbed areas and consequently higher amounts of early seral stands on the landscape. Thus, at this point in time, no changes to current management in order to try and increase the amount of early seral stages are being contemplated.

Figures and tables illustrating these conclusions are provided in the SFMP and in the report on the model (Appendix to SFMP). The model will be re-run in the years following the release of TSR IV, and trends will be re-evaluated. Further discussion for this indicator is available in the SFMP.

2019 Annual Report – Canfor Kootenay Operations

Indicator 7 – Interior Forest Habitat

Indicator Statement	Target (Variance)	Results
Median patch size of Old Growth and Mature Management Areas, by NDT and ecosection	Median patch size is maintained or increases through time	N/A – measured every five years - to be reported in 2020.

Current condition (as of 2016) for the median patch size of Old Growth Management Areas (OGMAs) and Mature Management Areas (MMAs) is shown in

Table 10. Of note is that the medians in most ecosections, with the exception of the Southern Purcell Kootenay Lake, are relatively small. This indicator is slow to change over time because very few OGMAs and MMAs are changed each year; consequently, median patch size is measured every five years and will be re-calculated in 2020.

Recently, spatial changes to OGMAs and MMAs were primarily for re-allocation of OGMAs from proposed harvest areas to other areas of equal or higher old growth or mature value and ensuring targets were maintained throughout this process. In all cases, the “Old and Mature Forest Replacement SWP” was followed, which indicates that replacement stands must be “of similar or greater old growth/mature value and area, and at least 2 ha in size alone or when combining with an adjacent OGMA if one exists”, and that when choosing a replacement OGMA, to “...try to add on to existing OGMAs or riparian reserves to make them larger, rather than making small isolated patches.”.

Through continued implementation of the Interior Forest Habitat Strategy, we expect the median patch size of old and mature management areas to remain stable or increase over this time period. Further discussion on this indicator and size class distributions of the OGMA and MMAs in each ecosection is presented in the SFMP.

Table 10: Median OGMA/MMA polygon size by ecosection in the DFA

Ecosection	NDT3		NDT4	
Forest License	Median size	n polygons	Median size	n polygons
TFL14				
Upper Columbia Valley – TFL14	5.80	193	5.47	118
Eastern Purcell Mountains – TFL14	6.43	289	-	0
A18979				
Southern Park Ranges – North	5.07	973	5.47	19
Upper Columbia Valley – Radium	4.34	365	3.56	264
A18978				
East Kootenay Trench – North	4.83	417	4.35	188
Shared A18978/A18979				
Southern Park Ranges – Central	4.74	929	9.95	11
Eastern Purcell Mountains – Central	5.81	745	6.37	42
A19040				
Southern Purcell Mountains – Cranbrook	7.66	296	6.06	6
Southern Park Ranges – South	8.34	448	5.91	23
McGillivray Range	7.77	1000	5.97	73
East Kootenay Trench – South	8.76	137	8.63	233
Mid Elk Valley	8.97	257	6.95	9
Upper Elk Valley	6.69	682	3.42	1
Flathead Valley/ Crown of the Continent	6.94	918	2.95	3

2019 Annual Report – Canfor Kootenay Operations

Eastern Purcell Mountains – North	5.27	574	5.53	19
Eastern Purcell Mountains – South	8.16	162	6.20	18
A20212				
Southern Purcell Mountains – Kootenay Lake	64.02	59	-	0
Total	6.15	8444	5.30	1027

Indicator 8 – Green Tree and Snag Retention

Indicator Statement	Target (Variance)	Results
Density (stems/ha) of dominant and co-dominant green trees and snags (standing dead trees) on each cutblock or cutblock area (gross block area)	All blocks or block areas to exceed the densities specified in FSC-BC Indicator 6.3.9 for each Natural Disturbance Type (NDT) and Biogeoclimatic zone combination (Table 12)	Achieved

Table 11: FSC-BC Indicator 6.3.9 minimum retention levels of dominant and co-dominant trees within each cutblock area (>200 m wide or 100 ha in aggregate)

NDT	NDT 1		NDT 2		NDT 3		NDT 4	
BEC	ESSF	Other	ESSF	other	ESSF	other	PP	other
Green Tree and Snag target (sph)	12	8	15	10	12	8	4	8
Snag target (sph)	3	2	3.75	2.5	3	2	1	2

This indicator only pertains to FSC Certified licenses (Table 1). Over the past nine years, including 2019, all blocks in Canfor's FSC certified areas have met the green tree retention targets (Table 12). However, not all blocks met the snag retention targets over this time period unless stubs (man-made snags, demonstrated to have wildlife value) were counted. Due to the large no-harvest buffers required around most snags by WorkSafe BC (minimum 1.5 tree lengths in diameter), not all snags can be retained within cutblocks and have the block still make an economic harvest unit. Thus, stubs help fill this gap. At the layout stage the focus is still on retaining the highest value wildlife trees (snags) in safe reserve patches. A High Value Snag SWP and target have been developed to assist with this goal.

Table 12: Percentage of blocks meeting green tree and snag retention targets in FSC certified areas between 2009 and 2019

Year	Percent of Blocks meeting Green Tree Retention Targets	Percent of Blocks meeting Snag Retention Targets when Stubs are not included	Percent of Blocks meeting Snag Retention Targets when Stubs are included ¹	Total number of blocks on FSC certified areas
2019 ²	100%	84%	100%	57
2018 ²	100%	86%	100%	79
2017 ²	100%	90%	100%	82
2016 ²	100%	75%	100%	72
2015 ²	100%	76%	100%	85
2014 ²	100%	80%	100%	109

2019 Annual Report – Canfor Kootenay Operations

2013	100%	75%	100%	132
2012	100%	70%	100%	103/67 ³
2011	100%	75%	n/a	164/129 ³
2010	100%	n/a ⁴	n/a	137
2009	100%	n/a ⁴	n/a	65

¹ Stubs were not consistently prescribed in all Site Plans in years prior to 2012

² Analysis done using the total number of harvested blocks in that calendar year, rather than CP approved blocks.

³ The total number of approved blocks in FSC certified areas/ the number of approved blocks in FSC certified areas with the target densities of snags present in the pre-harvest stands (used in snag retention calculation).

⁴ Snag retention not measured separately from green tree retention in this year

Indicator 9 – Wildlife Tree Patch Retention

Indicator Statement	Target (Variance)	Results
Percent of Wildlife Tree Patches retained across the DFA	Minimum 7% (0)	Achieved (15%)

Targets for Wildlife tree patch retention have been determined through FSP commitments (Section 6.1.2.8 Objectives set by Government for Wildlife and Biodiversity – Stand Level). In 2018, the Kootenay Division revised their FSP, including commitments for stand level Wildlife Tree Retention. Canfor no longer uses the Forsite Analysis, and has instead committed to adhering to Section 66 of FPPR (Wildlife Tree Retention):

- 1) If an agreement holder completes harvesting in one or more cutblocks during any 12 month period beginning on April 1 of any calendar year, the holder must ensure that, at the end of that 12 month period, the total area covered by wildlife tree retention areas that relate to the cutblocks is a minimum of 7% of the total area of the cutblocks.
- 2) An agreement holder who harvests timber in a cutblock must ensure that, at the completion of harvesting, the total amount of wildlife tree retention areas that relates to the cutblock is a minimum of 3.5% of the cutblock.
- 3) For the purposes of subsection (1) and (2), a wildlife tree retention area may relate to more than one cutblock if all of the cutblocks that relate to the wildlife tree retention area collectively meet the applicable requirements of this section.

Thus, this indicator was revised to reflect this new commitment, with a focus on achievement of Sec 66 (1) – which is an annual requirement (Sections 66(2) and 66(3) allow for blocks to be combined for WTRA purposes, but these blocks may be harvested over multiple years, making an Annual Indicator impracticable).

Between April 1st, 2019 and March 31st, 2020 the total area covered by wildlife tree retention areas that relate to harvested cutblocks was 15% (Table 13), achieving the 7% target.

Table 13. % WTP by Major Forest License for blocks with harvest completed between April 1st 2019 and March 31st 2020

Major License	WTP Area (ha)	Gross Block Area	% WTP
A18978	64.3	541.2	12%
A18979 (includes A90310)	83.0	862.9	10%

2019 Annual Report – Canfor Kootenay Operations

A19040 (includes A91308 and K1W)	310.1	1776.8	17%
A20212 (includes A20214)	70.8	672.5	11%
TFL14	169.0	664.4	25%
Grand Total	697.1	4517.7	15%

Indicator 10 – High Value Snags

Indicator Statement	Target (Variance)	Results
a) The density (stems/ha) of all identified High Value snags within gross block areas, all BEC subzones combined;	a) 5% improvement annually in the average	Indicator dropped
b) The average percentage of protected High Value snags	b) Minimum 65%	Indicator dropped

An in depth review of the High Value Snag (HVS) program was conducted in 2018, yielding the following information:

- Not all snags that are protected are identified pre-harvest: HCVF Effectiveness monitoring over the last three years has indicated that more HVS than those identified pre-harvest are retained by loggers within the Net Area. CCVF Effectiveness Monitoring in 2018 found that four out of five cutblocks had HVS retained within the Net Area, even though no HVS were identified pre-harvest. Effectiveness Monitoring in 2016 over 31 cutblocks identified 29 HVS snags that were retained but not identified pre-harvest (Table 14).
- Inaccurate estimates of HVS pre-harvest: It's not possible for layout crews to survey entire blocks for HVS due to time constraints. In addition, there is no baseline data for what is a reasonable number of HVS to be expected within a given area; it depends on previous disturbances (e.g. high intensity fires, old logging, insect outbreaks). Thus, while there has been a measurable increase in the number of HVS identified pre-harvest, this number is likely well below the density of HVS on the landbase.

Table 14. Summary of HVS observations as part of 2016 HCVF Effectiveness Monitoring Program

# Snags checked	Within Reserve		Within Net Area of block			Could locate	Not	Not a previously recorded HVS
	Intact	On ground	Intact	Felled	Stubbed			
76	11	4	40	14	3	4		29

Based on this review, it was determined that the current Annual Report indicators are not sufficient to provide an accurate representation of what occurs at the cutblock level, thus, this indicator has been dropped. Going forward, identification and retention of High Value snags will continue to be a focus at Annual pre-works for Field Operations and Harvesting contractors, and Post-harvest effectiveness monitoring will continue to evaluate snag retention.

Indicator 11 – Riparian Management

Indicator Statement	Target (Variance)	Results
---------------------	-------------------	---------

2019 Annual Report – Canfor Kootenay Operations

a) Riparian Reserves and Management Zones planned in accordance with Canfor's Integrated Riparian Assessment.	0 non-conformances	Achieved
b) Within each Riparian Management Unit, the combined Riparian Reserve and Management Zone widths meet the FSC budgets in Table 52 (SFMP), including both <i>FRPA</i> legal minimums on each stream, lake and wetland	0 non-conformances	Achieved

Canfor did not have any incidents in 2019 reported on riparian reserves not being planned to meet the Integrated Riparian Assessment process (no ITS incidents).

The current condition of Canfor's riparian reserves with respect to the FSC budget is available in the Integrated Riparian Assessments, Volumes 2-9. For each of the 46 Riparian Management Units within the DFA, the required retention amounts for each lake, wetland, and stream class are calculated, together with the amount of retention currently calculated to be present. Surplus and Deficits are presented by feature class, and for the overall unit.

All of the 46 RMUs have a budget surplus when lakes, wetlands, and streams across the unit were considered as a whole. However, in some units' particular feature classes are at or near deficit. This is particularly so for lakes and wetlands which are relatively rare on the landscape and thus have small budgets and small surpluses. In addition, these features tend to be located on valley bottoms where historic logging has taken place, much of it without riparian reserves.

Element 1.2 – Species Diversity & Element 1.3 – Genetic Diversity

Indicator 12 – Species of Management Concern – Habitat Protection

Indicator Statement	Target (Variance)	Results
Forest management activities conform to operational plans that include the appropriate management strategies from the SWP for blocks containing habitat for species of management concern	100% (5)	Achieved

Evaluation of this indicator relies on confirming operational plans contain information for habitat management. Evaluation of this indicator also relies on Canfor's Incident Tracking System (ITS), which is Canfor's system for tracking incidents related to forest management (such as operational plans not being followed). In 2018, no incidents were reported into ITS where operational plans related to species of management concern (SoMC) were not followed. Table 15 shows that there were 167 instances where >1 ha of mapped habitat for a SoMC overlapped with a block harvested in the 2019 calendar year (some blocks harvested with more than one type of mapped habitat). Of those 167 instances, 165 had operational plans that prescribed management strategies for species of management concern. Both non-conformances were in fire salvage blocks, were administrative in nature (no detrimental impacts to SoMC), and have recorded in ITS, and corrective actions have been developed.

Canfor is currently updating strategies for implementation related to Grizzly Bear Wildlife Habitat areas. These updates will be reported in the 2020 Annual Report.

Table 15: Number of blocks harvested in 2019 following SWPs for SoMC when block overlaps with habitat for SoMC

License	Habitat Type	n blocks with overlap with habitat for SoMC	n blocks with management strategies prescribed
---------	--------------	---	--

2019 Annual Report – Canfor Kootenay Operations

A18978	Rank 4/5 MB Habitat*	15	15
	Ungulate Winter Range	4	4
A18979	Rank 4/5 MB Habitat*	37	37
	Ungulate Winter Range	2	2
A19040	Critical Habitat	4	2
	Habitat Model	5	5
	Rank 4/5 MB Habitat*	45	45
	Wildlife Habitat Areas	6	6
	Ungulate Winter Range	9	9
A20212	Rank 4/5 MB Habitat*	15	15
	Ungulate Winter Range	6	6
A91308	Rank 4/5 MB Habitat*	2	2
TFL14	Rank 4/5 Migratory Bird Habitat*	17	17
Total		167	165
Total Percent			99%

**Only includes Site Plans signed from January 2017 onwards. The Migratory bird SWP was adopted in mid-2016, thus Site Plans signed prior to this date do not contain explicit measures to manage for migratory birds, and the remainder of 2016 was considered a transition period to the new SWP.*

Indicator 13 – Species of Management Concern – Habitat Suitability

Indicator Statement	Target (Variance)	Results
Suitable habitat is provided for key Species of Management Concern	Within one quartile (+ 25%) of the Mean in the Range of Natural Variation	Pending –TSR IV models under development

Since this is a new indicator, current condition has not yet been established. Current condition will be the currently available amount of suitable habitat for the key species of management concern that were proposed to be modelled in TSR IV. Draft models exist, but these require further refinement and need to be linked to the TSR. Canfor is exploring the best way to proceed with model refinement, in collaboration with FLNRORD staff. Results of the investigation will be reported when available.



Indicator 14 – Tree Seed

Indicator Statement	Target (Variance)	Results
Percentage of tree seed used in yearly tree planting program that is consistent with the <i>Chief Foresters' Standards for Seed Use</i>	100% (-5%)	Achieved

For 2019 planting, Canfor is within the 5% variance with the percent of trees planted outside of the *Chief Forester's Standards for Seed Use*: 3.5% Cranbrook TSA, 2.47% Invermere TSA and 4.34% for Kootenay Lake TSA as demonstrated in the Infoview Seed Transfer Compliance reports. Not using select seed where it is available is included in the percent above.



Indicator 15 – Natural Regeneration

Indicator Statement	Target (Variance)	Results
Percentage of stands at free growing that have a component of natural regeneration	100% (-10%)	Achieved
60% of stands have 60% of their total inventory coming from natural regeneration at free growing	60% (-10%)	Achieved

Current condition for the percentage of stands with a portion of their inventory coming from natural regeneration is slightly higher than the target (Table 16); however, targets were chosen to reflect a balance between site productivity objectives and maintaining genetic and species diversity.

Table 16: Natural Regeneration within 2019 Free-Growing cutblocks

Strata	n	Area (ha)	Percent of Total	
			Strata	Area
Surveyed for Free-Growing in 2017	612	8054	100%	100%
With some natural regeneration	586	7860	96%	98%
With >60% natural regeneration	407	6189	67%	77%

2019 Annual Report – Canfor Kootenay Operations

Indicator 16 – Mix of Species Planted

Indicator Statement	Target (Variance)	Results
Percentage of hectares planted with more than one species (by year)	100% (-30%)	Achieved

In 2019, a total of 6115.8 ha were planted and 92% were planted with more than one species.

Table 17. Summary of planting by licence in 2019

Licence	Only One Species Planted (ha)	Total Area Planted (ha)	% of Total
A18978	91.5	1350.5	6.78
A18979	129.0	1002.8	12.86
A19040	142.7	2103.8	6.78
A20212	127.1	1228.5	10.35
TFL14	12.2	430.2	2.84
Total	502.5	6115.8	8.22

Indicator 17 – Managing for Species Diversity during Tree Thinning

Indicator Statement	Target (Variance)	Results
Percentage of maximum density spaced hectares with species diversity maintained or enhanced	100% (-10%)	Achieved

In 2019, Canfor juvenile spaced 97.1 hectares, of which 84 hectares were in stands that were 100% lodgepole pine. Every effort was made to choose alternate species whenever possible. 13.1 hectares were in mixed stands and species diversity was maintained.

Element 1.4 – Protected Areas and Sites of Special Biological and Cultural Significance

Indicator 2 – Protected Reserves

Indicator Statement	Target (Variance)	Results
Percent of area in protected reserves, by BEC variant and management unit, within the DFA	12 – 24%	Target achieved, with consideration of HCVFs in the IDFdm2 and PPdh

See Page 13 for information on this indicator.

Indicator 18 – Sites of Biological Significance

Indicator Statement	Target (Variance)	Results
Forest management activities conform to operational plans that include the appropriate management strategies from the SWP for	100% (0)	Not met (92%,

2019 Annual Report – Canfor Kootenay Operations

blocks containing sites of biological significance	12/13)
--	--------

Thirteen blocks were harvested in 2019 that overlapped with Sites of Biological Significance (referred to as “SBS”, Table 18), one of which did not follow the appropriate management strategies as per the SBS SWP. Details regarding the non-conformance and corrective actions are detailed below:

TFL14 CP221 BOB0022: An inactive stick nest was identified within BOB0022 by layout staff in May 2016. The stick nest was protected within a 80-100 m radius Wildlife Tree Patch, however the species utilizing the nest (if any) was not verified, and no timing restriction was prescribed for the block. The block was subsequently harvested during July and August 2018, and July 2019, which is roughly considered to be the tail end of the sensitive period for raptor breeding. Corrective actions included a review of all stick nests within unharvested blocks was conducted to ensure no other issues (all have been protected within wildlife tree patches, and timing restrictions prescribed).

In addition, in order to improve tracking of wildlife features, a field card was developed in early 2018 that allows field staff to better capture information about features when they are encountered, and also lists what resources are available to manage for features when they are encountered. The field card was released at Spring training in 2018 and is available both as a fillable iPad form, and as a paper form.

Table 18: Number and percentage of blocks following SWPs for Sites of Biological Significance (SBS) for blocks harvested in 2018 that overlap with a SBS

License	Site of Biological Significance	n blocks with overlap [†]	n blocks with adequate management strategies prescribed
A18979*	Stick Nest	2	2
	Avalanche Path (Moderate or High Value)	2	2
A19040*	Stick Nest	2	2
	Avalanche Path (Moderate or High Value)	2	2
	Carnivore Den	1	1
TFL14	Stick Nest	2	1
	Avalanche Path (Moderate or High Value)	2	2
Total		13	12

**Includes fire and beetle salvage blocks.*

Indicator 19 – High Conservation Value Areas

Indicator Statement	Target (Variance)	Results
Forest management activities conform to operational plans that include the appropriate HCVF management strategies	100% (5%)	Achieved

Analysis for this indicator focused on an in-depth review of Site Plans for blocks with harvest complete in 2019 that overlap with HCVAs (Table 19). All blocks harvested in 2019 that overlapped with HCVAs 1+ ha had applicable management strategies included in operational plans.

Table 19: Summary of HCVa management strategy review for cutblocks harvested in the 2019 calendar year

HCVa [†] Category	License	n HCVAs	HCVa Management strategies included in operational plans
HCV1/2	A18978	12	12

2019 Annual Report – Canfor Kootenay Operations

	A19040	11	11
	A20212	5	5
	A18979 [†]	1	1
HCV4	A18978	1	1
	A18979 [†]	2	2
	A19040	5	5
	A20212	13	13
	TFL14	2	2
Total		52	52

[‡] CCVFs covered in Indicator 47

[†] Includes FLA90310 Kinbasket Development Corporation RFL

Criterion 2 – Ecosystem Condition and Productivity

Element 2.1 – Forest Ecosystem Condition and Productivity

Indicator 20 – Reforestation Success

Indicator Statement	Target (Variance)	Results
Percentage of blocks that achieve regeneration delay (RG) within the regen delay period	100%	Achieved
Percentage of blocks that achieve free growing within the free growing (FG) period	100%	Achieved

Within the DFA, 100% of cutblocks have met Regeneration Delay (RG) and Free-Growing (FG) obligations within the period. As of 2019, RG is achieved within 2.7 years and FG within 13.8, on average.

Indicator 16 – Mix of Species Planted

Indicator Statement	Target (Variance)	Results
Percentage of hectares planted with more than one species (by year)	100% (-30%)	Achieved

See Page 27 for information on this indicator.

Indicator 21 – Invasive Plants

Indicator Statement	Target (Variance)	Results
A: Percentage of treatments with no follow-up	0% (10%)	Not met (20%)
B: Percentage of infestations that go untreated	0% (10%)	Achieved (0%)

Canfor's process for addressing invasive plants is evolving, due to changing legal (i.e. FSP) and FSC-NFSS certification commitments. In the East Kootenay division, Canfor is committed avoiding or eliminating the use of chemical pesticides. Canfor's strategy for meeting this commitment involves a focus on identification of invasive plants during early block development (by layout, and the Planning Supervisor), and prevention, through minimising soil disturbance during harvest, cleaning equipment between sites, prompt grass seeding and restocking. Herbicide applications on Crown land are an absolute last resort (i.e. when no other method of control is practical or effective on a given site), and, starting in 2020, will be conducted in cooperation with MFLORD, under their Integrated Pest management plan, which ensures that an invasive plant species is receiving the most effective treatment to achieve management objectives. This indicator will be revised in 2020 to reflect this evolution. In addition, Canfor's updated invasive plant strategy is found in Appendix III.

Indicator statement 'A: percentage of treatments with no follow-up': In 2019, treatment follow-up monitoring was conducted on four of the five blocks scheduled. One block, did not have follow up monitoring due to miscommunication, and has been scheduled to be monitored in 2020 for invasive plant establishment and grass seeding success. Thus, 20% of blocks that were treated for invasive plants in 2018 were not followed up in 2019.

Indicator statement 'B: percentage of infestations that go untreated': From monitoring activities in 2018, three blocks within the DFA were identified as having invasive plant infestations that required

2019 Annual Report – Canfor Kootenay Operations

treatment by herbicide or grass seeding (Table 16). In 2019, three of these blocks were treated (two through heli-grass seeding, and one with herbicide). All treatments took place from June to July while plants were in bloom. Thus, 0% of blocks that have known invasive plant infestations went without treatment in 2019.

Table 20. Summary of invasive plant treatments by blocks in 2019

License	CP	Block	Treatment
A19040	561	JAF0007	Herbicide (spot treatments of blueweed, hounds tongue, and spotted knapweed)
A19040	816	LIN0013	Heli-grass seeded
A91307	834	LIN0025	Heli-grass seeded

Indicator 22 – Permanent Access Structures

Indicator Statement	Target (Variance)	Results
Percent of operable landbase converted to permanent access structures through forest management activities	5% or less per LU (+2%)	Achieved

In 2019, the analysis completed for this Indicator changed slightly in 2019 to make it more accurate and easier to reproduce, and the Woodlands Information Management team has developed a rationale on the enhanced method. The analysis now focuses on Canfor operating area, which is the only area where the information is consistent and updated.

Currently Canfor has three LU's approaching the 5% PAS threshold. Any planning in these landscape units going forward will include measures to keep the PAS below the 5% target.

Table 21: Percent Permanent Access Structures for Landscape Units in the DFA

2019 % PAS for Landscape Units				
> 5	4.01 - 5	3.01- 4	2.01- 3	<2
	I15, I26, I28	C11, C15, C20, C21, C27, C29, I06, I07, I20, I21, I22, I23, I24, I27, I29, I33 I35, I37, I38	C01, C02, C04, C05, C06, C07, C08, C09, C10, C16, C17, C18, C19, C22, C25, C30, C31, C34, I02, I03, I05, I08, I09, I10, I11, I19, I25, I32, I34, I37, I38, K02, K03, K05, K06, K025	C13, C14, C17, C23, C24, C32, C33, C38, I01, I04, I12, I13, I17, I18, I30, I36

Indicator 23 – Landslides

Indicator Statement	Target (Variance)	Results
Number of recordable landslides resulting from Canfor's forestry operations on permitted roads or cutblocks	0 (4)	Achieved

In 2019 there were zero (0) landslides recorded; which meets the target for this indicator.

2019 Annual Report – Canfor Kootenay Operations

Indicator 24 – Land Conversion

Indicator Statement	Target (Variance)	Results
Percent of DFA converted to non-forest land use through forest management activities not including roads, landings and other infrastructure directly related to forest management	Less than 0.5% reduction of DFA annually	Achieved

In 2019, no land was converted to non-forest land use through forest management activities. This is not including roads, landings or other infrastructure directly related to forest management. These PAS changes are tracked in the PAS indicator but are not considered conversion as per the FSC standard guidance. Canfor has changed the tracking of this indicator in 2020. We will track the FSC DFA year over year and include the gross area in the annual report. The target for max DFA conversion has been changed from 5% to 0.5% annually with a max of 5% over time. If the DFA area changes year over year (tracked in table 25), we will dig into the source of the change to ensure it is not associated with conversion. This result meets the target for this indicator.

Table 22: Current FSC Certified DFA – by TSA

Year	DFA Area (Ha)	Change	Reason for Change
2018	1,470,842	0	N/A
2019	1,470,842	0	N/A

Criterion 3 – Soil and Water

Element 3.1 – Soil Quality and Quantity

Indicator 26 – Detrimental Soil Disturbance

Indicator Statement	Target (Variance)	Results
Number of blocks where the % detrimental soil disturbance exceeds acceptable limits	0 (4)	Achieved

In 2019 Canfor had four (4) incidents related to excessive soil disturbance. All Incidents were recorded in ITS and have action plans intended to rehabilitate and reduce soil disturbance levels. This put us at the max variance for this indicator. In discussions with operations it appears many of the recorded disturbance issues were related to fire salvage activities. Fire salvage creates issues due to already exposed soil..

Indicator 27 – Coarse Woody Debris

Indicator Statement	Target (Variance)	Results
Number of large pieces of CWD per ha in harvested cutblocks each year, by BEC zone in each major Forest Licence	<p>The annual median and mean by BEC and Licence to be at or above the following:</p> <ul style="list-style-type: none"> PP – 1 piece/ha IDF – 2 pieces/ha MS and ICH, PI leading stands – 2 pieces/ha MS and ICH, non-PI leading stands – 4 pieces/ha ESSF, PI leading stands – 8 pieces/ha ESSF, non-PI leading stands – 10 pieces/ha <p>NOTE: Targets do not apply to blocks within community-forest interface areas being managed to reduce fire risk.</p>	Not Met – Mean and Median below target for 9 out of 15 BEC/Licence groupings

In 2019, sampling methodology changed from line transects to ocular estimates. This change was the result of concerns that line transects were an inefficient method for estimating piece density, as long transects are required to capture the variability on site (CWD is often not evenly distributed in the block). The decision to change to ocular assessments was made after discussions with waste and residue assessors (who conduct the monitoring), who indicated that ocular estimates are a reliable method for assessing density, and can better take into account the uneven distribution of pieces within a block.

Results from monitoring in 2019 (Table 23) found no improvement in terms of conformance with this indicator regardless of the change in methodology. In addition, no clear trend in terms of conformance with targets by BEC and Licence compared to previous years was observed, with declines in some BEC variants, and increases in others (refer to previous SFMP annual report draft for further information), suggesting that issues with conformance cannot be attributed to a specific license, or BEC.

Consequently, this indicator will be revisited in 2020, with a focus on the size/diameter target (i.e. requirement for pieces >20 cm diameter and >10 m long). This target was based on Forest and Range Evaluation Program (FREP) results described in the Chief Forester's guidance on CWD (2010). While it's important to focus on large pieces, a target that focuses on large pieces, but also takes into account a

2019 Annual Report – Canfor Kootenay Operations

variety of length and diameter classes, may be more appropriate. Results from this review will be presented in the 2020 Annual Report.

Table 23. Mean and Median pieces per hectare of Coarse Woody Debris >20 cm diameter and >10 m long for blocks harvested in 2019

License		MS/ICH PI Leading IDF	MS/ICH Other Leading	ESSF PI Leading	ESSF other leading
A18978	Mean	3.8	1.8	-	2.6
	Median	4.2	-	-	1.7
	n blocks	6.0	2	0	6
A18979	Mean	7.8	3.1	4.7	13.1
	Median	4.1	2.1	-	3.4
	n blocks	12	24	2	7
A19040	Mean	4.0	-	0.0	21.7
	Median	5.0	-	0.0	6
	n blocks	3	0	2	6
A20212	Mean	5.0	27.5	-	-
	Median	-	6.0	-	-
	n blocks	2.0	4	0	0
TFL14	Mean	1.2	3.2	3.7	-
	Median	1.0	2.5	2.5	-
	n blocks	3	9	5	0
Total	Mean	6.5	5.5	3.1	12.5
	Median	4.3	2.4	2.5	2.4
	n blocks	26	39	9	19

Element 3.2 – Water Quality and Quantity

Indicator 28 – Sensitive Watersheds

Indicator Statement	Target (Variance)	Results
Percent of Sensitive Watersheds, where forest development is planned, above ECA thresholds that have had further assessment by a qualified professional	100% (-10%)	Achieved

Results for this indicator are summarized in Table 24

Table 24: Hydrological Assessments

Watershed type	Above ECA Threshold	Hydrological Assessment Complete	Assessment Scheduled	No Planned Activity	Assessments Required – Not Yet Scheduled
HCV3	14	11	-	3	-
CWS	3	1	2	-	-

2019 Annual Report – Canfor Kootenay Operations

DWS	19	10	4	5	-
RAU	9	11*	20*	-	-
Total	45	33	13	6	

* Canfor has elected to assess all RAU's regardless of ECA level as the information from this assessment helps in planning process and could help improve future watershed condition when ECA thresholds are met.

Indicator 29 – Stream Crossing Sedimentation Control

Indicator Statement	Target (Variance)	Results
Number of drainage structures on Canfor's permitted roads identified as having a high risk of significant sedimentation that are not remediated within 1 year of identification	0 (3)	Achieved

In 2019 there were three (3) ITS incidents regarding sedimentation from Canfor crossings. This is within the allowed variance. All ITS incidents have had actions taken to remedy the situation.

Criterion 4 – Role in Global Ecological Cycles

Element 4.1 – Carbon Uptake and Storage

Indicator 20 – Reforestation Success

Indicator Statement	Target (Variance)	Results
Percentage of blocks that achieve regeneration delay (RG) within the regen delay period	100%	Achieved
Percentage of blocks that achieve free growing within the free growing (FG) period	100%	Achieved

See page 30 for information on this indicator.



Indicator 14 – Tree Seed

Indicator Statement	Target (Variance)	Results
Percentage of tree seed used in yearly tree planting program that is consistent with the <i>Chief Foresters' Standards for Seed Use</i>	100% (-5%)	Achieved

See page 25 for information on this indicator.



Indicator 30 – Climate Change Adaptation

Indicator Statement	Target (Variance)	Results
a) Annual meeting to review: possible effects of climate change, new information available, results of monitoring other indicators/strategies (from the perspective of climate change) and determine if changes are needed for the SFMP.	Annual Meeting	Achieved
b) Implement climate change stocking standards into regeneration plans	Within 1 year of approval of FSP climate change stocking standards	Achieved
c) Percent of cutblocks (by area) reforested with mixed species at free growing	100% (-30%)	Achieved

- a) The annual climate change meeting was held in Cranbrook on March 1st 2019 (covering 2018 and 2019 Calendar years). Topics included wildfire resilience, fuel break mapping, changes to the FSC Standard, FSP, cumulative effects, hydrological mapping, road and bridge monitoring. No immediate changes to the SFMP were proposed, however, a formal review and revision of the SFMP is scheduled to occur in 2020, at which point climate change indicators will likely be developed.
- b) New stocking standards have recently been developed by MFLNRORD for both the Rocky Mountain and Kootenay Lake Forest Districts. These stocking standards take into account the best available information on ecosystems (updated Biogeoclimatic mapping), climate change science (climate envelopes) as well as comments from licensees (including Canfor). Canfor continues to use these default stocking standards. Additionally, within the default stocking standards there is latitude to

plant species that are more adapted to drier climates (e.g. plant more ponderosa pine and Douglas-fir, and less spruce); which is done by Canfor on a regular basis.

The Kootenay division is in the process of transitioning to implementing the Climate Based Seed Transfer program ([CBST website](#)), which is a program that matches seed sources (seedlots) to climatically suitable planting sites, and is one of the ministry's climate change adaptation policies. The CBST program will be a legal requirement in the future, until such a date, the Kootenay division will continue to apply it on a trial basis.

- c) Refer to Indicator 16 for information on this indicator.

Element 4.2 – Forest Land Conversion

Indicator 22 – Permanent Access Structures

Indicator Statement	Target (Variance)	Results
Percent of operable landbase converted to permanent access structures through forest management activities	5% or less per LU (+2%)	Achieved



See page 31 for information on this indicator.

Indicator 24 – Land Conversion

Indicator Statement	Target (Variance)	Results
Percent of DFA converted to non-forest land use through forest management activities not including roads, landings and other infrastructure directly related to forest management	Less than 5% reduction of DFA annually	Achieved

See page 32 for information on this indicator.

Criterion 5 – Economic and Social Benefits

Element 5.1 – Timber and Non-timber Benefits

Indicator 25 – Volume Harvested Vs. Allocated

Indicator Statement	Target (Variance)	Results
Percent of volume harvested compared to allocated harvest level	100% over the legislated cut control period for Canfor's major replaceable forest licenses in the Kootenay region (+/-10%)	Achieved



In 2019, the overall harvest for the entire FSC DFA was 654,081 or 73.5% of the annual allocated harvest level (Table 25). While this is well under the target of 100%, there is a plan in place to ensure Canfor achieves 100% in each of the cut control periods. The AAC's used in this calculation represent the projected reduction for each TSA although the Minister has not, as of the time of this writing, apportioned the volumes to license holders. This is the best estimate of proportional reduction while taking a precautionary approach to the reduced harvest levels.

Canfor relies on its purchase wood program to supply additional fibre to its manufacturing facilities. Although harvesting below its quota levels, the company can ensure its Kootenay facilities can operate using purchased wood and fibre agreements with some First Nations communities who hold forest tenures.

2019 Annual Report – Canfor Kootenay Operations

Table 25: Harvest Results – 2019

License	AAC by license (m3)	2019 (m3)	% of AAC
FLA 19040 (Cranbrook)	427,020	314,265	73.6%
FLA 18978 (Canal Flats)	184,161	39,788	21.6%
FLA 20212 (Creston)	99,081	147,293	148.7%
TFL 14 (Parson)	180,000	152,735	84.9%
Total	890,262	654,081	73.5%

Indicator 31 – Primary and By-Products

Indicator Statement	Target (Variance)	Results
Primary and by-products that are bought, sold, or traded with other forest dependent businesses in the local area	Report annually on the total number of vendors (n/a)	Achieved

Primary and by-products were sold or purchased from 28 forest dependent businesses on the local area in 2019. Sales included pulp chips, hog fuel, cedar poles, peeler logs, posts, beams, firewood, and spruce for musical instruments.



2019 Annual Report – Canfor Kootenay Operations

Indicator 32 – Identified Non-Timber Forest Benefits

Indicator Statement	Target (Variance)	Results
Number of incidences of documented concerns about non-timber forest benefits (NTFB) brought forward, where the NTFB strategy was not followed	0 incidences (0)	Achieved

In 2019 there were zero incidences of concerns brought forward where Canfor's strategy to deal with public concerns was not followed.



Indicator 33 – Overlapping Tenures

Indicator Statement	Target (Variance)	Results
Number of incidences of documented concerns related to overlapping tenures brought forward, where the Overlapping Tenures Strategy was not followed	0 incidences (0)	Achieved

In 2019 there were zero incidences of concerns brought forward by overlapping tenure holders where Canfor's strategy to deal with their concerns was not followed.

Element 5.2 – Communities and Sustainability

Indicator 34 – Local Procurement of Goods & Services

Indicator Statement	Target (Variance)	Results
Maintain a high percentage of procured goods and services that are from local sources	>= 70% of Woodlands dollars spent in local communities; 5-year rolling average (-10%)	Achieved

Based on the 5-year average information available for Radium (Figure 1), the 5-year average percent spend for local goods and services is 88% and the target has been met. Canfor continues to purchase fibre from Alberta which is also showing an increase in spend for fibre acquisition outside the Kootenay Region and reducing the total local spend. Regardless, Canfor continues to spend an extremely high percent of its woodlands budget in the local Kootenay economy which was over \$132.5 million dollars into the local economy from woodland operations in 2019.

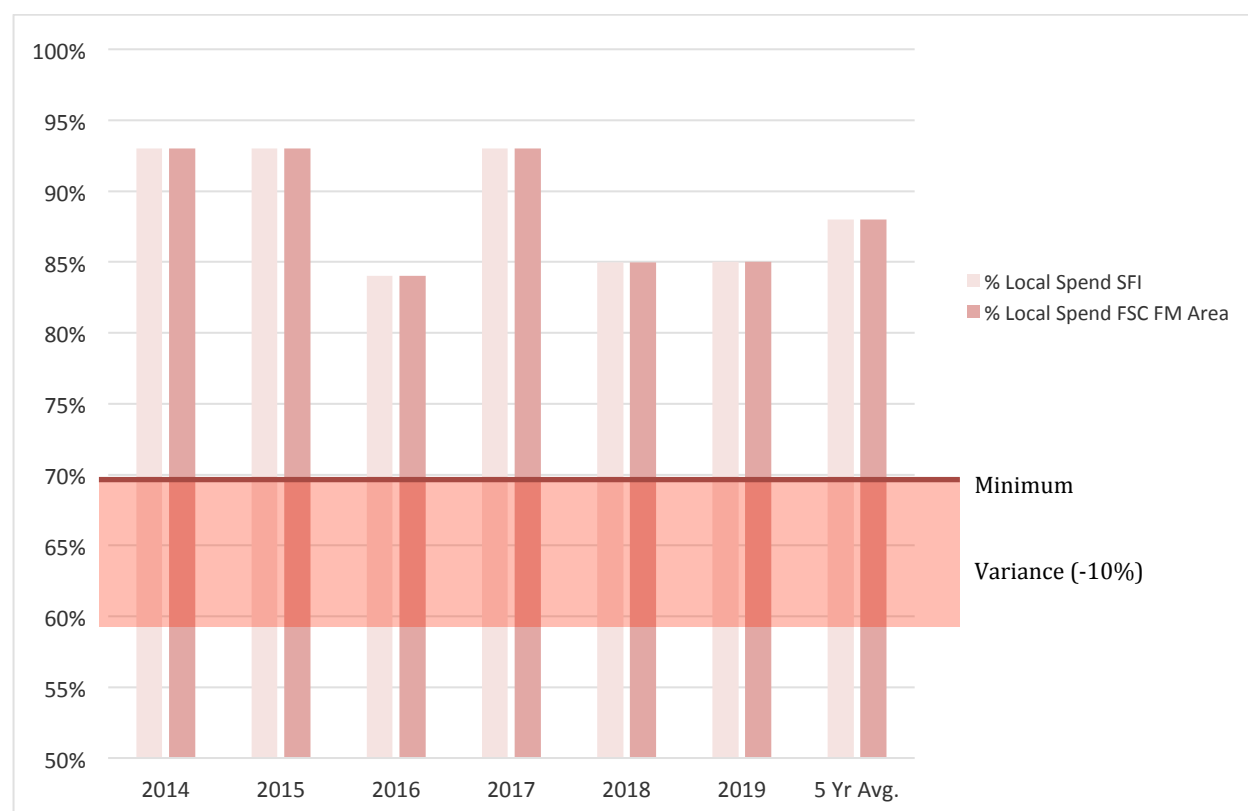


Figure 1. Percentage of CAD Spent Locally in FSC and SFI DFA's 2013-2019

Indicator 35 – Corporate Sponsorships, Donations and Scholarships

Indicator Statement	Target (Variance)	Results
Number of Corporate donations, scholarships or other sponsorships to local community groups, individuals or events	>= 5 donations and/or sponsorships to regional communities, events or individuals per year (- 1)	Achieved

2019 Annual Report – Canfor Kootenay Operations

Based on the 2019 reporting year, a total of 23 donations or sponsorships were given within Kootenay communities of over a value of \$52,000, thus achieving the target for this indicator.

Indicator 36 – Environmental & Safety Training

Indicator Statement	Target (Variance)	Results
Training in environmental and safety procedures in compliance with company training plans	100% of Canfor Kootenay Woodlands employees will have required environmental and safety training (-5%)	Achieved

In 2019, there were 34 woodlands employees. Training records indicate that by May 31st 2019 (internal deadline for training completion), 96% of staff had completed their training, thus achieving the target.

Indicator 37 – Direct & Indirect Employment

Indicator Statement	Target (Variance)	Results
Level of direct and indirect employment	AAC * employment multiplier – 5-year average (+/-10%)	Achieved in Both DFAs

Based on the last 5 years harvest levels within the Radium license, the calculated 5-year average employment Person Years (PYs) is 190 persons which is + 138.0% of the target ([Table 26](#)). The target is exceeded at this time

Table 26: Radium Employment 2014-2019

FL A18979 Volume harvested						
Year	2014	2015	2016	2017	2018	2019
AAC m ³	184,443	221,005	221,005	221,005	184,443	184,443
Cumulative AAC m ³	184,443	221,005	368,886	553,329	737,772	922,215
Annual harvest m ³	184,443	352,205	257,573	259,219	208,411	195,983
% of AAC	100.00%	159.37%	116.55%	117.29%	112.99%	106.26%
Cumulative	184,443	352,205	609,778	868,997	1,077,408	1,273,391
% of cumulative AAC	100.00%	159.37%	165.30%	157.05%	146.04%	138.08%
Average per year over five years	254,678					
Direct + indirect employment per 1000 m ³	0.745					
Person Year Target	137					
Person Year Calculated	190					

Based on the last 5 years harvest levels within the remaining Kootenay DFA, the calculated 5-year average employment PY's is 693 which is 84.0 % of the target (Table 27). This does not meet the target. Reduced AAC logging is largely due to market driven mill downtime and an abundance of purchase wood available in the area. Plans are in place to focus harvest on crown tenures in 2020 and 2021 which will bring this indicator back into compliance.

Table 27: Kootenay FSC DFA Employment 2014-2019

2019 Annual Report – Canfor Kootenay Operations

All remaining licenses administered by Canfor FSC DFA - Volume harvested						
Year	2014	2015	2016	2017	2018	2019
AAC m ³	890,263	1,025,925	1,020,051	1,020,051	890,263	890,263
Cumulative AAC m ³	890,263	1,025,925	2,051,850	3,071,901	4,091,952	4,982,215
Annual harvest m ³	890,263	958,257	886,813	854,725	1,042,577	654,081
% of AAC	100.00%	93.40%	86.94%	83.79%	117.11%	73.47%
Cumulative	890,263	1,879,379	2,766,192	3,620,917	4,663,494	5,317,575
% of cumulative AAC	100.00%	183.19%	134.81%	117.87%	113.97%	106.73%
Average per year over five years	879,291					
Cranbrook TSA and Kootenay Lake TSA Direct + indirect employment per 1000 m ³	0.95					
Invermere TSA and TFL 14 Direct + indirect employment per 1000 m ³	0.745					
TFL and A18978 total 5 year harvest	1499571					
Cranbrook and KL TSA total 5 year licenses harvest	2471094					
Person Year Target	825					
Person Year Calculated Invermere TSA and TFL	223					
Person Year Calculated Cranbrook and KL TSA	470					
Total Person Years Calculated	693					

Criterion 6 – Society’s Responsibility

Element 6.1 – Fair and Effective Decision-making

Indicator 38 – PAG Satisfaction

Indicator Statement	Target (Variance)	Results
PAG established and maintained according to Terms of Reference (satisfaction survey implemented)	80% satisfaction from surveys (-10%)	Indicator dropped

Canfor is currently evaluating options for re-structuring the PAG, as there is no requirement to maintain a PAG under SFI/FSC Forest Management standards.

Indicator 39 – Educational Opportunities – Information/Training

Indicator Statement	Target (Variance)	Achieved
Number of educational opportunities for information/training that are delivered to the PAG	≥ 1/meeting (0)	Indicator dropped

Canfor is currently evaluating options for re-structuring the PAG, as there is no requirement to maintain a PAG under SFI/FSC Forest Management standards.

Indicator 39 – Educational Opportunity

Indicator Statement	Target (Variance)	Results
Number of people who took part in an educational opportunity	25 (-10) annually	Achieved. There were over 50 people in attendance at various presentations, field tours and workshops.

In 2019, Canfor staff led numerous educational opportunities including presentations, workshops, field tours, and one-on-one meetings. Examples include: a staff presentation at the Wings over the Rockies tour on forest practices, a presentation on Canfor operations during the Ktunaxa Business Match-Up event, Presentation on FREP results to stewardship foresters from around the Province, an open house presentation on wildfire salvage operations to residents in Invermere at the Lions Hall and a tour of the Wynndel mill for members of the JMAC.

Indicator 40 – SFM Monitoring Report

Indicator Statement	Target (Variance)	Results
SFM monitoring report made available to the public	One SFM Annual Report available to public annually via web (N/A)	Achieved

The 2018 SFMP Annual Report (current) for the entire DFA, addressing both SFI and FSC indicators is made publicly available. The current SFMP Annual Report is located on Canfor’s Website – [Canfor Plans - select Kootenay Operations \(previous Annual Reports available upon request\)](#)

2019 Annual Report – Canfor Kootenay Operations

Indicator 41 – Third Party Verification

Indicator Statement	Target (Variance)	Results
Independent, third party review of the degree of Canfor achievement of meaningful participation	Compliance with external audit	Achieved

This indicator is currently being met, as verified by the valid FSC and SFI certificates for the applicable Forest Management areas during 2019.

Indicator 44 – Indigenous Peoples Understanding of Plans

Indicator Statement	Target (Variance)	Results
Evidence of best efforts to obtain acceptance of applicable management plans based on Indigenous Peoples communities having a clear understanding of the plans	≥ 3 forms of communication for all applicable management plans (0)	Achieved

See page 49 for information on this indicator.

Element 6.2 – Safety

Indicator 42 – Certified Safety Program

<u>Indicator Statement</u>	<u>Target (Variance)</u>	<u>Results</u>
Implementation and maintenance of a certified safety program	100% (0)	Achieved

Canfor maintains a certified safety Program – Occupational Health & Safety Program. The program covers topics ranging from relevant legislation to hazard identification, risk assessment and control measures. Canfor was audited in 2019, and met the scoring requirements to continue to be SAFE Certified.

Criterion 7 – Indigenous Relations

Element 7.1 – Indigenous Peoples and Treaty Rights

Indicator 43 – Indigenous Peoples Awareness Training

Indicator Statement	Target (Variance)	Results
Employees receive Indigenous Peoples awareness training	100% of staff who are required to have Indigenous Peoples awareness training as per the staff training matrix. (-10%)	Achieved

In 2019, 100% of required staff completed Indigenous Peoples Awareness Training as per there signed off training matrix. Canfor has developed new updated Indigenous awareness training that will be rolled out in 2020 and 2021.

Indicator 44 – Indigenous Peoples Understanding of Plans

Indicator Statement	Target (Variance)	Results
Evidence of best efforts to obtain acceptance of applicable management plans based on Indigenous Peoples communities having a clear understanding of the plans	≥ 3 forms of communication for all applicable management plans (0)	Achieved

Table 6 provides a summary of communications and information shared with Indigenous Peoples communities in 2019.

Table 6: Information sharing and communication types for Indigenous Peoples Communities in 2018

Nation or Band	# Plans Shared Annually with Indigenous Peoples	Forms of Communication	Qualitative Information provided in 2018
Ktunaxa Nation (and Bands)	3	Face-to-face meetings, phone calls, field trips, letters and information sharing digital submissions.	Canfor met with the Ktunaxa to review proposed developments several times in 2019. Detailed block by block reviews were completed. In response to a request from KNC, a new template for the Info Share Maps was developed to show the various layer that were of most concern to KNC. A new Block Specific Details New procedure and tracking spreadsheet was developed to record the communications and comments that were generated from the Info Share process. Three Field reviews (2 that included helicopter tours) were conducted with KNC and FLNRO to review the Tobermory Beetle Salvage proposals. One field trip was halfway through logging to

2019 Annual Report – Canfor Kootenay Operations

Nation or Band	# Plans Shared Annually with Indigenous Peoples	Forms of Communication	Qualitative Information provided in 2018
			review post-harvest blocks.
Shuswap Indian Band	3	Face-to-face meetings, phone calls, letters and information sharing digital submissions.	Canfor met Shuswap Band's Territorial Lands staff to discuss the 3 information sharing submissions to review new and previously information shared proposed areas in an in-depth fashion. Communication and reviews continued with Territorial Lands staff throughout the year however recent staffing changes in the Shuswap office has been challenging for both parties.
Adams Lake Indian Band	3	Phone calls, emails, letters and information sharing digital submissions.	Canfor sent 3 information sharing submissions to the Adams Lake Indian Band (ALIB). Historically there has been not much communication from the ALIB as they tend to rely on Kootenay region First Nations to provide comments. There were no responses from ALIB after follow up phone calls and communications. Canfor continues to reach out to the ALIB on proposed developments.
Neskonlith Indian Band	3	Phone calls, emails, letters and information sharing digital submissions.	Canfor sent 3 information sharing submissions to the Band. No responses were received from the Neskonlith. Canfor continues to reach out to the Neskonlith on proposed developments.

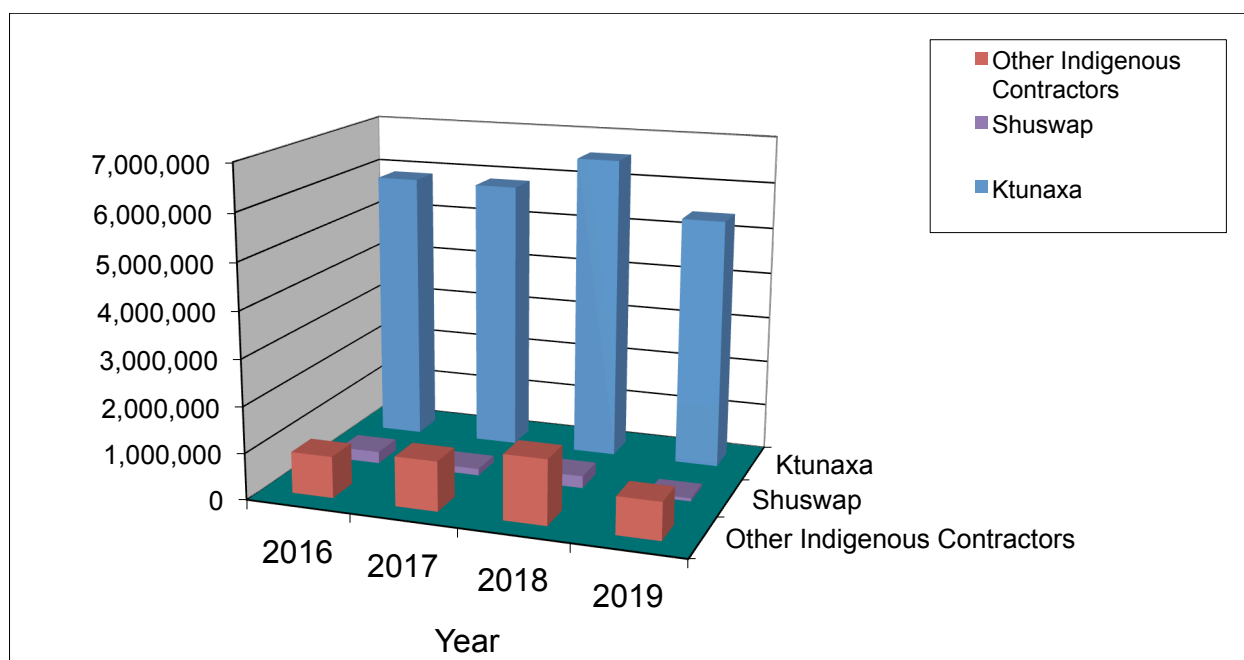
Element 7.2 – Respect for Indigenous Peoples Forest Values, Knowledge and Uses

Indicator 45 – Level of Indigenous Peoples Participation in the Forest Economy

Indicator Statement	Target (Variance)	Results
Evidence of Indigenous Peoples participation in the forest economy and efforts to increase the level of participation	Maintain 2013 levels of Indigenous Peoples participation in the forest economy at a minimum and continual improvement towards strategies to increase those levels of participation based on a 3-year average (-10%)	Achieved

The total amount of business between Canfor and Indigenous Peoples vendors and contractors in 2019 exceeded 2013 levels by \$1,419,311 (Figure 2). The trend towards greater aboriginal participation in the forest economy decreased relative to 2018, and compared to the previous 3 year average. This is in part due to the downtime taken by Robert logging, a substantial contributor to the Indigenous spend. Another substantial contribution came from the lack of licence payments in 2019. This was due to the 2018 expiration of the existing cut control period. Steps have been taken to remedy both these issues in 2020 as well as to continue to diversify the contributing contractors to avoid having “all eggs in one basket”.

Figure 2. Summary of Indigenous Peoples Woodlands contracts in CAD, 2016-2019



2019 Annual Report – Canfor Kootenay Operations

Indicator 46 – Evidence of Understanding and Use of Indigenous Peoples Knowledge

Indicator Statement	Target (Variance)	Results
Management strategies, developed through a collaborative process, including traditional knowledge and use, to protect identified Indigenous Peoples and other cultural forest values or sites of spiritual importance	Minimum of 1 process in place with willing Indigenous Peoples communities to identify and manage culturally important resources and values.	Achieved

Canfor and the Ktunaxa Nation Lands and Resources Agency (KLRA) staff continue to follow their agreed upon referral process although this process has started to be reviewed for updating. Several meetings were held with Ktunaxa lands staff in 2019 to develop management strategies for beetle salvage operations in the Upper Elk.

A joint monitoring project to review Cultural Conservation Value Forests (CCVFs) between Canfor and Ktunaxa KLRA staff continued with field visits of harvested areas which had overlapping CCVFs. The monitoring project is intended to determine if management strategies are being implemented and if they are achieving the desired outcomes. The Ktunaxa CCVF's and associated strategies underwent a thorough update in 2019 concluding in 2020. This is a project that started in 2017. Sharing of the updates with nation citizens and knowledge holders and subsequent tweaks to strategies are planned for 2020 and 2021.

Canfor staff met with Shuswap Chief and Council as well as Territorial Lands staff in late 2019 to discuss the relationship moving forward. The desire of both sides to establish a more formal agreement was stated. This process would like include some form of mapping of values to decrease the dependence on the info-share process. Between capacity issues for the band and the Covid-19 challenges progress has been limited, however discussion has resumed as of Sept, 2020. Canfor continues to have in person meetings with Shuswap lands staff to review harvest areas and identify any culturally important resources and values.

Indicator 47 – Level of Management and/or Protection for Indigenous Peoples Culturally Important Sites, Practices and Activities

Indicator Statement	Target (Variance)	Results
Forest management activities conform with operational plans which include management strategies to manage and protect Indigenous Peoples culturally important sites, practices and activities	100% compliance with operational plans (0)	Not Met



In 2019 there were five blocks where operational plans did not include adequate management strategies to fully protect an identified Indigenous Peoples important value (Table 28). This was reported in the Incident Tracking system (ITS) and corrective actions have been developed. All blocks overlapped with Cultural Conservation Value Forests (CCVFs) in the Creston area with requirements to retain ‘all’ trees greater than a specified diameter; in all cases, some retention was prescribed, but did not meet the 100% retention requirement. As a result, new strategies have been developed to better define veteran trees by age rather than based on diameter cut offs (large trees). The new strategy has been distributed to current planning staff.

Table 28: Summary CCVF management strategy review for cutblocks harvested in the 2019 calendar year

License	n CCVFs	HCVA Management strategies included in operational plans
A18978	12	12
A19040	11	11
A20212 [‡]	10	5
A18979 [†]	1	1
Total	34	29

[‡]Includes partially harvested blocks

[†]Includes FLA90310 Kinbasket Development Corporation RFL

Appendices

Appendix I. Common Ecosystem Type Representation within HCVFs

Table A-I 1. Common Ecosystem type overlap with Ecosystem Restoration HCVFs

HCVF Number	HCVF Name	Group	Area in HCVF (ha)
2114	Skookumchuk Priarie	1	703.1
2115	Reed Lakes	1	500.7
2125a	Lower Findlay A	1	22.6
2125b	Lower Findlay B	1	134.2
2126	E. Columbia Lake	1	420.3
2128	Findley Mouth	1	0.0
3127	Fussee Lake	1	679.6
3128	Englishman Creek	1	1711.4
3152	Saugum Lake	1	2272.9
Total Group 1			6444.9
Area required to be harvested under Ecosystem Restoration (ha)			4098.0
Total Surplus (ha)			2349.9
2115	Reed Lakes	3	1699.4
2125a	Lower Findlay A	3	1673.2
2125b	Lower Findlay B	3	676.0
2125c	Lower Findlay C	3	331.5
2126	E. Columbia Lake	3	908.5
2128	Findley Mouth	3	45.2
3127	Fussee Lake	3	350.9
3128	Englishman Creek	3	6826.1
3139	Kiakho Lake	3	211.5
3152	Saugum Lake	3	2744.7
Total Group 3			15466.8
Area required to be harvested under Ecosystem Restoration (ha)			3021.0
Total Surplus (ha)			12445.8

Appendix II. IDFdm2 and PPdh BEC Variant Representation within HCVFs

Table A-II 1. IDFdm2 and PPdh BEC Variant Representation within HCVFs

License	BEC	HCVF#	HCVF	Area (ha)
A18978	IDFdm2	Lower Findlay a,b,c	2125a,b,c	5746.2
A18978	IDFdm2	Findlay Mouth	2128	106.5
A18978	IDFdm2	East Columbia Lake	2126	1075.5
A18978	IDFdm2	Dutch Creek	2124	25
A18978	IDFdm2	Lower Lussier a	2113a	696.5
A18978	IDFdm2	Lower Lussier	2112	200
A18978	IDFdm2	Mud Creek a	2127a	57
A18978	IDFdm2	Mud Creek b	2127b	26.5
A18978	IDFdm2	Reed Lakes	2115	2124
Total Area IDFdm2				10057.2
Area required to be harvested under Ecosystem Restoration (ha)				2242.3
Total Surplus (ha)				7814.9
A18978	PPdh	Lower Lussier b	2113b	128.4
A18978	PPdh	Reed Lakes	2115	770.9
A18978	PPdh	Skook Prairie	2114	1370.7
Total Area PPdh2				2270.0
Area required to be harvested under Ecosystem Restoration (ha)				835.4
Total Surplus (ha)				1434.6
A18979	IDFdm2	Aberdeen	2545	1500
Total Area IDFdm2/PPdh				1500
Area required to be harvested under Ecosystem Restoration (ha)				46
Total Surplus (ha)				1454
A19040	IDFdm2	Saugum Lake	3152	3698
A19040	IDFdm2	Lower St. Mary's b	3150b	475.6
A19040	IDFdm2	Kimberley Nature Park	3151	1190
A19040	IDFdm2	Lower St. Mary's c	3150c	69.7
A19040	IDFdm2	Lower St. Mary's d	3150d	182.7
A19040	IDFdm2	Kiakho Lake	3139	173.4
A19040	IDFdm2	Englishman Creek	3128	7778.3
A19040	IDFdm2	Fussee Lake	3127	657.2
A19040	IDFdm2	Lower Elk Fish a	3125	1084.7
A19040	IDFdm2	Mt. Broadwood	3126	2706.5
A19040	IDFdm2	Morissey GB Linkage	3113	104.3
Total Area IDFdm2				18120.4
Area required to be harvested under Ecosystem Restoration (ha)				4293.0
Total Surplus (ha)				13827.4

2019 Annual Report – Canfor Kootenay Operations

License	BEC	HCVF#	HCVF	Area (ha)
A19040	PPdh	Saugum Lake	3152	2520
A19040	PPdh	Lower St. Mary's c	3150c	19
A19040	PPdh	Englishman Creek	3128	2949.3
A19040	PPdh	Fussee Lake	3127	1031
A19040	PPdh	Lower Elk Fish a	3125	6.6
Total Area PPdh				6525.9
Area required to be harvested under Ecosystem Restoration (ha)				1667.0
Total Surplus (ha)				4858.9

Appendix III Invasive Plant Management Strategy

Purpose

To ensure there are clear strategies such that:

- a. Canfor's forestry operations do not increase to occurrence of invasive species within the DFA, and
- b. Canfor can meet Certification commitments regarding integrated pest management and avoidance or elimination of chemical pesticides.

Rationale

Canfor has made legal (i.e. FSP), and Certification (i.e. FSC-NFSS, SFI) commitments around invasive plant management. An overall strategy is required for detailing how these commitments are met and/or implemented. Further information on job specific responsibilities are found in the current Invasive Plant Management Standard Work procedure.

Strategy

Training

1. The Canfor Biologist will ensure that training (in the form of PowerPoint presentations) for woodlands staff and contractors is available and up to date, and consistent with FSP Commitments:
 - a. FSP (Section 7.1.1): All woodlands staff will receive annual training in Best Practices for preventing the spread of invasive plants during forest management activities.
 - b. FSP (Section 7.1.1): All contractors engaged in road construction of cutblock harvesting will receive info on identification and reporting invasive plants
2. Records of training completion will be maintained by the Woodlands Administrative Assistant, until records are maintained in My Learning (anticipated in 2021).

Relationships with Regional Invasive Species Organizations (RISOs)

1. The Canfor Biologist will represent Canfor on the East Kootenay Invasive Species Council (EKISC) Board of Directors, in order to improve relationships with RISOs, community members, and government staff as it relates to invasive plant management.
2. The Canfor Biologist is responsible for maintaining up-to-date lists of priority species by RISO (i.e. EKISC, Columbia Shuswap and Central Kootenay Invasive Species Society) and that any pertinent information on invasive plant management (e.g. available courses, ID guides, other information) is made available to Canfor Woodlands Staff.

Invasive plant management on crown land (both FSC-FM areas, or SFI areas)

1. Canfor woodlands staff and contractors will focus on implementation of BMPs in order to reduce in available sites for colonization of invasive plants. Best Management Practices include:
 - a. Including known invasive plant sites into Site Plans and associated maps (*Responsibility: Permitting Supervisor*).
 - b. Reporting new infestations using Report-a-weed app (*Responsibility: All woodlands staff and contractors*).

- c. Removing obvious plant material from machinery such as cleaning equipment before moving to weed-free sites (*Responsibility: Harvesting and road building Contractors*)
 - d. Minimizing soil disturbance, through prescribing key season of harvest, and keeping landings and turn-arounds as small as possible (*Responsibility: Permitting Supervisor, layout*).
 - e. Re-vegetating disturbed areas as soon as possible (e.g. grass seeding in Open Forest/Open Range, tree planting elsewhere)
 - f. Avoiding infested sites for staging, parking, log sorting, etc. (*Responsibility: Permitting Supervisor to prescribe, layout*).
 - g. Checking that soil and surfacing material are free from invasive plants.
 - h. Controlling infestations – prompt grass seeding and/or mechanical treatments. Chemical treatments are considered a last resort.
2. Resources for identification of invasive plants such as digital guides, will be made available to Woodlands staff and Contractors on the Canfor Woods Drive ([here](#)), and shared at annual pre-works. Other opportunities and resources such as workshops will be shared via email (i.e. sign-up info) as they become available.
 3. Herbicide treatments are a last resort, and are to be coordinated with Regional Invasive Plant organizations, and are to occur only when it's in line with the province's integrated pest management plan (ensuring a consistent rationale for their application is used). Workplans are to be developed annually with FLNRORD during their annual planning meetings. In addition, this work requires an Authorizations Letter. When herbicides are used for spot treatments of invasive plants, only chemical pesticides that are not prohibited by FSC's Pesticide policy will be used, applied by certified applicators, following all legal requirements for safe storage, handling, and application of herbicides.

Invasive plant management on private land owned by Canfor (e.g. mills, scales, offices, currently within scope for FSC-FM area)

1. Currently, under Canfor's FSP Canfor is legally required to **monitor and treat invasive plants** on an annual basis at scale and mill sites.
2. Mill, office, and scale sites are areas with high traffic areas, with high vector potential (i.e. in that they are hubs that see vehicles from throughout our operating area), thus more intense management of all invasive plants at these sites (likely involving herbicide) is key to minimizing herbicide applications elsewhere. Where mechanical treatments (such as hand-pulling or mowing, weed-whacking) are suitable and not cost-prohibitive, these should be used.
3. The intent is to reduce and where possible eliminate the use of pesticides over time at these sites. However, in practice, it is expected that herbicide applications will continue in the future, as there is the possibility of new introductions of invasive species, and a persistent seed bank at sites. Records of treatments (mechanical and chemical) are to be maintained indefinitely, with periodic monitoring (every 5 years) to evaluate whether or not herbicide usage is decreasing.
4. When herbicides are used for spot treatments of invasive plants, only chemical pesticides that are not prohibited by FSC's Pesticide policy will be used, applied by certified applicators, following all legal requirements for safe storage, handling, and application of herbicides.

2019 Annual Report – Canfor Kootenay Operations

Invasive plant management on private land not owned by Canfor (e.g. Conservation Properties) – outside Canfor's FSC FM Area

1. Canfor currently has agreements to manage for invasive plants on these properties. Going forward, Canfor will promote alternatives to herbicide applications, and work with landowners to reduce or eliminate their usage over time.
2. When herbicides are used for spot treatments of invasive plants, only chemical pesticides that are not prohibited by FSC's Pesticide policy will be used, applied by certified applicators, following all legal requirements for safe storage, handling, and application of herbicides.