

SFM Plan

Appendix 2:

2022 Detailed Indicator & Results

Mid Island Forest Operation
TFL 39 Block 2

May 2023

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SFM Criteria, Values, Objectives, Indicators & Targets

This section of the SFM Plan describes Mid Island Forest Operation's SFM Values, Objectives, Indicators and Targets. As appropriate, an acceptable variance is provided for the performance level of each target and a forecasted future condition is provided for each indicator. This section is organized according to the Criteria for Sustainable Forest Management, which was developed by the Canadian Council of Forest Ministers and adapted for the Canadian Standards Association's Sustainable Forest Management standard (CAN/CSA-Z809-16).

As further explanation of the organization of this section:

The **Criteria** (e.g., below: 1.0 Conservation of Biological Diversity) and **Critical Elements** (e.g., 1.1 Ecosystem Diversity) and their accompanying statements are derived from *Defining Sustainable Forest Management: A Canadian Approach to Criteria and Indicators* (Canadian Council of Forest Ministers, Ottawa, 1995).

The subsidiary **Values, Objectives, Indicators, Targets, Acceptable Variances** and **Forecasts** were developed for this plan during discussions among MIFLAG members, Mid Island Forest Operation staff and other Western Forest Products' staff.

As used in this plan:

Values are DFA characteristics, components, or qualities considered by the advisory group to be important in relation to a CSA SFM element or other locally identified element.

Objectives are broad statements describing a desired future state or condition of a value.

Indicators are variables that measure or describe the state or condition of a value.

Targets are specific statements describing a desired future state or condition of an indicator. Where possible, targets are clearly defined, time-limited and quantified.

Acceptable Variances specify the range of performance results (+ and/or – relative to the Target) that is deemed to be an acceptable outcome. A result outside this range does not always indicate unacceptable performance. (For example, it could reflect: the impact of an uncontrollable event, such as a natural disaster; the fact that the Target was based on poor quality or inadequate data; or the effects of a responsible choice between two competing Objectives.) A result outside the Acceptable Variance range does, however, require review, assessment and, possibly, a revision of either the objective, target or management practices.

Forecasts are explicit statements of the expected future condition of an indicator.

Legal References are provided where they exist.

Performance Reporting

On an annual basis, the SFM Plan is updated to include performance reporting information. Most indicators are reported on an annual basis from January 1- December 31st. The monitoring report (Appendix 2) is completed by WFP Mid Island Forest Operation planners. The indicator results are presented to the Mid Island Forest Lands Advisory Group (MIFLAG) for review in the spring/summer of each year.

Internal audits also evaluate the quality, validity, and meaningfulness of the locally determined indicators and all targets.

Management Review

A management review of the SFM requirements is completed annually as part of WFP's Environmental Management System Management Review process. The review considers all aspects of the SFM process, including the SFMP Plan, annual results, the public participation process, audit findings (internal and external) and corrective/ preventative action plans. The Management Review is scheduled each spring/summer to ensure the sustainable forest management process is functioning properly and being fully implemented.

Summary of Results

For 2022, the Mid Island Forest Operation was in conformance with the target for 40 of 41 reported indicators (100%). One indicator did not meet the target or the variance: 2.1.3 Permanent Access. Two indicators were not reported in 2022: 1.2.2. SAR Habitat Modelling, and 3.2.1 Watersheds.

Parking Lot

The Parking Lot is intended to defer topics where consensus is not reached, but further discussion is desired. Parking Lot items are reviewed annually. There are no items currently in the parking lot.

Indicator 1.1.1: Ecosystem by Type

Element: 1.1 Ecosystem Diversity				
<i>Conserve ecosystem diversity at the stand and landscape levels by maintaining the variety of communities and ecosystems that naturally occur in the DFA. Establish forest plantations only in afforestation projects.</i>				
Value	Objective	Indicator	Target	Variance
Ecosystem types found on the DFA	Sustain ecosystem types over time	Ecosystem area by type	The ecosystem representation (%) by area for each type (BEC subzone) changes < 1% on a 5-year basis	0.5%

History

New Core Indicator under CSA Z809-08 (relates to old indicator 2). No change in CSA Z809-16.

The indicator target was modified at the February 21, 2019 meeting from % change in area to % change in ecosystem representation. This target will help to conserve ecosystem diversity at the stand and landscape level and will better measure the variety of ecosystems versus mapping changes. The variance will be 0.5% for all zones.

Justification

In conservation biology, ecosystem representation ensures that ecologically distinct ecosystem types are represented, especially in the non-commercial land base. This is a priority for the BC Conservation Data Centre (CDC). The CDC has developed red and blue lists, highlighting ecological communities that have particular threats, declining trends, or restricted distributions. Red and blue listed ecosystems can be either naturally rare or depleted due to human activities. Ecological communities on the red and blue list are often plant associations of the Biogeoclimatic Ecosystem Classification (BEC) system.

The CSA Z809 Standard recommends that representative ecosystem types should be summarized at a scale that is ecologically relevant and useful for management and suggests that the biogeoclimatic subzone level may be the most relevant scale in British Columbia. By using BEC for reporting, the results can also be compared to the CDC red and blue lists and management strategies for rare ecosystems.

The MIFLAG wants to sustain ecosystem types through time using biogeoclimatic subzones. The target is <1% change in ecosystem representation (%) for each subzone on a 5-year basis, with a 0.5% variance. The subzone reporting splits out area for old seral stages from early, mid and mature series because successional and stand developmental stages are important to CDC listing criteria.

Current Status & Interpretation

The target is met. The difference in ecosystem representation changed by less than 1% for each BEC subzone. The changes within the seral stages of the BEC subzones reflects harvest practices, with subzones like the CWHxm2, which is dominated by second growth, having a reduction in those associated stages ('early, mid, mature'), whereas, subzones dominated by old growth, like the MHmm1, having a reduction in the 'old' stage but through replanting also showing an increase in the 'early, mid, mature' stages.

BEC	Seral Stage	2018 HA	2022 HA	2018%	2022%	Difference
CWHmm1	Early, Mid, Mature	4619	4582	86%	86%	
	Old	748	743	14%	14%	
	Total	5367	5326	4.2%	4.2%	0.0%
CWHmm2	Early, Mid, Mature	132	132	59%	59%	
	Old	93	93	41%	41%	
	Total	225	225	0.2%	0.2%	0.0%
CWHvm1	Early, Mid, Mature	38685	38797	78%	78%	
	Old	10875	10930	22%	22%	
	Total	49560	49727	38.8%	39.1%	0.25%
CWHvm2	Early, Mid, Mature	21279	21798	55%	57%	
	Old	17107	16573	45%	43%	
	Total	38385	38371	30.1%	30.1%	0.1%
CWHxm2	Early, Mid, Mature	20273	19797	94%	94%	
	Old	1340	1340	6%	6%	
	Total	21613	21138	17%	16.6%	-0.3%
MHmm1	Early, Mid, Mature	2626	3112	21%	25%	
	Old	9903	9389	79%	75%	
	Total	12530	12501	9.8%	9.8%	0.0%
Grand Total		127680	127287	100%	100.0%	

Biogeoclimatic Subzones

The CWHxm2 is located south of Sayward and north of the CWHxm1. It is included in Natural Disturbance Type (NDT) 2 where a more frequent fire history results in a greater mix of age classes under natural conditions, with less dominance of age classes 8-9 compared with the wetter variants. A significant forest harvesting history over the past century has resulted in extensive areas of younger second growth dominating much of the subzone. All 15 site series are either red (7) or blue (8) listed in this variant under CDC. As a result, the CWHxm2 ranks high for the management of rare ecosystems. 26% of the CWHxm2 is in the non-classified land base (NCLB) and is unlikely to be logged. Only 1% of the THLB is >250years, so there is limited opportunity to increase the protected area, specifically targeting rare ecosystems. Recruitment of older seral stages in rare site series will need to occur.

CWHmm1 is restricted to the leeward side of the Vancouver Island Ranges at middle elevations (450-750m). The CWHmm1 is also included in the NDT2, but it tends to have a higher natural proportion of age class 8 and 9 than the CWHxm2. Significant harvesting has occurred, limiting the older age classes. Due to the lack of older age classes, all except 2 site series are red-listed or blue-listed. This variant is high priority for the management of rare ecosystems. There may be opportunity to increase the reserved area of older age classes during the establishment of new murrelet and goshawk reserves.

The CWHmm2 is the higher elevation variant above the CWHmm1 on the leeward slopes of eastern Vancouver Island. The CWHmm2 is rare for the DFA; however, it only represents 0.07% of the full extent of the variant in the Coast Forest Region. The impact of road construction or old growth logging is minimal at the regional level. Furthermore, 20% of the DFA mm2 is located within the NCLB and 41% remains old growth.

The CWHvm1 is the most extensive variant in the DFA, extending from sea level to 600m+ in elevation. Old forests dominate the natural CWHvm1 landscape which is included in NDT 1. However, significant harvesting has occurred and only 22% old growth remains. Of the 14 site series, six are blue listed and one is red listed. Opportunities for Mid Island to contribute to the provincial conservation of rare ecosystems in the CWHvm1 is high due to its abundance on the DFA (39%). 27% of the CWHvm1 is currently located within the NCLB.

The CWHvm2 is the montane variant occurring above the CWHvm1 (600m+) and covers a significant area (30% of DFA). Old seral stages dominate the natural CWHvm2 (NDT1) landscape. There is a comparatively more recent harvesting history, so a larger old forest component remains (45% >250years). 30% of the CWHvm2 is located in the NCLB, and 71% of the NCLB is >250years. 5 out of 11 of the vm2 site series are blue-listed; however, these rare ecosystems should be sufficiently protected within the NCLB and the extensive old growth. There will also be opportunities to locate high quality element occurrences of specific blue-listed site series in reserves being planned for the preservation of habitat for murrelets under SARA.

The MHmm is the forested subalpine subzone occurring above the CWH throughout the DFA. At Mid Island, 45% of the MHmm1 is in the non-classified land base and is unlikely to be logged, and 80% of the MHmm1 remains as old growth. Mid Island's area of the MHmm1 will help contribute to the provincial conservation/management of rare ecosystems in the subzone. It ranks low in priority for the management of rare ecosystems.

Strategies & Implementation

At the landscape level, there are many reserve types that encompass and thereby protect rare ecosystems, including old growth management areas, wildlife habitat areas, ungulate winter ranges, ecological reserves, and parks. At the stand level, there are wildlife tree retention areas, riparian reserve zones, and reserves to protect special resources. WFP's Stewardship and Conservation Plan also focuses on in-block retention, thereby contributing to rare ecosystem protection. Prescribing foresters pay attention to plant communities listed by the BC CDC when designing in-block reserves and wildlife tree patches.

The CDC has developed red and blue lists for plant communities. The red and blue lists highlight ecological communities that have threats, declining trends, or restricted distributions that indicate they require special attention. Red and blue listed ecosystems can be either rare or depleted and thereby rare due to human activities (land conversion). WFP intends to locate high quality element occurrence (EO) reserves to protect these rare ecosystems. WFP expects the bulk of the EO reserves to be established within existing permanent reserves or in additional reserves planned to accommodate required habitat for murrelets and goshawks under SARA. Reserve targets for each subzone are set in the Management of Rare Ecosystems within Western Forest Products' Vancouver Island and Sunshine Coast Forest Operations report by Allen Banner, Terence Lewis, and Del Meidinger.

Forecast

It is not anticipated that the overall ecosystem representation of the DFA will change significantly over the short-term, though the proportion of old growth will decrease given WFP's efforts to harvest the full profile and meet sustainability metrics.

WFP will continue to strive to meet Indicator 2.1.3 for permanent access structures, which will help minimize the impact of road construction. Additions or deletions to the DFA could impact the ecosystem representation and are tracked in Indicator 4.2.1.

In the long term, climate change will have a significant impact on ecosystem representation. The projection of future climate zones and vegetation change will be an ongoing task facilitated by modeling and direct measurement of change.

Monitoring

The indicator is reported annually. Corporate completes a GIS analysis to report on the hectares of productive forest by BEC zone. Ecosystem composition is calculated for the current year, and then compared to ecosystem composition from 5 years prior. The changing baseline allows for slow shifts due to climate change.

Indicator 1.1.2: Forest Area by Species

Element: 1.1 Ecosystem Diversity				
<i>Conserve ecosystem diversity at the stand and landscape levels by maintaining the variety of communities and ecosystems that naturally occur in the DFA. Establish forest plantations only in afforestation projects.</i>				
Value	Objective	Indicator	Target	Variance
Species composition of forests on the DFA	The overall species composition of the DFA remains stable over time	Forest area by type or species composition	The species composition by area (ha) remains within 2% on a 5-year basis.	Species that represent less than 5,000ha of the DFA are reported for informational purposes only; species that represent >5,000ha on the DFA may vary by +/- 2%

History

New Core Indicator under CSA Z809-08 (relates to old Indicator 5 and 6). No change in CSA Z809-16.

The target was revised at the March 15, 2018 MIFLAG meeting, from change in area by species to change in species composition by area. Due to frequent corporate spatial updates, the total area was changing annually, and it was impossible to determine whether the change in area by species was due to management practices or GIS projects.

Justification

The target aims for stable species composition over time to conserve ecosystem diversity at the stand and landscape levels by maintaining the variety of communities and ecosystems that naturally occur in the DFA.

The target is loosely based on the timber supply analysis and historical reporting of 2009 SFM Plan Indicator 5. From 2005 to 2009, the average difference in species composition was 1.84%. The 2% deviation from the baseline allows for subtle species shifts for climate change or due to poor survival (ex. elk related challenges reforesting Cw and Yc). The variance related to minor species was developed in 2014 due to the increased use of browse resistant species, such as Western white pine and Sitka spruce.

Current Status & Interpretation

Difference in Species Composition by Area from 2018-2022

Year	Balsam (%)	Cedar (%)	Cypress (%)	Fir (%)	Hemlock (%)	Pine (%)	Spruce (%)	Deciduous (%)
2022	19.8	5.4	6	14.5	51.9	0.3	0.4	1.6
2018	19.7	5.5	6.2	14.8	51.2	0.4	0.4	1.7
Difference	0.1	-0.1	-0.2	-0.3	0.7	-0.1	0	-0.1

Area per Species by Year

Year	Species								Total
	Balsam (Ha)	Cedar (Ha)	Cypress (Ha)	Fir (Ha)	Hemlock (Ha)	Pine (Ha)	Spruce (Ha)	Deciduous (Ha)	
2022	25,434	6,978	7,705	18,537	66,499	425	567	2,001	128,146
2021	25,666	7,174	7,717	18,758	66,465	429	531	2,020	128,760
2020	25,261	7,057	7,712	18,597	66,625	425	523	2,135	127,336
2019	25,295	6,857	7,849	18,407	65,603	501	513	2,159	127,185
2018	25,269	7,019	7,898	18,921	65,486	562	557	2,205	127,917

The target is met. The maximum increase of species composition was Hemlock (0.7%), while the maximum decrease was Douglas-Fir (-0.3%).

Overall, relatively browse resistant species are replacing highly desirable ungulate species on the land base. Cedar and cypress experience high mortality without caging or shelters, when planted in moderate to extreme elk use areas. Caging is not feasible at a large scale due to snow press and the high cost (~\$5,500/ha). In order to meet minimum stocking standards in these extreme elk use areas, reforestation is occurring with western hemlock on high elevation, Cedar/cypress suitable sites. Despite the challenges of establishing cedar and cypress, the total area has seen little change year over year.

Unfortunately, it is difficult to draw a direct comparison between this indicator reporting and the TSR analysis. The TSR analysis summarizes based on leading species. For this indicator, the species composition is calculated based on leading, secondary and tertiary representation in stand types by area. For example, if a forest inventory polygon is 50% Fdc, then 50% of the polygon area is attributed to Fdc.

NOTE: The total area represents the productive forest area that is “stocked” and excludes the areas harvested, but not yet planted or stocked.

Strategies & Implementation

WFP conducts reforestation activities consistent with legal requirements and approved stocking standards. The stocking standards specify the ecologically and commercially suitable species permitted for each ecosystem type and site series. Regeneration and free growing milestones ensure cutblocks are regenerated in accordance with approved stocking standards.

A species shift will occur through time due to extreme elk pressure. Elk target in order of preference: Western Redcedar, Cypress, Douglas-Fir, Hemlock, Balsam, Spruce, Pine, and Alder. The species composition will become skewed to less palatable species due to differences in survival and planting prescriptions that aim for good stocking to meet legal requirements.

To reduce the impact, Mid Island plants high components of Cedar and Cypress in heli blocks where very high slash levels discourage elk use. Historically Mid Island has also used cages and other variations of tree shelters for approximately 10ha/year in low elevation, easy access areas to provide future supply to First Nations. In moderate elk hazard areas, we obstacle plant a well distributed 10% of Cw/Yc in most blocks.

Forecasts

The target is expected to be achieved.

With the 5-year comparison period, the target allows for small shifts in species composition over the long term. This is necessary to account for climate change since the range and suitability of species will change. Mid Island has already started to adapt planting prescriptions. For example, the range of mountain hemlock is expected to decrease, so the division is planting high elevation hemlock instead on these sites. The performance of western hemlock is expected to decline in the xm2, so the division is planting and relying more heavily on Douglas fir and Western white pine. The range and performance of red alder is expected to expand and improve, so the division is continuing to implement a hardwood management strategy. There have been increased efforts by the company to identify and locate healthy and resilient cypress tree to source high quality seed that is sustainable for the establishment of future cypress seedlings.

Monitoring

The indicator is reported annually. Corporate completes a GIS analysis to report on the hectares of productive forest by species. The species composition is calculated based on leading, secondary, and tertiary representation in stand types by area. For example, if a forest inventory polygon is 50% Fdc, then 50% of the polygon area is attributed to Fdc.

The species composition is compared between the current reporting year's data and data from 5 years prior. The comparison year changes annually, allowing for slow shifts in species due to climate change or pests.

Indicator 1.1.3: Age Class

Element: 1.1 Ecosystem Diversity				
<i>Conserve ecosystem diversity at the stand and landscape levels by maintaining the variety of communities and ecosystems that naturally occur in the DFA. Establish forest plantations only in afforestation projects.</i>				
Value	Objective	Indicator	Target	Variance
The distribution of age classes on the DFA	Maintain old forest of each ecosystem type	Forest area by seral stage or age class	Amount of old forest and forest managed for recruitment of old forest characteristics in the non-contributing land base by ecosystem type is \geq the targets defined in the Landscape Unit Planning Guide	0%

History

New Core Indicator under CSA Z809-08 (relates to old indicator 1 and 4). No change in Z809-16.

In 2019, the objective and target were modified to align with WFP’s Stewardship and Conservation Plan. The old indicator was based on incorrect calculations and was impossible to meet due to the natural ageing process of a forest.

Justification for the Target

Seral stage is a key characteristic of forest ecosystems. Ecosystem conservation assumes that by maintaining the structure and diversity of ecosystems across the landscape, the habitat needs of various species will be provided. As a result, it’s important to maintain old growth forests.

Old growth forests are climax ecosystems often characterized by relatively tall, old trees and high structural diversity. In the Landscape Unit Planning Guide, old seral stage (old growth) is defined as >250 years for the CWH and MH BEC zones.

The Guide includes targets for old seral stage distribution for the CWH and MH. It recommends several targets by BEC zone based on biodiversity emphasis. For an intermediate biodiversity emphasis, the guide recommends >9% for the CWHmm1, mm2, and xm2, >13% of the CWHvm1 and vm2, and >19% for the MHmm1 of the forested area to be in old seral stages.

For simplicity, the indicator will be measured for the entire TFL, not by landscape unit. Some biogeoclimatic zones do not meet the old seral targets due to historic logging and fire history, so area <250 years has been protected as recruitment area. These areas are included in the calculation. The calculation will be ((productive forest area >250 years and OG recruitment area in NCLB) / (productive forest area of TFL 39 Block 2)) x 100, for each BEC subzone.

There will be no variance.

Current Status & Interpretation

BEC Unit	Target (%) *	% Area in NCLB (>250 years or Recruitment)		
		<250 years	>250years	Total (%)
CWHxm2	>9	20.6%	4.9%	25.5%
CWHmm1	>9	14.2%	9.2%	23.4%
CWHmm2	>9	4.9%	15.1%	20.0%
CWHvm1	>13	13.5%	14.3%	27.8%
CWHvm2	>13	8.5%	21.3%	29.8%
MHmm1	>19	4.8%	40.5%	45.3%

*Using the Intermediate Biodiversity Emphasis

BEC Unit	<250years in NCLB (ha)	>250years in NCLB (ha)	TFL 39 Block 2 (ha)
CWHxm2	4,350	1,028	21,139
CWHmm1	757	491	5,327
CWHmm2	11	34	225
CWHvm1	6,792	7,189	50,178
CWHvm2	3,257	8,156	38,309
MHmm1	598	5,048	12,465
TOTALS	15,765	21,946	127,643

The target is met for all BEC subzones. The total area in the NCLB for each BEC subzone exceeds the old seral target.

The CWHxm2 is the only BEC subzone that does not meet the old forest target without including the recruitment area. Due to this subzone being so easily accessible with relatively gentle terrain, there is a long history of forest harvesting, meaning the CWHxm2 is now reliant on recruiting old growth going forward. The CWHxm2 also has a natural disturbance type characterized by infrequent stand-initiating events and was affected by the Sayward fires of 1922 and 1938. It will take 170 years for this zone to fully meet the target without recruitment area.

All other BEC subzones meet the old forest target without recruitment area, within the NCLB.

Strategies & Implementation

Old Growth Management Areas (OGMA) identified through landscape unit planning serve as foundation blocks to ensure representative occurrences of ecosystem types in the older seral stages are conserved for the long term. Landscape unit planning is complete across the DFA, and all OGMAs are legally established. Other protected areas contributing to old growth targets include: wildlife habitat areas, parks, ungulate winter ranges, wildlife tree patches, riparian reserves, etc. The Western Wildlife and Biodiversity Program also provides age and structural diversity using a retention silvicultural system, which involves stand level retention targets.

Forecasts

The target will be met.

Monitoring

The Area Forester requests data from the Senior Biologist or MIFO GIS Analyst. Productive forest is used to calculate the representation. The Area Forester summarizes the seral stage breakdown by BEC subzone, split between THLB and NCLB.

For the interest of the PAG, the breakdown can also be summarized by landscape unit.

Indicator 1.1.4: Forest Strategy Retention

Element: 1.1 Ecosystem Diversity				
<i>Conserve ecosystem diversity at the stand and landscape levels by maintaining the variety of communities and ecosystems that naturally occur in the DFA. Establish forest plantations only in afforestation projects.</i>				
Value	Objective	Indicator	Target	Variance
Existing forests on the DFA	A portion of the existing forest is retained on the DFA	Degree of within stand structural retention	For retention blocks, minimum stand level retention is 15% in Enhanced Basic (EB), 20% in Enhanced Dry (ED) and General Basic (GB) and 25% in General Dry (GD) and Special (S)	-3%

History

New Core Indicator under CSA Z809-08 (carried forward from 2009 SFM Plan Indicator 7 and related to old Indicators 3 and 8). No change in Z809-16.

The target was revised at the March 15, 2018 MIFLAG meeting to match with historic reporting, which only included retention blocks.

Justification

Stand level retention helps capture important features that provide habitat heterogeneity including downed wood, tree cavities, large trees, and large dead snags. Retention of these structures in the managed forest matrix is important to provide stand structural heterogeneity across the landscape to promote a diversity of habitats; maintain unharvested refugia in large disturbed areas; assist some species to repopulate the regenerating ecosystem over time; and provide for a degree of connectivity throughout the managed landscape to facilitate movement of species populations.

This indicator is derived from the WFP Stewardship and Conservation Plan. The strategy has stand level retention targets ranging from 15-25% for all retention blocks, by Vancouver Island Land Use Plan (VILUP) zones.

The variance is -3% to allow operational flexibility to accommodate terrain challenges, windthrow hazard, economic conditions, etc. The variance would still ensure 7% retention in the Enhanced Basic, which is the minimum Wildlife Tree Retention Area % to meet the Forest Stewardship Plan and Forest Planning and Practices Regulation.

Current Status & Interpretation

Year	Resource Management Zone/ Variant Climate Class & Retention Target (%)					Target Met (Y/N)	Variance Met (Y/N)
	ED	EB	GD	GB	S		
	20	15	25	20	25		
2022	35.5	30	N/A	29	24	N	Y
2021	40	30	39	23	29	Y	N/A
2020	39	48	20	N/A	24	Y	N/A
2019	49	47	20	33	21	Y	N/A
2018	42	45	N/A	29	78	Y	N/A

N/A= no harvesting occurred

The target was met for all but the Special Management Zone, which was still within the allowed 3% variance. The targets were greatly surpassed in the Enhanced Dry, Enhanced Basic, and General Basic zones. No harvesting occurred in the General Dry.

Strategies & Implementation

Using a 5-year rolling average, WFP manages >50% of its total harvest area under retention systems. The retention system target varies by WFS zone, from >30% to >90%. Under this system, there are stand level retention targets, ranging from 15 to 25%.

Retention for each block is planned based on the required protection of different resources (e.g. riparian, wildlife, cultural) and engineering or economic constraints. If the minimum level of retention is not met to protect these resources, additional area is retained to meet the Western Stewardship and Conservation Plan stand level retention targets.

For many planned blocks, significant adjacent area is already protected due to riparian reserves, old growth habitat areas, wildlife habitat areas, and ungulate winter ranges. These protected areas are often included in block level retention as reserves and WTRAs. Including these areas in block retention does not cause a further loss of the operability of the land base and greatly increases retention totals.

Definitions:

ED= Enhanced Dry, EB= Enhanced Basic, GD= General Dry, GB= General Basic, S= Special
Where dry= CWHxm2 or mm1 and basic= CWHmm2, vm1, vm2, MHmm1

Retention system means a silvicultural system that retains individual trees or groups of trees to: maintain structural diversity over the area of the cutblock for at least one rotation; leaving more than half the total area of the cutblock within one tree height from the base of a tree or group of trees, whether or not the tree or group of trees is inside the cutblock. Retention can be dispersed throughout a cutblock as single trees or aggregated groups of trees.

Forecasts

The target is anticipated to be achieved based on historic performance and its priority at the corporate level. The WFP Stewardship and Conservation Plan revised stand level retention targets in 2020 by 5% for each zone, which will lead to a further increase in retention levels.

As of Jan 2018, the total area under forest influence will not include the area of Wildlife Tree Retention Area (WTRA) or Long-Term Retention (LTR). To continue meeting the target, more area will need to be retained internally to generate higher forest influence. As a result, the stand level retention levels should remain high.

Monitoring

A crystal report is generated annually with the combined area of reserves and WTRAs and the combined area of NAR and roads for all blocks logged in the reporting year. The retention % is calculated for all retention system blocks and summarized by WFS Zone. The retention % is the total leave area divided by the WFS Area (Gross-Leave).

Indicator 1.1.A: Forest Influence

Element: 1.1 Ecosystem Diversity				
<i>Conserve ecosystem diversity at the stand and landscape levels by maintaining the variety of communities and ecosystems that naturally occur in the DFA. Establish forest plantations only in afforestation projects.</i>				
Value	Objective	Indicator	Target	Variance
Forest influence	Forest influence is maintained throughout harvested areas	The % of total harvested area using a retention silviculture strategy on a 5-year rolling average	Enhanced Basic >=50% Enhanced Dry >= 60% General Basic >= 60% General Dry >= 70% Special >= 90%	<=15% of the target on a 5-year rolling average for each zone

History

This objective was carried over from the 2009 SFMP (Indicator 8). It is not a core indicator.

The indicator was revised at the February 2019 meeting. It was no longer possible to calculate the old indicator due to corporate data entry standardizations. The revised target still captures the intent of the original indicator since a retention system requires that “more than half the total area of the cutblock be within one tree height from the base of a tree or group of trees.”

Justification

Coastal BC has a diversity of forest ecosystems and species; therefore, forest management practices must vary in response to that diversity. No single harvesting or silvicultural system is appropriate everywhere.

Variable retention helps achieve that diversity. It is an overall approach to harvesting and silvicultural systems that retains trees and associated habitat for purposes other than timber management and traditional silviculture goals. Variable retention can be implemented with a wide range of harvesting systems. Various levels of retention can be used with different types, amounts, and spatial patterns of structure. Retention can be dispersed throughout a cutblock or aggregated in larger groups and patches, depending upon the objectives.

A retention system is a specific silvicultural system designed to meet the goals of variable retention. It was originally defined in the BC Operational Planning Regulations (March 1999) and has 3 requirements: 1) retention of trees distributed across the cutblock; 2) trees are left for the long term (one rotation minimum); 3) distribution of leave trees achieves >50% forest influence.

The retention targets of this indicator correspond to the corporate WFP Stewardship and Conservation Plan. The Plan outlines different retention silviculture system targets by VILUP zone. In the Enhanced Management Zone, where the emphasis is on timber production, the retention system will be used on 50% of the harvested area. In the General Management Zone, where the emphasis is on integrated resource

management, the retention system will be used on 60% of the harvested area. In the Special Management Zones (SMZ), where specific environmental, recreational, and cultural/heritage values have been identified, a retention system will be used on 90% of the harvested area. Also, for the SMZ, the VILUP Higher Level Plan Order specifies, “applying a variety of silvicultural systems, patch sizes, and patch shapes across the zone, subject to a maximum cutblock size of 5ha if clearcut, clearcut with reserves, or seed tree silvicultural systems are applied, and 40ha if shelterwood, selection or retention silvicultural systems are applied.”

The targets are 10% higher for dry zones (dm, xm, mm1) due to the extensive logging history and poor representation in reserves. Stand-level retention is being used to compensate for deficiencies in landscape-level representation.

The variance is to allow for operational flexibility to accommodate terrain challenges, windthrow hazard, economic conditions, etc.

By utilizing retention systems extensively across the landscape, WFP will ensure high levels of forest influence are maintained.

Current Status & Interpretation

WFS Zone	Actual 2022 (%)	5 Year Rolling Average (%)	Target Achieved	Variance Achieved
Enhanced Basic (>=50%)	71	77.8	Y	N/A
Enhanced Dry (>=60%)	100	88.4	Y	N/A
General Basic (>= 60%)	54	77.4	Y	N/A
General Dry (>=70%)	n/a	100	Y	N/A
Special (>=90%)	100	100	Y	N/A

5-years Gross Hectares

WFS Zone	Clearcut with Reserves (ha)	Retention (ha)	Total (ha)
Enhanced Basic	769	2,694	3,463
Enhanced Dry	63	479	542
General Basic	214	733	947
General Dry	0	72	72
Special	0	146	146
TOTAL	1,046	4,124	5,170

The retention silviculture system targets were met for 2022 blocks. For several years the General Dry zone was failing, although still within the variance, due to a single clearcut block, however, that has now phased out of the 5-year rolling average. Minimal logging occurs in this zone at Mid Island and will continue to be the case. The impact of this was also minimal in terms of area, only representing 39.2 ha.

Overall, 80% of the harvest area between 2018 and 2022 used a retention silviculture system, which ensures >50% forest influence across the Mid Island Forest Operation.

Strategies & Implementation

Management strategies are described in the Western Stewardship and Conservation Plan.

Using a 5-year rolling average, WFP manages >50% of its total harvest area under retention systems. WFP targets the retention system on blocks that have high levels of required protection (eg. riparian, wildlife, cultural) and engineering or economic constraints. If further retention area is required, the engineers consider biologic control points like big trees/vets, safe wildlife trees, rare ecosystems, riparian areas, rock outcrops, karst, and mature deciduous. The control points are used to optimize layout, though their spatial distribution is also considered to ensure >50% forest influence is achieved.

Forecasts

Mid Island remains committed to meeting the WFP Stewardship and Conservation Plan.

The forest influence calculation changed in January 2018 to exclude the area of Wildlife Tree Retention Area (WTRA) or long-term retention (LTR). To continue meeting the target, more area will need to be retained, and the retention will need to be better distributed throughout the block. As a result, it will be more challenging to meet the definition of a retention system. While Mid Island should continue to meet the target or variance, the total number of hectares managed under a retention system is expected to decrease closer to the targets.

Monitoring

The Corporate Senior Biologist creates an annual report summarizing the total hectares logged over the previous 5 years under a clear-cut with reserve and retention system by WFS Zone. The percent area using a retention system is calculated for each zone and compared to the zone's target.

Indicator 1.2.1: SAR Habitat Protection

Element: 1.2 Species Diversity				
<i>Conserve species diversity by ensuring that habitats and forest conditions for the native species found in the DFA are maintained through time, including habitats for known occurrences of species at risk.</i>				
Value	Objective	Indicator	Target	Variance
The habitat for focal species, including species at risk exist on the DFA	Ensure habitat for focal species, including species at risk, is protected on the DFA	Degree of habitat protection for selected focal species, including species at risk	Area (ha) of UWR and WHA remains the same or increases from year to year	Decrease by 1%

History

New Core Indicator under CSA Z809-08 (relates to old indicator 9). No change in Z809-16.

Justification

The target is based on legal requirements under FRPA and the government initiatives underway through Land Use Planning processes and strategies such as the Identified Wildlife Management Strategy. The variance is meant to help account for fluctuations due to spatial issues (e.g. map base or scale) and natural disturbance factors.

“Habitat, in terms of both quantity and quality, is a key component of the health of species and animal populations” (CSA Sustainable Forest Management, 2008). Forest management can have both positive and negative effects for wildlife and their habitat. It is important to ensure forest habitat necessary for the survival of species is available for use in the short-term and long-term. Habitat reserved for focal species also contributes to the habitat needs of many other wildlife species.

Ungulate Winter Ranges are areas identified as critical to the survival of local populations of ungulates during severe winters. On Vancouver Island, black-tailed deer and Roosevelt elk need areas with suitable forest and topographical features that are able to provide shelter, forage and snow interception. Roosevelt elk are on the BC provincial blue-list and have a BC Conservation Framework Priority of 2 (BC Species and Ecosystems Explorer, 2010) as well as having local and cultural importance. Black-tailed deer are not considered a species of concern, but have local importance for food, economic opportunity and recreation.

Marbled Murrelet are small seabirds that nest inland, with the majority of nests being found on large, high boughs in old conifers, up to 30 km inland. Much work has been done along the coast to identify and rank suitable nesting habitat for Marbled Murrelet. Marbled Murrelet are listed as Threatened on Schedule 1 of the Federal Species at Risk Act (SARA), provincially blue-listed, listed on the Forest and Range Practices Act (FRPA) Category of Species at Risk and considered Identified Wildlife, and have a BC Conservation Framework Priority of 1 (BC Species and Ecosystems Explorer, 2010). Identified Wildlife are considered to be sensitive to habitat alteration associated with forest and range practices and are considered to be at risk (endangered, threatened, vulnerable or regionally important).

Northern Goshawks are a relatively large forest dwelling hawk. They need a closed canopy forest with an open understory for nesting and foraging. The coastal subspecies is listed as Threatened on SARA Schedule 1, provincially red-listed, listed on the Forest and Range Practices Act (FRPA) Category of Species at Risk and are considered Identified Wildlife, and have a Conservation Priority of 1.

Current Status & Interpretation

Type	Status	2018	2019	2020	2021	2022	Target Met (Y/N)	Variance Met (Y/N/NA)
UWR	Legal	4941	4941	4941.9	4941.9	4941.9	Y	N/A
	Proposed	0	0	0	0	0		
	Voluntary	0	0	0	0	0		
MAMU	Legal	4400	4400	4412.1	4411.7	4411.5*	Y	N/A
	Proposed	63	63	63.3	63.3	63.3		
	Voluntary	17	20	20.1	7.2	7.2		
Goshawk	Legal	335	542	542.1	542.1	542.1	Y	N/A
	Proposed	207	204	439.7	443.5	443.5		
	Voluntary	509	555	345.3	414.1	395.8		
Red Legged Frog	Legal	12	12	11.9	11.9	11.9	Y	N/A
	Proposed	0	0	0	0	0		
	Voluntary	0	0	0	0	0		

The target was achieved in 2022. There was a small (0.2 ha) decrease in our legally established MAMU habitat area. The change comes from OGMA adjustments and mapping refinements, which was also the case in the change from 2020 to 2021.

There was a small decrease of voluntary WHA for goshawks in 2022. As these are not legally established, they are often in flux since while new nests can be found the same is true for older nests that become defunct and uninhabitable.

Strategies & Implementation

In general, the management strategy for this indicator includes:

To spatially designate and legally establish Wildlife Habitat Areas. WFP has a mix of legally established and proposed areas. The intent is to move proposed areas through the process to become legally established.

When it is necessary to build roads through or harvest adjacent to one of these reserves, WFP attempts to minimize the impact and provides replacement habitat of similar quality, if necessary.

Species at Risk training is delivered to the operations to aid staff in identifying and working around Species at Risk.

Northern Goshawk Management Protocol has been developed to guide operations managing forest activities around nests. Known nests will be monitored for activity when forest management activities are planned nearby.

When other habitat is encountered that is actively used by a focal species including a species at risk, the site undergoes evaluation for potential candidacy as a permanent reserve.

Forecasts

The government is planning on establishing significant marbled murrelet and goshawk WHAs and OGMAs, so the area of legal UWR and WHA is expected to remain the same or increase in the future.

Monitoring

Corporate Forestry is responsible for coordinating GIS Analysis and reporting on this indicator. Reserves are mapped spatially in a layer of the GIS. Changes in boundaries are tracked by Corporate Forestry. All habitat supply will be monitored spatially relative to the target every year. Nests are documented when they are located, and appropriate management strategies are developed within site-level plans.

Indicator 1.2.2: SAR Habitat Modelling

Element: 1.2 Species Diversity				
<i>Conserve species diversity by ensuring that habitats and forest conditions for the native species found in the DFA are maintained through time, including habitats for known occurrences of species at risk.</i>				
Value	Objective	Indicator	Target	Variance
The habitat for focal species, including species at risk, exist on the DFA	Ensure habitat for focal species, including species at risk, exist on the DFA	Degree of suitable habitat in the long term for selected focal species, including species at risk	The number of species with habitat modelling completed stays the same or increases over time and the amount of suitable habitat for species where habitat modelling exists stays the same or increases (on a 5yr basis)	Decrease by 1%

History

New Core Indicator under CSA Z809-08 (relates to old indicator 9). No change in Z809-16.

Justification

While ecosystem conservation is the coarse-filter approach to biodiversity management, species diversity is the fine-filter approach. For most species, forest managers only have the ability to manipulate habitats, not species populations. Legal protection can help preserve habitat or elements of the habitat for species in decline or at risk of extinction (species at risk). To account for the degree of habitat protection provided for selected focal species, including species at risk, forest managers need to recognize short-term habitat needs, particularly for critical and core habitats, and consider existing protection plans for species at risk (see Indicator 1.2.1). For the longer term, forest managers can use habitat supply models when they exist and are reasonable in order to assess the long-term availability of habitat suitable for selected focal species.

The intent of this indicator is to report on the amount of suitable habitat for focal species (currently available or projected in the long term) retained on the DFA through modelling. It can include modelling completed by WFP or other parties, such as government agencies. The variance is intended to allow fluctuations due to spatial or forest cover updates and natural disturbance factors. The variance will not cover changes to the model; instead the baseline will need to be reset.

The Marbled Murrelet is a small seabird that nests on large boughs high in old conifers, up to 30km inland. Marbled Murrelets are listed as Threatened by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and are provincially Blue-listed under the Conservation Data Centre. Suitable nesting habitat for the Marbled Murrelet has been mapped across its range using low-level aerial surveys, air photo interpretation, and the British Columbia model. Western Forest Products has used this information and mapping for habitat modelling on TFL39.

Current Status & Interpretation

Year	Species Modelling Complete	Measure	Hectares of Suitable Habitat (Modeled)		Target Met (Y/N)	Variance Met (Y/N)
			Current	Long Term		
2022	No reporting until 2023.					
2018	MAMU Nesting Habitat	Potentially Suitable Habitat in legal WHA, UWR, OGMA and NCLB	22,069.21	37,588.77	Y	Y
2013-2017	MAMU Nesting Habitat	Potentially Suitable Habitat in legal WHA, UWR, OGMA and NCLB	20,483.2	36,652.4	base line	
2010	MAMU Nesting Habitat	Potentially Suitable Habitat in legal WHA, UWR, OGMA and NCLB	16,289.9	20,838.6	reference info	

This indicator is scheduled to be updated and reported on in 2023.

Strategies & Implementation

As reliable habitat modelling tools and parameters become available for different species, WFP will apply them to its land base to guide the evolution of management prescriptions.

Western’s Stewardship and Conservation Plan around variable retention will leave a legacy of mature and old forest attributes.

The long-term strategy is to spatially designate and legally establish Wildlife Habitat Areas, Ungulate Winter Range and Old Growth Habitat Areas to address habitat needs for multiple species. WFP has a mix of legally established and proposed areas. The intent is to move proposed areas through the process to become legally established. Proposed reserves will be managed as if established.

Forecasts

The quantity of potentially suitable habitat is forecasted to increase. The federal recovery strategy (Environment Canada 2014) set a population objective that requires retention of nesting habitat at 70% (or greater) of 2002 amounts by 2032 province-wide. The government of British Columbia is committed to maintaining specified amounts of nesting habitat on provincial Crown land within each conservation zone. For the West and North Vancouver Island conservation district, there is a 68% habitat retention threshold. The combination of nesting habitat that is (or will be) protected through existing land use planning, plus nesting habitat in the non-contributing land base, does not achieve the minimum habitat threshold and habitat within the harvestable lands is required to achieve these thresholds for Crown land. At least 80% of the minimum habitat threshold for Crown land will be spatially protected (mapped) in the

West and North Vancouver Island conservation region. As a result, the total amount of currently suitable nesting habitat is expected to increase. Furthermore, the projected habitat is expected to increase as stands age and grow taller in the reserves and in the non-operable land base.

The Provincial Northern Goshawk Recovery Team has completed a habitat suitability index model for the Northern Goshawk. They modelled areas within which critical habitat for breeding or foraging is found. However, they are expected to continue with updates, possibly using Lidar in the near future. As a result, it would not create a proper baseline for this indicator. More information and maps can be found in the 2018 Recovery Strategy for the Northern Goshawk *Iaingi* subspecies (*Accipiter gentilis Iaingi*) in Canada report.

Monitoring

Corporate Forestry is responsible for coordinating GIS Analysis and reporting on this indicator.

The general monitoring measures are as follows:

Potential habitat supply will be monitored spatially relative to the target every 5 years.

Non-contributing land-base will be recalculated with new Timber Supply Analyses

Potential suitable habitat is modelled using parameters from the Marbled Murrelet recovery team in two steps:

- 1) Area is considered “Most Likely” suitable if ≥ 250 years old and ≥ 28.5 m tall.
- 2) Area is considered to potentially become suitable habitat if ≤ 250 years and ≥ 28.5 m tall or ≥ 18 m site index.

For modelling, long term is defined as twice the average life expectancy of the predominate trees in a DFA, up to a maximum of 300 years. Given the long-life expectancy of coastal forest species, 300 years is considered long term for the marbled murrelet modelling.

Indicator 1.2.3: Regeneration of Native Species

Element: 1.2 Species Diversity				
<i>Conserve species diversity by ensuring that habitats and forest conditions for the native species found in the DFA are maintained through time, including habitats for known occurrences of species at risk.</i>				
Value	Objective	Indicator	Target	Variance
Native tree species on the DFA	Native tree species are maintained on the DFA	Proportion of regeneration comprised of native species	Native species comprise at least 90% of the regeneration established annually on harvested areas	None

History

New Core Indicator under CSA Z809-08. Core Indicator under CSA-Z809-16, but has been moved from Criterion 2 to Criterion 1 (previously Indicator 2.1.2).

Justification

The target is based on legal requirements under FRPA and the associated Chief Forester’s Standards for Seed Use. However, the target accounts for slight variations where approved by government (e.g., planting of non-native noble fir in higher elevations where research indicates it is acceptable).

Current Status & Interpretation

Year	Planted	% Native Species	Target Met (Y/N)
2022	1,369,410	99.1	Y
2021	977,170	98.7	Y
2020	1,158,741	100.0	Y
2019	1,047,428	98.7	Y
2018	1,070,638	100.0	Y

This target was met. In 2022, nearly 1,400,000 trees were planted. The following species were used: Western Hemlock (50.13%), Douglas fir (35.09%), Cypress (5.17%), Mountain Hemlock (4.15%), Western Red Cedar (2.60%), Sitka Spruce (1.70%), Noble Fir (0.95%), and Amabilis Fir (0.21%). No Western White Pine or Red Alder was planted in 2022.

Strategies & Implementation

Noble fir is non-native to Canada. It is found at higher elevations in Washington, Oregon, and California. It has been approved for planting in British Columbia at higher elevations where research projects have indicated good performance and survival. The CIFO Forest Stewardship Plan includes stocking standards with Noble fir for these sites, with a 20% limit in the planting prescription to mitigate risk.

Forecasts

It is anticipated that the target will be achieved as it relates to legal requirements (FRPA, the Chief Foresters Standards for Seed Use, and CIFO's approved Forest Stewardship Plan stocking standards). Ecologically suitable sites for Noble Fir are not widely available, so there is minimal risk of exceeding the target.

No non-native species including noble fir, have been sown for in 2023 so the target is expected to be met.

Monitoring

The indicator reports on the spring and fall planting program species composition. It is assumed that all naturally regenerated trees are native species due to the lack of non-native seed sources on the DFA.

The Area Forester produces a Crystal Report annually. It reports on the total planted trees by species and block and calculates the total species composition.

Indicator 1.3.1: Trees Planted

Element: 1.3 Genetic Diversity				
<i>Conserve genetic diversity by maintaining the variation of genes within species and ensuring that reforestation programs are free of genetically modified organisms.</i>				
Value	Objective	Indicator	Target	Variance
Maintain the genetic diversity on the DFA	Genetically modified organisms are not introduced in the DFA	The percent of the total trees planted annually that includes genetically modified organisms	0%	None

History

New Core Indicator under CSA Z809-08.

Basis for the Target

The target aligns with the current legal requirements: no genetically modified organisms are currently permitted (Chief Foresters Standards for Seed Use, which prevents genetically modified seeds or vegetative material to be ‘registered’).

Current Status & Interpretation

This target was met for 2022 as no genetically modified organisms are planted. Only seedlings from registered seedlots are planted on the DFA.

Year	Planted	% Genetically Modified	Target Met (Y/N)
2022	1,369,414	0	Y
2021	977,170	0	Y
2020	1,158,741	0	Y
2019	1,047,428	0	Y
2018	1,070,638	0	Y

All of the seedlots utilized for planting are registered seedlots in BC and thus are not genetically modified in any way (genetically modified seedlings are not approved for registration or use in BC).

Strategies & Implementation

All seed destined for crown land reforestation must be registered with the Ministry of Forests. Registration at the Tree Seed Centre (TSC). The TSC ensures that seedlots meet the applicable collection criteria specified in the 'Chief Forester's Standards for Seed Use'. These standards include minimum requirements for genetic diversity and physical quality for BC and several northern US species and sources. The information is also used to guide transferability of seedlots to maximize forest productivity. Registration information and data integrity is maintained in the on-line web-based Seed Planning and Registry System (SPAR).

The only strategy in place related to this indicator is to only use seedlings from seedlots registered for use in BC in reforestation programs (legal requirement under FRPA and the Chief Forester's Standards for Seed Use). Alternatively, natural regeneration is also used to enhance restocking of cutblocks.

The seedlot number of all stock planted in the DFA is entered in silviculture records.

Forecasts

Currently, it is not anticipated that BC laws will change to allow for genetically modified organisms to be used to regenerate the forests. The Chief Foresters Standards for Seed Use and applicable amendments are posted at the following location: <https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/tree-seed/legislation-standards/chief-forester-s-standards-for-seed-use>

Monitoring

The Planning Department maintains the silviculture records through the entry of activity information in CENFOR. Planting specific data is also recorded within the Plant Wizard database and the provincial SPAR database for seeds and seedlings.

Indicator 1.4.1: Cultural Features

Element: 1.4 Protected Areas & Sites of Special Biological or Cultural Significance				
<i>Respect protected areas identified through government processes. Co-operate in broader landscape management related to protected areas and sites of special biological or cultural significance. Identify sites of special geological, biological, heritage or cultural significance within the DFA and implement management strategies appropriate to their long-term maintenance.</i>				
Value	Objective	Indicator	Target	Variance
Sacred and culturally important sites on the DFA	Provide protection for identified sacred and culturally important sites on the DFA	Protection of sites of special significance.	100% of identified sacred and culturally important sites (i.e. archaeological sites) are managed according to measures jointly developed by WFP and First Nations	None

History

New Core Indicator under CSA Z809-08. Core Indicator under CSA Z809-16 (previously Indicator 1.4.2).

Justification

The target is based on legal requirements under the Heritage Conservation Act, FRPA, and the results/strategies for Cultural Heritage Resources in the Forest Stewardship Plan. The target and the variance reflect the requirement to mitigate or control potential effects on identified culturally important sites through protection and/ or management prescriptions.

Current Status & Interpretation

Year	Archaeological Sites Identified	# Sites Protected	# Sites Managed	Target Met (Y/N)
2022	0	1	1	Y
2021	1	1	1	Y
2020	0	0	0	Y
2019	0	0	0	Y
2018	0	0	0	Y

There were 4 blocks that received an Archaeological Impact Assessment report in 2022. No cultural features/sites were identified. The one location reported last year has been designated as an archaeological site under the Heritage Conservation Act. This site was initially buffered with a 5m site boundary as per the BC Archaeology Branch Standards and was subsequently buffered by 70m on all sides by WFP.

Strategies & Implementation

The government has completed Archaeological Overview Assessments (AOA) to categorize the DFA into areas based upon archaeological site potential and the need for an archaeological impact assessment (AIA).

As required, AIAs are completed to identify and evaluate archaeological resources within the proposed development areas. AIAs identify and assess all impacts on archaeological resources that might result from the development and recommend alternatives for managing unavoidable adverse impacts.

In most cases, AIAs are conducted jointly with representatives from the applicable First Nation. In addition, copies of the AIA report are referred to the First Nation for review and comment. Mid Island Forest Operation also maintains open communication with First Nations regarding harvesting and road construction activities (i.e., meetings, email communications, etc.). Through this process, First Nations are provided with communication tools to respond to/ approve the management options that are proposed within the AIA report for management of the identified features.

WFP has a Standard Operating Procedure for Cultural Heritage Resources to guide planning activities in the identification, protection and management of features.

For the purposes of this indicator, ‘protected’ refers to protection of the feature from harvesting. ‘Managed’ could have a broader meaning including: buffer zones, special prescriptions to protect the feature during activity, or the modification/harvesting of a feature (provided First Nation approval and appropriate permits are in place).

Forecasts

It is anticipated that the target will be achieved. Currently, management strategies are jointly developed through WFP and First Nation participation in the AIA field work, open communication via phone, letter, and email communications, and the referral of the AIA report to First Nations for review.

In the event any First Nation expresses any concerns with the existing process, alternatives may need to be developed (e.g. Protocol Agreements).

Monitoring

The Area Forester reports on the number of cultural/archaeological sites identified during layout or harvesting for the year and provides a general summary of the implemented management strategies. Effectiveness of the management strategies is monitored during post-harvest assessments.

Indicator 1.4.2: Sites of Significance

Element: 1.4 Protected Areas & Sites of Special Biological or Cultural Significance				
<i>Respect protected areas identified through government processes. Co-operate in broader landscape management related to protected areas and sites of special biological or cultural significance. Identify sites of special geological, biological, heritage or cultural significance within the DFA and implement management strategies appropriate to their long-term maintenance.</i>				
Value	Objective	Indicator	Target	Variance
Protected areas on the DFA	Respect and maintain protected areas on the DFA through government processes	Proportion of identified sites with implemented management strategies	100% of identified sites (i.e. SMZ 11, karst, bear dens, nests) have implemented management strategies	None

History

New Core Indicator under CSA Z809-08 (relates to old indicator 11). In 2014, Recreation Areas was removed from this indicator as there is now a separate Recreation Indicator 5.2.A.

Core Indicator under CSA Z809-16. Indicator number has been revised from 1.4.1 to 1.4.2 under new standard.

Justification

For this indicator, identified sites will be: karst, bear dens, blocks in the SMZ, and the following nests: goshawk/ eagle/ peregrine falcon/ gyrfalcon/ osprey/ heron/ burrowing owl.

Protected areas identified through government processes (WHAs, OGMAs, and UWRs) are tracked in Indicators 1.2.1 and 1.2.2. Identified recreation features, pursuant to s.5 of the 2006 GAR, are tracked under Indicator 5.2.A. Sites of archaeological significance are tracked in Indicator 1.4.1. They will not be tracked under this indicator.

Current Status & Interpretation

Year	# of Identified Sites	# of Cutblocks	# of Management Strategies Implemented	Summary of Implemented Management Strategy	Target Met (Y/N)
2022	58	21	8	-Bear dens (10 blocks): 2 dens located in internal retention and 20 external block dens, all retained as per Harvest Instructions. -Goshawk nests (5 blocks): 12 nests found. Management instructions were set out for all nests, and surveys were completed as required. The Northern Goshawk Management Standard was followed in all cases. -Karst (8 blocks): 22 karst features identified. WFP Karst Management Standard adhered to, and recommendations applied. -SMZ 11 (2 blocks): Under retention system.	Y
2021	39	20	4	-Bear dens (4 blocks): 5 internal block dens, 2 external block dens all retained as per HI. -SMZ 11 (2 blocks): Under retention system. -Goshawk Nests (4 blocks): 6 nests found and buffered as per HI. Karst (10 blocks): 24 karst features identified. WFP Karst Management Standard adhered to and recommendations applied.	Y
2020	12	7	7	-Bear dens (4 blocks): 3 dens were in reserves or outside of the block, 3 dens were retained within the NAR, and 3 were felled, all in accordance with the HI. 5 dens required an assessment, and it was completed prior to road construction commencement. -SMZ 11 (2 blocks): Under retention system -Goshawk Nest: The nest was buffered. A survey was conducted in late February, prior to start-up. -Rare Plant: Identified and reserved	Y
2019	12	6	6	-Karst: cut from block, machine free zones, testing ground, cleaning -Bear dens: Retained, surveys prior to activity -Goshawk: Buffered, surveys prior to activity	Y
2018	25	12	19	-Karst (2 blocks)- Machine free zones, windfirming, and 6 recommendations from karst specialist -SMZ 11 (4 blocks)- 1 <5ha, 3 under retention strategy -Bear den (6 blocks)- Dens within reserves or to be left standing where safe, except 11297 (r/w) -Goshawk (2 blocks)- Operational timing restrictions, review of goshawk SOP, awareness of potential activity	Y

In 2022, there were 22 discovered bear dens relating to blocks where harvesting took place and was completed. 20 dens were in reserves or retention and outside of the block, while 2 dens were retained in reserves within the block. Prescriptions followed the WFP Bear Den Standard, which had important updates in 2021 to better align with den management guidelines set out by Artemis Wildlife Consultants.

Two blocks were within 1km of the same stick nest. A goshawk was detected in 2021, but there were no detections of any goshawk activity in two separate surveys in 2022. The nest was buffered for harvesting. 10 nests were found adjacent to 3 other new cutblocks. 6 of these nests were surveyed in both 2021 and 2022, but no goshawk activity was detected. 2 other nests were surveyed in 2021 but no goshawk activity was detected, and no survey was recommended for 2022. The final 2 nests were over 1km away from the cutblock so no survey was required, but the production crew was instructed to remain vigilant for any goshawk activity in the area. Additionally, 6 of these 10 nests are anchored in WHAs. All 10 nests were buffered for harvesting and the Northern Goshawk Management Standard was followed.

22 karst features were identified during the layout phase of 8 different blocks where harvesting was complete in 2022. WFP planners and karst assessment specialists applied the WFP Karst Management Standard for all work done in areas where karst had been identified. Individuals who perform this work are always expected to follow the karst management guidelines and checklists associated with this standard. Common specialist recommendations for the management of karst include machine-free zones, windfiring, stream and ditch cleaning, removal, high stumping and more.

Two cutblocks were harvested in the Special Management Zone. Both blocks were under a retention silviculture system.

Strategies & Implementation

WFP provides training to its staff and contractors to facilitate the identification of species at risk (animals and plants), nests, sensitive ecosystems, bear dens, and karst.

For karst features, WFP's Karst Management Standard and Guidelines are followed. The standard includes management practices to protect and maintain feature quality and/or contents from the potentially adverse effects of surface activities.

The management strategies for the coastal northern coastal goshawk are derived from the Goshawk Management Standard. It provides direction to WFP's forest professionals on managing primary forest activities around Coastal Northern Goshawk nests to minimize the risk of nest and territory abandonment. The Standard covers identification, survey requirements, operational timing restrictions, and buffer zones.

Section 34 of the Wildlife Act prohibits the destruction of an eagle, peregrine falcon, gyrfalcon, osprey, heron, or burrowing owl nest. WFP retains nests as wildlife trees and works to maintain retention surrounding the nest.

Forestry crews map the location of bear dens trees during layout, whether active or not. Bear den trees are considered for retention within reserve areas, or as individual wildlife trees, where safe to do so. WFP has released a new bear den standard. The post-harvest assessment verifies that all instructions/strategies were implemented.

Forecasts

The target should be met in future years.

Monitoring

The Area Forester reports on the number and type of high value features within 100m of new logging. The block file (harvest instructions, harvest instructions map, assessment) is reviewed for management strategies specific to the feature. Post-harvest assessments are completed to verify their implementation.

Indicator 2.1.1: Free Growing

Element 2.1: Forest Ecosystem condition and productivity <i>Conserve forest ecosystem productivity and productive capacity by maintaining ecosystem conditions that are capable of supporting naturally occurring species. Reforest promptly and use tree species ecologically suited to the site.</i>				
Value	Objective	Indicator	Target	Variance
Resilient forest ecosystems	Maintain ecosystem processes and ecosystem conditions	Reforestation Success	The annual number of hectares not meeting free growing deadlines is zero	None

History

New Core Indicator under CSA Z809-08 (carried forward from the 2009 SFM Plan Indicator 20). Indicator number changed from 2.1.1a to 2.1.1 to correct the numbering. No changes in CSA Z809-16.

Justification

The target and variance are tied to future yield assumptions in the Timber Supply Review associated with the DFA and legal requirements under FRPA (WFP FSP, FRPA s.29 and FPPR s. 16 and 44 (1)(b)). Prompt reforestation with ecologically suitable species is necessary to ensure the Long-Term Harvest Level (LTHL) of the DFA.

Current Status & Interpretation

Year	Total Ha Due	Ha Not Meeting Target	% Not Meeting Target	Target Met (Y/N)
2022	362.9	0.0	0.0	Y
2021	220.6	0.0	0.0	Y
2020	401.5	0.0	0.0	Y
2019	768.4	0.0	0.0	Y
2018	574.1	0.0	0.0	Y

This target was met. All 362.9 ha with a 2022 free growing milestone met their obligations.

Strategies & Implementation

Milestone obligations for Free Growing dates are established within the Forest Stewardship Plan (approved stocking standards based on ecosystem types). Timelines are set in motion upon harvest start dates.

Planting with appropriate species and brush control are the primary management tools that ensure free growing commitments are met on time. The Area Forester conducts surveys to ensure the success of reforestation.

Forecasts

The target is a legal requirement, so it should be consistently met.

Monitoring

Openings are regularly assessed in the field to ensure milestone obligations are met and reported to government.

The Area Forester generates milestone reports from the Ministry of Forests RESULTS database quarterly to ensure blocks with upcoming milestones are prioritized for surveys.

The same report is used to summarize compliance with milestone obligations for this indicator.

Indicator 2.1.3: Permanent Access (PAS)

Element: 2.1 Forest Ecosystem Condition and Productivity				
<i>Conserve forest ecosystem productivity and productive capacity by maintaining ecosystem conditions that are capable of supporting naturally occurring species. Reforest promptly and use tree species ecologically suited to the site.</i>				
Value	Objective	Indicator	Target	Variance
Conserve productive capacity of the DFA	The integrity of the DFA is maintained over time	Additions and deletions to the forest area	The average percent of forest area harvested each year in the DFA that is converted to permanent access structure does not exceed 6.5%	+0.5%

History

New Core Indicator under CSA Z809-08 (carried forward from 2009 SFM Plan Indicator 21).

Indicator moved from Element 2.2 to 2.1 under CSA Z809-16 (previously Indicator 2.2.1).

Justification

Based on FPPR Section 36, permanent access structures may not exceed 7% of the cutblock, unless there is no other practicable option having regard to the size, topography, and engineering constraints of the cut block or the safety of the road user. Permanent access structures (PAS) may exceed 7% of the cutblock if the road is necessary to provide access beyond the cutblock.

At the March 15, 2018 MIFLAG meeting, the target was increased from 6 to 6.5%. The MIFLAG expressed that they wanted WFP to continue to exceed legislated standards, but also acknowledged the increase in challenging terrain and the performance trend from the previous 6 years.

The target is focussed on deletions to the DFA rather than additions. Only deletions have an impact on forest ecosystem productivity. Refer to indicator 4.2.1 for information relating to additions and deletions to the forest area.

Current Status & Interpretation

Year	Access as % of TAUP	Target Met (Y/N)	Variance Met (Y/N)
2022	7.3	N	N
2021	6.9	N	Y
2020	5.9	Y	N/A
2019	5.2	Y	N/A
2018	5.6	Y	N/A

*The target for PAS increased from 5 to 6% in 2011 and 6 to 6.5% in 2017.

The target was not met. For 2022 the logged blocks PAS averaged 7.3%. The target of 6.5% was exceeded by 0.8%, which also exceeds the variance.

PAS exceeded the legislative 7% minimum in 29 blocks, as per allowable rationales in the FPPR Section 36. The reasons were outlined in their respective signed cutblock site plan or amendments.

Strategies & Implementation

WFP needs to balance logging productivity, road user safety, road building costs with the target of limiting permanent access structures to 6.5%. Appropriate yarding systems are applied to minimize road construction, and the Grade SOP states, “to avoid exceeding limits for soil disturbance, restrict ditch excavation and overburden stripping to the minimum width necessary for a safe road running surface.”

Forecasts

WFP will continue to strive to minimize PAS wherever possible. It is anticipated that the average PAS will range between 5-7%. Despite the target of 6.5%, FRPA does allow permanent access structures to exceed 7% of the cutblock if there is no other practicable option having regard to the size, topography, and engineering constraints of the cutblock. Given the increase in challenging terrain, wider roads with more switchbacks are expected to allow for safe hauling which leads to increased PAS. Safety needs to remain WFP’s number one priority.

Monitoring

The Area Forester reports on the annual TAUP, PAS hectares and PAS % for the cutblocks harvested each year using the CENFOR database.

PAS is calculated using a 5.6m road buffer on all roads. It is adjusted to account for large landings or quarries. This average road width was determined from a sample of 30 blocks in 2014. A weighted average of their road buffers by TAUP was calculated and adjusted down by a factor of 0.92 based on 2014 as-built PAS surveys. The accuracy of this road buffer was verified using Lidar and field assessments in December 2017.

Indicator 2.1.4: Harvest Level

Element: 2.1 Forest Ecosystem Condition and Productivity				
<i>Conserve forest ecosystem productivity and productive capacity by maintaining ecosystem conditions that are capable of supporting naturally occurring species. Reforest promptly and use tree species ecologically suited to the site.</i>				
Value	Objective	Indicator	Target	Variance
Sustainable harvesting on the DFA	The harvest level on the DFA is sustainable over time	Proportion of the calculated long-term sustainable harvest level that is actually harvested	i) The annual harvest level is within 50% of the AAC ii) The cumulative volume harvested does not exceed the AAC authorized for the 5-year cut control period	i) One out of five years in the cut control cycle may exceed +/-50% of the AAC ii) +10%

History

New Core Indicator under CSA Z809-08 (carried forward from 2009 SFM Plan Indicator 22). Indicator moved from Element 2.2 to 2.1 under CSA Z809-16 (previously Indicator 2.2.2).

Justification

The Chief Forester ensures sustainable harvesting by determining the annual allowable cut (m³/year) that can be harvested within a management unit. To provide operational flexibility, 5 year cut control periods apply. There are no minimum or maximum harvest levels for a given year; however, the maximum amount that can be harvested over 5 years without penalty is 110% of the 5-year AAC. Overharvest volumes are carried forward into the next cut control period. The licensee pays 2x stumpage on any volume over 110%. This discourages licensees from logging more than the sustainable volume.

Target i) ensures a steady flow of fibre, so jobs are maintained, while allowing for variations in harvest levels to account for market fluctuations. However, it does not ensure a sustainable harvest level is maintained with respect to the environment.

As a result, a second target was developed at the March 15, 2018 MIFLAG meeting. Target ii) helps ensure the sustainable harvest level is not exceeded over a 5-year period. A 10% variance was selected to align with the Cut Control Regulation.

Current Status & Interpretation

Year	AAC (m ³)	Harvested (m ³)	Average Harvest as % of AAC	Target Met (Y/N)	Variance Met (Y/N)
Cut Control 2019-2023	4,522,700	-	-	-	-
2022	904,540	940,864	104.0	Y	Y
2021	904,540	821,369	90.8	Y	Y
2020	904,540	852,353	94.2	Y	Y
2019	904,540	434,435	48.0	N	Y
Cut Control 2014-2018	4,956,012	5,214,612	106.3	Y	Y
2018	904,540	959,757	106.1	Y	Y
2017	904,540	1,096,144	121.2	Y	Y
2016	1,011,866	1,342,141	132.6	Y	Y
2015	1,067,533	896,650	84.0	Y	Y
2014	1,067,533	919,920	87.7	Y	Y

*Numbers adjusted back to 2014 for consistency with corporate reporting. Harvested volumes needed to include waste to be compared to AAC

In 2022, Mid Island met the target i) as 104% of the AAC was harvested, which remains well within the 50% of AAC range allowed.

Target ii) is based on the cumulative AAC for the 5-year cut control period, ending in 2023. As a result, this will be reported on in 2024.

Additionally, as final harvest volumes are not confirmed until June there are sometimes minor edits to the prior year's entry. This was the case for the 2021 harvest volume, which was initially reported as 803,703 m³, but is now confirmed as 821,369 m³. The table has been updated to reflect this and it does not change the meeting of any of the targets.

Strategies & Implementation

WFP wants to achieve harvest levels as close to the AAC as possible each year. There is a desire to maintain steady harvest levels to retain high quality employees and contractors. Harvest levels may exceed the AAC annually, as long as overall cut control requirements are met. Under harvests may occur during economic downturns, but they need to be minimized since undercut volumes may be awarded to other parties.

Corporate Forestry completes a timber supply analysis which determines the long-term harvest level (LTHL). The harvest rate is dependent on the state and growth rates of the existing forest, the silviculture intensity, and harvest constraints. The provincial Chief Foresters considers this rate when determining the AAC.

Forecasts

WFP plans to meet the targets or variances over the new cut control period and in future years.

MIFO wants to avoid a large undercut. However, it is unlikely this harvest volume will be achieved in 2023, meaning levels will be within the $\pm 50\%$ of the AAC, so target i) should be met.

Likewise, because of this large undercut entering the final year of the cut control period it is highly unlikely the cumulative AAC will be exceeded. Target ii) should be achieved in 2023.

Monitoring

Corporate provides harvest volume data using the MFLNRO Harvest Billing System scale reports. The LTHL is calculated by Corporate Forestry during the Timber Supply Analysis. AAC is used as a surrogate.

Indicator 2.1.A: Regeneration Delay

Element: 2.1 Forest Ecosystem Condition and Productivity				
<i>Conserve forest ecosystem productivity and productive capacity by maintaining ecosystem conditions that are capable of supporting naturally occurring species. Reforest promptly and use tree species ecologically suited to the site.</i>				
Value	Objective	Indicator	Target	Variance
Timelines of regeneration on the DFA	Harvested areas are reforested	Reforestation performance on harvested areas	i) All blocks meet the legal regen delay period (6 years)	None; unless biological or environmental rationales are provided on a site-specific basis
			ii) Average regen delay performance across all blocks with regen delay due is 90% of the regen delay period (i.e. better than the legal requirements)	

History

Carried forward from the 2009 SFM Plan Indicator 12. This indicator is not a core indicator.

During the November 20, 2021 MIFLAG meeting, the group approved splitting the target into 2 parts. This is to differentiate clearly between the legal time limit and the enhanced MIFLAG target.

Justification

Regeneration delay is the elapsed time after harvest commencement before an area becomes occupied by a specified minimum number of acceptable, well-spaced trees. The regen delay period is set in the stocking standards of the forest stewardship plan. For the 2017 Central Island Forest Operation Forest Stewardship Plan, the regen delay period is 6 years for all BEC zones and site series. However, in the Chief Forester’s reference guide for forest development stocking standards, the recommended regen delay period varies from 3 to 7 years, depending on the site series. To account for some of the lower limits, the indicator target requires the regen delay period to be 10% shorter than the FSP requirement.

Current Status & Interpretation

Year	Hectares	Legal Requirement (years)	Target 90% of Requirement (years)	Average Achieved (years)	Ha of Regen Delay Missed	Target Met (Y/N)	Variance Met (Y/N)
2022	1,446.8	6	5.4	3.4	0.0	Y	N/A
2021	1731.1	6	5.4	3.1	0.0	Y	N/A
2020	1651.6	6	5.4	3.4	0.0	Y	N/A
2019	1854.4	6	5.4	2.8	31.1	N	N
2018	1612.7	6	5.4	2.3	0.0	Y	N/A

The target was met.

Regen delay was due on 1,446.8 ha in 2022. The legal regen delay is 6 years for these hectares, making a 90% target of 5.4 years. The average regen delay period at MIFO in 2022 was 3.4 years.

No standards units exceeded the enhanced MIFLAG 5.4-year target.

It’s important to note that seedlings were established on these sites in advance of their declaration dates. This is reflected in the average age from the regen declaration survey.

Strategies & Implementation

Government and WFP databases are compared to ensure that SUs approaching their time limit for regeneration are given planting priority.

Timely planting with appropriate species is the primary management tool for meeting reforestation commitments. Foresters supervise the planting projects to ensure high quality planting and to check the health of the seedlings. Both factors can have significant impacts on seedling performance and survival.

To ensure reforestation success and to generate long term value, the following areas are planted:

- Moderate/high brush hazard
- Non-retention blocks greater than 40ha
- Public concerns: sensitive visuals, recreation use, community watersheds
- CWHmm1/mm2
- Less than 600m elevation
- Access issues
- Helicopter logged blocks
- Where Cw or Fdc are suitable and will maintain good survival

Natural regeneration is becoming more widely used, but it is restricted to well drained north aspect blocks with high forest influence in the CWH vm1, vm2, and MHmm1, above 700m. These areas experience very high levels of natural infill and are not expected to require extensive fill planting, thereby shortening the window to achieve silviculture regen delay.

Based on a 2017 survey analysis of blocks regenerated with naturals, there will be minimal impact on timber supply regen delay (measured from harvest completion vs commencement). The majority of WS trees filled in within 0.7 years of harvest completion. The TSR Management Plan 9 assumes 1-year RD for all BEC zones, so the implementation of the natural regen strategy will cause no timber supply impacts.

Forecasts

It is anticipated that the target will be achieved given the operation's historic performance and the link to legal requirements.

The widespread implementation of the natural regen strategy in 2013 is expected to continue increasing the regen delay period. The natural regen blocks will likely have a 5 year regen delay period, given the survey occurs 4 years after harvest completion and regen delay is measured from harvest commencement.

Furthermore, our reporting system changing will remain a contributing factor in potential increases in Regen Delay declarations. Until 2016, regen delay was declared based on planting quality surveys. Now, we are waiting to declare the standard units until after the survival survey if there are performance risk factors (ex. elevated elk, weevil, or brush hazard or suspect stock health). This will lead to a more accurate measurement of the regen delay period, but it will lead to an increase in the indicator. The impact of this change is ongoing but is not expected to prevent us from continuing to meet this target.

Monitoring

Planting, stocking, or survival surveys are completed on all blocks to ensure milestone obligations are met and reported to the government. Regen delay is declared using the data from one of these surveys.

The Area Forester generates a CENFOR report (Regen Delay by Year) and/or uses the Ministry of Forests RESULTS database to summarize compliance with milestone obligations. A weighted average is calculated for 'Regen Met'.

Indicator 3.1.1: Soil Disturbance

Element: 3.1 Soil Quality and Quantity <i>Conserve soil resources by maintaining soil quantity and quality.</i>				
Value	Objective	Indicator	Target	Variance
Productive capacity of forest soils on the DFA	Harvest operations are conducted such that the productive capacity of forest soils on the DFA is maintained	Level of soil disturbance	The annual % of harvested openings in which soil disturbance levels exceed the plan is zero	None

History

New Core Indicator under CSA Z809-08. (carried forward from 2009 SFM Plan Indicator 18).

Core Indicator under CSA Z809-16 indicator number did not change.

Justification

The objective ensures that site productivity is maintained and that impacts to other resource values are prevented or mitigated.

Based on FPPR, soil disturbance means disturbance to the soil in the net area to be reforested in a cut block because of temporary access structures, compacted areas, or gouges, ruts, and scalps.

Defined in the Forest Planning and Practices Regulation (FPPR), sensitive soils have a high or very high risk of displacement, surface erosion, or compaction due to slope gradient, texture class, moisture regime, or organic matter content.

The target and variance are based on legal requirements established in FPPR Section 35 for sensitive soils. The soil disturbance limit is 5% for sensitive soils, 10% for non-sensitive soils and 25% for roadside areas. The limit is outlined in the site plan for each standard unit.

As per FPPR Section 35(4)(b), an agreement holder may exceed the CSP limits for the construction of temporary access structures if the site is rehabilitated before the regeneration date to meet the specified limits.

Current Status & Interpretation

Year	# of Post-Harvest Assessments Completed	# of Openings & % of blocks Exceeding Soil Disturbance Limit	Target Met (Y/N)
2022	36	0	Y
2021	27	0	Y
2020	28	0	Y
2019	23	0	Y
2018	28*	0	Y

The target was met. Post-harvest assessments were done on 27 harvest complete blocks within the DFA. During each post-harvest assessment, an ocular assessment was completed to determine if soil disturbance was within its limits. All blocks were deemed to be within the CSP limits.

Strategies & Implementation

The EMS and SOPs provide guidance to avoid soil disturbance, including:

- Identify sensitive soils in the planning stages through field work (limits are recorded in Site Plans)
- Assign the appropriate harvest method (ground based, cable, aerial) for the soil conditions
- Assign the appropriate equipment to the soil conditions (hoechuck vs. skidder)
- Use woody debris to insulate soil disturbance
- Curtail operations during wet weather
- Complete EMS Cutblock Inspections and Post-Harvest Inspections to ensure compliance with the plan and to access soil disturbance levels.
- Prescribe rehabilitation measures where soil disturbance levels exceed the desired levels

The Falling and Bucking Department SOP includes, “Supervisors will confirm that visual checks to monitor soil disturbance are being done by operators concurrent with mechanical falling and processing activities.”

FPPR 35. (4)(b)(ii) allows soil disturbance to be exceeded by 5% for temporary access structures if the area is rehabilitated before the regeneration date. WFP aims to rehabilitate any soil disturbance in excess of limits while completing post-harvest activities like piling and ditch cleaning. To meet fire abatement standards, piling generally occurs within 1 year of harvest completion, so rehabilitation happens well in advance of regen delay (6 years from harvest commencement).

Areas of soil disturbance within 100m of an invasive species site are grass seeded promptly with weed free seed or planted

Forecasts

Due to past performance and the long history of implementation of the EMS and SOPs, we anticipate that the target will be achieved.

Monitoring

Soil disturbance is assessed through a visual review during cutblock inspections and post-harvest inspections. Post-harvest inspections are required on every block within 6 weeks to 6 months of the final cutblock inspection. If soil disturbance exceeds limits or if concerns are noted, an action item is created in the EMS tracking system with rehabilitation measures, a deadline and the assigned person to complete the task.

The Area Forester reviews the post-harvest assessments and the EMS tracking items annually, looking for any references to soil disturbance.

Indicator 3.1.2: CWD

Element: 3.1 Soil Quality and Quantity				
<i>Conserve soil resources by maintaining soil quality and quantity.</i>				
Value	Objective	Indicator	Target	Variance
Productive capacity of forest soils on the DFA	Soil degeneration on the DFA is prevented	Level of downed woody material	> 15 m ³ per hectare	-5.0 m ³ per hectare

History

New Core Indicator under CSA Z809-08. Minor revision in Z809-16.

Justification

Dead wood is an important component of a healthy forest ecosystem. Coarse woody debris is a major input of organic matter to forest soils, critical for forest function, structure, and productivity.

The 15m³ target relates to the waste benchmarks in the Provincial Logging Residue and Waste Measurement Procedures Manual. The waste benchmarks vary, from 10m³/ha to 35m³/ha, depending on stand maturity and harvest method. The waste benchmark means the volume of avoidable waste that can be left on a harvested area without being subject to a monetary waste assessment. The benchmark ensures sufficient coarse woody debris is left given its importance in nutrient and organic matter dynamics of forest ecosystems.

Furthermore, FPPR Section 68(1) requires a minimum of 4 logs per hectares, each being a minimum of 5m in length and 30cm in diameter at one end, to be retained on a cutblock.

Current Status & Interpretation

Year	Downed Woody Material (m ³ /ha)	Target Met (Y/N)	Variance Met (Y/N)
2022	69	Y	N/A
2021	46	Y	N/A
2020	52	Y	N/A
2019	59	Y	N/A
2018	63	Y	N/A

*In 2019, fixed reporting for previous years to reflect downed woody debris post-burning

Total waste levels averaged 83.0 m³/ha in 2022 for blocks with waste and residue submitted to the government. However, the volume needs to be reduced to account for pile burning. Piles represent approximately 22% of MIFO's total waste levels. Mid Island typically burns 75% of piles. Smaller piles and blocks with minimal piles that do not require hazard abatement are not burned. As a result, pile burning does not affect the achievement of the target.

$$83.0 - (83.0 * 0.22 * 0.75) = 83.0 - 13.7 = 69.3 \rightarrow 69\text{m}^3/\text{ha}$$

Following fire abatement, 2022 cutblocks averaged 69m³/ha of coarse woody debris. As a result, with regular harvesting practices, there will be sufficient downed woody debris to meet the target.

Strategies & Implementation

Coastal stands often have significant levels of downed and dead standing woody material at various levels of decomposition. Harvesting operations add to these levels by leaving non-merchantable wood on site. Intentional broadcast burning of woody material has been eliminated as a site preparation tool. However, non-merchantable wood is piled and burned depending on the fire hazard assessment to abate fire hazard and prevent the loss of plantable ground. This does not impede WFP's ability to achieve CWD targets.

Forecasts

Levels of coarse woody debris fluctuate with market conditions, the proportion of conventional vs heli logging, and the proportion of old growth vs second growth harvesting. It is expected that a similar volume of downed woody debris per hectare will remain in 2023.

Monitoring

The Waste Coordinator reviews waste data submissions for the calendar year and divides the total waste volume by the harvested area of the associated cutblocks. The volume of wood consumed by pile burning is subtracted from the waste total.

Indicator 3.2.1: Watersheds

Element: 3.2 Water Quality and Quantity				
<i>Conserve water resources by maintaining water quantity and quality.</i>				
Value	Objective	Indicator	Target	Variance
Water quality and quantity	Management operations do not endanger water quality and quantity	Proportion of watershed or water management areas with recent stand-replacing disturbance	Proportion of watershed units in the target condition (A,B) is improving over time (Mid-Island Watershed Assessment Report 2010)	None

History

New Core Indicator under CSA Z809-08.

Justification

A Watershed Assessment was completed for TFL 39 by G. Horel, P. Eng. (GM Horel Engineering Ltd.) in 2009/ 2010. The report includes recommended indicators and targets, in addition to recording the current status of the watersheds in the DFA. The assessment report defined four categories of overall watershed ‘health’: A – stable or consistent with natural; B – improving, may have sites that are still disturbed; C – moderately disturbed; and D – severely disturbed. The report outlines expected timelines to improve the rating for each watershed.

Current Status & Interpretation

Year	# of Watersheds in A, B Category	Area of Watersheds in A, B Category as a %	Target Met (Y/N)
2010	38/44 (86%)	116,735/142,812 (82%)	Report in 2023

The indicator will be reported in 2023. The reporting corresponds to the planned update and release of the Watershed Assessment Report in 2023.

Unfortunately, an interim report has not been feasible due to the availability of the hydrologist.

Status of Watersheds in TFL 39 Block 1 (2010 Horel report)

Watershed Trend	Watershed Name				
(D) Highly Disturbed	Lower Adam Big Tree Salmon Remainder				
(C) Moderately disturbed; or improving but still of concern			North Memekay Kunnum	Nisnak	
(B) Improving, may have sites that are still disturbed	Stewart/ Consort White Lower White Upper Elk North	Upper Memekay Spirit Lake Grilse	Canyon Little Memekay Middle Memekay Upper Adam	Compton Montague Kim	
(A) Stable, or consistent with natural	Elk South	Upper Amor de Cosmos Cooper Lower Memekay Springer Rooney	Gerald/ Moakwa Kokummi Stove Kay Stowe Kylee Newcastle Salmon-H	Nora Wagar Marilou Norberg Dewey/ Nicole White-B	Newcastle CWS K012-3 K031-1 Dalrymple
Fisheries Rank	(1) High to very high fish capacity; large or potentially large anadromous runs	(2) Important resident fishery or moderate anadromous capacity	(3) Small but significant anadromous capacity; or some resident fish	(4) Limited fisheries capacity. Few resident or anadromous fish	(0) No data

Strategies

A Watershed Indicators Report was completed for TFL 39 Block 2 by G. Horel (GM Horel Engineering Ltd.) in 2009/ 2010. The objectives of the report were:

- To propose indicators to evaluate watershed condition and trends, and track the effectiveness of forest management strategies
- To identify candidate sites for possible riparian, in-stream restoration and road deactivation projects; and
- To characterize physical watershed conditions as the basis for developing forest management strategies (management strategies were not part of this project).

In June 2011, a Watershed Management Strategies report was completed for TFL39 Block 2 by G. Horel, P. Eng. (G.M. Horel Engineering Ltd.). This report provides management strategies to address key concerns identified in the Watersheds Indicators Report.

To improve the watershed trend for Class C and D watersheds, the following strategies are being implemented:

- Where streams in a watershed unit have been impacted by landslide in postcode blocks, rate of cut limits are applied for harvest on steep terrain (until 2018).
- The TRMS, windthrow strategy, rainfall shutdown guidelines, and standard practices for road construction are followed throughout TFL 39-2.
- Terrain stability assessments are completed where required, as dictated by the TRMS.
- The TFL 39-2 Watershed Management Strategies Report is reviewed for all blocks during the Hydrological Note to File, and relevant strategies are applied.
- A watershed assessment is required for areas of special consideration: a community watershed, a fisheries sensitive watershed, or a large block (>40ha not greened up) in the Enhanced Forestry Zone. The hydrological assessment identifies and addresses potential sources of hydrological risk.

Implementation

In 2022 WMS were applied to 42 blocks while 54 TRMS checklists and 5 TSAs were completed. There were 16 blocks identified as areas of special concern and required a hydrological assessment. The table below summarizes the reasons for the hydrological assessment, the watershed, and the watershed trend.

Recommendations from the Watershed Management Strategy report were followed for the above blocks.

Block	Reason	Watershed	Watershed Trend
12285	Large block in the Enhanced Forestry Zone (>40 ha)	Spirit Lake	Improving, may have sites that are still disturbed
12561	Large block in the Enhanced Forestry Zone (>40 ha) & Fisheries Sensitive Watershed	Upper Memekey	Improving, may have sites that are still disturbed
20795 30305 40304	Large block in the Enhanced Forestry Zone (>40 ha)	Upper Adam, North Elk	Improving, may have sites that are still disturbed
21023 21035	Large block in the Enhanced Forestry Zone (>40 ha) & Fisheries Sensitive Watershed	Canyon, North Memekey, Lower White	Moderately disturbed; or improving but still of concern
30531	Large block in the Enhanced Forestry Zone (>40 ha)	Kim	Improving, may have sites that are still disturbed
40525 40530 40541 40544 40547	Large block in the Enhanced Forestry Zone (>40 ha)	Newcastle	Stable, or consistent with natural
49286	Large block in the Enhanced Forestry Zone (>40 ha)	Lower Adam	Highly disturbed
50254 50258	Large block in the Enhanced Forestry Zone (>40 ha)	N/A	No Defined Watershed

A hydrological assessment was performed for blocks 50254 & 50258 which resides in an area with a currently unidentified watershed. However, standard approved actions were prescribed such as windfirming, avoiding fish reaches, and employing erosion control measures on all in-block streams to maintain natural drainage patterns and mitigate sedimentation.

Based on the Hydrological Indicator Report, the primary concern for post-code management is landslides. However, over the course of 2022 no reportable landslides occurred across the Mid-Island division.

Landslides are considered reportable if they meet any of the following criteria:

- 0.25 ha or greater,
- Impacts a fish stream or community watershed stream,
- Initiates from a gully process,
- Is a fan destabilizing event,
- Is a debris torrent.

Forecasts

WFP Mid Island will continue to implement recommendations from the WMS and Terrain Management Strategy Report (TRMS) to improve watershed outcomes.

Monitoring

Until the Watershed Management Strategies report is updated, the Area Forester will report on the implementation of the strategies to achieve the target: watershed management assessments, terrain stability assessments, and TRMS reports. The Area Forester will also report on the number of new slides.

Indicator 3.2.2: Water Features

Element: 3.2 Water Quality and Quantity <i>Conserve water resources by maintaining water quality and quantity.</i>				
Value	Objective	Indicator	Target	Variance
Water quality and quantity	Maintain or enhance water quality (clean water) and water quantity (identified riparian features are within natural variations)	Proportion of forest management activities, consistent with prescriptions to protect identified water features	100% of forest management activities are consistent with prescriptions; measured as zero non-conformances identified through the following EMS Inspections: <ul style="list-style-type: none"> • Road Construction/ Reconstruction/ Deactivation • Post-Harvest 	None; Identified non-conformances are addressed through mitigative actions

History

New Core Indicator under CSA Z809-16.

Justification

Extensive research has been completed on the effects of forest management activities on water quality and quantity. Regulations, guidelines, and best management practices have been developed based on this research. Western’s Harvest and Road Instructions documents are guided by these regulations, SOPs, and standards to minimize and mitigate impacts to water quality and quantity.

Assuming all instructions are followed, the impacts to water quality and quantity should be minimized. As such, the target is for 100% prescription implementation, measured as zero non-conformances through the EMS Inspection process.

NOTE: A non-conformance relates to the organization’s Management System, including operating procedures, policies, standards or guidelines. A non-compliance relates to legal requirements, including acts, regulations, permits, and licenses.

Current Status & Interpretation

In 2022, road inspections were completed for 30 blocks. There are no outstanding ITS action items from 2022 that require further action.

In 2022, harvesting was completed on 46 blocks within the DFA. Post-harvest assessments completed in 2022 led to 4 action items. All 4 ITS action items listed in the table below that were created from these assessments were completed in 2022. There were no non-conformances as a result.

Additionally, 11 blocks were grass seeded in 2022 to help stabilize through vegetating cut & fill slopes adjacent to streams.

Year	Blocks Logged	ITS Items	Status	Non-Conformance
2022	46	Blk 40777: Complete hand & machine cleaning of several streams.	Completed March 15 th , 2022	No
		Blk 32007: Complete hand cleaning of streams.	Completed September 29 th , 2022	No
		Blk K01527: Complete hand cleaning of 1 stream.	Completed September 29 th , 2022	No
		Blk K01530: Deactivate stream crossings with a fail safe & clean sump area.	Completed October 11 th , 2022	No
2021	36	Blk 20767: Clean ditches and culverts	Completed November 8 th , 2021	No
		Blk 21550: Complete grass seeding of ditch along road ~100m either side of where stream crosses the road.	Completed April 23 rd , 2021	No
		Blk 40297: Complete hand cleaning of 3 streams & complete grass seeding along ditches in the vicinity of creeks	Completed April 8 th , 2021	No
		Blk K01800: Complete hand cleaning of a stream within the block to remove introduced debris a machine was not able to reach.	Completed August 23 rd , 2021	No
2020	29	Block 30783 requires grass seeding on exposed soils that may enter streams	Scheduled for spring Grass Seeding	No

Strategies

Detailed block assessments are completed in advance of harvesting to address FRPA values, including water. These assessments include: terrain risk management, terrain stability, watershed management, rate of cut, windthrow, and riparian management.

Harvest and Road Instructions provide strategies for managing water quality and quantity. The instructions are largely based on acts and regulations and Western's Standard Operating Procedures and Standards. The Grass Seeding Standard and Rainfall Shutdown Standard help support the Environmental Management System in response to erosion and sediment transport. The WFP Grade and Falling/Yarding SOPs provide specific measures for managing water quantity and quality. There are special requirements for operating within community watersheds as well.

Implementation

Western Forest Products completes extensive training with their supervisors and crews related to water quality and quantity. All supervisors complete EMS Level 2 and Spill Training. All crews complete EMS Level 1 and review all SOPs relevant to their jobs, including the Grade, Falling & Bucking, Yarding, and Loading SOPs. The crews are also provided with field cards with their relevant SOPs.

To ensure all acts, regulations, SOPs, and guidelines are followed, Mid Island carries out formal and informal inspections and assessments. They represent the primary means to monitor and measure features and/or conditions of operations that can have an adverse effect on the environment. They also represent a key means by which compliance with legal requirements is evaluated. Formal inspections and assessments are documented on forms, while informal ones may involve a diary notation. As per WFP's Environmental Management System, road construction inspections are required once per road project at completion and post-harvest assessments are required on all cutblocks, ideally within 6 weeks of the "final" block inspection, but no longer than 6 months after.

The Issue Tracking System, otherwise known as the EMS Issue List module in Cenfor, is the principal storage medium for tracking the results of formal inspections. Mid Island is responsible to ensure the information pertaining to internal inspections and to government agencies enforcement activities is tracked in ITS and is kept up to date.

Post-harvest activities like seasonal deactivation, trail rehabilitation and stream cleaning occur in conjunction with piling. Piling is scheduled and tracked for all blocks in the Cenfor Activities window. A piling schedule is maintained by the Quality Control (QC) Supervisor. If issues are found during the post-harvest assessment, they are documented in the piling schedule and are communicated to the Quality Control Supervisor verbally and in email. These findings help drive the piling priority list for the QC Supervisor to prevent any future non-conformances.

Forecast

This target should be met.

All Road and Harvest Instructions are signed off by a forest professional and are peer-reviewed by one to two forest professionals depending on risk. As a result, it is unlikely that any prescriptions would be unsuitable for managing water quantity or quality.

Furthermore, crews are trained extensively on their SOPs and are expected to understand and follow the project instructions. If the instructions are not followed, the non-conformance should be identified and addressed during the many scheduled inspections (road inspection, in progress road inspection, harvest inspection, in progress harvest inspection, post-harvest inspection).

Monitoring

The Area Forester will generate the EMS Issue Summary, filtered to conformance issues from Post-Harvest and Road Inspections. The Area Forester will review all ITS items to determine if they relate to water management. The Forester will check the status of all items to determine if they should be considered a non-conformance with respect to WFP's guidelines and SOPs.

Indicator 4.1.1 Carbon

Element: 4.1.1 Carbon				
<i>Maintain the processes that take carbon from the atmosphere and store it in forest ecosystems.</i>				
Value	Objective	Indicator	Target	Variance
The uptake of carbon	The rate of carbon uptake by the managed forest is consistent over time.	Net carbon uptake	The net carbon uptake of the forest is positive, measured using a five -year average	None

History

New Core Indicator under CSA Z809-08. No change in Z809-16.

Justification

The net carbon uptake on the DFA is simply defined as the difference between the total carbon uptake on the DFA by its growing stock, minus the net carbon removed from the DFA through harvest operations and the total carbon emitted by fuel consumption or burning (operationally caused fires). The target is based on the concept that regeneration objectives should balance with the harvested area of the DFA, resulting in a ‘constant’ measure of net carbon uptake.

The five-year average for the target and the variance is meant to help account for fluctuation in yearly cut levels due to market conditions and license obligations under provincial legislation.

Description	CO ₂ e (tonnes)						Target Met	Variance Met
	2018	2019	2020	2021	2022	2018-2022		
Carbon uptake (from growing stock TFL 39/2)	683,128	682,996	664,923	659,827	652,661	665,102	Y	N/A
Carbon removed (to short-lived products ¹)	-349,767	-171,151	-338,233	-366,921	-426,945	-330,603		
Fuel consumed (harvest & transport)	-12,096	-5,749	-11,651	-12,646	-10,988	-10,626		
Debris burned (debris disposal/ operational fires)	-70,001	-16,177	-38,481	-65,839	-80,481	-54,196		
Net carbon Uptake	251,264	489,918	276,558	214,421	134,247	269,677		

¹Short-lived products refer to paper, cardboard, and firewood as a percentage of volume harvested.

Current Status & Interpretation

The 5-year average for net carbon uptake was positive, so the indicator was met. All descriptor's emission totals fell within an acceptable range, close to 5-year averages, except for debris burned. Due to another very successful burn program, emissions from debris burning saw a noticeable increase compared to 2019/2020 totals.

To calculate performance of this indicator, the following applies:

The net carbon uptake on the DFA is simply defined as the difference between the total carbon uptake on the DFA by its growing stock, minus the net carbon removed from the DFA through harvest operations and the total carbon emitted through fuel consumption during forest management operations or debris burning (prescribed or operationally caused).

Net carbon uptake can be expressed using the following parameters:

- Carbon uptake (from growing stock)
- Carbon removed (to short-lived products)
- Fuel consumed (harvest & transport)
- Debris burned (debris disposal/operational fires)
- Net carbon uptake

Carbon uptake is estimated from forest growth and the carbon density of wood. Forest growth on the DFA is calculated through the harvest projection model by applying yield curves or growth estimates from the latest applicable timber supply analysis to the productive forest. For simplicity, no growth is assumed for "old-growth" age classes greater than 139 years of age. This estimated annual growth (in m³) is multiplied by the average carbon density estimates (kg/m³) by species to obtain the carbon uptake in tonnes of carbon.

A portion of the volume harvested remains sequestered in long-life products such as building lumber and furniture. A factor of the total volume is used to determine the carbon removed to short-lived products.

The carbon removed is calculated based on the log volume production for each species. The annual log production (in m³) is multiplied by the average carbon density estimates (kg/m³) by species to obtain the gross carbon removed. This is then multiplied by a factor of 60% to estimate the tonnes of carbon removed to short-lived products. For simplicity, only stem-wood volume is considered in the calculation which is consistent with the results of yield curves.

The known fuel consumption is matched to the operational log production. When contractors independently purchase fuel, their consumption is assigned the average calculated rate (in L/m³) for the remaining of the operation's log production to estimate the total amount of fuel they consumed. The sum of fuels consumed (in L) is then multiplied by the average carbon density by fuel types (in t/L) to obtain the tonnes of carbon emitted through fuel consumption.

Finally, the carbon emitted through forest practices such as debris burning or through other operationally caused fires is estimated by multiplying the approximate volume of wood consumed (in m³) by the average carbon density estimates (kg/m³).

Strategies & Implementation

The primary strategy for ensuring a consistent net carbon uptake on the DFA is prompt and effective reforestation or regeneration of harvested areas that aims to establish free growing stands of healthy trees of mixed species in sufficient numbers and within set time frames. The foresters aim to create resilient forests that will be less susceptible to pests and diseases. This is primarily achieved through a combination of natural regeneration and the planting of seedlings shortly after harvest is completed.

In certain circumstances, additional treatments/ strategies may be required in support of this core strategy to achieve its goal, including:

- Fertilization at the time of planting to help initial seedling growth and establishment ahead of competing brush.
- Physical protection of seedlings against browsing pressures from deer and/or elk.
- The use of improved seed for planted seedlings that have increased growth performance and/or insect or disease resistance.
- Brushing treatments to relieve young trees from competition.
- Broadcast fertilization of stands to stimulate growth when funding is available.
- Forest fire preparedness & response that aim at the prevention of fires and the prompt control and extinguishment of those that occur.
- Where fire hazard is low, distribution of slash versus piling to reduce burning activities.
- Modernizing or upgrading of equipment that results in improved fuel efficiencies.

Forecasts

The results for the Mid Island DFA indicate that there is ample growing stock on the DFA to maintain a net positive carbon uptake, assuming normal harvest levels are maintained.

Different harvest level scenarios were tested to determine the impact of logging on carbon uptake. If substantially more than the AAC is harvested to compensate for a year of undercut, the net carbon uptake could become negative. However, the target is calculated over a 5-year period, similar to cut control, so it would still be possible to meet the target.

Monitoring

The Corporate Certification Forester coordinates the calculation of the Net Carbon Uptake. Several parameters need to be monitored or maintained for the DFA:

- Growing stock inventory over time;
- Volume harvested annually;
- Species profile of the harvested volume;
- Age (i.e. old growth vs. 2nd growth) profile of the harvested volume;
- Annual fuel consumption (gasoline, diesel fuel, aircraft fuel);
- Annual area burnt in operationally caused forest fires;
- Annual area burnt in broadcast silviculture fires;
- Total number of debris piles burned annually for silviculture or fire abatement reasons and their average size.

The parameters listed above are entered in a spreadsheet built to calculate the carbon values emitted. It includes conversion factors extracted from recognized and credible international research literature. These factors include carbon density (CO₂e) of wood by species in tonnes/m³, carbon density of various fuel types in tonnes/L and proportion (%) of wood harvested that is stored in short-lived products.

Fuel consumption is calculated based on a factor derived from an average of all 5 WFP CSA DFA's from data gathered for the 2012 – 2016 reporting periods. The factor is applied to the annual M³ of harvest as reported for the CSA reporting period. This includes diesel, gasoline and avgas consumption. This factor will be reviewed and revised every 5 years to account for changes in harvest types, technology and equipment. The current factor is 16.67 kg of carbon per M³ of harvest. The rationale for using a factor is that fuel accounts for a relatively low portion of the carbon produced; already uses factors for contractors as they do not report fuel consumption; and has not seen significant fluctuations over the time it has been calculated (2009 – 2016).

Indicator 4.2.1: DFA Changes

Element 4.2 Forest Land Conversion				
<i>Protect forest lands from deforestation. Encourage afforestation where ecologically appropriate.</i>				
Value	Objective	Indicator	Target	Variance
The conversion of forest land to other uses	Avoid excessive conversion of forest lands into other uses	Deletions to the forest area	Forest area in the DFA converted to other uses is less than <0.01% of the DFA over a 5-year period	Some changes to the DFA are outside of the control of WFP

History

New Core Indicator under CSA Z809-08. Old Indicator 2.2.1b changed to 4.2.1 in 2014 to reflect the correct Element number.

This indicator appears as a duplicate in Z809-16 under both 2.1 and 4.2. It also appears under 2.1.3, but MIFLAG has assigned a different target under 2.1.3.

The target was updated at the March 15, 2018 MIFLAG meeting to allow a small amount (15ha over 5 years) of land conversions for operational developments (landfills, quarries, dryland sorts, etc).

Justification

The target is intended to represent additions and withdrawals from the DFA that are completed by WFP or by the government (e.g., land conversion for infrastructure such as dryland sorts). It captures conversions of forest lands to other uses. It is not intended to focus on spatial updates or tenure changes.

Current Status & Interpretation

Year	Total Area of the DFA (ha)	Area Converted to Other Uses over 5-year period	% DFA converted to other uses	Reason for Change	Target Met (Y/N)	Variance Met (Y/N)
2022	156,149	0	0.0%	N/A	Y	Y
2021	156,149	0	0.0%	N/A	Y	Y
2020	156,151	0	0.0%	N/A	Y	Y
*2019	156,150	1.2	0.00077%	Mowi hatchery construction	*Y	*N

The target was met for 2022. The 2-hectare discrepancy from 2020 is due to small TFL boundary revisions. No areas of the DFA were converted to other uses.

*The reporting from 2019 was incorrect. The Mowi hatchery construction led to a 1.2ha dirt pile being placed overtop of Block 22045. Mowi was planning on expanding their license to include this area. However, this will not be feasible. As a result, WFP reforested the site in Fall 2020, and it will continue to remain in the TFL as productive land.

Strategies & Implementation

All Crown land in a tree farm license is designated as “Provincial Forest” land. This designation limits the ability of the company to convert the land to other uses. The *Land Act* establishes that land can be converted for easements or rights of way, or for other purposes if the Chief Forester deems those uses to be compatible with uses described in the *Forest and Range Practices Act (Provincial Forest Use Regulation)*.

In general, WFP wants to maintain or increase the DFA through land or tenure purchases. However, some losses are required for capacity expansion (eg. landfill or dryland sorts). The DFA may also be changed due to government take back areas.

Forecasts

In 2018, the SUP permit was approved for S26295, a 4.7ha wood waste site for the Kelsey Bay dryland sort. This area remains forested for now but will be converted when the adjacent S25717 wood waste site is filled. The target should still be met once it’s developed.

No other land conversion is planned.

Monitoring

The corporate Properties and Permit department reports on the total area of the DFA and any tenure changes or transfers. Land conversion areas (landfills, dryland sorts, large quarries) under SUP are subtracted from the DFA shapefile area. The area converted to other uses over the previous 5 years is summed in the column “Area Converted to Other Uses in the DFA over a 5-year period”.

Indicator 5.1.1: Benefits

Element: 5.1 Timber and Non-Timber Benefits				
<i>Manage the forest sustainably to produce a mix of timber and non-timber benefits. Support a diversity of timber and non-timber forest products and forest-based services.</i>				
Value	Objective	Indicator	Target	Variance
Timber and non-timber benefits	Timber and non-timber benefits are supported	Documentation of the diversity of timber and non-timber benefits, products and services in the DFA	Track annual spending in the following areas: contract services, WFP crew labour, payments to government, purchases and misc. in relation to the annual harvest	None

History

New Core Indicator under CSA Z809-08 (carried forward from 2009 SFM Plan Indicator 28) Minor revision to indicator in CSA Z809-16 (no material change).

Justification

The distribution of Mid Island Operation’s primary costs provides a measure of the operation’s overall contribution to local, regional and provincial economies. The target is based on previous SFM Plan Indicator 28.

The value of non-timber forest products is not tracked by WFP. However, the annual number of agreements for non-timber forest products is reported in Indicator 5.1.2.

Current Status & Interpretation

Year	Volume Harvested (m ³)	Total Spending (\$)	Local Spending & Wages (\$)			Local Wood Sales (\$)		Target Met (Y/N)
			Sayward	CR Area	Courtney/Comox	Sayward	CR	
2022	914,273	103,639,638	2.5M (2%)	51.7M (50%)	4.2M (4%)	0.02M	2.4M	Y
2021	772,557	76,384,294	2.3M (3%)	30.4M (40%)	3.7M (5%)	0.06M	2.4M	Y
2020	803,139	68,005,816	2.4M (3%)	30.8M (46%)	3.3M (6%)	0.04M	1M	Y
2019	470,838	44,936,941	1.3M (3%)	17.4M (39%)	1.5M (3%)	0.05M	1.3M	Y
2018	926,597	71,001,693	1.5M (2%)	36.3M (53%)	1.6M (2%)	0.03M	2.8M	Y

*Volumes adjusted in Feb/2018 report for all years to reflect Corporate Volume of Timber Harvested for TFL 39 Block 2, including billable waste

In 2022, the Mid Island Forest Operation spent just over 103.6 million dollars. The total volume harvested increased by 18% from 2021 and total spending increased by 35.7%. The spending breakdown was: 50% contract services, 11% miscellaneous, 14% own crew labour, 13% purchasing, and 11% payments to government.

Strategies & Implementation

Information from the financial accounting system is collected monthly to report on the operation's primary costs to produce logs at tidewater.

Contract Services covers payments to full phase (stump to dump) logging contractors, single phase contractors, forestry and engineering contractors, general service contractors such as janitorial, electrical, and carpenters, etc. as well as consultants and professional services. These costs include the supply of labour, equipment and materials costs required to execute the contract work and invoiced as one "job".

Own crew labour includes the gross payment of wages paid to both salary and hourly employees without deduction for statutory or contractual deductions. It includes all benefits costs paid by the employer for statutory and contractual benefits including WorkSafe BC Assessments. Payments made to cover employees under the Employee and Family Assistance Program (EFAP) and costs related to EFAP programs are not included.

Payments to Government include only direct payments for stumpage and royalty fees, logging waste residue payments, timber taxes and fees allocated by Head Office properties department (municipal and regional district property taxes, foreshore leases, etc.), and amounts charged to licenses (e.g. radio licenses, highway crossing permits, etc.). Payments made to government do not include: Goods and Services Taxes, provincial sales taxes, provincial motor fuel taxes, federal excise taxes, payroll related taxes (employee income tax with holdings) and assessments for EI or CPP, corporate income taxes, or corporate capital taxes, etc.

Purchasing includes all supplies, materials and services purchased that don't fit into a category listed above. Some of the services in this category would include insurance coverage, road use charges, association dues, donations and repair supplies and services.

Miscellaneous is a category that includes any costs not captured in other categories. It includes, but is not limited to nor reconciles to the following: depletion on timber, road amortization, silviculture liability change, inventory change/allocations, depreciation and machine cost allocations.

Forecasts

WFP will continue to report out on spending.

Monitoring

Spending is reported in Mid Island's financial statement and during each financial month end. The Area Forester coordinates reporting (with assistance from Accounting).

Indicator 5.1.2: Open & Respectful Communication

Element: 5.1 Timber and Non-Timber Benefits				
<i>Manage the forest sustainably to produce a mix of timber and non-timber benefits. Support a diversity of timber and non-timber forest products and forest-based services</i>				
Value	Objective	Indicator	Target	Variance
Timber and non-timber benefits	Timber and non-timber benefits are supported.	Evidence of open and respectful communications with forest dependent businesses, forest users and local communities to integrate non-timber resources into forest management planning. When significant disagreement occurs, efforts towards conflict resolution are documented.	i) 100+ agreements in place for alternate uses (e.g., minor forest products, firewood, lesser vegetation, road use agreements, boughs, Sayward Futures Society etc.)	i) -10 Agreements/ Contracts
			ii) All communications with forest dependent businesses, forest users and local communities, related to integrating non-timber forest uses into forest management planning are recorded and reported out annually and, where disagreement occurs, all efforts of conflict resolution are documented.	ii) None

History

New core Indicator under CSA Z809-16. Target ii) was added.

Justification

Social and ecological benefits need to be considered during the development of forest management plans.

Possible uses and benefits to consider include:

- Outdoor activities;
- Timber and forest cover;
- Hunting, fishing, and trapping activities;
- Ecotourism;
- Cultural and heritage resources
- Ecological goods and services, and
- Other non-timber forest products

Target i) reflects MIFLAG’s desire for diversity in the local economy. It focuses on areas not already covered by other elements, indicators, or targets. The indicator relates to non-timber products and support for other forestry-dependent businesses. The target was raised from 75 to 100 in 2016 due to the high number of permits issued to the public for firewood.

CSA Z809-16 considers open and respectful communication with forest dependent businesses, forest users, and local communities to be evidence of genuine support for other social and ecological benefits within the DFA. Target ii) requires communication related to integrating non-timber forest uses into forest management planning to be summarized for MIFLAG review. If there are disagreements, all conflict resolution efforts will be documented.

Current Status & Interpretation

i) Agreements

Year	Agreements	Target Met (Y/N)	Variance Met (Y/N)
2022	Commercial/ Private Firewood- 110 Lesser Vegetation- 2	Y Total: 112	N/A
2021	Commercial/ Private Firewood- 91 Lesser Vegetation- 1	N Total: 92	Y
2020	Commercial/ Private Firewood- 144 Boughs- 4 Lesser Vegetation- 1	Y Total: 149	N/A
2019	Commercial/ Private Firewood- 163 Shake and Shingle- 1 Boughs- 1 Lesser Vegetation- 1	Y Total: 166	N/A
2018	Commercial/ Private Firewood- 198 Shake and Shingle- 1 Boughs- 1 Lesser Vegetation- 1 Road Use Agreements- 3	Y Total: 204	N/A

The target was met for 2022 with >100 permits distributed, primarily for firewood. Lesser vegetation agreements have been amended to include bough cutting during the holidays as well.

In addition to providing permits, WFP supports other forest users and non-timber benefits. For example, Mid Island supports local apiarists. Mid Island provides maps, road updates, and site recommendations to several commercial beekeepers each year.

WFP’s resource road infrastructure also provides access to BC’s backcountry, creating opportunities for recreation, tourism, and commercial harvesting of wild edible mushrooms, salal, or boughs. It also makes Mid Island an attractive hunting destination. MIFO rarely deactivates or blocks roads and has no locked gates. WFP has also released a Central Island Recreation Overview map at wfproadinfo.com, which will benefit hunters and other forest users.

Mid Island has the highest concentration of Roosevelt elk in British Columbia. On Vancouver Island, more than 15,000 applications are submitted annually by resident hunters for approximately 200 hunting opportunities. According to the 2021-2022 British Columbia Limited Entry Hunting Regulations Synopsis, the following zones overlap with Mid Island: 1-10 A, B, C, D, G, and H. Based on Koontz and Loomis (2005), resident and non-resident elk hunters spend \$440 and \$1,800 respectively per trip in local communities. This spending does not include direct license revenue, guide outfitter fees, indirect economic benefits, or regional impacts.

ii) Communication Tracker

All communications related to the integration of non-traditional timber forest uses into forest management planning were recorded in the “MIFO 2022 External Communication Ledger.” The communications related to this indicator are summarized below.

Interest group	Issue Raised	Action	Status
Member of public	Concerns regarding high amounts of blowdown in SE portion of TFL.	Drone was flown over areas and the Planning department assessed for salvage blocks.	Resolved
Apiarist	Inquiring about herbicide programs in the TFL due to some local bee colony deaths.	Provided a thorough call and email outlining our Pest Management Plan, where and how much we’ve treated in the past 5 years and checked using an overview map any potential overlap with known colonies. None were found.	Resolved
Infinit Pacific Corp	Wanting to trial browse deterrent seedling treatment.	Field visited their trials and planned to establish operational trials for Spring 2023 planting program.	Ongoing
Ministry of Forests	Wanting to collect drone data for a new forest cover analysis tool being developed.	Identified 2 blocks scheduled for surveying and collected the additional data requested.	Resolved
Apiarist	Inquired about blocks with high Fireweed.	Shared blocks & maps for known firewood areas.	Resolved
Karst/Caving	Requested to view 40299 Cutblock Site Plan (CSP).	Office visit and required CSP. Lead to a discussion about the process for the public to be able to request/view these documents.	Resolved
Town of Sayward	WFP looking to discuss Stowe Creek layout near H’Kusam trail.	Several attempts made to reach the Mayor and set up a meeting, no reply yet.	Ongoing
Member of Public	Dust levels on Salmon River Mainline.	Contract Manager arranged for several dust management strategies over the summer but issues is persistent.	Ongoing
Town of Sayward	Contractor handling fuel management plan for Sayward requests review of their proposed treatments.	Reviewed treatments areas and stocking standards/obligations for areas that overlapped with the TFL. No issues.	Resolved

Sayward Futures	Requested used wire spools to use as picnic tables.	WFP delivered 2 spools of requested size.	Resolved
CR Chamber of Commerce	Requested golf tournament sponsorship.	WFP sponsored and attending the event.	Resolved
Naturetrust BC	Adjacent work on Salmon estuary footbridge replacement	Project was discussed with them and they will inform WFP as work unfolds so that safety with Production is coordinated.	Ongoing
North Island College	Requested a safety briefing for the TFL.	Provided relevant safety documents & processes, along with active areas.	Resolved

Strategies & Implementation

WFP engages in many activities that support/ strengthen the local economy and foster a cooperative relationship with the community and local business owners. This includes agreements for firewood, boughs, salal, etc.

All communication regarding the integration of non-timber forest uses into the forest management planning will be documented, saved, and reported out annually. Any conflicts that arise and the efforts to resolve these conflicts will be chronicled by the Area Planner.

Forecasts

WFP maintains a long history of cooperation with local business owners, forest users, and the local communities. It is anticipated that WFP will continue to provide agreements for minor products and non-timber forest products, and good road access to support hunters, foragers, fishermen, campers, etc.

All Planners will continue using the External Communication Ledger.

Monitoring

The Area Forester reviews the central file and reports on the number of agreements in place for alternate uses.

The Area Planner will summarize all communications with forest dependent businesses, forest users, and local communities regarding the integration of non-timber forest uses into forest management planning. The Area Planner will provide a record of all efforts of conflict resolution if disagreements occur.

Indicator 5.2.1: WFP Support

Element: 5.2 Communities and Sustainability <i>Contribute to the sustainability of communities by providing diverse opportunities to derive benefits from forests and by supporting local community economies.</i>				
Value	Objective	Indicator	Target	Variance
Community sustainability	Support community stability	Level of participation and support in initiatives that contribute to community sustainability	List number of organizations supported	None

History

New Core Indicator under CSA Z809-08 (related to 2009 SFM Plan Indicator 37). Minor revision to indicator in CSA Z809-16 (no material change).

At the March 15, 2018 MIFLAG meeting, the target was altered to protect confidential information. The number of organizations will be reported in this report, and the actual organizations will be reported out orally during the annual MIFLAG indicator review meeting.

Justification

This indicator reflects WFP’s donations to support community sustainability. The indicator was revised in 2018 to exclude program and student support, already covered in the Public Outreach and Communication Indicator.

Benefits from the forests to local communities can also be tracked under Criterion 5, 6, and 7.

Current Status & Interpretation

Year	Organizations	Target Met (Y/N)
2022	6 Campbell River organizations 1 Sayward organization	Y
2021	3 Campbell River organizations 1 Comox organization	Y
2020	5 Campbell River organizations 3 Sayward organizations 1 Cape Mudge organization	Y
2019	12 Campbell River organizations 2 Sayward organizations	Y
2018	9 Campbell River organizations 3 Sayward organizations	Y

In 2022 the Campbell River organizations donated to included Sayward Futures, the Campbell River Minor Hockey Association (CRMHA), River City Cycle Club, Eagle Riders, Shoreline Arts, Campbell River Minor Lacrosse, and Campbell River Chamber of Commerce. First Nation log donations are tracked under ‘Indicator 7.2.A First Nation Donations’. Additional donations made to educational services are tracked under ‘Indicator 6.1.B Outreach & Education’.

Strategies & Implementation

WFP selects community projects that will impact the greatest number of individuals possible.

WFP donates to non-profits that align with their Community Investment Objectives which:

- Focus on healthy living, culture, or forestry education in local communities
- Promote the sustainable use of wood building materials
- Enhance public-use of the working forest promote understanding of forest management

Forecasts

It is anticipated that WFP will continue to support local non-profits based on historical performance. The level of donations will vary through time depending on the health of the forest industry.

Monitoring

The operations accountant provides a list of supported organizations.

Indicator 5.2.2: Training

Element: 5.2 Communities and Sustainability				
<i>Contribute to the sustainability of communities by providing diverse opportunities to derive benefits from forests and by supporting local community economies.</i>				
Value	Objective	Indicator	Target	Variance
Employee skills	Develop employee skills	Level of participation and support in training and skills development	Employee receives at least 1 day of training per year (based on an average)	None

History

New Core Indicator under CSA Z809-08. Minor revision in CSA Z809-16 (no material change).

Justification

Training and skills development are important for both the employees and organization. For the individual, training can increase motivation, engagement, productivity and competency. It creates opportunities for career development and helps improve safety. For the employer, training reduces employee turnover, increases profits, and deepens the talent pool. Western Forest Products ensures that its personnel are qualified with appropriate training and/or work experience and have opportunities to gain new knowledge.

Current Status & Interpretation

Year	# of Employees	Average Person Days of Training	Target Met (Y/N)
2022	135	2.0	Y
2021	132	3.9	Y
2020	140	2.5	Y
2019	154	2.2	Y
2018	142	2.0	Y

This target is met. WFP employees averaged 2 training days in 2022. It was calculated using a proportional average based on the number of employees in each job category and their respective training days. The noticeable decrease in training days was impacted in large part by a previously untracked apprenticeship training program that certain WFP workers attend for a minimum of 4 weeks a year. The hours associated with this program appeared in 2021.

Western Forest Products ensured that all employees in each job category had knowledge of their roles and responsibilities in achieving conformance with the SFM policy and requirements (EMS/SOP Review).

Training	Hours
Start up – Safety, EMS, SOPs, SWPs, etc.	270
Forest Professional Continuing Education	240
Accountant Continuing Education	40
Western Learning	282
First Aid (L1, TE, AED)	968
First Aid L3	14
Ambrosia Beetle Training	6
Blasting Certification	8
EMS 2 (Train the Trainer)	13
Rocks in Logs Awareness Training	6
QC Training - Outgoing Quality	8
Rocks in Logs Awareness Training	54
S100A refresher training	104
JOHSC Training	24
BCFSC Supervisor Training	32
Transport of Dangerous Goods	12
Grading/Snow Removal Training	10
Blasting Continuing Education	15
Bear Den Training	15
Ergonomics – truck drivers & Dryland Sort	40
Metal Saw Escape Training	11
SMZ Ecosystem Training	5
Bear Den Standard Training	7
Wildlife & Biodiversity Training	14

Strategies & Implementation

This target is intended to measure the average number of person days of completed training per year in the category of safety, environment and professional development.

WFP provides numerous training and skill development opportunities for employees and contractors under the existing Environmental Management System, Safety System and the Sustainable Forest Management Plan. In addition, there are certain training courses that are legally required such as Transportation of Dangerous Goods, Blasting, Crew Boat Operator, Fork Lift Operator, First Aid, etc.

Forest professionals and accountants must undertake professional development activities in order to maintain competency in their areas of practice. WFP provides opportunities to meet these requirements throughout the year. Forest professional are only allowed to practice in professional forestry fields where training and ability have made them professionally competent. If job-related knowledge is lacking, the forest professional must acquire it through reading, training, and consulting with peers and specialists, etc. Forest professionals must log and report a minimum of 30 hours of continuing professional development per year.

Accountants also have professional training requirements. Registered accountants are required to report 120 hours of training over a 3-year cycle, with a minimum of 20 hours per year. 60 hours need to be verifiable, including 4 hours of professional ethics training, and 60 hours can be non-verifiable.

In 2018, WFP launched Western Learning, an online learning management system. Western Learning will allow WFP to simplify, standardize and streamline learning and development processes, including the enrollment, tracking, and reporting of that completed training for all salaried employees.

Forecasts

It is expected that the average training days will remain stable, or slightly increase for planners, maintenance supervisors and production supervisors as WFP improves the functionality of the the E-learning platform and while new corporate standards are released over 2023.

Monitoring

There have been technical challenges with the training database since 2016. It no longer has accurate training records with hours for each employee. Until a new tracking system is rolled out, some assumptions had to be made in order to calculate this indicator. The Area Forester used the Western Learning training records with company wide time averages. The Area Forester compiled training record forms and average hours for other types of courses or training opportunities. The Area Forester calculated training averages for each employment category using a sum product calculation, considering % attended and average course hours. The Area Forester then calculated an operational training average with a sum product calculation, using average training hours and % of total employees by category.

Indicator 5.2.3: Employment

Element: 5.2 Communities and Sustainability				
<i>Contribute to the sustainability of communities by providing diverse opportunities to derive benefits from forests and by supporting local community ec</i>				
Value	Objective	Indicator	Target	Variance
Employment	Provide employment	Level of direct and indirect employment	Actual direct and indirect employment is greater than or equal to (0.0005*volume harvested), measured annually	-10% employment

History

New Core Indicator under CSA Z809-08. No changes in Z809-16. The target was updated for 2019 to better reflect direct and indirect employment as a function of volume harvested.

Justification

Forestry has been an influential industry in Campbell River and Sayward’s economies for decades and continues to be an economic driver. Campbell River has a diverse pool of trades, forestry specialists, contract loggers, truckers, and silviculture workers with around 1,195 people employed in the forest industry. Approximately 7% of Campbell River’s workforce is employed by the forest sector, 4.4% higher than the provincial average (Statistics Canada, 2016). Likewise, 33.3% of Sayward’s workforce is employed by agriculture, forestry, fishing and hunting (Statistics Canada, 2017).

Both communities are considered forestry dependent and rely on stable employment in the forest industry. This indicator provides a measure of WFP’s ability to generate employment from the DFA over the long term. For direct employment, it includes staff, union, and contract jobs for the Mid Island Forest Operation-Timberlands, including harvesting/felling, planning and administration, log hauling and trucking, road building, silviculture and other miscellaneous jobs. For indirect employment, it includes suppliers of goods and services to the forest industry.

The target is now tied to billable volume harvested plus waste to account for the decreasing AAC. The target of 0.0005 direct and indirect jobs/m³ was selected based on a 2013-2018 Mid Island baseline (see below). The coefficients ranged from 0.00051 to 0.00073 jobs/m³. The target was based off the lowest rate to allow for inevitable productivity gains with technological advancements. The variance allows 10% less actual jobs than calculated with the coefficient to account for economic downturns.

Year	Volume (m ³)	Direct + Indirect Jobs	Jobs/m ³
2018	1,050,072	687	0.00065
2017	1,101,575	799	0.00073
2016	1,324,684	747	0.00056
2015	1,280,945	653	0.00051
2014	1,179,225	654	0.00055

NOTE: It is not possible to split out exposure hours by license agreement. For this indicator, exposure hours and total volume is for the DFA plus any wood purchased by WFP and managed by the Mid Island Forest Operation (Ex. Nanwakolas- A92017 and A94386).

Current Status & Interpretation

Year	TFL39-2	A94386	TOTAL	Exposure Hours (Direct-WFP & Contract)	Indirect Exposure Hours	Actual Jobs (direct + indirect)	Required Jobs	Target Met (Y/N)	Variance Met (Y/N)
2022	930,265	*	930,265	592,902	415,031	700	465	Y	N/A
2021	825,136	*	825,136	512,371	358,660	605	413	Y	N/A
2020	852,581	127,492	980,073	497,916	348,547	588	490**	Y	N/A
2019	421,764	143,913	565,677	320,175	224,122	378	282	Y	N/A
2018	768,703	263,369	1,050,072	581,515	407,061	687	525	Y	N/A

Reported direct exposure hours= 592,902

Indirect exposure hours= 592,902* 0.70 = 415,031

Combined hours= 1,007,933

Direct/ Indirect jobs= 1,007,933 / 1440 = 699.95 (700)

The target is met for 2022. The Mid Island Forest Operation generated 700 full time equivalent direct and indirect positions. This was higher than the required number using the employment coefficient.

After a few compounding factors lead to low harvest volumes in 2019, there has been renewed stability in harvest volumes and employment numbers the last couple years. Additionally, a push to prevent an undercut during the current cut control period and strong wood pricing for most of the past year has led to additional hiring.

* Volume for forestry license A94386 is captured within the TFL 39-2 column.

** The 2020 “Required Jobs” column had a negligible calculation error and was fixed. This had no impact on the target set as the 588 actual jobs still far exceeded the required jobs total of 490.

Forestry license A92017 was previously recorded in the data table but the license expired in 2018, and the column has now been removed.

Strategies & Implementation

Employment is largely linked to harvest level. Western’s strategy involves setting operational levels that align with market demand, while remaining within AAC cut control limits. Target i) of 2.1.4 Harvest Level provides incentive for maintaining stable harvest levels throughout the cut control period, while acknowledging the cyclical nature of the forest industry. Employment is also guided by contractual agreements between the union and contractors under Bill 13.

Forecasts

There are various factors that influence timber harvesting employment coefficients over time. The percentage of timber that is harvested through conventional methods vs helicopter logging affects the types of timber harvesting jobs and may affect the number of jobs involved.

The percentage of old growth vs second growth timber affects the total number of jobs per 1000m³. Second growth timber is typically more uniform in size and located on flatter terrain, which results in more labour efficient harvesting methods. For example, most of the falling is done by feller buncher with little hand falling, and yarding is largely completed with hoe chucking rather than grapple yarding.

The baseline was set using direct employment data from 2013-2018. There were heli programs for 2 years; otherwise, all volume was logged through conventional methods. The proportion of second growth logging from 2013-2017 was higher than the 20-year plan or harvest profile. Mid Island intends to meet the sustainability metrics and reduce second growth volume to <20% going forward, so the actual employment coefficient may increase with less efficient harvesting methods.

To prevent an undercut after 2019’s low production, harvest levels rose in 2020 and will continue to remain as high as operationally/economically feasible for 2023. As a result, employment levels have increased. While we do foresee continuing to meet this target the forest industry is entering a period of greater change and pricing pressure so there may be fluctuations, however, Mid Island’s timber profile is well suited for the current and expected demand throughout 2023.

Monitoring

The Planning Administrator reports the exposure hours for the Mid Island Forest Operation using the data collected for WFP's Safety Program (Medical Incident Rate and Severity Rate). The PricewaterhouseCoopers' employment multiplier of 0.7 is used to calculate the indirect employment (PwC, 2017). The combined direct and indirect exposure hours are divided by 1440 hours (180 days*8 hours) to determine total full-time equivalent employment (FTE). This is compared to the estimated employment level using Mid Island's employment coefficient of 0.0005 jobs/m³ (set using a 2013-2018 baseline) and total billed volume harvested and waste. The volume levels are reported by corporate forestry through HBS and reflect all volume logged by the Mid Island Forest Operation, including partnerships or wood purchases. The indicator is considered met if the actual employment level meets or exceeds the calculated level. The variance allows 10% less jobs than calculated.

Indicator 5.2.A: Recreation Trails & Sites

Element: 5.2 Communities and sustainability <i>Contribute to the sustainability of communities by providing diverse opportunities to derive benefits from forests and by supporting local community economies.</i>				
Value	Objective	Indicator	Target	Variance
Economic development in local communities through tourism in the DFA	Protection of defined recreation trails and sites in the DFA	All GAR recreation features and the following defined sites/trails are not damaged or rendered ineffective: 1) Spirit Lake Recreation Site 2) Mount Kitchener trail	All GAR or defined sites/trails are not damaged or rendered ineffective as a result of harvesting or road construction	None

History

This indicator was developed by the MIFLAG in 2014. Previously, MIFLAG included important recreation areas as part of Indicator 1.4.1 Sites of Significance. MIFLAG wanted to manage and protect additional recreation sites and trails and decided to create a separate recreation indicator. A sub-committee was formed to develop this indicator and target.

In 2018, the indicator was revised to include all GAR recreation sites and trails on the land base, instead of a limited list. Based on WFP's recreation database, only 2 features are not covered under GAR: the Spirit Lake Recreation Site and Mount Kitchener trail. These features will also be covered under the indicator.

Justification

Recreation sites and trails play an important role in the domestic tourism sector by providing economic opportunities for rural communities. BC's trails and recreation sites provide safe and enjoyable public recreation opportunities for local citizens and visitors and promote an active lifestyle for a healthier population.

Recreation resource features within the Campbell River Forest District were identified pursuant to s. 5 of the Government Actions Regulations on April 12, 2006. The horse trail and associated sites were also captured in a recent recreation review under GAR. As per FPPR s. 70, forest activities may not damage or render these identified recreation resource features ineffective. Two recreation features (1 site, 1 trail) were not captured in the 2006 Campbell River Forest District Recreation Resource Features Locator maps. These features were defined in the indicator and must also meet the target.

Current Status & Interpretation

Year	# of Operations Conducted in Vicinity	Recreation Site ID	# of Sites Managed/Protected	Target Met (Y/N)
2022	2	Victoria Peak Rec Polygon (GAR)	1	Y
	1	Memekay Lakes Rec Polygon (GAR)	1	Y
	4	White River Rec Polygon (GAR)	2	Y
	2	Canon Falls Creek Rec Polygon (GAR)	1	Y
2021	1	Pine Marten Horse Camp (GAR)	1	Y
	1	Salmon Brewster Trail (GAR)	1	Y
	1	Santa Maria Lake Trail (GAR)	1	Y
	1	Sgt. Randally (GAR)	1	Y
	1	Rooney Lake (GAR)	1	Y
2020	1	Spirit Lake Rec Site	1	Y
2019	1	White River Rec Polygon (GAR)	1	Y
	1	Haihte Lake Polygon (GAR)	1	Y
2018	1	White River Rec Polygon (GAR)	1	Y
	1	Haihte Lake Rec Polygon (GAR)	1	Y
	1	Mount Kitchener	1	Y

The target was met for 2022.

Blocks 10274 and 10774 overlap with the Kings Peak Recreation Polygon. A recreation assessment was conducted, but no special prescriptions were deemed necessary for the protection of the feature. Operational plans were communicated to the District Recreation Officer, and no concerns were raised.

Block 11053 overlaps the Memekay Lakes Recreation Polygon. A recreation assessment was conducted, but no special prescriptions were deemed necessary for the protection of the feature. Operational plans were communicated to the District Recreation Officer, and no concerns were raised.

Block 21036 is located adjacent to the White River Rec Polygon, with some small slivers of overlap. Operational plans were communicated to the District Recreation Officer, and no concerns were raised, so no specific instructions were included relating to the protection of this feature.

Blocks 21565, 21566, and 21567 were also adjacent to the White River Rec Polygon, with no overlap. The Canyon Mainline, which is adjacent to the recreation feature, was used for hauling but activities in the area were otherwise minimal. No specific instructions were required related to the protection of this feature.

Blocks 40777 and 40779 are adjacent to the Canon Falls Creek Recreation Polygon. A recreation assessment was conducted, but no special instructions were deemed necessary for the protection of the feature. Operational plans were communicated to the District Recreation Officer, but no concerns were raised.

Strategies and Implementation

“protection of defined recreation trails and sites” is defined as follows:

For the Salmon-Brewster Horse Trail:

- That WFP will follow the “Management Principles for the Salmon-Brewster Equine Trail and Campsites” dated Oct 20, 2011 (updated November 13, 2012) by MoF.
- WFP will follow the legal Order and Objectives, and the management intent and expectations of the Order.

For other features: WFP will keep the sites and trails open and accessible, except for temporary closures due to logging activity.

Forecasts

To ensure the safety of the public, there may be temporary closures of recreation sites or trails. WFP will work with the applicable groups to ensure communication is maintained and impacts are minimized or mitigated. In some cases, trails may be required to be re-located (consistent with the Management Plan provisions).

Due to the change in wording of the indicator to include all GAR recreation features and the additional defined recreation sites and trails, there may be more reportable blocks in the future.

Monitoring

All GAR recreation features and the defined site/trails from the indicator target are buffered by 100m in ArcGIS. All blocks with harvest completion for the year of the report that overlap with the feature or buffer zone are identified. The management strategies in the recreation assessment are reviewed with recreation technicians from the Ministry of Forests. All prescriptions are included within the block’s Harvest and Road Instructions and followed through with a Post-Harvest inspection to ensure the management prescription was maintained.

Indicator 6.1.1: MIFLAG Satisfaction Survey

Element: 6.1 Fair and Effective Decision Making				
<i>Demonstrate that the SFM public participation process is designed and functioning to the satisfaction of the participants and that there is general public awareness of the process and its progress.</i>				
Value	Objective	Indicator	Target	Variance
Stakeholder/First Nations participation satisfaction	CSA public participation at this table is responsive, communicative and representative of stakeholder and First Nations' values.	Level of participant satisfaction with the public participation process	MIFLAG completes an annual Satisfaction Survey; overall satisfaction score is $\geq 80\%$; discuss results within 2 meetings and propose action items to improve (where applicable)	None

History

New Core Indicator under CSA Z809-08 (relates to old Indicator 34). The target was revised in April 2015 after much discussion with the MIFLAG group. The previous version “80% of 80%” was confusing to some. The new target is straightforward and includes other key components such as a prompt review of the issues and concerns.

This indicator was moved from Element 6.4 (previously Indicator 6.4.1) to 6.1 under CSA Z809-16.

Justification

Participant processes work best when participants are satisfied with how the process is running. Therefore, process conveners and facilitators need to know how participants are feeling about the means and protocols of engagement. A quantitative survey can be a gauge of participant satisfaction.

MIFLAG has determined that an overall score of $\geq 80\%$ represents achievement of satisfaction.

Current Status & Interpretation

Year	Satisfaction Survey Completed (Y/N)	Level Satisfaction	Target Met (Y/N)
2022	Yes	Survey completed by 5 members with 100% satisfaction. The results were reviewed at the January 2023 meeting.	Y
2021	Yes	Survey completed by 5 members with 97% satisfaction. The results were reviewed at the January 2022 meeting.	Y
2020	Yes	Survey completed by 9 members with 100% satisfaction. The results will be reviewed at the May 2021 meeting.	Y

Year	Satisfaction Survey Completed (Y/N)	Level Satisfaction	Target Met (Y/N)
2019	Yes	Survey completed by 7 members with 100% satisfaction. The results will be reviewed at the May 2020 meeting.	Y
2018	Yes	Survey completed by 9 members, with 97% satisfaction. The results were reviewed at the February 2019 meeting.	Y

The target was met for 2022. Five surveys were completed with all responses to all questions being ‘Somewhat Satisfied’ or better. There were no ‘Not Satisfied’ responses.

A lack of representation and member discussion has been identified and there are concentrated efforts underway to revitalize membership within MIFLAG. Covid-19 has provided continuous challenges with hosting virtual meetings and maintaining existing members and welcoming new ones, however, 2022 saw improved flexibility and a return of many members to in-person meetings.

Strategies & Implementation

WFP and MIFLAG have demonstrated a strong and committed working relationship over the last several years (>10). In general, feedback from MIFLAG is provided throughout regular meetings and field trips. This helps ensure the target is met (ie. issues are addressed as they occur).

A satisfaction survey is completed with the MIFLAG on an annual basis. The objective of the survey is to seek official feedback from MIFLAG members on their general satisfaction with the process and to identify areas for improvement. In response to the survey, an action plan is created to address concerns.

Forecasts

WFP will continue to work to address the concerns of MIFLAG in constructive, inclusive ways, while also improving attendance and active participation. It continues to be important to rebuild relationships after the 8-month USW strike, the Covid-19 pandemic, and generally increasingly negative public sentiment towards forestry.

Monitoring

A rating of ‘Not Satisfied’ is scored as 0 and any rating of ‘Somewhat Satisfied’ or better is scored as 1.

These scores are then averaged to provide an overall survey score of % satisfied.

Indicator 6.1.2: MIFLAG Meetings

Element: 6.1 Fair and Effective Decision Making				
<i>Demonstrate that the SFM public participation process is designed and functioning to the satisfaction of the participants and that there is general public awareness of the process and its progress.</i>				
Value	Objective	Indicator	Target	Variance
Public participation capacity	Develop/improve public participation capacity over time	Evidence of efforts to promote capacity development and meaningful participation in general	MIFLAG - schedule and arrange the opportunity for members to attend 1 field trip and 2 presentations each calendar year	Meetings may be suspended due to Public Health Orders and/or infectious diseases such as COVID-19

History

New Core Indicator under CSA Z809-08.

Under CSA Z809-16, this indicator has been moved from Element 6.4 into 6.1 (previously Indicator 6.4.2).

During the March 15, 2018 MIFLAG meeting, the target was reduced from 2 field trips down to 1 field trip due to lack of MIFLAG attendance. However, whenever desired by the MIFLAG, a second field trip will be scheduled.

Due to COVID-19 field trips for 2020 and 2021 were cancelled and all meetings were held remotely via Microsoft Teams.

During the November 20, 2021 MIFLAG meeting, the group approved adopting a variance that allowed for suspension of individual MIFLAG meetings due to public health orders and/or infectious diseases such as COVID-19.

Justification

Within the Advisory Committee process, presentations from outside experts are a key component for advancing knowledge and capacity of participants, and to facilitate educated evaluations and decisions regarding forest resource management issues. Field trips provide opportunities to better understand the issues discussed during the meetings. The target amounts were deemed to promote capacity development.

Current Status & Interpretation

Year	Field Trips/ Presentations	#	Target Met (Y/N)	Variance
2022	Field Trips: Grapple Yarding, Large Cultural Cedar, and Community Watershed blocks.	1	Y	N/A
	Presentations: Jan – Old Growth Deferrals with Stuart Glen & Carbon Indicator with Marie-Eve Leclerc March – Mid Island FSP with Bruce Vinnedge & Large Cultural Cedar with Kat Robazza May – Saanich Tree Nursery with Paul Kutz & CSA Indicators with Ryan Greencorn Sept – IRMP with Heidi Kalmakoff/Stuart Glen & CSA Indicators with Shawn Nov – EMS Monitoring Program with Colby Mahood & Changes to CSA-Z809 with Will Sloan	5		
2021	Field Trips: No field trips in first half of 2021 due to COVID-19 concerns. September 9 th – Karst Field trip cancelled due to low interest	0	N	Y
	Presentations: Jan - WFP’s new Reforestation Prescription Standard with Taisa Brown May – Annual SFMP Indicator Report Review with Sarah Germain Sep - WFP’s Monitoring Program & CSA Audit Results presentation Oct – All PAG Virtual Meeting Nov – WFP Water Program presentation with Steve Check	5		
2020	Field Trips: No field trips in 2020 due to COVID-19	0	Y	N/A
	Presentations: Jan – Old Growth Management with John Deal and Stuart Glen June – Draft MIFO PMP 2020-2025 with Taisa Brown Sept – The State of BC’s Forests: A Global Comparison with Dr. John Innes Oct – Climate Change, Wildfires, Carbon Modelling with Ben Boghean, Annette Van Niejenhuis, and Marie-Eve Leclerc Nov – Provincial OG Update, Big Tree Retention Standards, C2 & C5 with John Deal	5		
2019	Field Trips: 1 field trip to Sayward in June (post-harvest assessments, fire hazard, waste and residue, wood waste site, brushing)	1	Y*	N/A
	Presentations: April- John Deal on Biological Diversity December- Shannon Janzen on OG Management (cancelled due to low attendance)	1		
2018	Field Trips: 1 field trip to PRT Nursery	1	Y	N/A
	Presentations: January- Jonathan Armstrong on Sustainability Metrics, May- Tyson Berkenstock on Wetlands, August- Annette Van Niejenhuis on Climate Change Seed Transfer, September- John Deal on Western’s Forest Strategy and Habitat Planning, November- Steve Platt on LiDAR	5	Y	

There were 5 presentations and 1 field trip including the annual indicator review. The presentations covered many provincially important topics like conservation of cedar, reforestation, environmental monitoring, and Indigenous partnerships.

Strategies & Implementation

Ideas for field trips and presentations are tracked during meetings in a MIFLAG action tracker. The list is reviewed often and utilized when developing the annual meeting plan.

Forecasts

Regular meetings and at minimum one field trip is planned for 2023. An all-public advisory group meeting is being scheduled as these occur every other year, the last being in 2021.

Monitoring

The meeting minutes are reviewed for educational opportunities provided to the MIFLAG.

Indicator 6.1.3: MIFLAG Website

Element: 6.1 Fair and Effective Decision Making				
<i>Demonstrate that the SFM public participation process is designed and functioning to the satisfaction of the participants and that there is general public awareness of the process and its progress.</i>				
Value	Objective	Indicator	Target	Variance
Relevant information	Relevant information is provided	Availability of summary information on issues of concern to the public	Current SFM Plan and 100% of MIFLAG minutes are posted to the website	None

History

New Core Indicator under CSA Z809-08.

Under CSA Z809-16, this indicator moved from Element 6.5 into 6.1 (Previously Indicator 6.5.2).

Justification

The MIFLAG website has been recognized as a transparent means of communicating issues to the public and their resolution. It can help provide public awareness of the process and its progress.

Current Status & Interpretation

Year	SFM Plan Version Posted	# Meeting Minutes Posted	MIFLAG Website Review Completed	% Completed	Target Met (Y/N)
2022	Version 6.0 (January 2022); 2021 Indicator Results	5/5	Yes	100	Y
2021	Version 5.0 (January 2017); 2020 Indicator Results.	5/5	Yes	100	Y
2020	Version 5.0 (January 2017); 2019 Indicator Results.	6/6	Yes	100	Y
2019	Version 5.0 (January 2017); 2018 Indicator Results.	3/3	Yes	100	Y
2018	Version 5.0 (January 2017); 2017 Indicator Results; 2016 Indicator Results	5/5	Yes	100	Y

This target is met. The following were posted in 2022: 2021 Indicator Report and all 5 ratified meeting minutes. The SFM Plan remains posted on the website.

Strategies & Implementation

All meeting, workshop and field trip minutes are posted to the miflag.org website once ratified by MIFLAG. Other key documents for MIFLAG are also posted on the MIFLAG website.

General concerns of the MIFLAG are addressed through indicator development, MIFLAG meeting discussions, workshops, presentations etc. The MIFLAG website is the main vehicle for communicating this information with the public (maintained by WFP).

The MIFLAG website was redesigned and fully updated in 2019.

Forecasts

It is anticipated that the target will be achieved based on consistent historical performance (since 1999).

Monitoring

MIFLAG website contents are reviewed annually.

Indicator 6.1.A: MIFLAG Representation

Element: 6.1 Fair and Effective Decision Making				
<i>Demonstrate that the SFM public participation process is designed and functioning to the satisfaction of the participants and that there is general public awareness of the process and its progress.</i>				
Value	Objective	Indicator	Target	Variance
Diverse representation on PAG	A diversity of sectors are represented in the PAG	Report on the list of active members and their sectors	N/A	N/A

History

This Indicator is a MIFLAG Indicator, carried forward from the 2009 SFM Plan, Indicator 31 (not a core indicator).

It is carried forward from the 2016 SFM Plan and has moved from Element 6.4 to 6.1 consistent with the new standard structure (previously indicator 6.4.A)

Basis for the Target

This indicator tracks the active participants of the Mid Island Forest Lands Advisory Group. It provides an indication of the level of diversity in meaningful input from the local community into SFM planning on the DFA.

Current Status & Interpretation

Name	Representation
John Andres	Ministry of Forests
Jason Johnson	Member at Large (Sayward)
Sandra Barnes	Campbell River Environmental Committee
Colin Filliter	Member at Large (Campbell River)
Richard Glover	Sayward Fish and Game
Maureen Hunter	Member at Large (Campbell River)
Scott Burchett	Village of Sayward
Chris Callanan	Employee Services Representative
Brenda Mann	Ministry of Forests
Coleen McLean-Marlow	Education Representative
Little River Resources	Small Contractor Representative
Lynn Nash	Seniors Representative
Mary Ruth Snyder	CR Chamber of Commerce
Craig Adams	Tree Nursery Representative

MIFLAG continues to represent a broad array of interests across the defined forest area.

MIFLAG members who did not attend a 2022 meeting were not counted in this indicator. In 2022, two members (John Andres & Brenda Mann) departed MIFLAG.

Strategies & Implementation

Participation in MIFLAG is open to all interested members of the public, interested stakeholders and sector representatives. Public members agree to participate in MIFLAG as individual members of the public and are not representing any particular interest group, while stakeholder and sector representatives can and should represent their constituent's views and concerns as a whole. Stakeholder and sector representatives need to ensure their constituents are kept informed of the work of MIFLAG.

Nominations for specific individuals to be active members of MIFLAG can be made by existing members, or the Chair/WFP. The nominations will be discussed with the MIFLAG.

The MIFLAG Facilitator are responsible for supporting and monitoring participation in the advisory group. Attendance is recorded in the meeting minutes, and a MIFLAG membership list is maintained and posted on the MIFLAG website.

Forecasts

WFP will continue to report on the list of active members and their sectors. WFP will continue to promote diversity in the representation of MIFLAG members.

Monitoring

The MIFLAG Facilitator reviews the meeting minutes to determine the active members for the year.

Indicator 6.1.B: Outreach & Education

Element: 6.1 Fair and Effective Decision Making <i>Demonstrate that the SFM public participation process is designed and functioning to the satisfaction of the participants and that there is general public awareness of the process and its progress.</i>				
Value	Objective	Indicator	Target	Variance
Public education and communication	A continuous public education and communication program exists.	Number of people reached through educational outreach	Report on the outreach and education opportunities completed or supported	None

History

Not a Core Indicator under the CSA Z809-16 (but has been carried forward from the 2016 SFM Plan and has moved from Element 6.5 to 6.1 to reflect the new standard organisation (previously Indicator 6.5.1)).

The target was revised November 2017 to remove reference to a separate Communications Plan document. All elements of the plan were incorporated into the indicator.

Justification

This indicator is a measure of Mid Island's success at meeting its commitments for public education, outreach, and communication. It includes categories such as:

- Forest tours
- Public education (presentations, open houses, school visits, support for students),
- Public communication (MIFLAG meetings/tours, career fairs, public outreach events, articles)

Current Status & Interpretation

Year	Tours & Public Education	Public Communications
2022	<ul style="list-style-type: none"> - MIFLAG Field Tour of Operations - Financial support for Carihi Forestry Program through CRFEA -Financial support for Robin William's Forest Education Program. 	<ul style="list-style-type: none"> -5 MIFLAG meetings - 1 North Island College Career Fair
2021	<ul style="list-style-type: none"> -Presentation to 'Women in Forestry' at NIC about working in silviculture -Presented to NIC RFT and certificate students about forestry planning -Financial support for Carihi Forestry Program through CRFEA -Financial support for Robin William's Forest Education Program 	<ul style="list-style-type: none"> -5 MIFLAG meetings or special presentations

2020	<ul style="list-style-type: none"> -Carihi Forestry Program: Site plan field tour (Nov) -Financial support for Carihi Forestry Program through CRFEA -Financial support for Robin William’s Forest Education Program 	<ul style="list-style-type: none"> -6 MIFLAG meetings or special presentations -Presentation to CR City Council on local forestry issues and support
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MIFO provided a financial donation to the Campbell River Forestry Education Association (CRFEA). The CRFEA provides support to the Carihi Forestry Education program. WFP also financially supported Robin William’s Forest Education Program, which reaches students from several classes per semester.

Mid Island hosted 5 MIFLAG meetings or special presentations.

There has been a decrease in public education and field tours since 2019, in part associated with COVID-19 but also due to increasing operational demands and a tight labour market, making it challenging to source staff.

Strategies & Implementation

WFP engages in several activities that involve educational outreach to the community, including the MIFLAG website and meetings, open houses for consultation, field tours, career fairs, and support for students.

Forecasts

As the COVID-19 restrictions have ended and in-person events and attendance continue to increase, it is anticipated that our current public outreach will remain and increase in 2023. Opportunities to support school programs, tours, and career fairs are being directed to our corporate public outreach coordinator.

Monitoring

The MIFLAG Facilitator maintains records and reports on the number of completed elements on an annual basis for the SFMP.

Indicator 6.1.C: Research

Element: 6.1 Fair and Effective Decision Making				
<i>Demonstrate that the SFM public participation process is designed and functioning to the satisfaction of the participants and that there is general public awareness of the process and its progress.</i>				
Value	Objective	Indicator	Target	Variance
Research across all divisions is supported by WFP	WFP supports research across all divisions, including the deployment of non-herbicide alternatives	The list of active Corporate research projects and the related categories (i.e., alternatives to herbicides, ecosystem management, operational, etc.)	Annual report summary	None

History

This indicator and target are carried forward from the 2009 SFM Plan (Indicator 35 and 38).

This is not a Core Indicator under Z809-16 but has been carried forward from the 2016 SFM Plan as a MIFLAG indicator and has been moved from Element 6.5 to 6.1 consistent with the new standard organisation (previously Indicator 6.5.A).

Justification

This indicator tracks WFP’s continued involvement in research and development. Corporate Forestry facilitates the transfer of “Best Practices” from company research to operational planning staff. Planning staff can make better informed decisions for Sustainable Forest Management using these “Best Practices”.

Current Status & Interpretation

Year	Research Project	Target Met (Y/N)
2022	Variable Retention Adaptive Management (3) Species at Risk (4) Watershed Outputs: Quality, Quantity, Biodiversity (1) Resiliency (3) Regeneration and Growth (3) Seed and Seedling Production (1) Growth and Yield (1) Forest Inventory (3) Remote Sensing (5) Harvest and Logistics Planning (1)	Y
2021	Variable Retention Adaptive Management (3) Species at Risk (4) Resiliency (3) Regeneration and Growth (3) Seed and Seedling Production (2)	Y

Year	Research Project	Target Met (Y/N)
	Growth and Yield (1) Forest Inventory (2) Remote Sensing (4) Harvest and Logistics Planning (1)	
2020	Variable Retention Adaptive Management (2) Species at Risk (3) Resiliency (3) Regeneration and growth (3) Seed and Seedling Production (2) Growth and Yield and Lidar (2) Harvest and Logistics Planning (1)	Y
2019	Variable Retention Adaptive Management (2) Species at Risk (3) Resiliency (3) Regeneration and growth (4) Seed and Seedling Production (2) Growth and Yield and Lidar (7) Harvest and Logistics Planning (2)	Y
2018	Variable Retention Adaptive Management (2) Species at Risk (6) Resiliency (3) Regeneration and growth (4) Seed and Seedling Production (5) Growth and Yield and Lidar (4)	Y

WFP supported 25 research projects across its tenures. 11 of these projects were monitored, measured, or reported on in 2022.

Strategies & Implementation

The Company supports and engages in forest research and monitoring that leads to improved forest management practices. WFP’s objectives include sustaining timber supply and economic values, ecological values and processes, and sustaining social values. The strategy is to:

- Identify knowledge gaps and recommend basic and applied research needs;
- Engage with government, academic, and private agencies that have capacity and mandate to undertake applicable research;
- Support (with letters, in-kind resources, and leverage funding) research funding proposals for projects of particular or strategic interest to WFP tenures;
- Cooperate with research organizations in conducting basic and applied research; and
- Test and develop practicable applications and use of published research that are relevant to Western Forest Products’ management goals and responsibilities.

Significant areas of research include:

- Forest Ecology – The objectives of the forest ecology research program are to determine the effects of management activities on forest ecosystem functions and components, and to improve our ability to predict ecosystem response. The outcome is development and implementation of

ecologically sound silviculture prescriptions.

- Silviculture – The silviculture research program focuses on examining silvicultural practices for regeneration and growth. Objectives of this research are to maintain and enhance timber supply where economically viable to do so. Various trials- some being monitored after 30 or more years from establishment- examine species selection, genetic gain for volume and pest tolerance, stock types, mechanical site preparation, vegetation control, and fertilization.
- Forest Growth and Yield & Light Detection and Ranging (LiDAR) – The aim of this program is to quantify forest inventory and growth rates across the range of site conditions on the company’s tenures. The company has invested in LiDAR to improve inventory estimates and aid in planning. This investment has been further employed to examine forest ecology knowledge gaps.

Research supported or implemented by the Company occurs across its tenures:

In many cases, the findings apply broadly to sites in multiple tenures. The following is a listing of active and ongoing forest management research and monitoring projects in which the company is a lead or major partner; it covers all company tenures and divisions. Those projects which were monitored, measured, or reported on in 2022 are underlined. Funding sources apart from the Company (WFP) include Natural Science and Engineering Research Council of Canada (NSERC), Land Based Investment Strategy (LBIS), Operational Tree Improvement Program (OTIP), Ministry of Forests, Lands, Natural Resource Operations, and Rural Development (MFLNRO), Canadian Wood Fibre Centre (CWFC) and GenomeBC (and GenomeCanada).

* \$ indicates the organization(s) that funded the project.

Forest Ecology: Variable Retention Adaptive Management (VRAM)

- Lewis Lake (R885), Moakwa (R1164), Port McNeill (R817), Tsitika (R917), Horseshoe Lake (R949), Goat Island (R1009), Memekay (R1163), Klanawa (R1217) Forest Structure Experimental Sites
- Avian communities, carabid beetles, terrestrial gastropods, small streams
- Retention Monitoring (2021 – Symmetree - \$WFP)

Forest Ecology: Species at Risk

- Northern goshawk site monitoring (2021 – Manning and others – \$WFP)
- Bear den monitoring (2021 - \$WFP)
- Owl population monitoring and Autonomous Recording Unit testing
- Breeding birds: Population trends and habitat association

Silviculture: Resiliency

- Climate change strategies and mitigation
- Climate-based seed transfer – CoAdapTree (2021 – UBC Aitken et al -WFP, \$GenomeBC)
- Western redcedar genomic selection – pest tolerance

Silviculture: Regeneration and growth

- SCHIRP installation, Transition trials, Kennedy Lake trials, Demonstration trials, *Vaccinium* trials
- Western redcedar – western hemlock fertilization trials (2021 – \$LBIS)
- Planting trials – stock types, fertilization-at-plant, species selection

Silviculture: Seed & Seedling Production

- Cone & Seed insect management (2021 - WFP, Mosaic, MFLNRORD)
- Douglas-fir nursery trials (2021 – Noshad - \$OTIP)

Growth and Yield

- VRAM Regeneration performance

Remote Sensing – Forest Inventory

- Light Detection and Ranging (LiDAR) Enhanced Forest Inventory Project
- LiDAR derived area-based inventory – TFL 37 (2021 – FLNRORD Forest Analysis and Inventory Branch - \$FLNRORD)

Remote Sensing – Old Forest

- Examine structure and condition of Old Forest in the Kitasoo/Xai'xais territory with LiDAR (2021 – Uvic Darimont)

Remote Sensing – Wildlife Habitat

- Characterize Marbled Murrelet habitat spatially and structurally using LiDAR (2021 – UBC Coops \$NSERC)

Harvest and Logistics Planning

- Transportation logistics optimization (2021 – UBC Sowlati, \$WFP, \$Mitacs)
- Paper accepted for publication by Canadian Journal of Forest Research

Forecasts

Continued allocation of resources to support applicable research is expected.

Monitoring

Corporate forestry tracks research support and provides an annual summary to the division.

Indicator 6.1.D: Herbicides

Element: 6.1 Fair and Effective Decision Making				
<i>Demonstrate that the SFM public participation process is designed and functioning to the satisfaction of the participants and that there is general public awareness of the process and its progress.</i>				
Value	Objective	Indicator	Target	Variance
The use of herbicides in the DFA is limited	Vegetation management in the DFA emphasizes non-herbicide methods	i. The percentage of the DFA brushed using chemical herbicides on an annual basis	≤0.15%	≤0.05%
		ii. No chemical herbicides are applied within the identified Herbicide Exclusion Zone (HEZ) in the Sayward Valley (refer to map below) and within 20m of the Salmon-Brewster Horse Trail	Zero chemical herbicides applied within HEZ and within 20m of the Salmon Brewster Horse Trail	Chemical herbicide treatment is permitted for invasive plants

History

This is not a Core Indicator under Z809-16. It was carried forward from the 2016 SFM Plan as a MIFLAG indicator. It has been moved from Element 6.5 to 6.1, consistent with the new standard organization (previously Indicator 6.5.B).

Consensus was reached on this indicator at the February 2019 meeting.

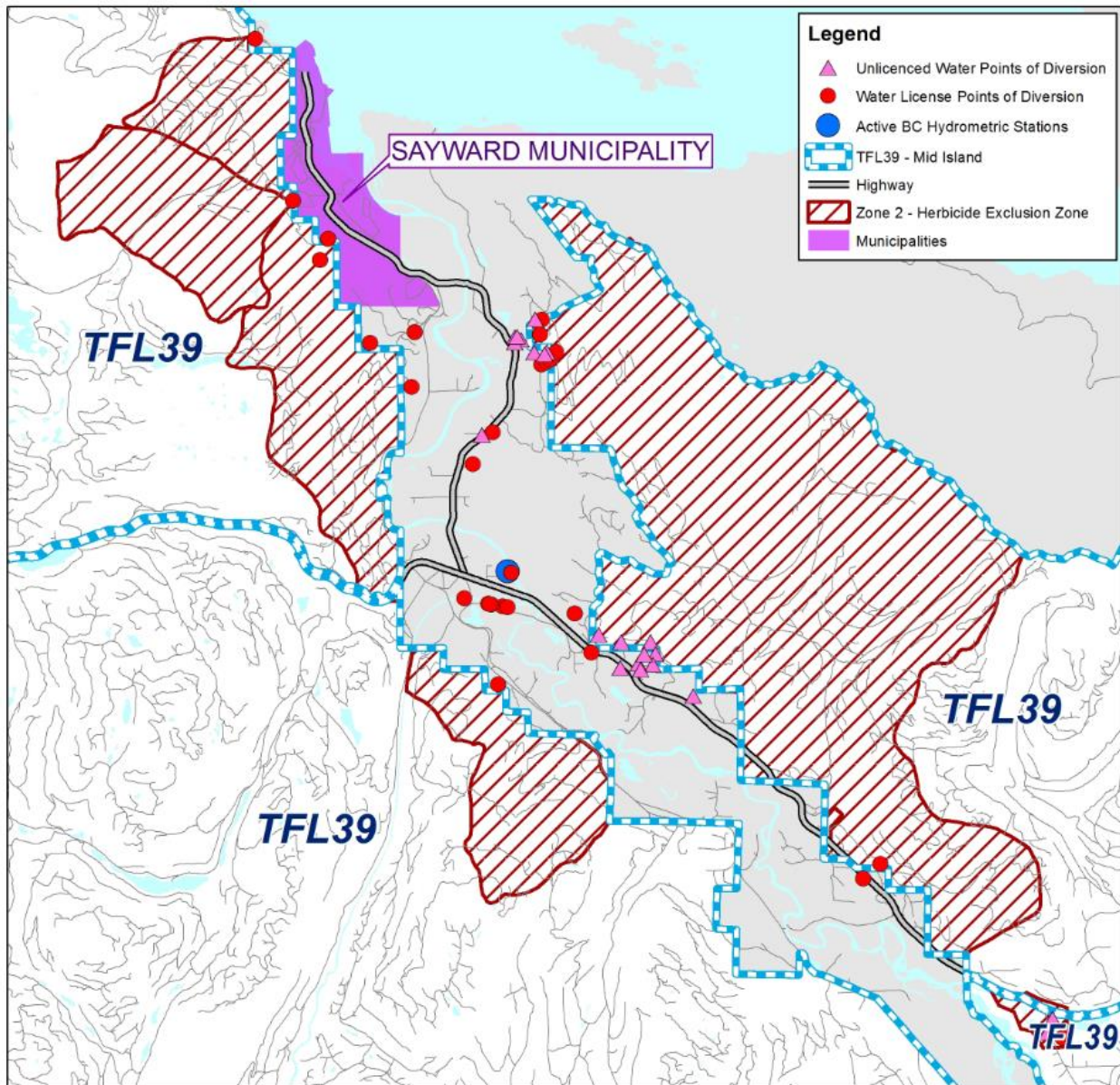
Justification

Brush control is essential for the establishment of new plantations and achieving free growing obligations. There are several ways to manage vegetation: manual, mechanical, biological, cultural, and chemical. Integrated vegetation management uses a combination of these approaches. MIFLAG wants Western Forest Products to limit its herbicide use and emphasize non-herbicide methods.

This indicator will eliminate the use of herbicides in the Herbicide Exclusion Zone and around the Salmon Brewster Horse Trail, two high value areas for the MIFLAG and Sayward residents. It will also limit overall use of herbicides to ≤0.15% of the DFA (~230ha), on an annual basis. Lastly, it will track manual brushing treatments and alternative approaches to help reduce herbicide usage.

Herbicide Exclusion Zone

- A Herbicide Exclusion Zone (HEZ) was mapped based on consultation with MIFLAG members and Sayward residents through an open house meeting. Minor additions were made in 2020 during the PMP review process, including the Mowi Hatchery site.
- Biological herbicides are permitted within the HEZ.
- Chemical herbicides are allowed to treat invasive species with no practical alternative treatment options in the HEZ.



Current Status & Interpretation

Year	Proactive Hardwood Management (ha)	Non-Herbicide Treatments (Ha)	Herbicide Treatments			Herbicide Treatment as a % of DFA	Chemical Treatments in HEZ (ha)	Target Met (Y/N)	Variance Met (Y/N)
			Ha	L ¹	Kg				
2022	0.0	23.4	0.0	/	0.0	0.000	0	Y	Y
2021	0.0	30.4	44	/	375	0.028	0	Y	Y
2020	0.0	104.8	0.0	/	0.0	0.000	0	Y	Y
2019	4.1	74.0	0.0	/	0.0	0.000	0	Y	Y
2018	6.5	25.7	0.2	/	1.9	0.000	0	Y	Y

¹ Litres of herbicide refers to the total volume of product

Both targets were met. Five blocks were manually brushed (girdling and manual cutting) in 2022, totalling 23.4 ha of non-herbicide treatments in the TFL. Larger stock types (412A) and high densities (1200sph) were planted on all conifer sites with high or very high brush potential based on the Land Management Handbook #28.

Strategies & Implementation

Western Forest Products exclusively prescribes non-herbicide brushing treatments in the HEZ and within the vicinity of the Salmon Brewster horse trail and the Mowi fish hatchery. Outside of these areas, WFP prescribes a mix of treatment types to ensure the target (0.15% of DFA) is not exceeded.

Chemical treatments can be more cost effective in dense treatment areas and can reduce the likelihood of a re-treatment vs manual treatments.

Non-chemical treatments can be more viable where there is an abundance of riparian areas or for creating plantable spots in advance of a replant. Non-herbicide treatments are also preferred for certain species like bracken fern, fireweed, and cherry.

Overall, Mid Island attempts to reduce its brushing by:

- Only treating hardwoods/vegetation where it can cause significant seedling mortality
- Only treating hardwoods/vegetation where necessary to meet free growing milestones
- Not treating brush >3.0m from crop trees
- Planting red alder on ecologically suitable sites with extreme brush hazard
- Planting large stock, fertilizing at time of planting, or planting shade-tolerant species on high brush hazard sites

Forecasts

WFP intends to meet the target. The Area Forester will monitor brushing levels to ensure herbicide applications do not exceed the target or occur within the herbicide exclusion zones.

MIFO plans to continue the herbicide program in 2023 while also utilizing manual cutting, girdling, and other strategies to avoid reliance on one method of vegetation management. The program will continue to be outside of the HEZ and will remain below the 0.15% limit. An overview map is posted on miflag.org, and was shared with the CR Mirror and the Sayward website along with the Notice of Intent to Treat (NIT). Prescription details will also be communicated to First Nations and the MIFLAG.

Indicator 6.2.1: Safety Committee

Element: 6.2.1 Safety Committee				
<i>Demonstrate that the organization is providing and promoting safe working conditions for its employees and contractors.</i>				
Value	Objective	Indicator	Target	Variance
Worker Safety Program	Maintain a worker safety program in cooperation with workers and unions	Evidence of co-operation with DFA-related workers to improve and enhance safety standards, procedures, and outcomes in all DFA-related workplaces and affected communities	Minimum of one Joint Health and Safety Committee meeting per month during active operations	None

History

New Core Indicator under CSA Z809-08. Minor changes under CSA Z809-16, and the indicator has been moved from Element 6.3 to 6.2 (previously Indicator 6.3.2)

Justification

A joint health and safety committee supports Western Forest Product’s duty to ensure a healthy and safe workplace. The joint committee brings together representatives of the employer and the workers (hourly), to identify and help resolve health and safety issues in the workplace.

The joint committee has the following specific duties and functions, as per WorkSafe BC:

- Identify situations that may be unhealthy or unsafe for workers, and advise on effective systems for responding to those situations
- Consider, and promptly deal with complaints relating to the health and safety of workers
- Consult with workers and the employer on issues related to occupational health and safety, and the occupational environment
- Make recommendations to the employer and the workers for the improvement of the occupational health and safety, and the occupational environment of workers
- Make recommendations to the employer on educational programs promoting the health and safety of workers and compliance with Part 3 of the Workers Compensation Act and the regulations, and to monitor their effectiveness
- Advise the employer on programs and policies required under the regulations for the workplace, and to monitor their effectiveness

- Advise the employer on proposed changes to the workplace, including significant proposed changes to equipment and machinery, or the work processes that may affect the health or safety of workers
- Ensure that accident investigations and regular inspections are carried out as required
- Participate in inspections, investigations and inquiries as provided in Part 3 of the Workers Compensation Act and Section 3 of the Regulation

Current Status & Interpretation

Year	# of HSC Meetings	Target Met (Y/N)
2022	12	Y
2021	11	Y
2020	9	Y
2019	6	Y
2018	10	Y

The target was met for 2022. The Joint Health and Safety Committee had 12 meetings, one per active month.

Strategies & Implementation

Mid Island Forest Operation employs more than 20 workers, so a joint Health and Safety Committee is required by WorkSafe BC. The committee is required to have more than four members, with at least half of the members to be worker representatives (don’t exercise managerial functions). Mid Island’s committee includes WFP, union, and contractor representatives. The committee meets on a regular basis-monthly, during active operations.

Safety performance is a key measurable for MIFO. Improvements in safety are supported by the EH&S Team, corporate polices, standards, hazard reports, work procedures etc. Locally, MIFO manages safety utilizing an OHS Program, emergency response procedures and by maintaining a “SAFE” company certification with the BC Forestry Safety Council. Continual improvement is a key component of the WFP Safety System, WorkSafe BC requirements and the Forest Safety Council SAFE Company certification requirements.

Forecasts

It is a WorkSafe BC requirement for joint Health and Safety Committees to meet regularly, at least once a month. As a result, the target should be met.

Monitoring

The Area Forester coordinates reporting of the number of joint Health and Safety Committee meetings held each year.

Indicator 6.2.2: SAFE Certification

Element: 6.2 Safety				
<i>Demonstrate that the organization is providing and promoting safe working conditions for its employees and contractors.</i>				
Value	Objective	Indicator	Target	Variance
Worker Safety	Maintain a worker safety program	Evidence that a worker safety program has been implemented and is periodically reviewed and improved.	WFP and Contactors (with active signed contracts) are SAFE Certified or in the registration process.	None

History

New Core Indicator under CSA Z809-08. No changes under CSA Z809-16, but the indicator has been moved from Element 6.3 to 6.2 (previously Indicator 6.3.3.)

Justification

Western Forest Products requires contractors to maintain SAFE Certification. SAFE Certification is an industry-wide initiative designed to assist companies in improving their safety performance and to evaluate company safety programs to industry standard. It takes commitment, completion of training, and a safety management system (with successful audit) to become a SAFE certified company. SAFE certification has a three-year cycle, with a certification or re-certification audit in year 1 and maintenance audits in year 2 and 3. The audits provide evidence that a worker safety program has been implemented with periodic reviews and corrective action logs.

Current Status & Interpretation

Year	SAFE Company Certification		Target Met (Y/N)
	WFP	Contractors (SAFE Cert Status Current)	
2022	Yes	Yes	Y
2021	Yes	Yes	Y
2020	Yes	Yes	N*
2019	Yes	Yes	Y
2018	Yes	Yes	Y

In 2022, Western Forest Products and 48/48 contractors with active contracts at Mid-Island were SAFE certified or in the registration process.

*One of WFP's main contractors was up to date in the SAFE certification registration process, but decided to expand their business. They originally registered as an owner-operator but have since expanded the business and increased the number of employees past 3, requiring registration as a SEBase (Small Employer- Base Audit Standard) employer. This requires further training and an audit on a minimum of 6 months of work documentation.

Strategies & Implementation

WFP's contractors implement and maintain their own safety programs to meet the requirements of the SAFE Company certification. Prior to commencing work for WFP, a review is completed to ensure each contractor is currently SAFE Company certified.

The Mid Island Forest Operation is responsible for implementing their safety program and continuing to meet the requirements of SAFE Company certification.

In 2018, Corporate launched an enhanced Health and Safety Management System. It has 13 key elements including 52 corporate safety standards encompassing everything from the right to refuse unsafe work to working in confined spaces. The System complies with ISO45001 and U.S. Voluntary Protection Program health and safety standards.

Western Forest Products also developed the Western Safety Accreditation program in 2018 to measure proactive health and safety performance. In 2022 Mid Island's WAS score was 97.2%. WSA scoring consists of four proactive safety key performance indicators: Health and Management System inspections, Operation Annual Safety Improvement plans, corrective action completion rates, and safety leadership training completion.

Mid Island Forest Operation also implemented the following: -Western Life Saving Rules -Contractor Health and Safety Improvement Plans for underperforming contractors -Standardized Health and Safety orientation for employees, contractors, and visitors -Use of Personal Field Level Hazard Assessments - Leader Health and Safety Training -Health and Safety Compliance Training.

Forecasts

It is anticipated that the target will be met as current corporate policies include support of the BC Forest Safety Council SAFE certification program.

Monitoring

Certification is confirmed when contracts are prepared. In addition, the contract administrator reviews active contractors quarterly to ensure their SAFE certification is current- not expired or revoked. The administrator checks on the BC Forest Safety Council website, under the link "who is safe certified?" If they are not on the list, the administrator checks to see if they are on the "audit submitted" list. If they are not on either list, the administrator follows up directly with the contractor. The contract administrator also maintains an internal tracking sheet with contractor SAFE Certification status and WSBC account standings (active, clearance, and whether or not their account is delinquent).

Indicator 7.1.1: Treaty

Element: 7.1 Aboriginal and Treaty rights.				
<i>Recognize and respect Aboriginal title and rights, and treaty rights. Understand and comply with current legal requirements related to Aboriginal title and rights, and treaty rights.</i>				
Value	Objective	Indicator	Target	Variance
Aboriginal title and rights	Aboriginal title and rights are understood	Evidence of a good understanding of the nature of Aboriginal title and rights	Report on the progress of interim measures, agreements and/ or treaties for First Nations in the DFA.	None

History

New Core Indicator under CSA Z809-08 (carried forward from 2009 SFM Plan Indicator 39). Moved from criterion 6 to criterion 7 in CSA Z809-16 (previously Indicator 6.1.1).

Justification

The target was designed to review the current status of interim measures agreements or treaties completed for First Nations in the DFA. Treaties and interim measures agreements are issued under the Constitution Act and the Indian Act (Federal). Once agreements are in place, the target will be re-visited to address evidence of a good understanding of the agreements.

Regardless of the status of the negotiations, it is important for forest professionals to understand applicable Aboriginal title and rights, and treaty rights, as well as the Aboriginal interests that relate to the DFA. Engagement with Aboriginal Peoples and communities, results in contributions towards specific management and operating plans as well as supporting meaningful relationships with leadership.

WFP's corporate Sustainable Forest Management Statement outlines the importance of recognizing and respecting First Nations' treaty rights and title and respecting asserted aboriginal interests.

Current Status & Interpretation

Year	First Nation	Treaty Stage	# of Treaties Complete	# of Interim Measures Agreements Completed	Compliance (%)	Target Met (Y/N)
2022	Wei Wai Kum	5	0	0	n/a	Y
	We Wai Kai	5	0	1	n/a	
	K'omoks	5	0	1	n/a	
	Tlowitsis	5	0	1	n/a	
	Kwakiutl	n/a	0	1	n/a	
2021	Wei Wai Kum	5	0	0	n/a	Y
	We Wai Kai	5	0	1	n/a	

	K'omoks	5	0	1	n/a	
	Tlowitsis	5	0	1	n/a	
	Kwakiutl	n/a	0	1	n/a	
2020	Wei Wai Kum	5	0	0	n/a	Y
	We Wai Kai	5	0	0	n/a	
	K'omoks	5	0	0	n/a	
	Tlowitsis	4	0	0	n/a	
	Kwakiutl	n/a	n/a	n/a	n/a	
2019	Wei Wai Kum	5	0	1	n/a	Y
	We Wai Kai	5	0	2	n/a	
	K'omoks	5	0	1	n/a	
	Tlowitsis	4	0	0	n/a	
2018	Wei Wai Kum	4	0	0	n/a	Y
	We Wai Kai	4	0	1	n/a	
	K'omoks	5	0	0	n/a	
	Tlowitsis	4	0	0	n/a	
2017	Wei Wai Kum	4	0	0	n/a	Y
	We Wai Kai	4	0	0	n/a	
	K'omoks	5	0	1	n/a	
	Tlowitsis	4	0	0	n/a	

This target is met.

Laich-Kwil-Tach Council of Chiefs is negotiating an agreement in principle in the BC treaty process on behalf of its three member bands, including the We Wai Kai Nation (Cape Mudge Band) and the Wei Wai Kum Nation (Campbell River Band). They are in Stage 5- Final Agreement Negotiations.

The Tlowitsis Nation is negotiating a treaty independently through the BC treaty process. As of 2021 they have advanced from Stage 4 and are now in Stage 5- Final Agreement Negotiations. The Tlowitsis Nation has received a 'Transition to Stage 5 Memorandum of Understanding' for this completed agreement.

The K'omoks First Nation is negotiating independently with Canada and British Columbia through the BC treaty process. They are in Stage 5- Final Agreement Negotiations.

The Kwakiutl First Nation is negotiating land and resource issues with the Province outside the BC treaty process. The Nation wishes to pursue claims around the Kwakiutl Douglas Treaty. The Kwakiutl is party to a 2015 Letter of Intent on Consultation with the Provincial Government. It lays out a framework for consultation and partnership building.

In 2021, an announcement was made on a planning and reconciliation agreement between four member Nations of the Nanwaḡolas Council and Western Forest Products. This includes an agreement to defer harvest of approximately 2,500 hectares of ancient, rare and other priority old growth for two years in support of Province's Old Growth Strategy.

The Nanwaḡolas agreement covers 100% of the ancient and remnant trees in 1,068 hectares identified by the Old Growth Technical Advisory Panel (TAP) within the TFL. Another 1,506 hectares of priority large, remnant and ancient forests have been deferred through other bi-lateral initiatives between Nanwaḡolas and Western, including a Large Cultural Cedar Protocol, TFL ecosystem mapping and an addition to the H'kusam area, originally deferred in the fall of 2020.

Current Nanwakolas and WFP are working together on an Integrated Resource Management Plan (IRMP) for TFL39-2 that incorporates Nation values on the land base. Planned schedule for completion of the IRMP is later this year (2023).

Strategies & Implementation

MIFO and MIFLAG will continue to work with First Nations and monitor treaty negotiations. In the future, once treaties are established, MIFO will implement measures to understand and comply with treaty settlements that are imposed on the DFA.

Forest professionals can demonstrate an understanding and respect for Aboriginal title and rights by:

- Using Aboriginal knowledge
- Recognizing Aboriginal Peoples' expertise
- Identifying and respecting Aboriginal forest values and uses
- Developing a meaningful and effective working relationship with Aboriginal Peoples
- Seeking acceptance of forest management plans on the basis of Aboriginal communities having a clear understanding of the plans

Forecasts

As agreements/ treaties are completed, MIFLAG will re-visit this indicator and establish a new target that can reflect understanding and knowledge of rights and title and the agreements defining them.

WFP will continue to demonstrate an understanding and respect of Aboriginal rights and title through the consultation process.

Monitoring

The area forester reviews <https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/consulting-with-first-nations/first-nations-negotiations/first-nations-a-z-listing>.

The forester reports on the treaty stage and newly completed agreements for each First Nation.

Indicator 7.1.2: Open & Respectful Communication with First Nations

Element: 7.1 Aboriginal and Treaty Rights <i>Recognize and respect Aboriginal title and rights, and treaty rights. Understand and comply with current legal requirements related to Aboriginal title and rights and treaty rights.</i>				
Value	Objective	Indicator	Target	Variance
On-going open and respectful communications	On-going open and respectful communications with Aboriginal communities to foster meaningful engagement.	<p>Evidence of ongoing open and respectful communications with Aboriginal communities to foster meaningful engagement, and consideration of the information gained about their Aboriginal title and rights through this process.</p> <p>Where there is communicated disagreement regarding the organizations forest management activities, this evidence would include documented efforts towards conflict resolution.</p>	<p>i. Report summary of annual communication of WFP information sharing processes with First Nations (MP, FSP, PMP, SFMP)</p> <p>ii. Report summary of on-going communication (i.e., meetings, call logs, emails)</p> <p>iii. Where disagreement occurs and is made known, the disagreement and all efforts of conflict resolution are documented.</p>	None

History

New Core Indicator under CSA Z809-08 (carried forward from 2009 SFMP Indicator 26 and 40). Moved from criterion 6 to criterion 7 in CSA Z809-16 (Indicator 6.1.2 is now Indicator 7.1.2), with some significant revisions to focus on ongoing communication rather than a focus on input into plans.

Justification

Meaningful relationships with Aboriginal Peoples require engagement and consultation regarding forest management decisions and incorporation of Aboriginal values into forest management. This contributes towards shared decision making.

Information sharing of the TFL Management Plan, Forest Stewardship Plan and Pest Management Plan are all required under legislation.

The Forest Planning and Practices Regulation requires the proponent to make reasonable efforts to meet with the First Nations to share, explain, and discuss information regarding the Forest Stewardship Plan and to determine whether the First Nation has cultural heritage resources that may be impacted. The proponent must consider all written comments from the First Nation and describe any changes made to the Plan to address these comments.

The Integrated Pest Management Act (IPMA) requires proponents to consider and address any potential impacts related to asserted aboriginal interests or treaty rights that are brought to the proponent’s attention by a First Nation, or by the proponent’s own research if no response is received.

Tracking the info sharing process and documenting all communications with First Nations will demonstrate WFP’s commitment to open and meaningful dialogue and consideration of Aboriginal title and rights.

Current Status & Interpretation

i) This target was met for 2022.

Year	Info Sharing Summary	Target Met (Y/N)
2022	<p>Info shares were initiated with Nanwakolas (K’omoks, We Wai Kai, Wei Wai Kum, Tlowitsis) in July 2022 and November 2022. These shares included a cover letter, summary of blocks, overview map, and shapefiles with new projections. WFP also offered to meet in person to review and discuss the proposed blocks and/or any concerns they may have with the proposed development.</p> <p>Resulting responses included requests from individual Nations for Large Cultural Cedar surveys and Arch recon walks. These requests are being fulfilled, concurrent with block development.</p> <p>Tlowitsis requested a meeting to review blocks from the July info share, but despite several attempts Western has not been successful in scheduling a meeting.</p> <p>K’omoks First Nation has expressed opposition to Old Growth harvesting within its traditional territory in the July 2022 info share.</p> <p>Info share through Nanwakolas was also initiated for Kelsey Bay Landfill and Sayward Landfill permits in November. No comments were received.</p> <p>Monthly meetings (12 in total for 2022) were held with Nanwakolas to review information sharing protocol and to address interests related to specific areas.</p> <p>Western Forest Products is currently working with Nanwakolas on an Integrated Resource Management Plan (IRMP) for TFL 39-2. A goal of the IRMP is to ensure Indigenous Values are integrated in management for the TFL. The two-year IRMP process is anticipated to be completed in 2023.</p> <p>The 5-year Forest Stewardship Plan (FSP) for the period of 2022-2027 was info-shared to Nanwakolas on September 1st, 2021, and received approval early in 2022.</p>	Y

ii) This target was met for 2022. All correspondence with First Nations has been saved and filed. With the introduction of the Planning and Indigenous Relationships Forester in 2021, some of the workflow has been altered and the indicator may need some updates to wording to better align with current practices, while still meeting the intent of the target.

iii) There were ongoing disagreements around the automatic renewal of TFL 39. Legislation makes the TFL renewal automatic, so this issue is being addressed by the MoF and WFP corporate. Due to the confidential nature of many of these discussions not much can be shared publicly.

Strategies & Implementation

The Province of British Columbia has a duty to consult and where required, accommodate First Nations whenever it proposes a decision or activity that could impact treaty rights or aboriginal rights (including title) - claimed or proven. Proponents are often in a better position relative to the Province to exchange information about their decision requests and directly modify plans to mitigate any concerns. Mid Island sends out info shares to all First Nations with traditional territory overlapping with the DFA and to the Ministry of Forest Lands Natural Resource Operations and Rural Development on their annual logging plans.

Consultation must be meaningful with the intention of reasonably addressing the claimed or proven aboriginal rights. Accommodation may be necessary if a proposed activity will adversely impact an Aboriginal Interest or if there is likely an infringement of a proven aboriginal right or title or treaty right. Accommodation involves seeking compromise to address concerns; however, it does not require a duty to agree.

Target iii) attempts to capture efforts to accommodate. Where disagreements occur, efforts at conflict resolution will be made and documented. All communications with First Nations (eg. Phone calls, letters, emails, meetings) will be recorded in the FN Info Sharing tracking folder.

Forecasts

Plan referrals for TFL MPs, FSPs, and PMPs are legally required. In addition, legislation requires a written record of comments received, as well as any changes to address concerns/comments. Mid Island will continue sharing logging plans on an annual basis. Referral of the SFMP is not legally required, but it is necessary under the CSA Standard. Mid Island will document communication, including disagreements and conflict resolution efforts, with First Nations in the Communications Tracking Sheet and in Cenfor. The Integrated Resource Management Plan is scheduled for completion later this year.

Monitoring

The Planning Forester documents Forest Stewardship Plans, PMPs and the SFMP reviews that occur with First Nations. A summary of First Nations information sharing and reviews is maintained in the CENFOR database. Corporate Forestry completes and documents information sharing in relation to the TFL Management Plan. All communication and conflicts unrelated to info sharing will be entered in the First Nation Communications Tracking Sheet.

Indicator 7.2.1: MIFLAG & First Nations

Element: 7.2 Respect for Aboriginal forest values, knowledge and uses.				
<i>Respect traditional Aboriginal forest values, knowledge, and uses as identified through an Aboriginal input process.</i>				
Value	Objective	Indicator	Target	Variance
Aboriginal Capacity Development	Develop/improve aboriginal participation capacity over time	Evidence of efforts to promote capacity development and meaningful participation for Aboriginal individuals, communities and forest-based companies	Each First Nation with traditional territory in the DFA is invited to participate in the MIFLAG and review the SFM Plan annually at the First Nations office/territory; on-going communication is maintained. Report summary of efforts to promote capacity development for Aboriginal individuals, communities and forest-based companies	None

History

New Core Indicator under CSA Z809-08. Moved from criterion 6 to criterion 7 in CSA Z809-16 (previously Indicator 6.4.3 with some minor revisions).

Justification

Aboriginal participation in the SFM process provides an additional opportunity to have meaningful consultation. It can provide another avenue to identify, address, and protect Aboriginal rights, uses, cultural resources, and values. The target is designed to help build a trusting and respectful relationship with First Nations.

Many Aboriginal communities view the forestry sector as a means to achieve economic self-sufficiency. However, a lack of capacity can be a barrier impeding the flow of benefits from resource development to Aboriginal peoples. A focus has emerged on providing Aboriginal peoples with the education, training, and skills to capture employment and business opportunities in the forest industry.

This indicator will report on WFP's efforts to promote capacity development and to provide opportunities for participation and input in the certification process.

Current Status & Interpretation

Year	First Nation	# of Invitations to Participate & Review the SFM Plan	# of Meetings Held at First Nations office	On-Going Communication	Target Met (Y/N)
2022	Nanwakolas	1	0	Yes	Yes
	Kwakiutl	1	0		
	Cape Mudge	1	0		
	Campbell River	1	0		
	K'omoks	1	0		
	Tlowitsis	1	0		
2021	Nanwakolas	1	0	Yes	Yes
	Kwakiutl	1	0		
	Cape Mudge	1	0		
	Campbell River	1	0		
	K'omoks	1	0		
	Tlowitsis	1	0		
2020	Cape Mudge	1	0	Yes	Yes
	Campbell River	1	0		
	K'omoks	1	0		
	Tlowitsis	1	0		
2019	Cape Mudge	1	0	Yes	Yes
	Campbell River	1	0		
	K'omoks	1	0		
	Tlowitsis	1	0		
2018	Cape Mudge	1	0	Yes	Yes
	Campbell River	1	0		
	K'omoks	1	0		
	Tlowitsis	1	0		

This target was met. WFP also offered to provide a presentation to each Council and to hold a regularly scheduled meeting in each community.

Mid Island also supported aboriginal capacity development in 2022 by ensuring all job postings were distributed to all First Nation bands through WFP's operating areas through our corporate office. We also continue to employ Spirit Lake Silviculture for the majority of our silvicultural activities and had a total of 2,866 exposure hours for them in 2022 which is an increase of 2,110 hours, or 250%, compared to 2020.

Strategies & Implementation

WFP extends invitations to the First Nations in the DFA to participate in the MIFLAG on an annual basis. On-going communication occurs with additional meeting invites, distribution of meeting minutes, and phone calls.

WFP is committed to working with local First Nations to promote capacity development. WFP posts all available jobs at local First Nation band offices, attends Aboriginal Career Fairs, provides job shadowing opportunities, and regularly uses a First Nation silviculture crew for work on the DFA.

Since 2020, WFP has dramatically increased ongoing communications with First Nations on available opportunities within the company. On a weekly or sometimes bi-weekly basis, the WFP human resources team provides an updated accounting of job postings to our Indigenous Engagement Coordinator, that are further passed along to all First Nations whose territory we work within or near.

In September 2021, Western formally became “PAR Committed”, which means WFP officially began participating in The Canadian Council Of Aboriginal Business, Progressive Aboriginal Relations (PAR) Certification process. PAR is a certification program that confirms corporate performance and success in goals and milestones in Aboriginal relations at the Bronze, Silver or Gold level as determined by independent third party verification.

Forecasts

WFP has initiated newly concentrated efforts to revitalize the MIFLAG and develop more diverse representation amongst its members. This includes an emphasis on encouraging participation by First Nations on the MIFLAG. WFP will continue to extend meeting invitations, send meeting minutes, and offer opportunities for input. WFP is always willing to hold a MIFLAG meeting in their respective community or do a presentation to council.

WFP will continue to encourage capacity development by promoting aboriginal employment, job shadows, and skill development opportunities. WFP is continuing to fund the Fundamentals of Forestry program.

Monitoring

The WFP Representative for MIFLAG reviews correspondence files to report on the efforts to engage First Nations in MIFLAG and/ or review of the SFM Plan, with focus on discussions held at the First Nation’s office. The representative reviews meeting minutes for attendance.

The Planning Administrator reports on the number of job postings sent to the First Nation band offices and the number of exposure hours from Spirit Lake Silviculture. The Area Forester tracks the number of student opportunities provided.

The WFP Representative for MIFLAG receives an update from the Director of Indigenous Relations on corporate initiatives to promote capacity development.

Indicator 7.2.2: Large Cultural Cedar

Element: 7.2 Respect for Aboriginal forest values, knowledge and uses.				
<i>Respect traditional Aboriginal forest values, knowledge, and uses as identified through an Aboriginal input process.</i>				
Value	Objective	Indicator	Target	Variance
Aboriginal knowledge	Aboriginal knowledge provided is used and respected	Evidence of understanding and use of Aboriginal knowledge through the engagement of willing Aboriginal communities, using a process that identifies and manages culturally important resources and values	<ul style="list-style-type: none"> i. 100% of requests by First Nations for field visits to planned cutblocks are completed ii. Report on on-going status and results of the implementation of the LCC Strategy (e.g., number recorded, number protected, number used by First Nation) 	None

History

New Core Indicator under CSA Z809-08. Moved from criterion 6 to criterion 7 in CSA Z809-16 (previously Indicator 6.2.1).

Justification

This indicator intends to capture WFP’s efforts to build relationships with First Nations through meetings and field visits to planned cutblocks. These visits provide opportunities to address concerns and issues the First Nations may have identified through the information sharing process. Furthermore, the field visits may capture other valuable resources to First Nations, such as large cultural cedar.

Large cultural cedar (LCC) are defined as cedar logs greater than 100cm DBH with no rot, twist or defect, that are suitable for either house logs, totem logs or canoe logs. An agreement between WFP and Nanwakolas was implemented to train appropriate WFP employees to accurately identify LCCs. This training was completed with traditional carvers from Cape Mudge First Nation, Campbell River First Nation, and Tlowitsis First Nation. With the completion of this training, the First Nations are confident that the agreed-upon WFP representatives have the ability and knowledge to confidently mark and record LCCs. LCC have been recorded in all cutblocks and adjacent areas to cutblocks since 2014- originally by timber cruisers. Location of these LCCs are shared with the First Nations at time of cutblock information sharing (Step 6 Process).

The term “Monumental cedar” is no longer used. However, records in Cenfor have not been changed, so an inventory of monumental cedar remains in the system.

Current Status & Interpretation

Year	Field Visits (Requested/ Completed)	Large Cultural Cedars (LCC)	Target Met (Y/N)
2022	17/17 (+79 LCC Surveys)	LCC: Identified – 536; Current Inventory – 2651; Protected Inventory – 1307; Harvested - 23	Y
		Monumental: Identified – 0; Current Inventory – 131; Harvested - 0	
2021	9/9 (+24 LCC Surveys)	LCC: Identified- 480; Current Inventory- 2115; Protected Inventory- 905; Harvested- 123	Y
		Monumental: Identified- 0; Current Inventory- 131; Harvested- 0	
2020	5/5 (+25 LCC Surveys)	LCC: Identified- 19; Current Inventory- 1635; Protected inventory- 613; Harvested- 19	Y
		Monumental: Identified- 0; Current Inventory- 131; Harvested- 0	
2019	8/8 (+35 LCC Surveys)	LCC: Identified- 83; Current Inventory- 1616; Protected inventory- 600; Harvested- 7	Y
		Monumental: Identified- 0; Current Inventory- 131; Harvested- 0	
2018	5/5 (+ 38 LCC Surveys)	LCC: Identified- 101; Current Inventory- 1533; Protected inventory- 518; Harvested-107	Y
		Monumental: Identified- 0; Current Inventory- 146; Harvested- 0	
2017	26/26 (+59 LCC Surveys)	LCC: Identified-77; Current Inventory-1431; Protected inventory- 493; Harvested-11	Y
		Monumental: Identified – 0; Current Inventory – 146; Utilized by First Nations – 0; Harvested- 11	

In 2022, there were 17 First Nations walks and 79 LCC surveys. 536 large cultural cedars were identified, and the current inventory increased to 2651- with 1307 in the protected inventory.

Strategies & Implementation

Mid Island follows the Cultural Heritage Resources SOP which contains steps on First Nation field walks, LCC and CMT identification, documentation, and management practices. WFP has a strong history of completing field walks and resolving issues and concerns by First Nations.

Trained First Nation members surveys according to the agreed upon criteria developed with Nanwakolas and local First Nation carvers. LCC surveys are completed on all proposed blocks that have an old growth cedar component. Locations and quality observations of LCCs are recorded and stored in the WFP data base. The locations are marked on the block maps shared during the Step 6 referral process.

Forecasts

WFP and the Nanwakolas Council have entered a new Information Sharing Protocol as of November 16th, 2020 that contains changes in how Large Cultural Cedars (LCC) will be managed in TFL 39 moving forward. This new protocol aims to further strengthen and enhance already existing LCC management through systematic surveying of blocks directly by Nanwakolas trained or approved qualified surveyors, alongside more detailed LCC classification criteria and retention targets (see table below).

Type	Cultural Use	Status	Diameter	Length	Retention
Type 1	Community canoes, large totem poles, large big house logs	Very Rare	≥150cm	12m	100%
Type 2	Chief canoe, medium totem poles, medium big house logs	Rare	120-149cm	7m	50%
Type 3	Small totem poles, small big house logs	Moderately Rare	100-119cm	5m	25%

Additionally, this protocol establishes strategies that will aid in the future recruitment of Cedars as well as the continued stewardship of identified standing LCCs by establishing a 1 tree length reserve zone and a ½ tree length management zone (based on LCC height) around retained LCCs. Having these buffer zones will help mitigate windthrow risk while also better maintaining the ecological conditions around retained LCCs. The priority for LCC management is to ensure that continued long term access to these high quality and culturally significant trees is maintained for present and future generations.

Monitoring

The Area Forester reports on the number of requested and completed field visits each year.

The GIS department determines the current LCC inventory, the number protected, the amount newly identified, and if any were harvested over the year using the GIS database.

Indicator 7.2.3: First Nation Special Sites

Element: 7.2 Respect for Aboriginal forest value, knowledge and uses.				
<i>Respect traditional Aboriginal forest values, knowledge, and uses as identified through an Aboriginal input process.</i>				
Value	Objective	Indicator	Target	Variance
Areas where culturally important practices and activities occur	Areas where culturally important practices and activities occur are managed for or protected	Level of management and/or protection of areas where culturally important practices and activities (hunting, fishing, gathering) occur	Report on management and/ or protection of knowledge, values, and sites that are identified through the process described in 7.1.2	None

History

New Core Indicator under CSA Z809-08. Moved from criterion 6 to criterion 7 in CSA Z809-16 (previously Indicator 6.1.3).

Justification

Aboriginal rights are practices, customs, or traditions integral to the distinctive culture of the First Nation. Some examples of aboriginal rights are hunting, fishing, and gathering plants for traditional medicines and spiritual ceremonies. Aboriginal rights can be connected to a particular piece of land. The intention of the target is to incorporate Aboriginal rights and interests into the SFMP and forest management planning, through the management or protection of knowledge, values, and sites of cultural significance (hunting, fishing, and gathering).

Current Status & Interpretation

Year	# First Nations Special Sites Identified	Sites Managed (%)	Target Met (Y/N)
2022	None identified	N/A	Y
2021	None identified	N/A	Y
2020	None identified	N/A	Y
2019	None identified	N/A	Y
2018	1 Elk wallow area	100	Y

This target is met.

No sites were identified in 2022 during info sharing, phone calls, or meetings.

The H'Kusam Forest continues to be protected by a 199.2ha old growth management area (OGMA). The H'Kusam Forest is a regionally significant area of pre-contact First Nations' forest use and sensitive cultural sites and features. WFP helped initiate the discussions and applied for the OGMA establishment in 2013.

Strategies & Implementation

The intent of Indicator 7.2.3 is to protect or manage for general areas of the DFA that have been identified by First Nations as providing hunting, fishing, gathering, or other cultural practice opportunities. For First Nations to be comfortable sharing confidential information, WFP needs to continue developing relationships with First Nations built on trust and respect. WFP is taking the following steps:

- Encouraging First Nation participation in MIFLAG
- Annual info sharing- including the Nanwakolas Information Sharing Protocol
- Phone calls and meetings (and offering to hold them in First Nation's offices)
- First Nation recon walks for LCCs
- Inventory and protection of LCCs
- Log donations
- Assurance of the protection/ security of any shared information

Forecasts

The target is expected to be met. WFP will document all important sites to ensure they are considered during forest management planning. WFP will keep the information secure and confidential.

Monitoring

The Area Forester reports on the areas of the DFA that First Nations have identified as culturally important (while respecting confidentiality of information where requested). For example, an area of the DFA may be identified as important for berry picking. WFP would record and track the general area of importance to the Nation while respecting the confidentiality of the site-specific location.

Indicator 7.2.A: First Nation Donations

Element: 7.2 Respect for Aboriginal forest values, knowledge and uses.				
<i>Respect traditional Aboriginal forest values, knowledge, and uses as identified through an Aboriginal input process.</i>				
Value	Objective	Indicator	Target	Variance
Culturally important resources and values	Old Growth cedar continues to be available to First Nations	The annual volume of old growth cedar made available to First Nations	Report on the volume of wood made available to First Nations	None

History

This is not a core indicator.

MIFLAG indicator carried over from the 2009 SFM Plan Indicator 29. In 2017, this indicator was moved from Criterion 6 to Criterion 7 to fit with the new CSA Z809-16 standard (previously Indicator 6.2.A).

Justification

The target acknowledges aboriginal rights. Old growth western red cedar logs are important to First Nations for traditional, cultural, and ceremonial purposes.

Current Status & Interpretation

Year	Volume of Cedar/ Cypress (m ³)	Target Met (Y/N)
2022	59.09	Y
2021	76.67	Y
2020	37.75	Y
2019	24.37	Y
2018	28.11	Y

The target is met. In 2022, Mid Island donated 59.09 m³, valued at \$38,973.10 to First Nations. The volume reported does not include wood made available for carvers from the waste piles at the dryland sort.

Strategies & Implementation

When a First Nation individual requires a log for cultural purposes, a written request (with log specifications) by a member of Band Council is submitted to Corporate (Corporate Forestry Donation Requests and MoF Free Use Permits). Then, the operation finds a suitable log at the dryland sort or assists the individual in finding a suitable standing tree for them to harvest. The volume is scaled and recorded at the point of delivery. The volume is recorded and tracked by the dryland sort administrator and special products administrator. Additional processes for securing cultural use logs are done through our Large Cultural Cedar Protocol agreement with the Nanawakolas Council.

Forecasts

WFP has a long history of providing volume to First Nations. WFP is committed to fulfilling all reasonable requests for cedar and cypress volume from First Nations with traditional territory in the DFA. It is therefore anticipated that the target will be achieved.

Monitoring

The Area Forester coordinates reporting of the annual volume of cedar and cypress provided to First Nations in the DFA (assistance may be provided by Dryland Sort personnel or Corporate Forestry).