



WESTERN FOREST PRODUCTS INC.

# SUSTAINABLE FOREST MANAGEMENT PLAN

## 2014 ANNUAL REPORT

*March 2015*

*Western Forest Products Inc.  
Nimpkish DFA and TFL 37*

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# SFM Criteria, Values, Objectives, Indicators & Targets

This section of the SFM Plan describes the Nimpkish Woodlands SFM Values, Objectives, Indicators and Targets. As appropriate, an Acceptable Variance is provided for the near term performance level of each Target and a forecasted future condition is provided for each Indicator. The 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-Z809-08).

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 NWAC members, Englewood Forest Operation's staff and other Western Forest staff.

As used in this plan:

- **Values** are DFA characteristics, components, or qualities considered by the advisory groups 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 of 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 SFMP will be updated to include performance reporting information in order to facilitate review of the actual outcomes of each indicator (this will be reported within Appendix 2). Most indicators, (but not all) are reported on an annual basis from January 1 – December 31. The monitoring report (Data Set) is completed by Englewood Forest Operations Management, and presented for review to NWAC each year.

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

## Summary of Results

A summary of the 2015 Annual Report results will be compiled in spring 2016.

For 2014 Annual Report results, refer to:

[http://www.westernforest.com/company/environment/certification/Englewood\\_SFM\\_Report\\_2014.pdf](http://www.westernforest.com/company/environment/certification/Englewood_SFM_Report_2014.pdf)

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Appendix 2: Detailed Indicator & Results  
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## Summary of Changes

The SFM Plan 12 is a new plan designed to meet the requirements of the new CSA Z809-08 Standard and replaces all previous versions.

The incorporation of the mandatory Core Indicators from the Standard took in account all the indicators and targets from SFM Plan 10. Through reviews of the indicators with NWAC and guided by their input and comments, the SFM Plan 10 indicators and targets were either incorporated in the Core Indicators, kept as local indicators, dropped entirely or replaced by a new Core Indicator. The indicator numbering approach from the CSA Standard was also adopted to facilitate alignment with the new Standard. The Table below summarizes the transition.

SFM Plan 10	Action	SFM Plan 11
Indicator 1	Replaced	Indicator 1.1.1
2	Replaced	1.1.2
3, 8 & 17	Replaced	1.2.2
4	Dropped	
5.5	Incorporated	1.1.4
9, 11, 12 & 13	Replaced	1.2.1
10	Incorporated	1.2.4
14	Incorporated	2.1.1
15 & 18 & 19	Dropped	
16	Replaced	1.2.3
20	Incorporated	2.1.2
21	Incorporated	2.2.1
22 & 23	Dropped	
24 & 25	Incorporated	3.1.1
27.5	Incorporated	3.2.1
28 & 29	Replaced	4.1.1
30 & 31	Dropped	
32	Incorporated	2.2.2
33 & 34	Incorporated	5.1.1
35	Incorporated	1.4.2
38	Dropped	
39.5	Incorporated	5.1.1
40.5	Incorporated	6.3.1
41, 42 & 44	Incorporated	5.2.3
43	Dropped	
45	Incorporated	6.1.2
46	Incorporated	6.4.3
47	Incorporated	1.4.2, 6.1.3

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SFM Plan 10	Action	SFM Plan 11
48 & 49	Incorporated	5.2.4
50, 51 & 52	Dropped	
53	Incorporated	6.4.1
54 & 55	Dropped	

# Indicator 1.1.1 Ecosystem Area by Type

<b>Element: 1.1 Ecosystem diversity</b>				
<i>Conserve ecosystem diversity at the stand and landscape levels by maintaining the variety of communities and ecosystems that naturally occur in the DFA.</i>				
<b>Value</b>	<b>Objective</b>	<b>Indicator</b>	<b>Target</b>	<b>Variance</b>
Older seral stages of each ecosystem types	Older seral stages of each ecosystem types found on the DFA are maintained	1.1.1 Ecosystem area by type	There is more than 50% of each ecosystem type (biogeoclimatic variant) in the productive forest area of the DFA within the mid to old seral stages at any time.	-5% (i.e. 45%) for up to 10 years.

## History

New CSA Core Indicator in 2010

## Justification

For many species, if the habitat is suitable, populations will be maintained. Two key characteristics of forest ecosystems are the community types, as driven largely by the species composition of the overstorey, and community seral stages, as driven by succession and disturbance processes. These factors are strong predictors of the biotic communities that will inhabit both forest stands and the entire forest landscape.

The 50% level for ecosystem area by type and seral stage provides reasonable assurance that there is adequate representation of each existing ecosystem type in their older age stages being maintained and replaced at all times on the DFA.

The variance is meant to help account for age class distribution imbalance that might develop or exist due to historical activity and / or land use decisions.

## Current Status & Interpretation

The distribution of ecosystem area by type for each seral stage on the EFO DFA for the 2009-2014 reporting is

BGC Unit	Seral stage	2009 (ha)	2011 (ha)	2012 (ha)	2013 (ha)	2014 (ha)	2009 %	2011 %	2012 %	2013 %	2014 %
CWH vm1	Early	21,598	21,399	19,394	19,572	19,147	51	50	46	46	45
	Mid	7,039	7,366	9,243	9,413	9,443	17	17	22	22	22
	Mature	3,352	3,353	3,499	3,399	3,630	8	8	8	8	9
	Old	10,399	10,276	10,200	9,920	10,009	24	24	24	23	24
CWH vm2	Early	13,452	13,516	12,884	13,320	13,089	40	40	38	40	38
	Mid	828	850	1,654	1,697	2,279	3	3	5	5	7
	Mature	440	453	453	452	562	1	1	1	1	2
	Old	18,941	18,837	18,598	18,099	18,872	56	56	55	54	54
CWH xm2	Early	6,316	6,387	6,600	6,800	6,812	37	37	39	40	40
	Mid	5,808	5,703	5,655	5,587	5,473	34	33	33	33	32
	Mature	3,126	3,147	3,035	2,907	2,967	18	18	18	17	17
	Old	1,806	1,809	1,756	1,740	1,758	11	11	10	10	10
CWH mm1	Early	4,802	4,781	3,430	3,530	3,646	38	38	27	28	29
	Mid	6,625	6,652	8,025	7,927	7,730	53	53	64	63	62
	Mature	63	62	63	57	59	1	0	1	0	0
	Old	1,022	1,015	993	986	1,023	8	8	8	8	8
MH mm1	Early	2,952	2,988	3,050	3,168	3,137	15	15	16	17	14
	Mid	258	273	326	355	778	1	1	2	2	3
	Mature	131	131	118	118	227	0	1	1	1	1
	Old	16,903	16,921	15,533	15,378	18,427	84	83	82	81	82

The following table illustrates how the percentage of **mid to older age classes** changed over the last five years for each ecosystem type.

Year	CWHvm1	CWHvm2	CWHxm2	CWHmm1	MHmm1
2009	51%	62%	65%	61%	86%
2010	49%	60%	63%	62%	85%
2011	50%	60%	63%	62%	85%
2012	54%	62%	61%	73%	84%
2013	54%	60%	60%	72%	83%
2014	55%	62%	60%	71%	86%

The table above illustrates that within all biogeoclimatic site series there is greater than 50% of the area of ecosystem type found to be in the mid to older seral stages. The results in the above table indicate that more harvesting has occurred in the CWH vm1 and vm2. This target is met.

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## Strategies & Implementation

Government mandated reserves serve as foundation blocks that ensure representative pieces of ecosystem types in the older seral stages are preserved for the long term in various types of reserves. They include:

- Ungulate Winter Ranges
- Marble Murrelet Areas
- Old Growth Management Areas
- Riparian Reserves
- Wildlife Tree Patches requirements

Additionally, a key supporting company strategy for maintaining elements of the current forest is the *Western Forest Strategy* which describes the use of retention silviculture systems throughout Western's tenures. The strategy has been 100% implemented in 2014 and it provides a target level of retention based on biological and other factors.

A second element of the strategy for this value is also 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. In this way, harvested areas can be recruited to the mid to older seral stages in the shortest time frame possible.

## Forecasts

It is expected that the target will continue to be generally met based on the experience of the last decade when it has been gradually more difficult to economically harvest the full extent of the AAC and that states of undercut have been prevalent. Considering also that just over 1% of the DFA forest land base is harvested annually, the natural progression of stands from the Early seral stage to the Mid seral stage should be sufficient to achieve and maintain the target over the long term. The ecosystem types that provide the most viable harvest opportunities are expected to dip into the variance but should recuperate over time. A key assumption is that no major event will occur (e.g., very large wildfire) that would dramatically alter the current seral class distribution within the DFA.

## Details/ Data Set

The biogeoclimatic zone variants are used as the basis for defining ecosystem types. This is consistent with the Vancouver Island Land Use Plan and with TFL Management Plans approved by the province.

Forest cover data is maintained in GIS layers along with ecosystem information. The intercept of the ecosystem types with the forest inventory information is then grouped by seral stages defined based on age as follows:

Seral Stage	Definition
Early	0 to <40
Mid	40 to 80 (40 to 120 in MH)
Mature	81 to 250 (121 to 250 in MH)
Old	>250

The licenses included are TFL 37, and MF25.

## Monitoring

To monitor performance on this indicator, a number of parameters must be monitored or maintained for the DFA:

- The ecosystem profile of the harvested areas based on their location
- Forest inventory over time (adjusted for age, for annual harvested area and for roads)

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constructed)

The distribution of seral stages for each ecosystem types on the DFA is determined through a GIS exercise.

The primary means to maintain the inventory is through the entry of activity information in CENFOR by the Timberlands Operations. For stands not in CENFOR, their age is corrected manually.

# Indicator 1.1.2 Forest Area by Species Composition

## Element: 1.1. Ecosystem diversity

*Conserve ecosystem diversity at the stand and landscape levels by maintaining the variety of communities and ecosystems that naturally occur in the DFA*

Value	Objective	Indicator	Target	Variance
The species composition of the forest on the DFA	The overall species composition of the productive forest on the DFA remains stable over time.	1.1.2 Forest area by species composition.	The forest area (ha) by species composition remains within 2% of the baseline on a 5-years basis.	-1% (i.e. up to 3%) for up to 10 years.

### History

New CSA Core Indicator in 2010

### Justification

For many species, if the habitat is suitable, populations will be maintained. Two key characteristics of forest ecosystems are the community types, as driven largely by the species composition of the overstorey, and community seral stages, as driven by succession and disturbance processes. These factors are strong predictors of the biotic communities that will inhabit both forest stands and the entire forest landscape.

Maintaining a stable species composition over time helps ensure species are not displaced through management activities. The 2% deviation from the baseline provides for the temporary species shift that can occur in the early stage of stand establishment and development.

The variance is meant to help account for temporary deviations engendered by operational focus on certain markets as well as possible reforestation failures due to browsing pressures or health issues.

Climate change may come to affect this target in the long term

### Current Status & Interpretation

At the end of 2009, the distribution of forest stands by leading species on the NVI DFA was as follows:

Leading Species	% 2009	2014	Percent deviation
Western Hemlock	50.3	48.3	1.0
Douglas-fir	22.7	23	0.3
Yellow Cedar	9.2	11	1.8
Amabilis Fir	5.4	6	0.6
Western Red Cedar	5.2	5	.2
Red Alder	1.7	2	0.3
Sitka Spruce	0.1	0	.1
Pine	-	0	0
Misc & NSR	5.4	6	.6

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The 2014 data indicates that the species percent deviation is within the allowable variance for all species this target is met. It is to be noted that the data capture is taken from Cenfor and all third party information entered into results. It is using the best available information to capture the most accurate representation across the defined forest area.

## **Strategies & Implementation**

The main strategy for ensuring a stable overall species composition on the DFA is;

- Prompt and effective reforestation or regeneration of harvested areas with species of trees ecologically suited to the site only.

This is in effect a legal requirement that is met through a combination of natural regeneration and planting of seedlings specifically matched to the site ecology.

In areas where browsing pressures are high, physical protection of seedlings may be required. However, in some extreme cases, this measure may not be successful and a species shift may result on a specific site.

## **Forecasts**

Because natural species shift or drift is very slow it is not likely a factor unless climate was to change so drastically in the short term (i.e. <100 yrs.) as to cause species dieback.

Assuming there is no change in the existing policy to reforest harvested sites with ecologically suited species, the target is expected to be met as tree species that may be preferred for harvesting programs are also promoted in planting programs.

## **Details/ Data Set**

The forest cover data for the productive forest of the DFA is organized by stands of more or less homogeneous composition and age. The stand descriptors or labels include species composition organized hierarchically by species representation in the stand. Stands can be grouped based on the leading species as follows:

- Amabilis Fir
- Douglas-fir
- Western White Pine
- Red Alder
- Sitka Spruce
- Western Red Cedar
- Western Hemlock
- Yellow Cypress

The total area of the stands with the same leading species is then tallied.

Stands not yet reforested or with their composition not yet confirmed are grouped as NSR.

## **Monitoring**

To monitor performance on this indicator, the parameter that must be monitored or maintained for the DFA is:

- Forest inventory over time (adjusted annual harvested area and reforestation information)

The area of the stands on the DFA grouped by their leading species is determined through a GIS exercise.

The primary means to maintain the inventory is through the entry of activity information (e.g., stocking survey results and free-growing assessment results) in CENFOR by the Timberlands Operations. The forest inventories are updated with this information on a periodical basis.

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## Indicator 1.1.3 Forest Area by Age Class

### Element: 1.1. Ecosystem diversity

*Conserve ecosystem diversity at the stand and landscape levels by maintaining the variety of communities and ecosystems that naturally occur in the DFA*

Value	Objective	Indicator	Target	Variance
The distribution of age classes on the DFA	Older age classes on the DFA are maintained	1.1.3 Forest area by age class	The percent of the productive forest area (ha) in the older age classes (81 to 250 +) is at least 25% of the DFA forest area (on a five year basis).	-5% (i.e. down to 20%) for up to 10 years.

### History

New CSA Core Indicator in 2010

### Justification

For many species, if the habitat is suitable, populations will be maintained. Two key characteristics of forest ecosystems are the community types, as driven largely by the species composition of the overstorey, and community seral stages, as driven by succession and disturbance processes. These factors are strong predictors of the biotic communities that will inhabit both forest stands and the entire forest landscape. Older age classes are often the most difficult to manage, primarily because they require much time to develop. However, they are often host to unique communities that would not otherwise be present across the forest landscape.

Maintaining a quarter of the forest in older age classes (81 + years) serves to ensure representation of these most unique communities is preserved.

The variance is meant to help account for age class distribution imbalances that might develop or exist due to historical activity and / or land use decisions.

### Current Status & Interpretation

At the end of 2009, the distribution of productive forest area by age class for the Englewood DFA was as follows:

Age Classes	Ha (2009)	% (2009)	%(2014)
0 - < 40	47,613	38	35%
40 - 80	21,201	17	20%
81 - 120	4,181	3	3%
121 - > 250	53,267	42	42%

Although harvesting activities are normally concentrated within the older age classes, the data indicates that there is a healthy mid age (40 – 80) supply of growing stands to recruit from and maintain the targeted level of older age classes on the DFA.

The baseline data from 2009 has been carried through as this indicator is reported out on a five year basis. The 2014 data indicates that the older age classes 81-250 is 65%, this value is well over the targeted 25%. This target it met.

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## Strategies & Implementation

A basic piece of the strategy is to protect part of the older age classes. This is done primarily for species habitat reasons (See Core Indicator 1.2.1 & 1.2.2) and through processes such as those that identified Ungulate Winter Ranges (UWR) and Wildlife Habitat Areas (WHA).

Additionally, a significant area of the DFA referred to as the Non Contributing Land Base (NCLB) is not operable for physical and economic reasons and also contributes to the protection of older age classes.

Over time, currently young stands in the NCLB will add to the current supply of older age classes (see Core Indicator 1.2.2). Such recruitment is also occurring for protected habitat areas.

Another key supporting company strategy for maintaining elements of the current forest is the *Western Forest Strategy* which describes the use of retention silviculture systems throughout Western's tenures. The strategy provides target levels of retention based on biological and other factors.

Finally, harvesting with the regulated level and the prompt reforestation strategy help contribute to the continuous supply of operating age classes.

## Forecasts

Timber Supply Analysis done for Management Plan 9 for TFL 37 contains projections of age class distributions to the year 2252 (p. 20). These projections were made using a forest estate model called Forest Simulation and Optimization System (FSOS).

The data indicates that at year 2252, over 30% of the productive forest would be in the age classes 81+ with the majority (3/4) in the old growth age class 8. These results would indicate that the target should continue to be met in the long term under current management approaches.

## Details/Data Set

The age classes used match those of the seral stages.

Forest cover data is maintained in GIS layers and includes stand age information current to a given year. A manual exercise is applied to update the age of stands to the reporting year and to account for harvesting activities when necessary.

The total area of stands in the same age class is then tallied.

The licenses included are TFL 37, and MF 25.

## Monitoring

To monitor performance on this indicator, the parameter that must be monitored or maintained for the DFA is:

- Forest inventory over time (adjusted annual harvested area)

The area of the stands on the DFA grouped by their age class is determined through a GIS exercise.

The primary means to maintain the inventory is through the entry of activity information in CENFOR by the Timberlands Operations. The forest inventories are updated with this information on a periodic basis.

## Indicator 1.1.4 Degree of Within-stand Retention

### Element: 1.1 Ecosystem Diversity

*Conserve ecosystem diversity at the stand and landscape levels by maintaining the variety of communities and ecosystems that naturally occur in the DFA*

Value	Objective	Indicator	Target	Variance
The variety of structure at the stand level	A portion of the existing stand structure is retained	1.1.4 Degree of within-stand structural retention	Within-stand retention is achieved through the use of retention system according to the targets set in the Western Forest Strategy by VILUP Zones and eco-sections (See below).	-5% below target for 1 year

### History

New CSA Core Indicator in 2010. Adjusted old indicator # 5.5 to better align with Forest Strategy

### Justification

Forest ecosystems and species have evolved in response to changes in climate and different natural disturbances at various scales. To achieve conservation of biological diversity, the basic theoretical premise is that species are adapted to historic local conditions. In coastal BC, windthrow, insects, disease, infrequent fire and landslides create forests with an abundance of dispersed residual structure (e.g., live and dead standing trees in varying patterns) from the pre-disturbance stand. Scientific knowledge of historical development and habitat is used as a guide to sustain productive and diverse forest ecosystems. However, recognizing the resilience of ecosystems and the multiple pathways and patterns that can occur within the limits of ecosystem processes, it is necessary to “mimic” natural disturbances. The strategy assumes that both stand-level retention and landscape-level reserves are necessary for conserving biodiversity across the landscape. Neither approach alone is likely to be as effective or efficient.

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. Clearcut, seed tree, retention, shelterwood and selection systems are all ecologically appropriate in the right context. A mixture of systems will achieve a range of patch sizes and structures within stands and landscapes.

The introduction of targets for retention systems through the Western Forest Strategy that are consistent with the government’s Vancouver Island Land Use Plan ensures that diverse structure is maintained over the landscape through the retention of portions of existing stands.

The variance is meant to provide some operational flexibility particularly in difficult markets and restricted operating levels.

## Current Status & Interpretation

Western Forest Strategy Zone (VILUP Zone)	Eco-section	WFP Operating Area	Target % Retention System 2010-2014	2010 Results	2011 Results	2012 Results	2013 Results	2014 Results
SMZ (SMZ)	NIM	CWHvm1, vm2, xm, mm1, MHmm1	≥90	100%	100%	98%	100%	98%
General Basic (GMZ)	NIM	CWHvm1, vm2, MHmm1	≥60%	62%	63%	65%	79%	84%
General Dry (GMZ)	NIM	CWHxm, mm1	≥70%	100%	100%	100%	100%	100%
Enhanced Basic (EFZ)	NIM	CWHvm1, vm2, MHmm1	≥50%	95%	69%	60%	57%	72%
Enhanced Dry (EFZ)	NIM	CWHxm, mm1	≥60%	100%	100%	100%	83%	88%

The 2014 target levels were not only met but are trending in an positive direction with respect to the Western Forest Products Forest Retention Strategy. There is an increased level of retention in the general basic, enhanced basic and enhanced dry zones for 2014. WFP EFO continues to maintain a high adherence to targets set for retention level throughout all VILUP zones. This is captured early at the planning phase and maintained through production to post harvest assessment. This target is met.

## Strategies & Implementation

Management strategies are described in the Western Forest Strategy document by Bill Beese, MF, RPF, Final Implementation Version approved July 24, 2007; and Retention System Implementation Standards June 2008.

## Forecasts

The next Timber Supply Analysis for TFL 37 is due in 2016. It will include an analysis of the effect of implementing the Western Forest Strategy and will quantify the level of retention on the DFA.

From similar analysis completed on other forests, it is anticipated that the Strategy contributes to the retention of over 3% more of the existing stands than would be retained due to legal or operational parameters only.

## Details/Data Set

The term retention system refers to a silvicultural system designed to meet the goals of the variable retention approach. 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 (at least one rotation); 3) distribution of leave trees achieves >50% "forest influence". The specific definition of the retention system is:

*"a silvicultural system that is designed to:*

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- a. *retain individual trees or groups of trees to maintain structural diversity over the area of the cutblock for at least one rotation, and*
- b. *leave 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.”*

All the cutblocks harvested in the year are tracked according to the silviculture system type applied to them. Annually, those that meet the above definition are tallied and included in the annual report.

## **Monitoring**

The detailed monitoring and reporting procedures used in reporting this indicator is described in the Western Forest Strategy document; and Retention System Implementation Standards.

The primary means to track harvest area and their characteristics is through the entry of activity information in CENFOR by the Timberlands Operations.

A spreadsheet was also created to track harvest area assigned as retention system for each cutblock relative to the harvest area.



## Indicator 1.2.1 Degree of habitat protection for focal species

Element: 1.2 Species Diversity				
<i>Conserve species diversity by ensuring that habitats 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
Habitat for selected focal species, including species at risk	Maintain or increase habitat for selected focal species, including species at risk	1.2.1 Degree of habitat protection for selected focal species, including species at risk.	The amounts (in ha) of habitat protected for selected focal species remains the same or increase year after year. Selected focal species are Marbled Murrelet, Northern Goshawk, Black-tailed deer & Roosevelt elk and Keen's Myotis.	Decrease by 1%.

### History

New CSA Core Indicator in 2010

### Justification

“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 to 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 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 murrelets are small seabirds that nest inland with a majority of nests being found on large boughs high 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 murrelets. Marbled murrelets 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.

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Keen's Myotis is a medium sized bat with smallest distributional range of any North American bat. Its range is the Pacific coast region with most of the known population being found in coastal British Columbia, suggesting an association with coast forest habitats. Keen's Myotis is listed as Special Concern on SARA Schedule 3, 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.

The variance is meant to help account for fluctuation due to spatial issues (e.g. map base or scale) and natural disturbance factors

### Current Status & Interpretation

The three- year trend for the amount of habitat for selected focal species that is protected in the DFA is as follows:

Additional area inclusion in 2014 has increased the legal area for Marbled Murrelet Nesting Habitat and Keen's Myotis Habitat. The changes in the proposed Marbled Murrelet Nesting Habitat and Keen's Myotis Habitat are due to government decreases in the size of the Lukwa South proposal due to treaty lands. Further to this is a new WHA proposal at Lukwa South in 2013. The proposal for habitat protection for the Quatsino Cave Amphipod is not legal yet and has therefore stayed the same. The changes from 2012 to 2013 in the Marbled Murrelet Nesting Habitat are due to new low-level aerial surveys following current standards, completed in 2012. The previous aerial survey did not use the current standards for ranking habitat and overestimated the suitable habitat. This updated data will serve as a new baseline. The changes in the proposed Goshawk Nesting Habitat are due to a new Wildlife Habitat Area proposal at Lukwa South.

The rest of the information has stayed consistent.

Habitat Type	Measure	Total Hectares									
		Legal (2010)	Proposed (2010)	Legal (2011)	Proposed (2011)	Legal (2012)	Proposed (2012)	Legal (2013)	Proposed (2013)	Legal (2014)	Proposed (2014)
Ungulate Winter Range (UWR)	Spatially delineated ungulate winter range.	5681	0	5684	0	5685	0	5685	0	5685	0
Marbled Murrelet Nesting Habitat	Moderate to Very High ranked habitat from the low-level aerial inventory in WHA, UWR, OGMA.	5046	156	5046	165	5058	165	1402	21	1417	20
Goshawk Nesting Habitat	Area reserved around known nests (WHA, other).	2595	0	2595	0	2595	0	2595	322	2595	208
Keens Myotis	Area reserved around known hibernacula (WHA).	0	174	0	174	0	174	0	174	174	0
Quatsino Cave Amphipod	Mixed in with karst/cave features	n/a	n/a	n/a	n/a	n/a	n/a	0	9	0	9

### Strategies & Implementation

- To spatially designate and legally establish Wildlife Habitat Areas and Old Growth 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.

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- 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.
- 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

As more reserves such as WHAs, UWRs and OGMA become legally established the habitat conserved for focal species is expected to increase over the short-term.

## Details/ Data Set

**Ungulate Winter Ranges** have been legally established for all tenures within the DFA. Ungulate Winter Range may also be available through other reserve areas (WHA, OGMA) but has not been spatially delineated as such. A total of 5681 ha for TFL 37 (U-1-001) were spatially established in October 2004. The indicator is measured as the total area spatially delineated and conserved for ungulate winter range. This area must meet or exceed the target of 5681 ha.

**Marbled Murrelet nesting habitat** has been delineated within the DFA. Potentially suitable habitat was modelled and further assessed and ranked by low-level aerial surveys in 2002 and 2003. The surveys followed provincial standards ranking the habitat nil to very high quality. Habitat ranked moderate to very high is generally considered “suitable” habitat. In the short-term suitable habitat is protected in a variety of reserves. Some reserves, wildlife habitat areas, have been specifically delineated for marbled murrelets. Other species’ Wildlife Habitat Areas Old Growth Management Areas, and Ungulate Winter Ranges may incidentally encompass suitable nesting habitat. This indicator is a measure of the amount of inventoried suitable nesting habitat reserved within the DFA. The amount should be consistent or increase from the current state and not be less than 5046 ha.

**Goshawk nesting habitat** mapping is available for the TFL. For the current process the amount of goshawk habitat is based solely on areas that will not be harvested due to the presence of goshawk nests. There are currently 15 known nest territories within the DFA. Ten territories were formally established in March 2003 as 2595 ha of WHA while the others have been voluntarily conserved by WFP. This indicator is a measure of the amount of habitat reserved around known nests. The amount should be consistent or increase from the current state and not be less than 2595 ha.

**Keen’s Myotis** appear to be associated with coastal forest habitats and karst features. More research needs to be done before accurate mapping of potential habitat is available. This measure is an indicator of the amount of area reserved due to the presence of known winter hibernation or maternity roost sites. The amount should increase from the current state of 0 ha with 2 proposed reserves currently being negotiated.

## Monitoring

- Reserves are mapped spatially in a layer of the GIS. Changes in boundaries are tracked by Corporate Forestry biologists.
- 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.
- Known nests will be monitored for activity when forest management activities are planned nearby.

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## Indicator 1.2.2 Degree of suitable habitat in the long term for focal species

### Element: 1.2 Species Diversity

*Conserve species diversity by ensuring that habitats for the native species found in the DFA are maintained through time, including habitats for known occurrences of species at risk.*

Value	Objective	Indicator	Target	Variance
Availability of suitable habitat for selected focal species, including species at risk	To ensure the long-term availability of habitat for selected focal species including species at risk.	1.2.2 Degree of suitable habitat in the long term for selected focal species, including species at risk.	On a 5-year basis, the amount (in ha) of potentially suitable habitat available within WHA, UWR, OGMA and NCLB remains the same or increases over time. The selected focal species are Marbled Murrelet, Black-tailed deer & Roosevelt elk	UWR – decrease by 1% MAMU – decrease by 2%

### History

New CSA Core Indicator in 2010.

### Justification

Some species need habitat that includes mature to old trees for their survival. Habitat currently unsuitable for species may develop the attributes necessary for the survival of the species as it ages. It is important to ensure critical habitat will be available in the long-term. Long-term is defined as twice the average life expectancy of the predominate trees in a DFA, up to a maximum of 300 years. Tree species within the DFA are long lived and the long-term is defined as the maximum of 300 years.

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 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 murrelets are small seabirds that nest inland with a majority of nests being found on large boughs high 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 murrelets. Marbled murrelets 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).

The variance is meant to help account for fluctuation due to spatial issues (e.g. map base or scale) and natural disturbance factors. For Marbled Murrelet the variance is also to account for the inaccuracies of the modelling and the inability to predict the quality of the habitat.

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## Current Status & Interpretation

At the end of 2009, the baseline amount of potentially suitable habitat for selected focal species that is currently available in the DFA is as follows. The baseline data from 2009 was updated in 2013. The changes below are a difference in data set (inventory data). The previous aerial survey did not use the current standards for ranking habitat and overestimated the suitable habitat. This updated data will serve as a new baseline.

Habitat Type	Measure	Legal Reserves (ha)(2009)	Legal Reserves (ha)(2013)	NCLB <sup>1</sup> (ha) (2009)	NCLB <sup>2</sup> (ha) (2013)
Ungulate Winter Range	Spatially delineated ungulate winter range.	5681	5685	0	0
MAMU Nesting Habitat	Potentially Suitable Habitat in WHA, UWR, OGMA and NCLB	7068	8684	4633	7844

## Strategies & Implementation

- To spatially designate and legally establish Wildlife Habitat Areas, Ungulate Winter Range and Old Growth 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. Proposed OGMA's and WHA's will be managed as if 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.
- As committed in Operational Plans, WFP ensures areas of equivalent marbled murrelet habitat are available in the Timber Harvesting Land Base (THLB) if suitable habitat is harvested in the NCLB.
- Western's Forest Strategy around variable retention will leave a legacy of mature and old forest attributes.
- 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.

## Forecasts

Ungulate winter range is expected to not change over time as winter range is based on topographical and forested characteristics that are not expected to change significantly from the natural disturbance processes.

The quantity of potentially suitable habitat is forecast for marbled murrelet. This includes the current amount of potentially suitable habitat and future potentially suitable habitat (i.e. trees that are currently too young). This does not take into account habitat quality as the characteristics, such as moss development, are not easily modeled. It is expected that within the amount forecast not all will be suitable.

To forecast suitable habitat into the future only modeling can be used as the inventory gives the current state. Potentially suitable habitat was modeled using parameters from the marbled murrelet recovery team and in two steps.

- 1) For forests greater than 250 years old there was an assumption that the old growth characteristics would not change significantly in the long term and the following parameters were used: Forested area > 250 years old and > 28.5 m tall. These parameters are from the

<sup>1</sup> Non-contributing landbase as defined by MP9 (TFL 37) timber supply analysis updated to 2009.

<sup>2</sup> Non-contributing landbase as defined by MP9 (TFL 37) timber supply analysis updated to 2009.

“Most Likely” category defined in Table 3 in the Marbled Murrelet Conservation Assessment 2003, Part B.

- 2) For forests younger than 250 years old there is a potential to develop the necessary attributes. It was assumed that trees with a moderate or better site index had the potential to develop the characteristics and the following parameters were used: Forested area ≤ 250 years old and Site Index ≥ 18.

The table below shows the result of this modeling exercise. In essence, as currently young stands grow, substantially more potentially suitable habitat is available in the long-term for the marbled murrelet.

Habitat Type	Legal Reserves (ha) (2009)	Legal Reserves (ha) (2014)	NCLB (ha) (2009)	NCLB (ha) 2014
Ungulate Winter Range	5681	5685	0	0
Potential MAMU Nesting Habitat	8341	10281	15764	22446

Goshawk nesting habitat mapping is not available at this time. The Northern Goshawk Recovery Team is in the process of creating and testing a habitat model for Vancouver Island. Once this model is released it may be used to calculate the amount of habitat conserved within reserves.

### Details/ Data Set

**Ungulate Winter Ranges** have been legally established for all tenures within the DFA. A total of 5681 ha has been legally designated through one order (for more details see above indicator). Ungulate Winter Range may also be available through other reserve areas (WHA, OGMA) but has not been spatially delineated as such. Established UWR should remain as such in the long-term because of the old-growth characteristics of the UWR and long intervals between natural disturbances in the ecosystems. The indicator is measure as the total area spatially delineated and conserved for ungulate winter range over the long-term and must meet or exceed the target of 5681 ha.

**Marbled Murrelet nesting habitat** has been delineated within the DFA. Potentially suitable habitat was modeled. Of the potentially suitable habitat within the DFA the areas within wildlife habitat areas, ungulate winter range and old growth management areas and found within the non-contributing landbase (generally unharvestable) will be retained in the long-term. The potentially suitable habitat available in reserves was calculated using the current legal and proposed WHA, UWR and OGMA's. The non-contributing landbase was calculated using data from the TFL 37 Management Plan 9 dataset created for the timber supply analysis, which was updated for 2009.

This indicator is a measure of the amount of potentially suitable nesting habitat retained within the DFA over the long-term. The amount should be consistent or increase from the current state and not be less than 11701 ha.

### Monitoring

- Reserves are mapped spatially in a layer of the GIS. Changes in boundaries are tracked by Corporate Forestry biologists.
- Potential habitat supply will be monitored spatially relative to the target every 5 years.
- Non-contributing landbase will be recalculated with new timber supply analysis

## Indicator 1.2.3 Proportion of regeneration comprised of native species

### Element: 1.2 Species Diversity

*Conserve species diversity by ensuring that habitats for the native species found in the DFA are maintained through time, including habitats for known occurrences of species at risk.*

Value	Objective	Indicator	Target	Variance
The existing pool of genes within tree species on the DFA	The existing pool of genes within tree species on the DFA is maintained	1.2.3 Proportion of regeneration comprised of native tree species	The proportion of regeneration comprised of native tree species is 100%.	None

### History

This is a new core indicator.

### Justification

The Chief Forester's Standards for Seed Use require native tree species to be planted. Accordingly, all trees planted within the DFA are native tree species and there is no variance.

### Current Status & Interpretation

The species profile of the DFA compared to the amount of trees regenerated by species for the years 2010-2014 are as follows:

Year	Ba	Cw	Yc	Fd	Hw/Hm	Alder	Ss	Misc.	Total
Planted 2010 (%)	8.3	12.1	31.0	21.7	25.7	0.0	0.1	1.1	100%
Planted 2011 (%)	3.0	23	22	41	9	0.0	1	1	100%
Planted 2012 (%)	3.1	20.9	29.0	38.2	6.8	0.0	0.4	1.6	100%
Planted 2013(%)	7.0	22.1	15.8	43.7	4.3	0.0	1.2	5.9	100%
Planted 2014(%)	7.0	20.3	14.7	44.1	5.2	0.0	1.0	7.7	100%
DFA Species Profile (%)	5.4	5.2	9.2	22.7	50.3	1.7	0.1	5.4	100%

This target is met; the proportion of regeneration at Englewood Forest Operations is 100% native species. The percent of species planted is highly linked to the harvested areas within the previous season/year. There has been a consecutive decline in the amount of Hemlock (both mountain and western hemlock) planted since 2010. Hemlock species have a tendency to regenerate naturally so planting is not necessary for future forests. Western red cedar, Yellow cedar and Douglas fir are planted wherever possible and vary in percent planted based on cutblock elevation and planting prescription. Within the miscellaneous category more Noble fir and Western white pine have been introduced due to the elk browse noted during survey data collection. Elk have not been noted to browse western white pine so the percentages will increase in future planting prescriptions as it proves to be a successful species to resist browse. Noble fir has been included on southern aspects, which

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helps to aid in species diversity. It is to be noted that Cw, Fd, and Yc are the primary species that are planted at Englewood this trend will continue on site appropriate to those species.

### **Strategies & Implementation**

All tree species regenerated within the DFA are native tree species. Trees are regenerated within the DFA from natural regeneration or from planting trees within their seed transfer limits. At free growing there tends to be more trees regenerated on site in addition to those planted. (See indicator 1.3.1) These naturally regenerated trees ensure the existing pool of genes within tree species on the DFA is maintained.

### **Forecasts**

Assuming that climate change does not trigger species extirpation, it is expected that native tree species will continue to be planted and natural regeneration of trees will continue to significantly augment planted areas at historical levels and contribute to genetic diversity.

Also, there is no expectation of changes in regulation that would alter the current standard of reforestation with ecologically suited species and allow the introduction of exotic species.

### **Details/ Data Set**

The four year trend indicates that more Fdc and Cw are being planted within the DFA. Yc is increasing but vary by year depending on blocks harvested that are higher elevation. Balsam is an alternate species within cutblocks that is increasingly used in silviculture prescriptions. Englewood is trending away from planting Hw/Hm as there is a high percentage of natural ingress of Hw/Hm.

The number of trees planted by species during the annual spring and fall planting programs will demonstrate that only native species are planted. The species planted are generally Fd, Cy and Cw. With lesser amounts of Ba, Hw and Ss. Hemlock regenerates very well naturally across the DFA but to determine the amount of natural Hw regeneration is difficult. Sitka spruce tends not to be reforested in large numbers due to the Sitka spruce weevil. Resistant seed is becoming available and more may be planted in the future.

### **Monitoring**

The Operations Forester or designate manages the planting program. The number and species of trees planted are entered into CENFOR.

The Operations Forester or designate compiles the data from the CENFOR database and reports on the indicator performance in the annual SFM Report.



## Indicator 1.2.4 Percent consistency with management practices for habitat features

### Element: 1.2 Species Diversity

*Conserve species diversity by ensuring that habitats for the native species found in the DFA are maintained through time, including habitats for known occurrences of species at risk.*

Value	Objective	Indicator	Target	Variance
Native Species Diversity	Diversity of habitats to sustain a natural diversity of native species is retained on the DFA.	1.2.4 Percent consistency with management practices to address special habitat features	Where worker safety is not compromised, all cutblocks harvested over any 5-year period are managed to address special habitat features identified.	None

### History

This was indicator #10 in SFMP 10.

### Justification

Stand-level measures contribute to the maintenance of biodiversity by caring for known habitat features of species at risk occurring on the DFA. This indicator ensures that stand-level strategies are in place to manage specific habitat needs for species at risk and species of local interest. Habitat requirements of most species at risk are sufficiently known to develop special management areas, or prescribe activities that will not interfere with the well-being of these species. Special habitat features may include bird nests or den trees for example.

Once habitat features are identified, management strategies are defined in site plans and harvest instruction. For that reason no variance is allowed.

### Current Status & Interpretation

This indicator was first reported on in 2008 so the 5-year percent consistency is not yet available. The results since 2008 are summarized in the table below.

In 2014 a total of 5 features were found in 4 cutblocks that required management for special habitat features, four (4) of which were for black bear dens. One (1) of the blocks (DA128) contained a wildlife tree within a retention patch. GC023 was not reported out within the habitat features for 2013 and will be reported within this years results. The blocks reported out within the 2014 report are: KC031,NA006,DA128,BC120 and GC023.

All blocks were consistent with management for special habitat features. This target is met.

The WFP Environmental Management System (EMS) requires a post-harvest assessment done ideally within 6 weeks of the "final" block inspection but no longer than 6 months. The blocks that are reported out have completed Post Harvest Assessments and they are consistent with the management of the special habitat feature.

### **Indicator results for special habitat features**

<b>Year</b>	<b>Cutblocks requiring Special Habitat Feature Management</b>	<b>Harvest Area Consistent<sup>1</sup></b>	<b>Total Harvest Area (ha)<sup>2</sup></b>	<b>Percent Consistency (%)</b>
2008	CE005, KC012, KH075H, LG212, MU080, TS014, UN038	185.6 ha	185.6 ha	<b>100 %</b>
2009	HG040, ME135, NE062, NW121, NW131, Q213, TS051, SC006	207.8 ha	207.8 ha	<b>100 %</b>
2010	FE003, LG224, MU170, NE202, NS024, NS029, TS005, TS007	230.0 ha	230.0 ha	<b>100%</b>
2011	DA313, ME230, NE069, TS206, DA390, KC120, NS020, UN115, WS015	264.8ha	264.8ha	<b>100%</b>
2012	NA003,CE030,DA415,KC195,MQ425A, TS019,KC153, WS250,NS031, BC195	268.2ha	268.2ha	<b>100%</b>
2013	LG215, NA403H, GC021, DA030, HR097, LG209, KC014, NE084, NE040, CE009, WS001, LG060, CE023, NW751, BC127, DA410, LG306, ME011, ME023, NS065, TS115	733.6ha	733.6ha	<b>100%</b>
2014	BC120, DA128, GC023, KC031, NA006	133.8ha	133.8ha	<b>100%</b>

<sup>1</sup> Harvest area of cutblocks that contain special habitat features and that are consistent with Site Plans, Harvest Instructions and Post-Harvest Assessments.

<sup>2</sup> Total harvest area of cutblocks that contain special habitat features.

## **Strategies & Implementation**

Strategies to appropriately manage special habitat features are based on information already in place (e.g., National Recovery Teams of Environment Canada, Identified Wildlife Management Strategy) and on recent scientific literature. Appropriate management strategies are implemented in site level plans to ensure the development or maintenance of species' habitat.

Special habitat features are managed on a case-by-case basis as they are discovered. Bear dens, large stick nests, great blue heron colonies and active nests of other bird species are retained as they are located and where worker safety is not compromised. Additional habitat surrounding bear dens is prescribed on a site-specific basis.

## **Forecasts**

Based on the recent performance history it is anticipated that the target will be met and continue to be met in the future.

## **Details/ Data Set**

This indicator is assessed based on WFP's forest operations being in conformance with internal plans (ie Site Plans and Harvesting Instructions) that are in place to address identified special habitat features:

The wildlife section in each Site Plan and Harvesting Instruction are reviewed for "Special Habitat Feature" prescriptions. The results of Post-Harvest Assessments are normally used to confirm that harvesting and road-building activities were conducted in accordance with the plans.

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**Ultimately results are compiled as follows:**

<b>Calculation</b>		<b>% HA<sub>CONSISTENT</sub> = HA<sub>CONSISTENT</sub> / HA<sub>TOTAL</sub></b>
<b>Variables</b>	% HA <sub>CONSISTENT</sub>	Percentage of cutblock harvest area that is consistent with Site Plans and Harvesting Instructions for special habitat features, and based on a 5-year period.
	HA <sub>CONSISTENT</sub>	Harvest area of cutblocks that contain special habitat features and that are consistent with Site Plans and Harvesting Instructions over a 5-year period.
	HA <sub>TOTAL</sub>	Total harvest area of cutblocks that contain special habitat features, based on a 5-year period.
<b>Notes</b>	1.	<i>Cutblocks are included in calculation if a harvest completion date is recorded for MoF reporting purposes</i>
	2.	<i>5-year reporting period is the most recent 5 Calendar years (January – December)</i>

For annual reporting purposes, it is recommended that cutblocks having special habitat features be mentioned in a text statement.

**Monitoring**

Special habitat features are documented when they are located and appropriate management strategies are developed within site-level plans. These results are summarized annually in the SFM annual report.

## Indicator 1.3.1 Percentage of the trees planted annually that are GMOs

### Element: 1.3 Genetic Diversity

*Conserve genetic diversity by maintaining the variation of genes within species and ensuring that reforestation programs are free of genetically modified organisms.*

Value	Objective	Indicator	Target	Variance
Genetically modified organisms on the DFA.	Genetically modified organisms are not introduced in the DFA	1.3.1 The percent of the trees planted annually that are genetically modified organisms.	The percent of the trees planted annually that are genetically modified organisms is 0%.	None

### History

New Indicator in 2010 for the new concept of genetically modified organisms introduced in CSA Z809-08.

### Justification

The target aligns with the current legal status: no genetically modified organisms are currently planted within the Englewood Defined Forest Area.

### Current Status & Interpretation

Year	Number of Genetically Modified Organisms Planted
2010	0
2011	0
2012	0
2013	0
2014	0

The results in 2014 are consistent with previous year in that only seedlings from registered seedlots were planted on the DFA. No genetically modified organisms were planted. This target is met.

### Strategies & Implementation

The only strategy in place related to this indicator is to only use seedlings from seedlots duly registered for use in BC in reforestation programs.

Alternatively, natural regeneration is also used to enhance restocking of cutblocks.

### Forecasts

Currently, there is no expectation that genetically modified organisms would be allowed as restocking material.

### Details/ Data Set

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

### Monitoring

The primary means to maintain the silviculture records is through the entry of activity information in CENFOR by the Timberlands Operations.

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## Indicator 1.4.1 Proportion of identified sites with implemented management strategies

### Element: 1.4 Protected areas & sites of special biological & cultural significance

*Respect protected areas identified through government processes. Co-operate in broader landscape management related to protected areas and sites of special biological and cultural significance. Identify sites of special geological, biological, or cultural significance within the DFA, and implement management strategies appropriate to their long-term maintenance.*

Value	Objective	Indicator	Target	Variance
Protected areas identified on the DFA through government processes	Respect and maintain protected areas identified on the DFA through government processes.	1.4.1 Proportion of identified sites with implemented management strategies	100% of identified sites have implemented management strategies.	None

### History

New Core Indicator in 2010.

### Justification

The target aligns with the current legal status. Government processes normally results in government orders that give legal status to the new requirements.

### Current Status & Interpretation

A number of Government processes, past and ongoing, have served to identify areas for protection or special management:

**The Protected Area Strategy (PAS):** In July 1993, the government of BC established the Protected Area Strategy (PAS) for British Columbia committed to expanding a protected area system that would protect 12% of the province by 2000. Recommendations began in January 1992 as part of the Commission on Resources and the Environment (CORE). The products of this process were submitted to Cabinet in February 1994, and the recommendations were embodied in the subsequent Vancouver Island Land Use Plan. Cabinet endorsed a final set of boundaries on April 15, 1995 which encompassed 78,342 ha of new protected areas. A second group was formed to identify “special feature” areas. Nominations were accepted from the public and First Nations stakeholder groups. The process resulted in an additional 11,770 ha of protected areas announced in February 1996. Currently, 13.1% of Vancouver Island, or about 439,000 ha has protected status distributed throughout Vancouver Island’s 10 eco-sections. The DFA contains 3 of the eco-sections

**The Old Growth Management Area (OGMA) process:** In 2000, in response to CORE, the Vancouver Island Land Use Plan was completed and included the identification of Resource Management Zones with specific Old Growth retention requirements. An ongoing Land Use Planning process involving Western and the Ministry of Environment is being used to spatially locate Old Growth Management Areas (OGMA) to be retained. All of the OGMA’s are legally established.

**The Ungulate Winter Range (UWR) process:** In August of 2003, a Memorandum of Understanding (MOU) on the Establishment of Ungulate Winter Ranges and Related Objectives was developed between MWLAP, the Ministry of Forests (MOF) and the Ministry of Sustainable Resource Management (MSRM). The purpose of the Memorandum of Understanding (MOU) is to expedite and facilitate the orderly confirmation and establishment of ungulate winter ranges (UWR) and related objectives across the province, in order to support the Forest Practices Code and the new *Forest and Range Practices Act* (FRPA). The MOU clarifies general ministry roles and responsibilities and outlines procedures and considerations to facilitate timely delivery of this initiative. It replaces previous agreements concerning coordination, administrative processes, and consultation requirements. The

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MOU identifies 3 types of UWR and objectives. The intent is to facilitate, through due process, the cooperative development of objectives to support the FRPA while at the same time maintaining the foundation of stakeholder support, where UWR and objectives have been established through Cabinet-approved strategic land use planning processes

**The Designated Wildlife Habitat Areas (WHA) process:** The Government's Identified Wildlife Management Strategy (IWMS) Version 2004 was released in May 2004 and replaces IWMS Volume 1, released in 1999. IWMS Version 2004 contains an updated list of identified wildlife, updated species accounts and updated procedures for implementing the IWMS. The IWMS provides direction, policy, procedures and guidelines for managing Identified Wildlife. The goals of the Strategy are to minimize the effects of forest and range practices on Identified Wildlife situated on Crown land and to maintain their limiting habitats throughout their current ranges and, where appropriate, their historic ranges. Identified Wildlife are managed through the establishment of wildlife habitat areas (WHAs) and the implementation of general wildlife measures (GWMs) and wildlife habitat area objectives, or through other management practices specified in strategic or landscape level plans.

### **Strategies & Implementation**

Western Forest Products follows government process.

### **Forecasts**

The target is the forecast given that the establishment of protected areas is normally the result of government policies and processes and no change in policy is anticipated.

### **Details/ Data Set**

The baseline data from 2013 has some discrepancies. This was noted within the spatial data and has been corrected in the 2014 results. The areas within the Protected Area Strategy have increased slightly. The areas within the Old Growth Management Areas have increased with cleanup of spatial data and incorporation of new areas due to Old Growth Management Area Amendments. The amount of area associated with Northern Goshawk Habitat has decreased slightly due to survey data updates and new habitat area has been included for the Keen's Myotis Bat.

Processes	Area Name / Landscape Unit (2010-2012)	Area Name / Landscape Unit 2013	Area Name / Landscape Unit 2014	Strategy / Status
Protected Area Strategy	Claude Elliot Creek Ecological Reserve (231 ha) Claude Elliot Lake Provincial Park (289 ha) Lower Nimpkish Provincial Park (200 ha) Mount Cain Regional Park (497 ha) Mount Elliot Ecological Reserve (324 ha) Nimpkish Lake Provincial Park (3,950 ha) Nimpkish River Ecological Reserve (18 ha) Schoen Lake Provincial Park (8,430 ha) Woss Lake Provincial Park (6,634 ha)	Same as 2010-2012	Claude Elliot Creek Ecological Reserve (233 ha) Claude Elliot Lake Provincial Park (328 ha) Lower Nimpkish Provincial Park (238 ha) Mount Cain Regional Park (511 ha) Mount Elliot Ecological Reserve (330 ha) Nimpkish Lake Provincial Park (3,923 ha) Nimpkish River Ecological Reserve (19 ha) Schoen Lake Provincial Park (8,780 ha) Woss Lake Provincial Park (6,527 ha)	100% protected
<b>Total Area</b>	20,573ha	20,573ha	20,887ha	100% protected
Old Growth Management Areas (by LU)	Lower Nimpkish (LN) (6,748 ha) Upper Nimpkish (UN) (9,715 ha)	LN- 6,748ha UN-9,715ha	LN- 6,872ha UN-8,325ha	100% Managed
<b>Total Area</b>	15,172ha	15,172ha	15,197ha	100% Managed
Ungulate Winter Ranges (by Order #)	u-1-001 (6,203 ha)	5,684ha	5,684ha	100% protected
Designated Wildlife Habitat Areas	Northern Goshawk (2,725 ha) Marbled Murrelet (331 ha)	Same as 2010-2012	Northern Goshawk (2595ha) Marbled Murrelet (331) Keen's Myotis Bat (174ha)	100% protected
<b>Total Area</b>	3,056ha	Same as 2010-2012	3,100ha	100% protected

## Monitoring

The Timberlands Forester with assistance from the Operations Foresters will review for newly designated or amended Protected Areas and update the details. Normally, such designations and amendments are referred to affected parties prior to formal designation.

## Indicator 1.4.2 Protection of identified sacred and culturally important sites

### Element: 1.4 Protected areas & sites of special biological & cultural significance

*Respect protected areas identified through government processes. Co-operate in broader landscape management related to protected areas and sites of special biological and cultural significance. Identify sites of special geological, biological, or cultural significance within the DFA, and implement management strategies appropriate to their long-term maintenance*

Value	Objective	Indicator	Target	Variance
Identified sacred and culturally important sites on the DFA	Provide protection for identified sacred and culturally important sites on the DFA	1.4.2 Protection of identified sacred and culturally important sites.	Target 1 – 100% of identified sacred and culturally important sites are protected or managed according to measures by WFP and First Nations. Target 2 – All cutblocks harvested over any 5 year period are consistent with management practices to address karst features.	None  ≥ 5% of the target.

### **Target 1: Identified Culturally Important Sites**

#### **History**

New CSA Core Indicator in 2010. Adjusted old indicators #35 & #47 to align with this new Core Indicator.

#### **Justification**

Based on an Archaeological Overview Assessment completed by Government, the DFA has been categorized into areas based upon archaeological site potential and the need for a Cultural Heritage Inventory Survey (CHI). As required, CHIs are completed to identify and evaluate archaeological resources within the proposed development areas. CHIs identify and assess all impacts on archaeological resources that might result from the development, and recommend alternatives for managing unavoidable adverse impacts.

The target and the variance reflect the requirement to mitigate or control potential effects on identified culturally important sites.

#### **Current Status & Interpretation**

A total of four (4) cutblocks BC231, DA128, KC129, and KH159 were harvested during 2014 required management for cultural features. All four (4) of the blocks were assessed within the applicable timeframe and remained consistent with the management practices to address cultural features. This target was met.

The WFP Environmental Management System (EMS) requires a post-harvest assessment done ideally within 6 weeks of the “final” cutblock inspection but no longer than 6 months.

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## Strategies & Implementation

The FSP contains commitments for post approval consultation on Cultural Heritage Resources, and the Heritage Conservation Act applies to operational activities. Additionally, a MFR District letter on CP consultation guides cutting permit applications.

WFP's planners review the location of all proposed cutblocks relative to an archaeological potential map. If the proposed cutblock is located within an area designated with high archaeological potential, or if any observed features are identified during cutblock reconnaissance, an assessment/survey is planned and conducted. Where worker safety is not compromised and in consultation with First Nations, management strategies for CMTs located during the survey are incorporated into the final layout and addressed in the site plan.

## Forecasts

The target is anticipated to be met based on past policy and experience. Given the status of First Nations in BC, no change in company policy is anticipated and company cooperation with First Nations is expected to continue.

## Details/ Data Set

The historical data is summarized below for the results of the last six years.

Year	Cutblocks Requiring Cultural Feature Management	Harvest Area Consistent <sup>1</sup> (ha)	Total Harvest Area <sup>2</sup> (ha)	Percent Consistent (%)
2008	BC 104	24.1	24.1	100%
2009	BC 108, BC 109, NS 051, NS 105	104.7	104.7	100%
2010	BC107, FE003, ME040, NE110, NS009WF, NS029, NW103	318.3	318.3	100%
2011	BC135, BC206, KC120, ME004, NA001, NS008, WS019, WS028, NS006	251.4	251.4	100%
2012	DA317, NE017, NE118, WP131, BC195, ME044, WS004, NA228, NS112	152.4	152.4	100%
2013	LG060, WP129, NA124B, NE124, DA122, LG306, ME023, NW903	199.1	199.1	100%
2014	BC231, DA128, KC129, KH159,	137.4	137.4	100%

*1 Harvest area of cutblocks that address cultural features and that are consistent with Site Plans and Harvest Instructions.*

*2 Total harvest area of cutblocks that address cultural features.*

This target was met. All blocks assessed Post Harvest were consistent with the cultural management prescriptions recommended for the block.

## Monitoring

Cultural/Archaeological Surveys are tracked in a database (Forest Ops) and considered as site plans and harvesting instructions are prepared. Cutblock Site Plans that contained cultural features and prescriptions are reviewed yearly in relation to annual logging activities. Non-conformances and non-compliances are communicated to WFP's Operations Planning Foresters, who will take actions to remedy the particular situations. The primary monitoring process will be through Cutblock Inspections and Post-Harvest Assessments.

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## **Target 2: Karst**

### **History**

Previously indicator 35 in SFM Plan 10, carried forward to SFMP 11.

### **Justification**

Managing karst values within forested landscapes is an important consideration when proposing harvesting and development projects. Under the Government Action Regulation, an order has been brought into force that now provides a legislated level of protection to karst features. This target monitors WFP's consistency with implementing prescriptions for karst features. No variance is allowed for this target.

### **Current Status & Interpretation**

The results for 2008-2014 summarized in the table below. There were no blocks harvested in 2014 that were managed for karst features.

The WFP Environmental Management System (EMS) requires a post-harvest assessment done ideally within 6 weeks of the "final" cutblock inspection but no longer than 6 months.

### ***Indicator results for karst management***

<b>Year</b>	<b>Cutblocks requiring Special Areas Management</b>	<b>Total Harvest Area (ha)<sup>2</sup></b>	<b>Percent Consistency (%)</b>
2008	FE005, NA009, NS007	113.5 Ha	<b>100 %</b>
2009	NE018A, NE025, NE062	78.3 Ha	<b>100 %</b>
2010	FE003, NE108, NS023, NS045	201.2Ha	<b>100 %</b>
2011	BC125, BC206, NA001, NS006, NE069,	156.3Ha	<b>100%</b>
2012	NA003, NE017, NS031, WS301	106.5Ha	<b>100%</b>
2013	KC007, NA201, NE213, NS065, NE040,NE071, NE084, KH205	295.6Ha	<b>100%</b>
2014	n/a	n/a	n/a

<sup>1</sup> Harvest area of cutblocks that address karst features and that are consistent with Site Plans and Harvest Instructions.

<sup>1</sup> Total harvest area of cutblocks that address karst features.

### **Strategies & Implementation**

A karst inventory identifies the vulnerability potential as well as any known features and information is included as new karst features are discovered. WFP conducts a karst field assessment when a proposed cutblock or road is located within an area mapped as moderate or higher karst vulnerability potential. This assessment includes:

- Establishing the general bounds for the primary karst catchment associated within the proposed development activity;

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- Conducting a ground search of appropriate intensity;
- Identifying and mapping the locations of cave entrances and significant surface karst features;
- Evaluating and classifying caves and other notable karst features; and
- Documenting the significant features that are found through measurement, narrative descriptions, illustrations and photography.

Measures are then recommended to mitigate impacts to the significant cave and karst features. The range of possible protective measures during road building and harvesting phases includes:

- Relocating roads and cutblock boundaries;
- Establishing reserves;
- Employing alternative harvest systems;
- Enhancing the supervision and monitoring of specific activities;
- Restricting road building or harvesting practices;
- Imposing weather or timing restrictions for specific activities; and
- Committing to manage for or rehabilitate impacted features.

### Forecasts

Karst management is integral to the planning process and is now a legislated requirement. A change in government policy that would relax requirements is not anticipated. This target is expected to continue to be met based on past performance.

### Details/ Data Set

This indicator is assessed based on WFP’s forest operations being in conformance with internal plans (ie Site Plans and Harvesting Instructions) that are in place to address karst features:

- Pertinent sections in each Site Plan and Harvesting Instruction are reviewed for references to the existence of karst features as well as associated prescriptions. Periodic monitoring and/or WFP’s final inspection reports are used to confirm that harvesting and road building activities were conducted in accordance with the plans.

Ultimately results are compiled as follows:

<b>Calculation</b>		<b>% HA CONSISTENT = HA CONSISTENT / HA TOTAL</b>
<b>Variables</b>	% HA CONSISTENT	Percentage of cutblock harvest area that is consistent with Site Plans and Harvesting Instructions that address karst features, and based on a 5-year period.
	HA CONSISTENT	Harvest area of cutblocks that address karst features and that are consistent with Site Plans and Harvesting Instructions over a 5-year period.
	HA TOTAL	Total harvest area of cutblocks that address karst features, based on a 5-year period.
<b>Notes</b>	<ol style="list-style-type: none"> <li>1. Cutblocks are included in calculation if a harvest completion date is recorded for MOF reporting purposes</li> <li>2. 5-year reporting period is the most recent 5 Calendar years (January – December)</li> </ol>	

### Monitoring

The Operations Forester will ensure that data is compiled, and performance reported, in the annual SFM Plan.

## Indicator 2.1.1 Reforestation success

Element: 2.1 Forest ecosystem resilience				
<i>Conserve ecosystem resilience by maintaining the both ecosystem processes and ecosystem conditions</i>				
Value	Objective	Indicator	Target	Variance
Resilient forest ecosystems	Maintain ecosystem processes and ecosystem conditions	2.1.1 Reforestation Success	The area of forest land missing it's Free Growing milestone obligation is 0 ha annually	None

### History

New CSA Core Indicator in 2010. It incorporates part of old indicator #14.

### Justification

This indicator provides a measure of success at ensuring that forests are promptly regenerated, enhancing ecosystem recovery and accelerating forest growth and to maximize carbon absorption. Following harvesting, WFP is responsible to ensure that stands of trees are promptly re-established. The objective is to ensure that these stands are established and become Free Growing within the legal timeframe. NAR describes the amount of area that WFP is committed to reforest following harvesting activities. Free-growing stands, as defined in the Forest Practices Code of British Columbia Act and the Forest and Range Practices Act, are stands of healthy trees of a commercially valuable species, meeting stocking standards, the growth of which is not impeded by competition from plants, shrubs or other trees.

### Current Status & Interpretation

Year	FG Area Expiring (ha)	FG Commitments met (ha)	Area not meeting FG Commitment (ha)	Variance from Target (ha)
2009	582	582	0	0
2010	1001	1001	0	0
2011	680.8	680.8	0	0
2012	685.6	685.6	0	0
2013	820.5	820.5	0	0
2014	1000.8	1000.8	0	0

This target has been met. WFP Englewood is 100% compliant with free growing commitments for the 2014 reporting year. It is to be noted that the amount of free growing hectares has notably increased from the previous year. A large amount of silviculture amendments were made in 2010 extending the late free growing dates to 2014 and 2016. It is to be noted that the area of free growing obligations that are associated with Canfor blocks will be decreasing in the coming years.

### Strategies & Implementation

A series of steps are involved in managing regeneration: Historically there has been a low reliance on natural regeneration with the majority of area being planted promptly after logging. This reliance on planting is due to a number of factors:

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- Drier sites on average, limiting natural regeneration success
- Reduced brushing - minimizing foliar treatments required
- Reduced fill planting – minimizing fill plants
- Easier/less planting layout – reduced time – reduced supervision
- Some sites can be difficult to predict-Salal “Transitional” sites- short term growth loss but can affect FG hts, GU,VEG. Safe to plant Cw
- Green up or VEG timeline can be reduced
- Future access to block may be unknown
- Reduced block entries (treatments, surveys)
- Simplified surveying, and survey scheduling
- Reduced reporting requirements
- Controlled species regeneration

## **Forecasts**

The current planning regime will ensure that this indicator continues to be met. The number of expiring hectares is expected to rise in 2014 however WFP will schedule and plan the survey work to ensure the target is achieved.

## **Details/ Data Set**

For FPC cutblocks: This indicator is determined by subtracting the total area meeting FG commitments (on a SU basis) in the reporting year from the total FG area expiring (on a SU basis) during the reporting year. If an amendment has been prepared, the SU can be tallied as meeting requirements. In the event that the MoFR determines that an amendment did not constitute having met FPC requirements to establish a free growing stand within the Free Growing Assessment Period (FGAP), the area failing to meet commitments will be reported in the year this becomes known.

For FSP cutblocks, or FPC cutblocks approved to be brought under FRPA FSP standards, the late free growing date is 20 years.

FG Area Expiring – a summary of SU area, including all SUs expiring in the reporting year.

Area meeting FG commitments – a summary of cutblock area, including all blocks whose FG commitments have been completed (all SU's have achieved FG status).

Data will be tracked via Silviculture Prescriptions or Site Plans within the CENFOR systems. Data will be tracked and compiled at the operation level. Annual summaries will be forwarded to the Annual Report coordinator for reporting purposes.

## **Monitoring**

Free to Grow surveys, and Regeneration Performance Assessments. The Operations Forester will ensure that data is compiled, and performance reported, in the annual SFM Report.

## Indicator 2.1.2 Percent Consistency with time to control a forest fire

Element: 2.1 Forest ecosystem resilience				
<i>Conserve ecosystem resilience by maintaining the both ecosystem processes and ecosystem conditions</i>				
Value	Objective	Indicator	Target	Variance
Healthy forest	Minimize the impact on forest resources resulting from uncontrolled fire.	2.1.2 Percent consistency with time to control a forest fire	Zero operationally caused fires annually	1 Operationally caused fire >0.1 ha that is controlled within 24 hours of the fire being reported.

### History

Existing indicator # 20 in the Z809-02 SFMP, this indicator has been revised a number of times since 2004.

### Justification

Deriving indefinite economic benefits from the forest depends, in part, on WFP's ability to protect the forest from damage by operationally caused fires. For this indicator, operationally caused fires are those that are initiated by forest management activities. Resource management related fires (e.g., Slash burning) are covered by a Resource Management Burn Plan. Such fires are not considered operational fires unless they escape beyond the cut block boundaries into standing timber or reforested areas as described in that plan.

Effective fire control measures are important to ensure that site productivity and forest values are maintained. WFP investigates all operationally caused forest fires. The variance is to allow for very small operational fires that are detected and extinguished before any damage occurs.

### Current Status & Interpretation

Year	Area of Operationally Caused Fires (ha)	Area of Lightning Caused Fires (ha)	Area of Fires With Other Causes (ha)	Total (ha)
2009	0.01	466.73	0	466.74
2010	0.0003	0	0	0.0003
2011	0	0	0	0
2012	0	0	0	0
2013	0.08	0	0	.08
2014	0.4	0.0 (contained within tree)	151.3	.4

WFP Englewood Forest Operation had three reported fires in 2014. One was caused by a lightning strike, one was started by operational causes and one cause is unknown but occurred in an inactive block during a divisional shutdown for fire weather. All fires were reported to the Coastal Fire Center and all operational fires were contained within 24 hours of being reported. The lightning strike was reported by a harvesting contractor and was located behind Vernon Camp. The Operational Fire was located within Cutblock WP123 and was reported to the Coastal Fire Center with Air Support and WFP

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Operational Crews. The third reported fire occurred within the Noomas area and affected 3 free growing blocks (NE063, NE060 and CU006), 3 planted blocks(NE062, NE084, NE084H), some standing timber and areas of retention. All blocks have been scheduled for silviculture activities. This target was met.

## **Strategies & Implementation**

For the purpose of this indicator, fires will be classified based on their ignition source. Ignition sources include operational, lightning, recreation, and unknown or other. All are to be reported in the Annual Report. Details regarding the size and type of fires are to be included in the Annual Report results. Only fires greater than 0.1 ha will be considered to count towards the acceptable variance, All operationally caused fires <0.1 ha in size will not be counted towards the variance but will be included in the annual report of total hectares burned by type. The size of the fires (greater than 0.1ha) is important as Western Forest Products Englewood Forest Operation hopes to maintain a low level of operationally caused fires trending towards none.

## **Forecasts**

Continued commitment to fire preparedness through the compilation and interpretation of fire weather indices, crew training and adequate onsite fire tools will help to ensure that work performed is appropriate for the given fire danger class and workers are prepared for the unexpected. The forecast is for zero operationally caused fires greater than 0.1 hectares which demonstrates a proactive fire / operational management with regards to forest protection by WFP within the DFA. This optimistic target can be met through conservative operational judgement and through diligently tracking fire weather indices through the fire season.

## **Details/ Data Set**

For the purpose of this indicator, fires will be classified based on their ignition source and tracked in the EMS Issue List module of the Cenfor database. Ignition sources include operational, lightning, recreation, and unknown or other. All are to be reported in the Annual Report. Details regarding the size and type of fires are to be included in the Annual Report results. Only fires greater than 0.1 ha will be considered to count towards the acceptable variance, All operationally caused fires <0.1 ha in size will not be counted towards the variance but will be included in the annual report of total hectares burned by type.

## **Monitoring**

The Operations Foresters will ensure that data is compiled from the Cenfor database, and performance reported, in the annual SFM Report.

## Indicator 2.2.1 Additions and Deletions to the Forest Area

### Element: 2.2 Forest ecosystem productivity

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.

Value	Objective	Indicator	Target	Variance
Productive Forest Ecosystems	Maintain the productivity of forest ecosystems	2.2.1 Additions and deletions to the forest area	Of the cutblocks that have had post-harvest road measurement surveys conducted in any given calendar year, no more than seven percent (7%) of the cutblocks' aggregate total area is represented as unproductive permanent road.	+2% of the target.

**History** This indicator was developed in 2004. Previously was Indicator #21 in the Z809-02 SFMP.

### Justification

This indicator is a measure of the proportion of area removed from the productive forest landbase as a result of permanent road development. Area converted to unproductive forest affects some of the key elements for a productive forest ecosystem. For example, roads eliminate or reduce the ability of the landbase to support forests that contribute to ecosystem diversity, productivity, and the conservation of soil and water resources. Minimizing the area converted to roads and other structures thereby protects the forest ecosystem as a whole. The 7% target is consistent with the *Forest and Range Practices Act* (FRPA) and WFP's Forest Stewardship Plan (FSP) for the North Vancouver Island Region (NVIR). The variance is to account for those few instances where the limits are exceeded when no practical alternative exists which is also permissible under that Act.

### Current Status & Interpretation

Post-Harvest Road Measurement surveys were conducted on 28 cutblocks in 2014. The percent of the TAUP converted to unproductive sites for road development based on Post-Harvest Road Measurements conducted in 2014 is 4.09% and is summarized in the table below. The trend is well below the acceptable variance and is moving in a more negative direction indicating that there are less permanent access structures being utilized within the harvest methods. There was a sizeable heli program in 2014 that utilized heli drop locations, but minimized cutting and road permit roads.

The target was met.



### **Indicator results for road development**

Year	Area in Permanent Access (ha)	TAUP (ha)	% Permanent Access	Variance from Target
2008	52.15	931.4	5.6	-1.4%
2009	35.6	604.0	5.9	-1.1%
2010	37.16	718.0	5.2	-1.8%
2011	34.93	700.4	5.0	-2.0%
2012	19.48	401.3	4.85	-2.15%
2013	36.81	839.7	4.38	-2.62%
2014	34.43	842.4	4.09	-2.91%

## **Strategies & Implementation**

Planners consider road development targets as they prescribe ecologically and economically appropriate harvest systems for each cutblock. Following the harvest of each cutblock, surveys are conducted to measure the actual area of roads within the cutblock. Where it is operationally and ecologically appropriate, road rehabilitation may be required to minimize the road area.

## **Forecasts**

Based on past performance, the percent of permanent roads for the future is expected to be within the specified target range.

## **Details/ Data Set**

The percent of the cutblocks area converted to unproductive permanent access structures (PAS) is calculated as follows:

<b>Calculation</b>		<b>% PAS = HA ROAD / HA TAUP</b>
<b>Variables</b>	% PAS	Percentage of the cutblocks TAUP <sup>1</sup> area that is converted to permanent access structures (ie permanent roads) and based on cutblocks that have had post-harvest road measurement surveys conducted within each calendar year.
	HA ROAD	Sum of permanent road area for every cutblock that has had a post-harvest road measurement survey conducted for a given calendar year.
	HA TAUP	Sum of TAUP area for every cutblock that has had a post-harvest road measurement survey conducted for a given calendar year.
<b>Notes</b>	1. TAUP is an acronym for Total Area Under Prescription and includes: net area to be reforested, road area, reserves etc.	

## **Monitoring**

The Timberlands Forester will ensure that data is compiled from Cenfor and road measurement surveys and performance is reported in the SFM Plan Annual Report.

## Indicator 2.2.2 Proportion of the LTHL that is actually harvested

Element: 2.2 Forest ecosystem 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
The harvest level on the DFA	The harvest level of the DFA is sustainably regulated	2.2.2 Proportion of the calculated long-term sustainable harvest level that is actually harvested	1) The volume harvested does not exceed the total AAC authorized for the 5 year cut control period. 2) Report out of results of waste and residue surveys by old growth/ second growth billable sawlogs and billable pulp logs	Target 1) +10% to the target. Target 2) No variance report out.

### History

This indicator was developed in 2004. Previously was Indicator #32 in the Z809-02 SFMP.

### Justification

A sustainable supply of timber must balance the overall rate at which the forest is harvested with the rate at which it can regenerate. Every ten years the provincial Chief Forester considers an array of timber and non-timber objectives desirable on the same landbase in his determination of the AAC for TFL 37. Ensuring that the rate of harvest over the ten-year period does not exceed the AAC limits indicates that the harvest levels are within the long-term productive capacity of the landbase. A variance of +10% of the AAC for the cut control period is allowed and matches the limit permitted under the Forest Act. Target 2 is a report out of the billed waste and residue totals by second and old growth. Reports come from harvest billing system (HBS) and do not include standing timber that was not harvested. Information for 2013 includes data from 2018-2012 and data from 2013, the start of a new cut control period. This data reflects all harvest methods both heli, conventional (cable and ground based).

### Current Status & Interpretation

The harvest performance of WFP relative to the AAC is in year two of the cut control period (2013-2017) and is shown in the table below. The volume report out for WFP Volume Harvested has been adjusted from the 2013 Annual Report out. More accurate numbers have been received. Previous numbers were 1,080,319m<sup>3</sup>. The 2008-2012 performance of the cut control for WFP's portion of the AAC determined for Tree Farm Licence No. 37 help reduce the shortfall from previous years. The results of the five year reporting demonstrate that the WFP Volume harvested is higher than the WFP AAC which is within the indicator targets.

This target is met. 2014 is the second year of the new cut control period. The volume harvested is higher than the actual AAC but will be adjusted in subsequent year to follow.

### Indicator results for harvesting the AAC

Year <sup>1</sup>	WFP Volume Harvested (m <sup>3</sup> )	WFP AAC (m <sup>3</sup> /yr)	Current % Performance
2008	594,960	843,763	101%
2009	630,313	843,763	
2010	978,668	843,763	
2011	941,106	843,763	
2012	1,132,483	843,763	
	<b>4,277,530</b>	<b>4,218,815</b>	

<sup>1</sup> 5-year cut control period effective January 1, 2008 through 2012.

Does not include First Nations and BCTS AAC

WFP Volume Harvested reflects waste and residue, and is an approximation of the volume scaled reported out of the Harvest Billing System (HBS) (Gross Volume).

### Indicator results for harvesting the AAC

Year <sup>1</sup>	WFP Volume Harvested (m <sup>3</sup> )	WFP AAC (m <sup>3</sup> /yr)	Current % Performance
2013	1,080,319	843,763	117%
2014	904,682	843,763	
2015		843,763	
2016		843,763	
2017		843,763	
	<b>1,985,001</b>	<b>4,218,815</b>	

<sup>2</sup> 5-year cut control period effective January 1, 2013 through 2017.

Does not include First Nations and BCTS AAC

WFP Volume Harvested reflects waste and residue, and is an approximation of the volume scaled reported out of the Harvest Billing System (HBS) (Gross Volume).

The following table illustrates the billable waste and residue.

Year	Billable 2nd Growth (Sawlog) Volume (m <sup>3</sup> )	Percent of AAC	Billable OG Volume Sawlog (m <sup>3</sup> )	Percent of AAC	Billable Utility (Pulp Logs) (m <sup>3</sup> )	Percent of AAC	Total AAC (m <sup>3</sup> )
2012	29,819	2.63	20,470	1.81	33,724	2.98	1,131,000
2013	17,853	1.65	70,200	6.5	46,691	4.3	1,080,319
2014	18,711	2.06	58,850	6.5	38,316	4.23	904,682
3 Year Average	22,127	2.11	49,840	4.93	39,577	3.8	1,038,667

The results are reflected in the surveys that were billed in 2014 but included blocks that were harvested between 2013, 2013 and 2014. Backlogged waste and residue surveys are decreasing as more access to blocks are created (less snow restrictions, 2014 was a low snow year). WFP EFO is increasing the utilization of lower quality fiber (pulp) by upgrading our utility sorts. Thereby decreasing the amount of volume in 2<sup>nd</sup> and old growth billable waste and residue.

### Strategies & Implementation

WFP harvests timber according to the TFL agreement and the AAC determined by the provincial Chief Forester. The actual annual harvest is also influenced by, among other factors, legislated penalties that regulate the 5-year cut control period. The Forest Act stipulates that the actual harvest level must not exceed 110% of the allowable annual cut.

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Harvest levels are regulated by the Forest Act (Part 4 Division 3.1) and the Cut Control Regulation and Policy, which is adhered to by the tenure holder. Achievement of this target will be realized through meeting the requirements set out in legislation. Specifically, the license holder must not exceed the sum of the Annual Allowable Cuts in the Cut Control Period (5years) by 110%. Any excess volume of timber (overcut) must be treated as being harvested during the next cut control period and counts toward that period's cut control. There is no minimum volume of timber that must be harvested in any period; however, any timber volume that is not harvested from the allowable cut in the cut control period (undercut) may be disposed of to another party (BC Timber Sales). Corporately, with regards to social and economic return, harvesting the full AAC maximizes the potential of the THLB while mitigating long term fiber procurement impact in the case of an undercut situation and potential AAC reallocation. While WFP always finds it important to harvest the full AAC, it does not always make good economic sense to do so especially when the markets are low. When markets exist that promote positive return (sound economical harvesting of timber from the DFA) the goal is to harvest the entire allowable cut.

## Forecasts

In accordance with the TFL agreement, WFP prepares a timber supply analysis every ten years that presents a series of short- and long-term timber supply forecasts. This typically involves a detailed review of the existing inventories, operability, growth and yield and forest cover constraints. Sensitivity analyses are done to further explore uncertainties regarding the applied assumptions and to understand their potential impacts.

It is evident that over the last few years it has proven difficult to economically harvest the full extent of the approved AAC. How the economic cycle for the forest industry overlaps with the cut control period is a major factor influencing performance in regards to this target. Although it is not possible to forecast the actual results for this target, it is expected that the Western's policy will remain to harvest 100% of its AAC within each cut control period. Of note, the Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) has further maintained a policy to allocate undercut volumes to First Nations or made it available through Timber Sales which also provide for economic activity.

## Details/ Data Set

The indicator and target are based on WFP's portion of the AAC determined for TFL 37. Total volume harvested relative to the AAC is determined through an annual summary of WFP's scaling records and/or the Ministry's Harvest Billing System, as follows:

<b>Calculation</b>		<b>% PERFORM<sub>HARVEST</sub> = VOL<sub>HARVEST</sub> / VOL<sub>AAC</sub></b>
<b>Variables</b>	% PERFORM <sub>HARVEST</sub>	Percentage of total volume of timber harvested relative to the AAC authorized over the cut control period.
	VOL <sub>HARVEST</sub>	Total volume of timber harvested <sup>1</sup> over the cut control period.
	VOL <sub>AAC</sub>	Total AAC authorized over the cut control period.
<b>Notes</b>	1.	

## Monitoring

Both WFP and the MFLNRO track timber volumes as it is scaled. These scaled volumes are used to generate stumpage billings and to monitor WFP's consistency with its allocated cut. The Timber Supply Analysis Forester provides data to ensure that performance with cut control is reported in the annual SFM report.

## Indicator 3.1.1 Level of Soil Disturbance

Element: 3.1 Soil Quality and Quantity				
<i>Conserve soil resources by maintaining soil quality and quantity</i>				
Value	Objective	Indicator	Target	Variance
Conservation of soil resources	Maintain the productive capacity of forest soils	3.1.1 Level of soil disturbance	<p>Target 1 - No area is converted to permanent non-productive area, resulting from landslides observed over any 5-year period that are induced by forest development activities.</p> <p>Target 2 - All cutblocks harvested over any 5 year period are consistent with management practices to address soil disturbance</p>	<p>+10 hectares to the target.</p> <p>5% of the target</p>

### **Target 1 – Landslide NP**

#### **History**

Previously Indicator #24 in the Z809-02 SFMP.

#### **Justification**

Landslides and other surficial geological soil disturbances occur naturally on the Nimpkish DFA. Tree roots and canopy cover are crucial factors in the stability of steep forested slopes. The risk of landslides increases within 2 years of harvesting, with a maximum loss in root strength in the 4-7 year range before the root strength in the soil and canopy closure start to recover with regeneration. Accelerated rate of landslides caused by forest development activities can have long-term negative effects of the productive forest landbase. Significant soil erosion from these slide events can also have negative impacts on water quality.

#### **Current Status & Interpretation**

There were a total of 4.18 ha of non-productive area resulting from landslides over the past 5 years (2010-2014) thereby meeting the acceptable target variance for this Indicator. The slide occurring in NW170B was the result of a minor road construction failure. The area was assessed by a Geoscientist and a prescription was applied that allowed the road centerline to be moved to a higher more stable location. This area will be grass seeded. This target is met.

#### *Indicator results for landslides*

Year	Cutblocks with Landslides Induced by Forest Development	Non Productive Area Resulting From Landslides (ha)	Total Non-Productive Area for the 5-Year Period (2010-2014)
2010	NW751, KA010,NO002, NE043, CE012, CE019, CE023, LG220, LG223	3.4	4.18ha
2011	CE007, CE030, KC196, LG110, WP120, KC034, LG106	0.76	
2012	No landslides reported	0.00	
2013	No landslides reported	0.00	
2014	NW170B	0.02	

*Landslides are considered induced by forest development activities if they originated from a road cut/fillslope failure, or any other obvious source that could be attributed to forest development activities.*

#### **Strategies & Implementation**

Terrain assessments are conducted on cutblocks and roads that contain potentially unstable terrain. Recommendations within terrain assessments are based on risk analysis and are incorporated into

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Road and Harvesting Instructions. All WFP employees are trained in general operating guidelines identified within the Environmental Management System (EMS), with the goal of preventing the incidence of landslides due to poor forestry practices.

### **Forecasts**

With the implementation of the Terrain Risk Management Strategy and the continued use of terrain specialists it is expected the frequency of landslides will be reduced over time. However, reliable forecast of results for this indicator is not possible given the inherent uncertainty related to the typical root causes: meteorological and geological processes.

### **Details/ Data Set**

This indicator is assessed through a review of WFP's internal Landslide Reports (an environmental incident within WFP's EMS) completed for all observed landslides. The Landslide Description section in the report describes the size, dimensions, and amount of productive and/or non-productive area remaining. These reports also specify the slides point of origin. Landslides are considered induced by forest development activities if they originated from a road cut/fillslope failure, or any other obvious source that could be attributed to forest development activities.

### **Monitoring**

Operations Engineers to ensure that data is compiled from Slide reports and the Cenfor database, and performance reported, per the indicator in the SFM Plan.

## **Target 2 – Soil Disturbance**

### **History**

Previously Indicator #25 in the Z809-02 SFMP.

### **Justification**

Conservation of soils sustains the long-term productivity of the ecosystem.

### **Current Status & Interpretation**

The table below summarizes the results for the last five (5) years, 2010-2015. In 2014 forty-seven (47) blocks were harvested and all were assessed within the 2014 reporting year. All were found to be consistent with management practices to assess soil disturbance. The blocks carried over from the 2013 report (BC231, BC120 and GC023) are reported within this years area.

These blocks will be assessed according to WFP's Environmental Management System (EMS) in that post-harvest surveys are to be completed within 6 weeks of the "final" block inspection but no longer than 6 months.

Year	Cutblocks Requiring Soil Disturbance Management	Harvest Area Consistent <sup>1</sup> (ha)	Total Harvest Area <sup>2</sup> (ha)	Percent Consistent (%)
2010	BC077, BC107, CE035, DA228, FE003, KH424, LG224, LG225, ME040, ME048, MQ041, MQ305, MU170, MU636WF, NE108, NE110, NE202, NE208, NS006, NS009WF, NS023, NS024, NS029, NS045, NW103, TS005, TS007, WP101, WP104, WS102	803.1	803.1	100%
2011	BC005, BC007, BC125, BC135, BC206, DA390, KC120, KH102, KH570, ME004, ME026, MU300, NA001, NE122, NS010AWF, NS015, NS020, UN115, WS007, WS015, WS019, WS028, NE069,	589.4	589.4	100%
2012	BC195, BC203, KC019, NA007, NE017, NE028, NE118, NS031, NS075, WP131, ME045, ME198, MQ253, MQ257, UN206, UN208, UN215, BC099, BC208, CE030, CE031, CE046, CE054, DA415, GC012, GC013, KC195, KC196, ME009, MQ005, MQ250, MQ425A, NS008, NW607, NW608, Q211, TS019, UN103, WP107, WP108, WP110, WS301, BC101, CE023, KC153, WS250, KC003H, ME004A, NA003, NA228, ME042, ME044, ME050H, NA301, NS112, WP107H, WP115, WP120, ME042H, NS099, WS004	1281.6	1281.6	100%
2013	BC127, BC133, CE025A, CE045, CU017, DA009, DA120, DA122, DA124, DA233, DA248, DA410, KA170H, KC004H, KC007, KC07B, KC140, KC157, KC171, LG127, LG304, LG306, ME003, ME011, ME023, MQ251, MU366, NA119, NA124, NA124B, NA201, NE044, NE124, NE213, NS015A, NS039, NS040, NS065, NS109, NW430, NW432, NW763L, NW764, NW903, SC005H, TS110, TS115, TS241, UN088, UN501, WP088, WP129, WP129A, WS006, WS230, WS270 (2013 Harvest) CE004, CE016, CU038, DA030, DA317, DA328, DA500, GC021, HR097, KC014, KC173, KH205, KH424H, LG060, LG209, LG215, MW010, MQ050, MU166H, MU172, MU175, NA126, NA403H, NE040, NE059, NE071, NE084, NE084H, NE120, NE215, NW580, NW604, NW742, NW744, NW751, NW753, NW908, TS032, UN082, UN210, UN265H, WS001, WS002 (backlogged blocks)	2864	2864	100%
2014	BC006, BC120, BC231, BC235, DA005, DA008, DA013, DA128, DA308, GC016, KC030, KC031, KC040, KC129, KC130, KH159, LG218AH, LG226, ME012H, MU101, MU167, MU187H, NA005, NA138, NE125, NE150, NS046, NS063H, NS107, NS107A, NS116, NW163H, NW410, NW451, TS007WF, TS106, TS111, TS205, TS211, TS243, TS244, UN250, UN550, UN552, UN612, WP118, WS140, TS221, TS223, GC023	934.6	934.60	100%

1 If no formal soil disturbance management practices are required then the cutblock is considered consistent.

2 Total harvest area based on the cutblock harvesting completion date reported to the MoF for a given year.

## Strategies & Implementation

Ecologically and economically appropriate harvest systems are prescribed at the site level to ensure soil disturbance objectives are met. Timing forest operations seasonally also helps minimize site disturbance. If site disturbance objectives of the SP are exceeded, corrective actions are taken as required. Rehabilitation will be prescribed and reviewing the appropriateness of the skidder on similar sites will be assessed.

## Forecasts

Previous high performance for this indicator shows that the production crews are minimizing soil disturbance. No change is anticipated in the performance of this indicator.

## Details/ Data Set

This indicator is assessed based on a query of WFP's silviculture files. Unless otherwise notified by the Woods Foreman, the Forester conducting the post-harvest assessment will confirm that soil disturbance falls within prescribed levels. WFP Forester's record the areas of concern in the

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silviculture files, so that they may be followed-up with a post-harvest soil disturbance survey, if necessary.

Performance for this indicator is calculated as follows:

<b>Calculation</b>		$\% \text{ HA}_{\text{CONSISTENT}} = \text{HA}_{\text{CONSISTENT}} / \text{HA}_{\text{TOTAL}}$
<b>Variables</b>	$\% \text{ HA}_{\text{CONSISTENT}}$	Percentage of the total harvest area consistent with soil disturbance management over a 5-year period.
	$\text{HA}_{\text{CONSISTENT}}$	Harvest area of cutblocks that are consistent <sup>1</sup> with management practices to address soil disturbance over a 5-year period.
	$\text{HA}_{\text{TOTAL}}$	Total harvest area of cutblocks where felling started <sup>2</sup> over a 5-year period.
<b>Notes</b>	1.	If no formal soil disturbance management practices are required then the cutblock is considered consistent.
	2.	Use cutblock harvesting completion date reported to MoF.

## Monitoring

The Operations Foresters will ensure that data is compiled from the silviculture files, and performance reported, in the SFM Annual Report.

## Indicator 3.1.2 Level of downed woody debris

<b>Element: 3.1 Soil quality and quantity</b>				
<i>Conserve soil resources by maintaining soil quality and quantity</i>				
Value	Objective	Indicator	Target	Variance
Conservation of soil resources	Maintain the productive capacity of forest soils.	3.1.2 The level of downed woody debris.	The average annual volume of downed woody debris remaining after harvesting is at least 50 m <sup>3</sup> /ha	Lower Limit = 40 m <sup>3</sup> /ha No Upper Limit.

## History

New SFMP 11 indicator to address CSA Z809-08 Core Indicator 3.1.2.

## Justification

Forest ecosystems and species have evolved in response to changes in climate and different natural disturbances at various scales. To achieve conservation of biological diversity, the basic theoretical premise is that species are adapted to historic local conditions. In coastal B.C., downed woody debris plays a fundamental role in ensuring that the productivity of a post-harvest site is not lost. It is this organic debris that decomposes and enriches soils. Prior to full decomposition this material provides shade, and helps to retain moisture on site and maintain the correct microclimate for many of the smaller insects and organisms.

## Current Status & Interpretation

Year	Volume of Downed Woody Debris from Residue Assessments (m <sup>3</sup> /ha)
2010	90
2011	107
2012	111
2013	135
2014	109

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This target was met and has decreased since the previous year's (2013) report out. This is largely due to the increased utilization of our lower quality fibre (pulp) by upgrading to utility sorts. This area meets the target of greater than 50m<sup>3</sup> remaining after harvest.

### **Strategies & Implementation**

DWD volumes are dependant on utilization rates, and pre-harvest stand structure. In addition to quantity the biological value of DWD increases when it is left dispersed throughout the slash as opposed to being piled at roadside. Through increased Y&L crew awareness and training more pieces will be recognized as waste prior to being yarded to the landing, thereby keeping the pieces of DWD where they are of highest biological value.

### **Forecasts**

Although utilization specifications are constantly changing the effect on DWD is not expected to be significant across the TFL or to fluctuate dramatically within the foreseeable future. The levels of DWD that TFL 37 is currently experiencing have remained more or less constant for several years.

### **Details/ Data Set**

DWD = Measured as m<sup>3</sup>/ha is the total of the Billable and Non-billable waste measured during the residue and waste assessment on each harvest area.

### **Monitoring**

The Operations Foresters with assistance from the Operations Engineers will ensure that data is compiled, and performance reported, in the SFM Annual Report.

## Indicator 3.2.1 Proportion of watershed with recent stand-replacing disturbance

Element: 3.2 Water quality and quantity				
<i>Conserve water resources by maintaining soil quality and quantity</i>				
Value	Objective	Indicator	Target	Variance
Healthy watersheds	Maintain or enhance water quality (clean water) and water quantity (stream flow regimes within natural variations)	3.2.1 Proportion of watershed or water management areas with recent stand-replacing disturbance	Annually, 100% of Cutblock Site Plans are consistent with the Watershed Management Strategies Report and the Terrain Risk Management Strategy.	≥ 90% of target level.

### History

Indicator 27.5 was a new indicator for SFM Plan 10 and has been carried forward to SFMP 11.

### Justification

In order to assess the health and suitability of watersheds for industrial logging, previous legislation (ie Forest Practices Code of British Columbia Act), required the District Manager to identify watersheds that required Coastal Watershed Assessment Procedures (CWAPs). However, due to the change in forest practices legislation (ie shift from FPC Act to FRPA), watershed assessments are now an issue of due diligence unless Fisheries Sensitive Watersheds (FSWs) are designated. Although there are no designated FSWs in TFL 37, watersheds in the Nimpkish DFA may have experienced detrimental impacts from historic logging practices and natural disturbance events and therefore a current assessment of their status was conducted.

## Current Status & Interpretation

Watershed	Blocks	Harvest Area in Watershed	Watershed Ha
Davie	DA005, DA008, DA013, DA128, DA308, LG218AH	149.0	19,252
Kaipit	KC030, KC031, KC040, KC129, KC130	144.4	8,022
Tsitika-Upper	TS007WF, TS106, TS205, TS211, TS243, TS244	81.2	2,454
Steele	NS046, NS107, NS107A, NS116	69.0	1,800
Kokish-Tsulton	BC006, BC231, BC235	67.0	2,410
Nimpkish-Remainder (upper)	KH159, UN550, UN552, UN612	66.7	22,339
Tlakwa	NA005, NA006	49.1	4,440
Storey	NE125	33.3	1,136
Kla'anch	MU167	33.3	2,226
Nimpkish – Remainder (Mid)	ME012H, NE125, NE150, NS046, NS063H	30.4	30,574
Theimer	BC120, BC231	30.3	2,554
Lukwa	LG226	26.3	4,163
Atluck	NA138, WP118	25.6	13,363
Gold	GC016	23.8	2,505
Oktwanch	MU101, MU187H	22.6	6,945
Woss	WS140	22.6	10,680
Kilpala-Kilpala	NW163H, NW410	20.1	7,497
Kilpala-Karmutzen	NW163H, NW410	20.1	3,502
Sutton	UN250	8.6	1,797
Tsitika-West	TS111	4.4	1,447
Kinman	NE150	2.7	2,889
Tolnay	UN550, UN552	0.8	701

**Note:** All areas in the above table are taken from the Site Plan Net Area to Reforest

Harvesting Year	Site Plans Consistent with the Watershed Management Strategies Report and the Terrain Risk Management Strategy
2010	100%
2011	100%
2012	100%
2013	100%
2014	100%

Target is 100% met. The trend in the table above shows that all Cutblock Site Plans that were signed and sealed in 2010, 2011, 2012, 2013, 2014 were 100% consistent with the Terrain Risk Management Strategy and the Watershed Strategy. All assessments were completed where required and / or were referenced as addressed. A breakdown of blocks, watersheds and associated watershed hectares has been included within this Indicator. It is to be noted that some blocks overlap more than one watershed. Where this happens, the block is reported more than once. To be noted the area within 2014 varies from 2013 values. The area generated within 2013 was collected by GIS analysts and

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included areas that did not have defined sub basins in Cenfor. The area information in 2014 was collected directly from Glynnis Horel's Watershed Indicator Report for TFL 37 that was created on October 19, 2007.

During the Site Plan and Assessment phase the Sensitive Areas and Key Management Concerns are considered through Terrain Stability Field Assessments and Terrain Management Strategy (TRMS) Checklists. Within the three (3) key areas portraying the highest harvest area in 2014 the following Sensitive Areas and Management Concerns are considered through Site Plan and pre harvest cut block analysis. The Davie watershed trend is moderately disturbed or improving but still of concern. The Kaipit and Upper Tsitika are improving and may have sites that are still disturbed.

Within the **Davie Watershed** the Sensitive Areas are floodplains and alluvial streams especially Davie mainstem. There are some fans on tributary streams. The key management concerns are harvesting on floodplains and fans. Terrain stability in Schoen Creek and steep slopes in tributary drainages; 3 slides in postcode blocks.

Within the **Kaipit Watershed** the Sensitive Areas are floodplains and alluvial streams. The Key Management Concerns are terrain stability, harvesting on floodplains and 4 slides in Post Code Blocks.

Within the **Upper Tsitika Watershed** the Sensitive Areas are alluvial streams and fans. The Key Management Concerns are harvesting on fan and along alluvial streams and terrain stability of steep slopes in the mid basin.

All of the information contained in this section references Western Forest Products Inc. North Vancouver Island Region Tree Farm Licence 37 Watershed Indicators by Glynnis Hotel. October 19, 2007. Strategies to manage the above sensitive areas, and key management concerns are incorporated into the site plan for specific block level management.

## **Strategies & Implementation**

Although the management strategies within the Terrain Strategy and the Watershed Strategy reports are equally important to roads (i.e., fan destabilization road sedimentation issues etc), the target results for this indicator will be based on Cutblock Site Plans only.

## **Forecasts**

By following the terrain and watershed management strategies mentioned above, it is expected that the watershed trends data will be at or above the baseline conditions data (see Table below) when it is updated in 2017.

## Details/ Data Set

Current watershed conditions, changes to watershed conditions over time (watershed trends) and watershed risk ratings etc. were reported by Glynnis Horel P.Eng in October 2007 for all watersheds units in Tree Farm Licence 37 (Nimpkish DFA) that are a primary watershed or a major basin of the Nimpkish, Tsitika or Oktwanch watersheds that are larger than 1,000 ha. The results are summarized in the 2007 FIA report entitled Tree Farm Licence 37 Watershed Indicators. A follow-up report entitled Tree Farm Licence 6, Tree Farm Licence 39 Block 4 and Tree Farm Licence 37 Watershed Management Strategies provides detailed watershed management strategies for each of the identified watersheds and is the basis of the target for this indicator.

Adoption of this indicator and associated target will ensure that the Watershed Management Strategies Report and the Terrain Risk Management Strategy are implemented as part of the operational planning process for cutblocks. Forestry and Engineering staff will review the “key management concerns”, “identified sensitive areas” and the “watershed management strategies” for each watershed, and then design cutblock site plans to be consistent with the Watershed Management Strategies report. Identification of sensitive areas and stream channel types are facilitated through the use of the GIS inventory mapping. The Terrain Risk Management Strategy and the Watershed Management Strategy are directly linked and therefore both strategies are adopted as part of this indicator.

The current status (as of Oct 2007) for all watersheds in TFL 37 is detailed in both of the aforementioned reports by Horel and is summarized in the Table below.

### Current status of Watersheds within TFL 37

Watershed Trend	Watershed Name			
(D) Highly Disturbed			Holiday Waring	Alston
(C) Moderately disturbed OR improving but still of concern	Nimpkish Upper Davie Oktwanch rem.			
(B) Improving, may have sites that are still disturbed.	Kilpala Lukwa Upper Oktwanch	Kaipit Karmutzen Kla'anch Maquilla Surprise Upper Tsitika	Elliot Eve Kiyu	Noomas Sutton
(A) Stable OR consistent with natural condition	Nimpkish Lower Atluck Hump Woss lower	Theimer Tlakwa Tsulton Steele Woodengle	Clint Christine Torback	Gold Kinman Storey Fiddle West Tsitika
<b>Fisheries Rank</b>	<b>(1) High to V.High capacity. Large or potentially large anadromous runs</b>	<b>(2) Moderate anadromous capacity or important resident fishery.</b>	<b>(3) Small but significant anadromous capacity or some resident fish.</b>	<b>(4) Limited fish capacity. Few resident or anadromous fish</b>

*Note: Watersheds denoted in Blue text indicates that a CWAP was previously completed*

### Watershed Risk Legend:

High Risk	Moderately High	Moderate	Low
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For annual reporting purposes, the *current status* for this indicator will be reported and calculated as follows:

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<b>Calculation</b>	<b>% SP's Consistent = # of SP's Consistent / Total # SP's Signed</b>	
<b>Variables</b>	% SP's Consistent	Percent of Cutblock SP's signed in each calendar year that are consistent with both the Watershed Management Strategies Report and the Terrain Risk Management Strategy.
	# of SP's Consistent	The number of Cutblock SP's signed in each calendar year where both terrain and watershed assessments were completed after October 1, 2008, and the SP's were consistent with these assessments. (Consistent means that the Terrain Risk Management Strategy and the Watershed Strategies Report were referenced as addressed).
	Total # SP's Signed	The total number of Cutblock SP's signed in each calendar year where both terrain and watershed assessments were completed after October 1, 2008.

## Monitoring

The Operations Forester will ensure that data is compiled from the Cenfor database and/or cutblock files, and performance reported, in the annual SFM Plan.

## Indicator 4.1.1 Net carbon uptake

<b>Element: 4.1 Carbon uptake &amp; storage</b>				
<i>Maintain the processes that take carbon from the atmosphere and store it in forest ecosystems</i>				
<b>Value</b>	<b>Objective</b>	<b>Indicator</b>	<b>Target</b>	<b>Variance</b>
The uptake of carbon	The net rate of carbon uptake by the forest is positive over time	4.1.1 The net carbon uptake	The net annual carbon uptake on the DFA is positive year after year	1 year negative

## History

New Core Indicator in 2010 from CSA Z809-08.

## Justification

The basic premise of a sustainable forest management organization is that it should be at least carbon neutral from the onset. In this context carbon neutrality is a demonstration that harvest levels are sustainable. In itself, forest management should be shown to be a positive contributing activity for global ecological cycles over time.

The variance is meant to help account for fluctuation in yearly cut levels due to market conditions and license obligations under provincial legislation.

## Current Status and interpretation:

The results for the 2010-2014 reporting years, the net carbon uptake of the DFA (expressed in CO<sub>2</sub>e tonnes) was calculated to be as follows:

	CO <sub>2</sub> e (tonnes) (2010)	CO <sub>2</sub> e (tonnes) (2011)	CO <sub>2</sub> (tonnes) (2012)	CO <sub>2</sub> (tonnes) (2013)	CO <sub>2</sub> (tonnes) (2014)
Carbon uptake (from growing stock) (TFL 37)	588,290	538,273	525,328	529,157	574,157
Carbon removed (to short-lived products)	-370,638	-376,670	-474,864	-436,472	-392,971
Fuel consumed (harvest & transport)	-11,843	-16,283	-21,212	-18,201	-18,011
Debris burned (debris disposal/operational fires)	-91,643	-11,966	-56,104	-55,950	-44,153
<b>NET Carbon Uptake</b>	114,166	133,354	-26,852	18,534	119,022

The target was met for 2014. The baseline results calculated for the Englewood DFA for 2014 indicated that there was ample growing stock on the DFA to fix sufficient amounts of carbon to replace the volume harvested that year. In 2014 Englewood Forest Operation harvested fortyseven 47 blocks. Of this fortyseven (47) blocks, twenty (20) are second growth and twenty seven (27) were old growth timber. It is important to note that second growth forests are active carbon sinks; it is important to keep a mix of both old and second growth with respect to carbon emissions. This is being maintained and this target was met.

### Strategies & Implementation

The primary strategy for ensuring a consistent net rate of carbon uptake on the DFA overtime 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.

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 may be required in support of this core strategy to achieve its goal including:

- Site preparation such as spot or broadcast burns or mechanical debris scattering or removal to ensure a good distribution of the regeneration throughout the harvested area.
- 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.

Additional strategies that contribute to the consistent sequestration of carbon on the DFA include:

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- The use of improved seed for planted seedlings that have improved growth performance and/or insect or disease resistance.
- Brushing treatments to relieve young trees from some of that competition.
- Broadcast fertilization of stands to stimulate growth (e.g., SCHIRP) 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.
- Modernizing or upgrading of equipment that result in improved fuel efficiencies.

## Forecasts

Testing of different harvest levels in the spreadsheet model indicates that the annual net carbon uptake would remain positive for the DFA at the normal AAC level of harvest but could turn negative in a year where substantially more than the AAC is harvested to compensate for a year of undercut.

**Details/Data set:** 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.

The net volume of carbon removed is a factor of the total volume harvested that accounts for the portion of the harvest that remains sequestered in long-life products such as building lumber and furniture.

Net carbon uptake can be expressed in a simple equation as follows:

$$\begin{aligned}
 & \text{Carbon uptake (from growing stock)} \\
 & - \text{Carbon removed (to short-lived products)} \\
 & - \text{Fuel consumed (harvest \& transport)} \\
 & - \underline{\text{Debris burned (debris disposal/operational fires)}} \\
 & \text{Net carbon uptake}
 \end{aligned}$$

Carbon uptake is calculated using the current growing stock on the DFA and applying growth estimates to the updated timber inventory. The government growth models TIPSY (Table Interpolation Program for Stand Yields) and VDYP (Variable Density Yield Projection) are used to generate growth estimates depending on stand age and tenure. Growth is distributed by species according to the species percentages recorded for each stand. The annual growth (in m<sup>3</sup>) is multiplied by the average carbon density estimates (kg/m<sup>3</sup>) by species to obtain the carbon uptake in tonnes of carbon.

The carbon removed is calculated based on the log volume production for each species. The annual log production (in m<sup>3</sup>) is multiplied by the average carbon density estimates (kg/m<sup>3</sup>) 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/m<sup>3</sup>) for the remaining of the operation's log production to estimate the total amount of fuel they consumed. The sum total 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 m<sup>3</sup>) by the average carbon density estimates (kg/m<sup>3</sup>) of all of the entire harvested volume to obtain the carbon uptake in tonnes of carbon.

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The results since tracking this indicator are summarized in the following table:

Year	C uptake	C removed	Fuel C	C burned	Net CO <sub>2</sub> e (tonnes)
2009	590,915	- 292,505	- 10,023	- 17,710	270,677
2010	588,290	- 370,638	- 11,843	- 91,643	114,166
2011	538,273	-376,670	-16,283	-11,966	133,354
2012	525,328	-474,864	-21,212	-56,104	-26,852
2013	529,157	-436,472	-18,201	-55,950	18,534
2014	574,157	-392,971	-18,011	-44,153	119,022

### Monitoring method

To monitor and calculate performance on this indicator, a number of parameters must be monitored or maintained for the DFA:

- Growing stock inventory over time (adjusted for age and for annual harvested area)
- The volume harvested annually
- The species profile of the harvested volume
- The age (i.e., old growth vs. 2<sup>nd</sup> growth) profile of the harvested volume
- Total 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 (CO<sub>2</sub>e) of wood by species in tonnes/m<sup>3</sup>.
- Carbon density of various fuel types in tonnes/L.
- Proportion (%) of wood harvested that is stored in short-lived products.

## Indicator 2.1.1 Reforestation success

<b>Element: 4.1 Carbon uptake &amp; storage</b>				
<i>Maintain the processes that take carbon from the atmosphere and store it in forest ecosystems</i>				
<b>Value</b>	<b>Objective</b>	<b>Indicator</b>	<b>Target</b>	<b>Variance</b>
Resilient forest ecosystems	Maintain ecosystem processes and ecosystem conditions	2.1.1 Reforestation success		

**Refer to Element 2.1 for details.**

## Indicator 2.2.1 Additions and deletions to the forest area

<b>Element: 4.2 Forest land conversion</b>				
<i>Protect forest lands from deforestation or conversion to non-forests, where ecologically appropriate</i>				
<b>Value</b>	<b>Objective</b>	<b>Indicator</b>	<b>Target</b>	<b>Variance</b>
Productive forest ecosystems	Maintain ecosystem conditions	2.2.1 Additions and deletions to the forest area		

**Refer to Element 2.2 for details.**

## Indicator 5.1.1 Quantity and quality of timber and non-timber benefits produced in the DFA

<b>Element: 5.1 Timber &amp; non-timber benefits</b>				
<i>Manage the forest sustainably to produce an acceptable and feasible mix of timber and non-timber benefits. Evaluate timber and non-timber forest products and forest-based services.</i>				
<b>Value</b>	<b>Objective</b>	<b>Indicator</b>	<b>Target</b>	<b>Variance</b>
Forest benefits	A consistent range of forest benefits is produced from the DFA	5.1.1 Quantity and quality of timber and non-timber benefits, products, and services produced in the DFA	Target 1 – The area harvested does not exceed the key profile targets for the cut control period Target 2 – At least 7 campsites are maintained between June 15 and Sept. 15 each year Target 3 – EBITDA is positive at the bottom of the market cycle	Variable (see below)

### History

New broad Core Indicator in SFMP 11. It incorporates pre-existing Indicators # 33, 34, and 39.5 from SFMP 10.

## Target 1 – Profile Targets

### Justification

Specific harvest profile targets established for the term of SFM Plan 10 and continued in SFM Plan 11 are given in the table below. Additionally, WFP organizes its harvest priorities and patterns with consideration to the following items:

- Application of ecosystem-based forestry practices,
- Salvage of damaged or diseased timber where economically practical,
- Harvest over-mature stands first,
- Increase the proportion of second growth harvested over the next 25 years, and
- Disperse harvest areas to address spatial constraints and patch-size objectives

*Indicator targets for the TFL 37 harvest profile*

Profile Type	Profile Class	Key Targets <sup>1</sup>	Acceptable Annual Ranges
Logging Type	Ground/Cable		
	Helicopter	5%	Minimum 3%
	HemBal-Helicopter <sup>3</sup>	4%	Minimum 2%
Economic Operability	Economic		
	Marginal	8%	Minimum 4%
	Uneconomic NP or NF <sup>2</sup>		
Stand Type	Old Growth		
	Second Growth	24%	Maximum 30%
	Immature NP or NF <sup>2</sup>		
Tree Species	Hw/Hm		
	Ba		
	Cw	11%	Maximum 14%
	Fdc	10%	Maximum 13%
	Yc	9%	Maximum 12%
	Other		
AAC	Volume charged (m <sup>3</sup> )		

1. Key harvest profile targets are based on those identified through the 20-year plan analysis for the period 2007 to 2016. Data does not include BCTS.
2. NP or NF are areas classified as Non-Productive or Non-Forest
3. The target and acceptable annual range was updated to reflect October 2006 AAC determination which included 37,000 m<sup>3</sup>/year of HemBal-Helicopter out of an AAC of 889,415 m<sup>3</sup> (excludes BCTS but includes First Nations portion).

### Current Status & Interpretation

The table below summarizes actual harvest profiles for a 5-year period (2010- 2014). These profiles generally reflect:

- i) stand type (stand age category),
- ii) logging type (type of harvesting and yarding methods),
- iii) economic operability (market prices, planning, engineering and logging costs, government stumpage, etc.), and
- iv) tree species (based on forest cover inventory).

Each year, actual harvested areas are evaluated against these targets. The key targets shown in the table are minimums and are based on those identified through the 20-year plan analysis for the period 2007 to 2016.

The targets for Logging Type, Economic Operability, and Stand Type were all met. The value for helicopter logging was below the target but within the minimum. The value for stand type in harvesting

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second growth area and volume is above target but below maximum. WFP EFO did not meet the target for harvest of Yellow cedar (achieved 8% when the target is 9%). This was largely due to markets dictating the return on investment of harvest for Yellow cedar. WFP EFO also overachieved on the target for Douglas fir (it harvested 14% and the maximum is 13%). WFP EFO is evaluating the targets with respect to heli, harvest of yellow cedar and douglas fir. Results of the 20 year plan analysis (available forest cover data) are refining the available timber for harvest on the landbase. Once appropriate values are decided upon they will be integrated into the 2015 Annual Report. It is likely that they will appear in the acceptable annual ranges to allow for market flexibility, pressures on the landbase and available timber.

## RESULTS

PROFILE TYPE	PROFILE CLASS	AREA & VOLUME HARVESTED	% OF TOTAL HARVESTABLE AREA	KEY TARGETS	ACCEPTABLE ANNUAL RANGES
Logging Type	Ground/Cable	5,960	92%		
	Helicopter	251	4%	5%	Minimum 3%
	HemBal - Helicopter	233	4%	4%	Minimum 2%
	NP or NF	0	0%		
Economic Operability	Economic	5,982	93%		
	Marginal	385	6%	8%	Minimum 4%
	Uneconomic	77	1%		
	NP or NF	0	0%		
Stand Type	Old Growth	3,960	61%		
	Second Growth	1,673	26%	24%	Maximum 30%
	Immature	810	13%		
	Np or NF	0	0%		
Tree Species	Hw/Hm	2,468,553	49%		
	Ba	728,640	14%		
	Cw	659,645	13%	11%	Maximum 14%
	Fdc	712,851	14%	10%	Maximum 13%
	Yc	396,059	8%	9%	Maximum 12%
	Other	71,951	1%		
		<b>Volume Charged (m<sup>3</sup>)</b>	<b>5,037,698</b>		

1 Key harvest profile targets are based on those identified through the 20-year plan analysis for the period 2007 to 2016. Data does not include BCTS.

2 NP or NF are areas classified as Non-Productive or Non-Forest.

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3 The target and acceptable annual range was updated to reflect October 2006 AAC determination which included 37,000 m<sup>3</sup>/year of HemBal-Helicopter out of an AAC of 889,415 m<sup>3</sup> (excludes BCTS but includes First Nations portion).

## Strategies & Implementation

Planners prepare their annual harvest and development plans by first considering the current harvest profile status and associated targets. Western's strategy with regards to its harvest level is to harvest the full extent of its annual allowable cut. In adverse market conditions, production levels have been significantly reduced below the AAC and focus has been on harvesting areas with a positive margin.

## Forecasts

Harvest profile targets are developed through the timber supply analysis and twenty year plan processes. As new information and changes in management strategies are incorporated into these analyses, harvest profile targets may be adjusted.

Based on past performance and given the apparent return of more buoyant markets, it is anticipated that the targets will be met consistently within the next 2 years.

## Details/ Data Set

This indicator is assessed based on a spatial exercise, where harvested areas are summarized according to the profiles and assumptions used in the timber supply analysis. Accordingly, the following details apply:

- Harvested areas are spatially intersected against the profiles listed below.
- Areas are summarized for each cutblock.

Harvest profiles for stand type, logging type and economic operability are calculated as follows:

<b>Calculation</b>		<b>% HA PROFILE = HA PROFILE / HA HARVESTED</b>
<b>Variables</b>	% HA PROFILE	Percentage of the harvested area <sup>1</sup> of cutblocks corresponding to each harvest profile over a 5-year period.
	HA PROFILE	Total harvested area of each profile over a 5-year period.
	HA HARVESTED	Total harvested area <sup>1</sup> over a 5-year period.
<b>Notes</b>	1 Harvested area is spatially tracked through cutblock depletion records, where areas are considered to be loaded out.	

The harvest profile for tree species is calculated as follows: <b>Calculation</b>		<b>% M3 PROFILE = M3 PROFILE / M3 HARVESTED</b>
<b>Variables</b>	% M3 PROFILE	Percentage of the harvested volume <sup>1</sup> of cutblocks corresponding to each harvest profile over a 5-year period.
	M3 PROFILE	Total harvested volume of each profile over a 5-year period.
	M3 HARVESTED	Total volume <sup>1</sup> over a 5-year period.
<b>Notes</b>	1 Inventory volume is spatially identified through cutblock depletion records, where areas are considered to be loaded out, and summarized based on current volume information derived from the forest cover and used in the timber supply analysis.	

## Monitoring

Actual harvest profiles are summarized in the SFM annual report through a spatial GIS analysis of areas harvested and the various profile indicators. Operations enter the key production information in CENFOR and LIMS.

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## **Target 2 – Campsites Maintained**

### **Justification**

Providing and maintaining campsites in more remote but locally popular locations helps meet local demand for recreational pursuits in a natural setting. In the event that it must undergo substantial modification or relocation, the target number of campsites may be reduced to six.

### **Current Status & Interpretation**

WFP supports recreation opportunities by constructing, maintaining and monitoring the use of designated recreation sites. WFP's sites are provided free of charge to the public. WFP currently maintains 7 campsites containing 78 designated camper units with overflow capacity to 136 units.

All campsites are going to be assessed for danger trees in the spring of 2015 before the major camping season begins. All campsites were maintained during the 2015 season.

### **Strategies & Implementation**

WFP maintains seven campsites containing one hundred thirty-six campsite pads. Campsites are supplied with tables, garbage cans, fire rings, and toilet facilities. Garbage collection and site maintenance is funded by WFP. Potential hazards (e.g., danger trees) are removed, and notices of fire hazard are posted as required.

### **Forecasts**

The timber supply analysis for the Nimpkish DFA removes approximately thirty two hectares from the THLB for recreation sites. At this time, WFP does not foresee a need for additional campsites.

### **Details/ Data Set**

A description of the current recreation sites maintained is shown in the table below. The recreation sites have remained the exact same for the last two reporting years.

Recreation sites maintained by WFP:

<b>Recreation Site</b>	<b>Details</b>	<b>Number of camper units, Features</b>
Nimpkish Lake	4.5 ha	Campsite with 28 pads; pebble beach; windsurfing
Kinman Creek	15.0 ha	Campsite with 32 pads; pebble beach; windsurfing
Anutz Lake	1.6 ha	Campsite with 19 pads; sandy beach; boating; hiking
Atluck Lake	3.4 ha	Campsite with 16 pads; pebble beach; boating; hiking
Woss Lake	4.4 ha	Campsite with 27 pads; sandy beach; fishing; boating; walking
Lower Klaklakama (North)	0.7 ha	Campsite with 7 pads; rocky beach; fishing
Lower Klaklakama (South)	2.5 ha	Campsite with 7 pads; rocky beach; fishing
<b>TOTALS</b>	<b>32.1 ha</b>	<b>136 pads</b>

### **Monitoring**

WFP's campsite maintenance activities are summarized annually in the SFM annual report. New recreational features are identified as opportunities arise.

## **Target 3 – EBITDA**

### **Justification**

Forest harvesting activities provide the largest economic benefits for many rural communities in BC and sustaining these economic benefits is one of the keys to community stability. SFM plans and

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practices have the potential to substantially impact the economic value of timber products from an area. The success of WFP contributes in part to the stability in North Island Communities. Accordingly, this objective ensures a fair return on investment for WFP.

As a public company listed on the Toronto Stock Exchange, WFP reports its corporate results annually to its shareholders. WFP is committed to being globally competitive by building a strong and healthy company. The Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA) are a direct measure of WFP's success in achieving this objective.

Assessing the sustainability of economic benefits to the North Island from WFP's Englewood Forest Operation requires an indicator that reflects the general financial health of the company. Earnings from the Nimpkish DFA contributes towards WFP as a whole, which is a large company involving a diverse set of operations. Although there are many approaches for assessing a company's health, Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA) provides a good overall picture of the company's financial performance. Results for this indicator are reported annually to illustrate the company's health thus WFP's overall global competitiveness.

The target is to show a positive EBITDA year after year. The variance is 1 year of negative EBITDA. Any extended period of negative results would bring in question the sustainability of the business and ultimately engender major restructuring.

### Current Status & Interpretation

The company EBITDA component of this indicator was met in 2014. The EBITDA has been on a positive incline since 2009 after showing a negative for 3 years. The EBITDA value is positive, which meets the target. However it has declined since 2013. This can be explained by weaker export markets, changing market conditions and increasing costs.

### Strategies & Implementation

To address the string of years with negative EBITDA, a series of corporate restructuring and reorganization was conducted in the last three years. A new senior team was put in place and new business directions were put in place. For Timberlands, a new focus was placed on harvesting areas with a positive economic margin.

### Forecasts

Forecasting of future markets and the economy can be found in the financial annual report. There are no long-term forecasts with regards to this indicator. However, Company EBITDA has returned to positive from 2010 and continues to remain positive for the foreseeable future.

### Details/ Data Set

Earnings Before Interest, Tax, Depreciation and Amortization (EBITDA) is reported regularly for the whole company in its various public financial reports. The EBITDA reported in annual reports were as follows.

	2006	2007	2008	2009	2010	2011	2012	2013	2014
EBITDA (in mm\$)	\$138.2	(\$13.8)	(\$42.4)	(\$34.8)	46.9	61.8	50.6	129	108.5

### Monitoring

EBITDA is value tracked through the company annual reports. It is an accounting measure created for broad performance evaluation and reporting purposes.

## Indicator 5.2.1 Level of investment in initiatives that contribute to community sustainability

### Element: 5.2 Communities & Sustainability

*Contribute to the sustainability of communities by providing diverse opportunities to derive benefits from forests and by supporting local community economies*

Value	Objective	Indicator	Target	Variance
Community sustainability	Support community sustainability	5.2.1 Level of investment in initiatives that contribute to community sustainability	Target 1 - Level of capital spending is greater than \$0 annually. Target 2 – Report the annual total value of goods & services spent in North Island communities	1 year at \$0  None

### History

New Core Indicator in 2010 with SFMP 11.

### Target 1 – Capital Spending

#### Justification

Any healthy and viable business in the long term contributes to community stability by providing a steady level of employment and business opportunity to the communities they exist. To remain competitive and viable over time, businesses must re-invest regularly in the equipment, facilities and infrastructure they use.

This target provides a measure of the health of the company as well as its commitment to sustainability in the community. To account for periods of extreme economic difficulty and market downturns, a variance of 1 year at no capital investment is allowed.

#### Current Status & Interpretation

Year	Total Capital Spending on the North Island
2010	\$1,805,151
2011	\$1,962,267
2012	\$2,511,009
2013	\$5,173,048
2014	\$2,643,836

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This target has been met. There is a significant decline in the amount of Capital spending than the previous 2013 year, but it is a gradual sustainable increase from 2012. Total capital spending in 2013 was significantly higher than previous years. This was due to a couple of large expenditures in plant and equipment, and increased work on roads and bridges compared to previous years. The 2014 value is more in line with sustainable spending and will likely be the trend in future successive years.

### Strategies & Implementation

Because capital spending has taxation implications, Operations follow a strict set of rules and criteria in the identification of capital projects. These procedures have been developed by the company finance department to align with the requirements of taxation laws.

### Forecasts

The target level is thought appropriate because it is not possible to set an alternate fixed capital spending amount as this is purely a business decision that can vary with circumstances and needs from year to year. Given that substantial capital spending continued during the recent difficult economic environment, the target is expected to continue to be amply met.

### Details/ Data Set

The capital expenditures done at the Englewood Operations in the last 4 years is summarized in the following table:

Year	Plant & Equipment Spending	Infrastructure Spending	Total Capital Spending
2008	\$ 335,813	\$ 750,842	\$ 1,086,655
2009	\$ 976,448	\$ 1,271,919	\$ 2,248,367
2010	\$ 262,351	\$ 1,372,902	\$ 1,635,253
2011	\$ 810,471	\$ 1,359,186	\$ 2,169,657
2012	\$ 1,792,201	\$ 1,257,221	\$ 3,049,422
2013	\$ 1,852,766	\$ 3,320,281	\$ 5,173,048
2014	\$ 1,643,042	\$ 1,000,794	\$ 2,643,836

It is to be noted that the previous values within this table been changed (2013 note). The information could not be replicated and the previous methodology could not be repeated. The Timberlands Accountant has replaced the numbers.

### Monitoring

Annually, the amount spent in these two categories of capital expenditures is reported by the Operations Forester.

Data from the financial system JDE is used for reporting purposes:

- Plants & Equipment – JDE Code 2849
- Capital Roads (include bridges) – Various JDE Codes (in summary report)

## **Target 2 – Local Spending**

### **Justification**

The value of goods and services WFP purchases from businesses located in the communities in and around the DFA provides support to those businesses that in turn contribute to the diversity of amenities available to all residents. As such, it represents a direct contribution to the sustainability of local communities. No variance is proposed as this is a reporting target.

### **Current Status & Interpretation**

In 2014, Englewood purchased an estimated total of \$19,339,639.16 in goods and services from businesses located primarily in Port McNeill, Port Hardy, Woss and Campbell River. The amount represents 93% of all Englewood's expenses in those categories during the year. This clearly underlines the significant economic activity generated by the Nimpkish DFA in local communities.

### **Strategies & Implementation**

For Western, its primary strategy is to be a successful and viable business in the global market. Towards that goal, all Operations endeavor to obtain the goods and services they need at the most competitive price they can. This often provides local enterprises with a competitive advantage over others. Mostly, it is goods that cannot be produced locally at a competitive price that are purchased elsewhere.

### **Forecasts**

The level of local purchases depends on many factors that cannot be predicted reliably or can change rapidly. They include the condition of global markets, the local availability of specific goods and services and the financial state of the company. However, Englewood remains committed to report on this target. No variance is proposed as this is a reporting target.

### **Details/ Data Set**

The approximate distribution of expenditure by community for 2010-2014 is illustrated in the table below. It is to be noted that the data has been more specifically detailed within the table below. This data has been tracked through AP- flo and is reflecting invoices that are generated from EFO that are tracked and received through the division but also for corporate level spending that is tied to the division. The increase in the business coming from Campbell River is partly due to some tugboat costs to aid in log flow and distribution for 2014.

<b>Year</b>	<b>North Island (Alert Bay, Port Hardy, Port Alice, Sayward, Sointula)</b>	<b>Port McNeill</b>	<b>Woss</b>	<b>Campbell River</b>	<b>Non Local (South Island)</b>
2010	16%	25%	1%	26%	32%
2011	29%	29%	2%	17%	23%
2012	19%	24%	1%	33%	23%
2013	21%	29%	1%	27%	22%
2014	6%	27%	1%	59%	7%

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The source information is un-audited data from the JDE financial system and is based on the date of invoicing. The amounts used for the analysis include all sales tax (i.e., PST, GST or HST). The distribution is based on the location of the store or dealership the purchases were made from.

### **Monitoring**

The goods and purchases made by Englewood are all documented through invoices. The invoices are processed and tracked through the JDE financial system. A summary report provides the base un-audited data for the target.

## Indicator 5.2.2 Level of investment in training and skills development

### Element: 5.2 Communities & Sustainability

*Contribute to the sustainability of communities by providing diverse opportunities to derive benefits from forests and by supporting local community economies*

Value	Objective	Indicator	Target	Variance
Employee skills	Develop employee skills	5.2.2 Level of investment in training and skills development	Target 1 - Annually, 100% of WFP employees receive the defined training (EMS and other) Target 2 – Report annual investment in apprenticeship program.	<= 15% (i.e. down to 85%) for employee training  None

### Target 1 – Employees Training

#### History

New Core Indicators in 2010 for SFMP 11.

#### Justification

The level of annual employee training provided characterizes the bulk of Western's training investment. The 15% variance for the WFP employees subjected to the defined training is to account for exceptional circumstances (e.g., sickness, leave of absence) that prevent some employees from attending training sessions and for the more common missing of single or small elements of their required training.

#### Current Status & Interpretation

The results for 2010-2014 are as follows:

Year	Personnel (Staff + Employees) Requiring Training	Training Missed	Percent Trained (%)
2010	201	18	91%
2011	206	22	89%
2012	207	21	90%
2013	206	26	87%
2014	204	24	88%

This target has been met. It is not 100% but it is within the variance for percent of WFP Employees to be trained. Missed training is made up through the year by supervisors and employees.

#### Strategies & Implementation

The core elements of the required training for employees are described in the Timberlands EMS according to general employee positions. Further specialized training requirement for specific employees (e.g., fire fighting, TDG, Safe Work Practices) is defined in the training record databases (e.g., Training Manager) maintained by the Operation. Often, the bulk of the defined training is carried out early in the year at the beginning of production operations following the winter shutdown period.

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## Forecasts

It has proven difficult for the Operation to meet its 100% training commitment over the past years. This has been mostly due to resource and timing issues. It is expected that the target will continue to be challenging to achieve but that the persistent efforts and attention focused on the process will produce improvement over time.

## Details/ Data Set

The training requirement for each employee is defined by the Operation and may include EMS training, Safety training and specialized training such as TDG training, spill response and fire fighting training. Personnel are considered trained only when all required courses for the position are completed. Englewood conducts training needs assessments to verify achievement of target.

## Monitoring

The Operations are responsible to maintain training records for all their employees. Training records are the basis for training needs assessments that indicate if all defined training requirements have been met. The Operation Administrator is responsible for tracking this information.

## Target 2 – Apprenticeship Investments

### History

New Core Indicators in 2010 for SFMP 11.

### Justification

Apprenticeships represent investments made in developing specialized skill sets. They are primarily trade oriented however in 2012 a new program was developed by Western Forest Products (supported by WorkSafeBC and BCFSC) and administered in the Englewood Forest Operation to train young workers to understand the basic logging skills and fundamentals. Investments in apprenticeships and skills help support the development of local talents in skill sets which can be used long term throughout the community. As this is a reporting target, no variance is provided.

### Current Status & Interpretation

Year	Apprentice Investments	Specialization
2010	4	Mechanics-equipment maintenance
2011	5	Mechanics-equipment maintenance
2012	5	4 Apprentice Mechanics 1 High School work experience student in the equipment maintenance department specializing in welding.
2013	3	3 Apprentice Mechanics 18 Logging Fundamentals Training Program Students 1 Falling Trainee 1 High School Student mentoring Planning
2014	4	4 Apprentice Mechanics 17 Logging Fundamentals Training Program Students

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This target was met. In addition to the apprentice programs in 2014 seventeen (17) students were trained to understand basic logging skills and fundamentals in the Logging Fundamentals Training program. During 2014, there were four (4) apprentice mechanics working in the equipment maintenance department.

### Strategies & Implementation

The support of apprenticeships for mechanics is a cost effective strategy to develop and maintain a pool of local talent to facilitate transitions within the work force due to changing demographics. The specific number of placements varies with the anticipated work load based on the economic outlook and the availability of candidates.

The Logging Fundamentals Training program was developed to facilitate six (6) students each session, with three (3) sessions completed each year. Continuation of the program at the time of this report is not confirmed for 2015, due to funding issues.

### Forecasts

Based on past experience, it is anticipated that apprentices will remain a part of the workforce for the foreseeable future due to the changing company demographics.

### Details/ Data Set

The table below shows the number of apprenticeships directly supported by WFP since 2008.

Year	2008	2009	2010	2011	2012	2013	2014
Apprentice #	3	5	4	5	4 Mechanics + 6 Logging Fundamentals Students+1 High School Student=11	23	21

The Maintenance Department remains the primary user of apprenticeship positions for developing tradesmen.

### Monitoring

Annually, the Operations Administrator gathers the information on apprenticeship from the Payroll Clerk for inclusion in the SFM Annual Report.

## Indicator 5.2.3 Level of direct and indirect employment

### Element: 5.2 Communities & Sustainability

*Contribute to the sustainability of communities by providing diverse opportunities to derive benefits from forests and by supporting local community economies*

Value	Objective	Indicator	Target	Variance
Full-time jobs on the DFA	There are stable full-time jobs provided from the forest resource on the DFA	5.2.3 Level of direct and indirect employment	Target 1 - The number of full time Company and contractor employees from local communities in the DFA is reported.	None
			Target 2 - Contractors will harvest at least 50% of the total annual timber volume harvested that is attributed to Schedule B lands.	None
			Target 3 - Report number of non-forestry businesses associated with the Nimpkish DFA	None

### History

New Core Indicator in 2010 with CSA Z809-08. It incorporates pre-existing indicators # 41, 42 and 44.

### **Target 1 – Full Time Employment from Local Communities**

#### Justification

The number of full-time employees supported by the Nimpkish DFA at least partially affects the stability of North Island communities. Most full time employees locate their families within the region, which creates a demand for a more diverse set of amenities. Although WFP is not the only employer of full-time personnel in the region, it is easily the largest employer operating within the Nimpkish DFA. Accordingly, this indicator provides a means to quantify the impact that company and government policies have on local employment.

WFP's employment levels are a function of its ability to generate income. This is governed primarily by the AAC and global market demand. Specific targets and variances for this indicator are not applicable as WFP can neither significantly influence markets, nor control where employees and their families must reside.

#### Current Status & Interpretation

In total, WFP employed 204 full time employees and 239 contract employees in 2014.

The distribution of WFP employees and contractor employees by community for the 2010-2014 years is shown in the table below. Over half (63%) of the full time company and contractor employees reside within or adjacent to the Nimpkish DFA. The results for 2014 are showing that a majority of the WFP Company Employees reside in Woss or Port McNeill. Within the contractor environment the majority reside in Port McNeill and Campbell River. The results of last year show an increase in the number of

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contract employees living in Port McNeill, this number reflected the total employees working for the contractor, not the defined forest area. This has been corrected in the data below.

Community	Number of Full Time Company Employees (2010/11)	Number of Full Time Company Employees (2012)	Number of Full Time Company Employees (2013)	Number of Full Time Company Employees (2014)	Number of Full Time Contract Employees (2010)	Number of Full Time Contract Employees (2011)	Number of Full Time Contract Employees (2012)	Number of Full Time Contract Employees (2013)	Number of Full Time Contract Employees (2014)
North of Port McNeill	7	12	10	10	6	0	26	46	7
Port McNeill	78	71	77	78	42	77	56	118	55
Woss	65	64	69	69	5	4	3	4	18
Sayward	8	9	7	6	4	0	4	7	4
Campbell River	27	26	25	23	21	33	47	59	89
Comox Valley	20	21	20	12	17	10	6	21	24
South of Comox Valley	3	5	2	6	2	0	123	40	33
Alert Bay	-	-	3	-	-	-	-	7	8
Gold River	-	-	-	-	-	-	3	2	-
Sointula	-	-	-	-	-	-	-	5	1
<b>Total</b>	<b>208</b>	<b>208</b>	<b>213</b>	<b>204</b>	<b>97</b>	<b>124</b>	<b>278</b>	<b>309</b>	<b>239</b>

The summary below represents the employees from both the contractor and WFP employees for the last 7 years:

Community	2008	2009	2010	2011	2012	2013	2014
North of Port McNeill	6.8%	5.1%	4.3%	2.1%	9.3%	11%	3.8%
Port McNeill	38.1%	40.7%	39.3%	46.6%	20.14%	37%	30%
Woss	22.1%	21.8%	23.0%	20.7%	1.07%	14%	19.6%
Sayward	3.4%	3.4%	3.9%	2.4%	1.44%	3%	2.3%
Campbell River	14.6%	15.0%	15.7%	18.07%	16.9%	16%	25.3%
Comox Valley	12.2%	12.1%	12.1%	9.03%	2.16%	8%	8.1%
South of Comox Valley	2.7%	1.6%	1.6%	0.9%	44.24%	8%	8.8%
Alert Bay	-	-	-	-	0%	2%	2.0%
Gold River	-	-	-	-	1.08%	0.4%	-
Sointula	-	-	-	-	-	1%	0.2%

## Strategies & Implementation

WFP's employment levels are a function of its annual strategies for generating revenue, the market for logs, the AAC and changes in government policy, such as the recent *Forest Revitalization Act*. As each of these influences is dynamic, specific employment levels are determined as WFP prepares its

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annual harvest plans and budget each fall. Additionally, WFP has no internal policy to dictate where employees must reside.

## Forecasts

Periodic forecasting of employment levels is done internally as annual timber harvesting plans are prepared. Forecasting this indicator over a longer period is considered meaningless because of the myriad of issues involved around harvest patterns, value of standing timber, costs associated with timber harvest and government policy. Nonetheless, WFP remains committed to reporting performance on this target.

## Details/ Data Set

This indicator is based on information collected from WFP's Human Resources department and Stump to Dump Contractors for the number of employees from local communities. The tallies are for regular full time employees only. Mailing addresses are used to distinguish part time residences from permanent residences.

## Monitoring

Annually, figures for this indicator are accessed through the mailing addresses in WFP's employee records and similar information is solicited from WFP's stump-to-dump contractors. This information is summarized in the SFM annual report.

## Target 2 – Volume Harvested by Contractors

### Justification

Current legislation and part 14.00 of license agreement obligates WFP to ensure that each year at least 50% of the annual timber harvested from Schedule B land involves independent logging contractors. For the B.C. coast, the annual timber volume can be harvested under any combination of full contracts, each of which provides for a term of at least 5 years, and phase contracts, each of which provides for a term of at least 2 years. No variance applies as this is considered a legal requirement.

### Current Status & Interpretation

In 2014 the total volume contracted was 484,918m<sup>3</sup> this is an increase from 2013 and is above the average for the years since 2001. The volume harvested on schedule "B" lands was 611,457m<sup>3</sup>. Which is below the average since 2001. This indicates 159% compliance for 2014. This target was met.

#### *Indicator results for contractor clause compliance*

Year	Total Harvested Volume Attributed to Schedule B Lands (m <sup>3</sup> )	Total Volume Contracted (m <sup>3</sup> )	Percent Compliance of Total Volume Contracted
2001	636,154	396,225	125%
2002	900,026	531,620	118%
2003	777,693	413,129	106%
2004	819,954	417,314	102%
2005	890,307	531,756	120%
2006	602,254	384,642	128%
2007	518,376	333,296	128.6%
2008	409,787	248,827	121.4%
2009	477,506	300,899	126%
2010	654,097	435,834	133.3%
2011	675,664	414,794	130.4%
2012	785,122	552,278	140.7%
2013	659,165	449,062	136.3%
2014	611,457	484,918	158.6%
Average	672,683	421,042	127%

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## Strategies & Implementation

WFP harvests timber with a combination of company employees and various arrangements with contractors. The specific distribution of company and contractor harvest is established as WFP prepares its annual harvest plans and budget each fall.

### Forecasts

Periodic forecasting of the annual contractor harvest is done internally as annual timber harvesting plans are prepared. Forecasting this indicator over a longer period is considered meaningless because decisions around harvest distribution depends on internal and government policy, which are both unpredictable in the long term. However, based on past performance and the fact that it is related to a legal requirement, it is anticipated that Englewood will continue to meet this target.

### Details/ Data Set

This indicator is assessed based on procedures outlined in the *Timber Harvesting Contract and Subcontract Regulation* as it relates to the British Columbia *Forest Act*. The total timber volume attributable under contract is the sum of the volume attributable to full and phase contractors. Compliance with the contractor clause is calculated according to the steps shown in the following table:

#### **Contractor clause performance calculation**

Steps	Contractor Clause Performance Calculation
1.	TFL #37 AAC that is harvested by or on behalf of WFP (m <sup>3</sup> )
2.	AAC attributable to schedule "A" lands (m <sup>3</sup> )
3.	AAC attributable to schedule "B" lands (m <sup>3</sup> ) that is harvested by or on behalf of WFP
4.	Volume of timber harvested (m <sup>3</sup> ) Scaled and billed volumes
5.	Harvested volume attributed to Schedule "A" Lands (m <sup>3</sup> ) #2 / #1 x #4
6.	Harvested volume attributed to Schedule "B" Lands (m <sup>3</sup> ) #3 / #1 x #4
7.	Total volume contracted (m <sup>3</sup> ) Full + phase volumes
8.	Total volume contracted as % of schedule "B" harvested (%) #7 / #6 x 100
9.	% Compliance of total volume contracted #7 / #6 / 0.5 x 100

*Note: All items refer to the AAC volume attributed to WFP and does not include BCTS or First Nation's portion of the TFL 37 AAC.*

The AAC attributable to Schedule A & B lands (Steps 2 and 3 above) is determined via the "Schedule B prorate". The current Schedule B prorate is 80%. The pro-rate is based on the percentage of the total AAC that is derived from the timber harvesting landbase (THLB) within Schedule B (Crown) lands (611,457m<sup>3</sup>) divided by the AAC for the licence (843,763 m<sup>3</sup>). Eventually, as TLs within the TFL are completely reverted to Schedule B lands, only the Crown Grant lands will remain as Schedule A and the total prorate will increase to approximately 0.950. Of course, this assumes no further changes to the forest tenure system.

The table below shows the total volume of AAC for TFL 37 that is attributable to Schedule A lands as well as WFP's portion of the current (2008) allocation of AAC for Schedule B lands.

**WFP's portion of AAC in TFL 37 as of 2012**

<b>Schedule Lands within TFL37</b>	<b>Attributable AAC Volume (2008)</b>	<b>Attributable AAC Volume (2011)</b>	<b>Attributable AAC Volume (2012)</b>	<b>Attributable AAC Volume (2013)</b>	<b>Attributable AAC Volume (2014)</b>
Schedule A	197,676m <sup>3</sup>	168,099m <sup>3</sup>	168,099m <sup>3</sup>	168,099m <sup>3</sup>	168,099m <sup>3</sup>
Schedule B	646,087 (WFP Portion only)	675,664 m <sup>3</sup> (WFP Portion only)	675,664 m <sup>3</sup> (WFP Portion only)	675,664 m <sup>3</sup> (WFP Portion only)	675,664 m <sup>3</sup> (WFP Portion only)
Total Licensee (WFP) AAC	843,763m <sup>3</sup>	843,763 m <sup>3</sup>	843,763 m <sup>3</sup>	843,763 m <sup>3</sup>	843,763 m <sup>3</sup>

**Monitoring**

As timber is harvested it is scaled and both WFP and the MoF track the volumes. These scaled volumes are used, among other things, to monitor WFP's consistency with contractor harvest compliance. Results are summarized for each calendar year in the SFM annual report.

**Target 3 – Non-Forestry Businesses**

**Justification**

Community stability on North Island is ideally achieved through diversification of its economic base by allowing communities to better withstand shocks in one sector of the economy. While the forest industry does not control or even directly influence other sectors of local economies, the sustainability of communities, in terms of amenities, is tied to their ability to provide a diversity of work opportunities. Thus the ability of the forest industry to attract and keep a skilled workforce is linked to the diversity of the local economy. Specific targets and variances are not applicable for this indicator as WFP is not able to directly influence the number of non-forestry related businesses. Current Status & Interpretation

The table below details the non-forestry businesses identified within the Nimpkish DFA during 2010-14.

**Indicator results for non-forestry businesses within the Nimpkish DFA.**

<b>Category</b>	<b>Number of Non-Forestry Businesses (2011)</b>	<b>Number of Non-Forestry Businesses (2012)</b>	<b>Number of Non-Forestry Businesses (2013)</b>	<b>Number of Non-Forestry Businesses (2014)</b>	<b>Comments</b>
General Amenities (store, gas station)	1	1	1	1	Woss General Store
Services	2	2	2	4	Towing Company; Contract Cleaners
Accommodation	2	2	2	2	Rugged Mountain Hotel; Rice Creek RV Park
Restaurant	2	2	2	2	Lucky Logger Pub(1/2 year), Woss Vegas Cafe
Cedar Salvage	2	2	2	2	Dakard and J & B
Waste wood (chips, Phoenix Sea Soil)	2	2	2	2	North Island Power Chip, Phoenix Sea Soil,
Lumber Mill	1	1	1	1	Edge Grain Forest
Art	1	1	0	0	Gordon Pynm (deceased)
Outdoor Recreation	2	2	2	2	Mt. Cain Ski hill & River Rafting
Guiding/Hunting	4	4	4	4	Fishing Charters; Hunting Guide
Trapping	2	2	2	3	BillTatton, Bill Silky, Brad Galeazzi
Product Services – cosmetics	2	2	1	3	Avon,Epicure, Tupperware,Party Lite,Regal
Accounting	1	1	1	1	Accounting Business
Small Engine Repair	1	1	0	0	Small Engine Repair
<b>Total:</b>	<b>25</b>	<b>25</b>	<b>22</b>	<b>27</b>	

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The summary data for the last five years indicates an increasing trend in the number of non-forestry businesses within the Nimpkish DFA:

<b>Business Category</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
General Amenities (store, gas station)	1	1	1	1	1	1	1
Services	1	1	2	2	2	2	4
Accommodation	1	1	2	2	2	2	2
Restaurant	2	2	2	2	2	2	2
Cedar Salvage	2	2	2	2	2	2	2
Waste wood (chips, Phoenix Season)	2	2	2	2	2	2	2
Lumber Mill	1	1	1	1	1	1	1
Art	0	1	1	1	1	0	0
Outdoor Recreation	2	2	2	2	2	2	2
Guiding/Hunting	1	1	2	4	4	4	4
Trapping	2	2	2	2	2	2	3
Product Services – cosmetics	0	0	1	2	2	1	3
Accounting	0	0	1	1	1	1	1
Small Engine Repair	0	0	1	1	1	0	0
<b>Total:</b>	<b>15</b>	<b>16</b>	<b>20</b>	<b>25</b>	<b>25</b>	<b>22</b>	<b>27</b>

The 2014 non forestry businesses has increased since 2013 with the addition of more cleaners, cleaning camps, and staff accomodations. A local trapper has also been added to the list and 2 more independent sales representatives for domestic supplies.

### **Strategies & Implementation**

Generally, businesses will develop within communities as associated amenities are available and economic opportunities become favourable. From time to time throughout the year, WFP’s operations may directly or indirectly encounter non-forestry businesses associated with the Nimpkish DFA. Although some businesses are quite public through advertising, many others are obscure from observation and some are rather secretive to maintain a low profile and secure a market advantage. Consequently, besides being a very dynamic exercise, an accurate number of non-forestry businesses is difficult to secure. With this said WFP Englewood is committed to buying local and supporting the local economy when it is practicable to do so.

### **Forecasts**

The number of non-forestry businesses associated with the Nimpkish DFA is beyond WFP’s control and there are no effective forecasting tools to predict future trends of these businesses. Consequently, forecasting of this target is not appropriate. Nonetheless, Englewood remains committed to report on this target

### **Details/ Data Set**

This indicator is assessed based on known businesses operating within the Nimpkish DFA. WFP maintains a contact list as ongoing reference. Specific targets and variances are not applicable for

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this indicator as WFP is not able to directly influence the number of non-forestry related businesses. While WFP tries to support local business, it does not always remain the most economically viable option. It is not appropriate to set targets for this indicator as the economic climate ie: external markets dictate how WFP manages their expenditures.

### **Monitoring**

Throughout the year, WFP internally tracks these businesses through various sources including, but not limited to: enquiries to the Port McNeill Chamber of Commerce and Mt. Waddington Regional District, telephone directory, internet and mostly through local knowledge and word-of-mouth. Results are then summarized in the SFM annual report.

## Indicator 5.2.4 Level of Aboriginal participation in the forest economy

Element: 5.2 Communities & 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
Aboriginal economic opportunities.	Support Aboriginal economic opportunities in and around the DFA.	5.2.4 Level of Aboriginal participation in the forest economy	Target 1 - Report the number of First Nations Peoples employed by WFP and its contractors.  Target 2 - Report the number and description of protocol, joint venture, and benefit agreements in use between WFP and local First Nations	None  None

### History

New Core Indicator in 2010 with CSA Z809-08. It incorporates pre-existing indicators # 48 and 49.

### **Target 1 – First Nation Employment**

#### Justification

Economic and employment opportunities derived from the forest resource are important to First Nations. This indicator is intended to report First Nations employment within the Nimpkish DFA, directly involved in harvesting operations. Several years of reporting should identify trends and assist in future dialogue between WFP and First Nations.

Specific targets and variances are not applicable for this indicator as WFP can neither influence its contractors' personnel, nor control the availability of qualified First Nations personnel.

## Current Status & Interpretation

Year	First Nations Employed with Western	Mandays/yr	First Nations Employed with Western Contractors	Mandays/yr	Department
2010	3	Not tracked	2	Not tracked	Railway/Planning
2011	4	Not tracked	3	Not tracked	Railway/Planning/Road Crew/Shake and Salvage Crew
2012	5	Not tracked	Not accurate numbers	Not tracked	Planning (1) Railway (2) Yarding and Loading (2)
2013	4	Railway(119) Y and L Chaser(122) Welder (115) Planning (200)	9	(4) CMT Crew (52) (2) Harvesting 6 months (120) (1) Harvesting 1 year (240) (2) Grade Crew	See description behind value
2014	5	(3)Y&L(54-144) (1)Rail Maintenance (96) (1)Planning (215)	16	120 36 91 288  180  12	(1)Cruising (5) CMT (2) Slashpile Burn (5) Logging  (1)Heli Pad Construct/tree topping (2) Bridge Install

The values for First Nations employed both within the contractor and WFP employ has increased. This is a trend that will likely continue to increase in future reports.

### Strategies & Implementation

Although WFP is an equal opportunity employer, successful candidates must possess qualifications and skills required for the vacant position. Good candidates for entry-level positions will indicate that they possess a valid driver's license and valid first aid certification.

Englewood maintains direct communications with First Nations in order to identify opportunities for employment.

### Forecasts

Based on past performance and the increasing profile and influence of First Nations within the forest industry, it is anticipated that First Nation employment levels will be maintained and increase over time within the DFA.

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With the completion of the treaty processes, it is further anticipated that potential employment will likely not be limited to direct employment with WFP or its contractors but will also materialize from business opportunities flowing out of those processes.

## Details/ Data Set

The table below show the number of First Nation Employees working on the DFA for WFP and its contractors over the past years.

Year	FN Employees WFP (#)	FN Employees Contractors (#)
2005	6	0
2006	6	14
2007	6	14
2008	4	14
2009	1	6
2010	3	2
2011	4	3
2012	5	Do not have accurate numbers
2013	4	9
2014	5	16

The information on First Nations within WFP's direct and indirect employ was reported by self identified First Nations. Additional First Nations could be working within the defined forest area that are unreported within this document.

## Monitoring

To the best of their knowledge, WFP's direct line supervisors and contractors identify full time First Nations employees. These results are summarized annually in the SFM annual report.

### **Target 2 –Agreements With First Nations**

#### Justification

Economic and employment opportunities derived from the forest resource are important to First Nations. This indicator summarizes the agreements made between WFP and First Nations.

No variance is applicable.

#### Current Status & Interpretation

WFP established four agreements with the 'Namgis First Nations in 2005. Three of these agreements still exist in 2014.

These are described as follows.

- First Nations crew contracted to conduct cultural heritage inventory surveys on selected planned block. Locations of artifacts are located with GPS and a report is submitted to WFP.
- 'Namgis sponsored a contract for Nimpkish Cedar Products to conduct cedar salvage operations in TFL 37. This is still an active contract in 2014.
- Harvesting Non-replaceable forest license volume-WFP had an agreement to the 'Namgis for employment. This led to one 'Namgis First Nation working within the Grade and Railroad crew and a shake and shingle contractor in 2011. In 2014 the NRFL was awarded late to accommodate higher level plans to allow operations to proceed.

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- The Mowachalaht/Muchalaht First Nations sponsored a contract with Ida Lake Contracting to conduct cedar salvage operations in the Octwanch drainage of TFL 37.

In 2014 WFP harvested, sorted, provided firewood and carving logs amounting to approximately 170m<sup>3</sup> to which the 'Namgis tows from the Beaver Cove dryland sort to Alert Bay. The Mowachaht/Muchalaht receives monumental cedar log donations of approximately 45m<sup>3</sup> in 2014 .

### **Strategies & Implementation**

Western endeavors to negotiate mutually beneficial business arrangements directly with willing First Nations. As the need arises, WFP and First Nations jointly develop such agreements. There is no limit to the number of these arrangements and discussions exploring various opportunities occur on a fairly regular basis.

### **Forecasts**

The importance and scale of business arrangement with First Nations may continue to increase with Governments efforts to negotiate treaty settlements.

### **Details/ Data Set**

This indicator is assessed based on a review of the formal agreements with First Nations. The Operations Planner, contact person for all FN initiatives, maintains a record of these on file.

### **Monitoring**

First Nations agreements for each calendar year are tracked by a WFP's Operations Planner and are reported in the SFM annual report.

## Indicator 6.1.1 Evidence understanding of Aboriginal title and rights

### Element: 6.1 Aboriginal and treaty rights

*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.*

Value	Objective	Indicator	Target	Variance
Aboriginal title and rights.	Aboriginal title and rights are understood.	6.1.1 Evidence of a good understanding of the nature of Aboriginal title and rights	Information sharing meetings held with each FN at least annually with discussion topics ranging beyond operational plans.	FN missed in a 12 month period because inactive in that territory.

### History

New Core Indicator in 2010 with CSA Z809-08.

### Justification

This indicator provides a measure of success at coordinating and managing activities to avoid infringement of Aboriginal rights, and provides a measure of information sharing activity, in support of CSA SFM principles. It is noted that this indicator does not constitute consultation, and is not part of a consultation process. Consultation is done Government to Government with each Band, whereas this indicator groups all Bands and is voluntary on behalf of the company

An important component of this indicator is the wide ranging topics discussed during Information Sharing meetings. The discussions going beyond those associated with normal operational planning provides the best evidence that WFP staff understand the nature of Aboriginal titles and rights.

The Nimpkish DFA is located almost entirely within the 'Namgis First Nation territory. Additionally, small areas in the south and north central portions are within the Mowachaht/Muchalaht and the Tlowitsis First Nations' territories. Often no operation occurs in those small parts for long stretches of time. The variance is meant to allow for a reduced frequency of information sharing meetings for Nations that are not directly affected or involved by Englewood operations.

### Current Status & Interpretation

Within 2014 ongoing communication occurred with the 'Namgis First Nations.

First Nation	Meeting Dates	Meeting Topics
'Namgis	February 8 <sup>th</sup> , 2011 March 22 <sup>nd</sup> , 2011 April 26 <sup>th</sup> , 2011 July 6 <sup>th</sup> , 2011	<ul style="list-style-type: none"> <li>• Treaty Negotiations</li> <li>• Business Arrangements</li> <li>• Employment</li> <li>• Forest Strategy Agreement</li> <li>• Recreation</li> <li>• Cultural Heritage Resources</li> <li>• Habitat Restoration</li> <li>• Social and Environmental Research</li> </ul>
'Namgis	January 31 <sup>st</sup> , 2012- 'Namgis and MARR-Port McNeil District Office March 1st, 2012- Port McNeil- Blackbear Resort May 10 <sup>th</sup> , 2012-Alert Bay July 12 <sup>th</sup> , 2012-Campbell River August 22 <sup>nd</sup> , 2012-Small Technical Meeting Woss November 16 <sup>th</sup> , 2012- Campbell River	Meetings all pertained to discussions on Working Agreements including Forests Strategy Implementation and Business Relationships.
'Namgis	Tuesday April 16, 2013- Alert Bay 'Namgis Forestry Office	Meeting with Doug Aberley and Rachel Dalton to review WFP Englewood's Annual Report
'Namgis	11 meetings in 2013	Meetings all pertained to pre treaty negotiations and business arrangements
'Namgis	6 meetings in 2014	<ul style="list-style-type: none"> <li>• Data sharing agreements</li> <li>• ATLI Resource Corporation inclusion into WFP FSP</li> <li>• Watershed Strategy Reports-TFL 37</li> <li>• CMT/CHR Management 'Namgis Audit</li> <li>• Cultural Cedar Strategy</li> <li>• Employment Opportunities</li> <li>• Log Handling Tenure</li> <li>• Treaty Settlement offer Lands</li> </ul>

## Strategies & Implementation

The principal strategy for Englewood is to maintain free ranging and open lines of communications with all the First Nations with territory included within the DFA. A main component of this strategy is the information sharing meetings held with each First Nation. There is no set frequency for such meetings. They tend to occur once a year to update each First Nation on WFP's plans but they have occurred more frequently, particularly with the 'Namgis when needed and/or requested.

Alternatively, meetings focused on various aspects of WFP's relationships with each Nation can and have been convened by either party.

## Forecasts

Given the continued focus of the BC Government in reaching settlements with First Nations, it is anticipated that information sharing meetings and other communication meetings between WFP and First Nations will continue to occur. These meetings form the primary means to coordinate efforts and ensure the rights of all parties are understood and respected.

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## **Details/ Data Set**

Meetings minutes are normally created to document discussions held and decisions made and action items to follow up. These minutes are kept on file at the Operations by the Senior Operations Planner and provide the evidence to report on this target.

## **Monitoring**

There is no special monitoring process for this target. The records of information sharing meetings are reviewed and summarized annually in the SFM Report.

## Indicator 6.1.2 Efforts to obtain acceptance of management plans by Aboriginal communities

### Element: 6.1 Aboriginal and treaty rights

*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.*

Value	Objective	Indicator	Target	Variance
Aboriginal understanding of plans.	Aboriginal understanding of plans is increased.	6.1.2 Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans	All operational plans are accessible for review by local First Nations.	None.

### History

New Core Indicator in 2010 with CSA Z809-08. It incorporates pre-existing indicators # 45.

### Justification

This indicator provides a measure of WFP's efforts at coordinating and managing activities to avoid infringement of Aboriginal rights, and provides a measure of information sharing activity, in support of CSA SFM principles. It is noted that this indicator does not constitute consultation, and is not part of a consultation process. Consultation is done Government to Government with each Band, whereas this indicator groups all Bands and is voluntary on behalf of the company. This indicator is a demonstration of the opportunity given all affected First Nations to review proposed plans and referrals and provide comment.

This indicator is intended to demonstrate WFP's efforts to provide the Aboriginal communities with the key information concerning its plans in order to gain their acceptance of those plans.

A number of Ministry of Forests, Lands & Natural Resource Operations' policies provide the framework for plan reviews with First Nations. In that context, no variance is provided.

### Current Status & Interpretation

The Nimpkish DFA is located almost entirely within the 'Namgis First Nation territory. Additionally, small areas in the south and north central portions are within the Mowachaht/Muchalaht and the Tlowitsis First Nations' territories. However, new line work provided by the Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) in 2010 showed that bands represented by the Laich-Kwil-Tach Treaty Society may also have small portions of the DFA within their territorial claims. Additional information was provided in 2013 by MFLNRO, based on new territorial assertion that indicates the Kwakiutl Traditional Territory overlaps portions of the Beaver Cove area of TFL 37. The Quatsino First Nations also overlaps TFL 37 in a small area close to the Kilpala Operating Area.

On an annual basis, or more frequently as required, WFP reviews, shares information with and seeks input on specific cutblocks with all these First Nations. Within individual block consultation (layout phase) a number of correspondences (average 4 per block) via email/phone are completed between the planner and First Nation to ensure clarity of the information is received.

The table below details the opportunities documented for First Nations in 2014 to review operational plans.

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Plan	Submission Date	Approval Date	First Nation Consulted	Date of Meeting (Invitation)
Namgis Monthly Operational Information and Information Summaries	n/a	n/a	Namgis	Jan-December 2014, 12 in total (48 blocks)
MMFN 5 Monthly Information Updates for road /harvest operations, no new development blocks information sharing referrals in 2014	nil			
Nanwakolas directed Referral and Responses for Tlowitsis FN, We Wai Kai FN, Wei Wai Kum FN. Nanwakolas Monthly Information Updates, includes 5 new Development Referrals. Note: Nanwakolas decides which blocks need to be referred to which First Nations based on core territories, according to Nanwakolas.	28-Mar-14	2-May-04	We Wai Kai Nation via Nanwakolas	April 2014 (3 new block part of the monthly information update)
	2-Jul-14	4-Jul-14	We Wai Kai Nation via Nanwakolas	July 2014 (1 revised block part of the monthly information update)
	9-Oct-14	17-Dec-14	We Wai Kai Nation via Nanwakolas	Oct 2014 (2 new block part of the monthly information update)
	28-Mar-14	2-May-04	Tlowitsis FN via Nanwakolas	March/April 2014 (3 new block part of the monthly information update)
	5-May-14	6-May-14	Tlowitsis FN via Nanwakolas	May 2014 (1 new block part of the monthly information update)
	2-Jul-14	4-Jul-14	Tlowitsis FN via Nanwakolas	July 2014 (1 revised block part of the monthly information update)
	9-Oct-14	25-Oct-14	Tlowitsis FN via Nanwakolas	Oct 2014 (2 new block part of the monthly information update)
	10-Nov-14	22-Nov-14	Tlowitsis FN via Nanwakolas	Nov 2014 (5 new block part of the monthly information update)

***Indicator results for First Nation plan reviews***

## Strategies & Implementation

The traditional territory determines which First Nations are contacted so that appropriate review and discussion can occur. Referral is conducted for all proposed new development.

WFP seeks active partnerships primarily with the 'Namgis First Nations to build community relationships and to promote understanding and acceptance of forest MPs. On an annual basis, or more frequently as required, WFP reviews, confers with and seeks input on specific cutblocks with all First Nations.

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## Forecasts

Given the growing influence and profile of Aboriginal communities through the Treaty process, it is expected that efforts to gain understanding and support of Plans will continue and possibly increase at least until final settlement is reached.

## Details/ Data Set

This indicator is assessed based on a review of the documented communications with First Nations' reviews of Forest Stewardship Plans (FSP) and amendments, Pesticide Management Plans (PMP), Management Plans (MPs), SFM Plans and Development Referrals (DR). As most plans are in place for 5-year periods and more, annually the opportunities to review plans are more frequently in the nature of Development Referrals than of the legal overarching plans.

Measured as a percentage, the indicator is determined by dividing the number of First Nations contacted by the total number of Plans by type.

The table below summarizes the efforts made to refer all plans to First Nations for review, comments and explanation.

Year	Plans By Type	#	First Nation Contacted							Opportunity for Review (100%)
			Laich-Kwil-Tach Treaty Society	'Namgis	Mowachaht /Muchalaht	Kwakiutl	Quatsino	Tlowitsis	Wei Wai Kai	
2007	Development Referrals	4		4						100
	Forest Development Plan	5		2	2			1		100
2008	Development Referrals	20		16	3			1		100
2009	Development Referrals	5		3				2		100
2010	Development Referrals	6	2	2	1			1		100
2011	Development Referrals	8	2	3	1			2		100
2012	Development Referrals	35	2	12	2	1	1	5		100
2013	Development Referrals	74	-	12	2	-	-	6		100
2014	Development Referrals	66	-	12	-	-	-	12	6	100

## Monitoring

Monitoring of First Nation's consultation is an ongoing process with the Ministry of Forests, Lands & Natural Resource Operations also being a key player in the process. WFP maintains records of communications regarding the review of Plans. This data is summarized annually in the SFM annual report.

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## Indicator 6.1.3 Level of management/ protection of culturally important areas

Element: 6.1 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
Areas where culturally important practices and activities occur	Areas where culturally important practices and activities occur are managed for or protected	6.1.3 Level of management and/or protection of areas where culturally important practices and activities (hunting, fishing, gathering) occur	Identified areas where culturally important practices and activities occur are managed 100% of the time	None

### History

New Core Indicator in 2010 with CSA Z809-08. It incorporates pre-existing indicators # 47.

### Justification

This new target is intended to give a measure of success at identifying and managing culturally important resources and values and to avoid infringement of Aboriginal rights. The provincial Cultural Heritage Act provides guidance on assessing, identifying and managing archaeological sites. Based on Archaeological Overview Assessments (AOA) completed by government, the DFA has been categorized into areas based upon archaeological site potential. By this process, WFP identifies the planned cutblocks for which formal assessments for the presence of Culturally Modified Trees (CMTs) are proposed. A CMT is a tree that has been altered by native people as part of their traditional use of the forest.

Information Sharing Meetings to review planned cutblock and road development are conducted between WFP and affected First Nations within the DFA. At these meetings, affected First Nations will be asked for input on areas of fishing, hunting, gathering and/or other CHRs (Cultural Heritage Resource). Through these meetings, the list of proposed CMT assessments is reviewed. In this way, the need for CMT assessment is confirmed. In addition, the specific cutblocks where a more intensive Archaeological Impact Assessment (AIA) might be necessary is identified.

As required, AIA are completed to identify and evaluate archaeological resources within the proposed development area. AIA identify and assess all impacts on archaeological resources that might result from the development, and recommend alternatives for managing unavoidable adverse impacts. AIA require archaeological features known to exist or have a high potential to exist within or adjacent to the proposed development, are completed by an archaeologist and, an Archaeological Impact Assessment report prepared with copies to the Provincial Archaeology Branch, Western and the First Nation.

It is through these processes that areas where culturally important practices and activities (hunting, fishing, gathering) occur or have occurred are identified and best management strategies are developed and agreed upon with the First Nations. No variance is applicable.

### Current Status & Interpretation

A total of four (4) cutblocks harvested during 2014 required management for cultural features. A range of management prescriptions was applied to each and are summarized in the table below. It is to be noted in 2014 that of the 31 blocks surveyed (Indicator 6.2.1) 4 blocks had management prescriptions for cultural features.

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Cutblock	Cultural Heritage Survey	Feature Description	Feature Retained	Fall & Yard Away From Feature	Buffer around Feature	Windfirm around Feature	Avoid Piling around Feature
BC231	Completed	3 ALT (aboriginal logged trees)	yes	yes	2- in retention 1- outside harvest area	no	Yes
DA128	Completed	CMT Stump Recent bark strip	yes	yes	CMT is contained within retention Recent bark strip is surrounded by standing leave trees	no	Yes
KC129	Completed	ALT	yes	no	1 outside harvest area	no	Yes
KH159	Completed	2 CMT's outside boundary	yes	yes	2 in retention	no	yes

100% of areas where cultural practices occurred were managed in 2014.

### Strategies & Implementation

WFP's planners review the location of all proposed cutblocks relative to an archaeological potential map. If the proposed cutblock is located within an area designated with high archaeological potential, or if any observed features are identified during cutblock reconnaissance, an assessment/survey is planned and conducted.

Once the specific areas and/or cultural resource affected are identified, WFP develops management strategies that would best protect the integrity of the site or resource. It is WFP's strategy to do so in dialogue with the First Nation involved to ensure values and rights are respected.

The normal practice is to change cutblock design to provide 100% protection to the resource involved. Occasionally a lesser level of protection is considered subject to the approval/endorsement of the First Nation when protection is not possible. This would occur primarily for the reasons of worker safety. Additional care to ensure features are not damaged is normally taken during the falling and yarding phases of operations.

### Forecasts

CMTs and other Cultural Heritage Resources are protected through legislation and WFP is committed to continued appropriate management of such features in cooperation with First Nations, therefore no deviation from this target is anticipated.

### Details/ Data Set-

The performance against this target is determined by tallying the management strategies developed for all the cutblocks harvested in the year that contained known CMTs or other CHR.

The strategies are recorded in the cutblock files and form part of site plan for each cutblock.

### Monitoring

Cultural/Archaeological Surveys are tracked in a database (Forest Ops) and considered as site plans and harvesting instructions are prepared. Cutblock Site Plans that contained cultural features and prescriptions are reviewed in relation to annual logging activities. The applicable management strategies are summarized in the SFM annual report.

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## Indicator 6.2.1 Aboriginal knowledge of identified sources/ values that are culturally important-

### Element: 6.2 Respect for Aboriginal forest values, knowledge and uses

*Respect traditional Aboriginal forest values, knowledge and uses as identified through the Aboriginal input process.*

Value	Objective	Indicator	Target	Variance
Aboriginal knowledge	Aboriginal knowledge provided is used and respected	6.2.1 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	100% of requested assessments by First Nations are completed prior harvesting.	None

### History

This target is newly created in 2010 to support the new Core Indicator in the Z809-08 SFM Plan.

### Justification

This new target is intended to give a measure of success at identifying and managing culturally important resources and values. The provincial Cultural Heritage Act provides guidance on assessing, identifying and managing archaeological sites. Based on Archaeological Overview Assessments (AOA) completed by government, the DFA has been categorized into areas based upon archaeological site potential. By this process, WFP identifies the planned cutblocks for which formal assessments for the presence of Culturally Modified Trees (CMTs) are proposed. A CMT is a tree that has been altered by native people as part of their traditional use of the forest.

During Information Sharing meetings between WFP and affected First Nations within the DFA, First Nations will be asked for input on areas of fishing, hunting, gathering and/or other CHRs (Cultural Heritage Resource-see further definition in the Abbreviations and Definitions section of the report). Through these meeting, the list of proposed CMT assessments is reviewed. In this way, the need for CMT assessment is confirmed. In addition, the specific cutblocks where a more intensive Archaeological Impact Assessment (AIA) might be necessary is identified.

As required, AIA's are completed to identify and evaluate archaeological resources within the proposed development area. AIA's identify and assess all impacts on archaeological resources that might result from the development, and recommend alternatives for managing unavoidable adverse impacts. AIA require archaeological features known to exist or have a high potential to exist within or adjacent to the proposed development, are completed by an archaeologist and, an Archaeological Impact Assessment report prepared with copies to the Provincial Archaeology Branch, Western and the First Nation.

No variance is proposed as this follows a recognized process that has a legal basis.

## Current Status & Interpretation

A total of forty seven (47) cutblocks harvested during 2014. Thirty one (31) were subject to a request by First Nations for assessment. The table below lists where assessments were requested. All assessments were completed prior to harvesting. This target was met.

### *Indicator results for cultural features*

<b>Year</b>	<b>Cutblocks Requiring Assessments</b>	<b>Assessment type</b>	<b>Percent Consistent (%)</b>
2010	BC077, BC101,BC107,DA228,DA313, FE003,ME014, ME040,ME048,NE108, NE110,NS006,NS009wf,NS023,NS024 ,NS029,NS045,NW103,NW108	CMT/CHR	<b>100%</b>
2011	BC005,BC007, BC125, BC135,BC206, BC208,KC120,ME004,ME009,ME045, NA003,NA228,NE117,NE120,NE122, NS10AWF,NS008,NS015,NS020,WS0 07,WS019,WS028,NS075,BC099, ME198,ME026,ME042,ME028,WP107, WP108,WP110,WP115,WP120, WP131,NA130,NW580,DA415,KH570, MQ005,MQ425A,MU300,MQ250	CMT/CHR	<b>100%</b>
2012	BC133, BC203, DA246, DA248, DA317, KC003, KC019, KC133, KC140, LG060, LG304, ME004A, ME042H, ME044, ME045, ME050H, ME198, NA003, NA007, NA228, NA301, NA403, NE017, NE028, NE059, NE117, NE118, NE120, NE124, NS015A, NS031, NS039, NS065, NS075, NS099, NS109, NS112, WP129, WP131, WS004, WS013, WS230	CMT/CHR	<b>100%</b>
2013	BC120, BC132,BC231, BC235, DA005, DA013,DA111, DA128, DA447, GC023, KC030, KC031, KC040,KC129,KC130,KC203,LG057, ME005,ME023,NA005,NA006,NA010, NA017,NA102,NA116,NA136,NA138, NA203,NE084B,NE211,NS046,NS107, NS107A,NS116,NW170A&B,NW044,N W410,NW451,NW413,NW452,NW763 L,NW905,UN552,WP088,WP105,WP1 11,WP112,WP118,WP119,WP123,WS 252	CMT/CHR	<b>100%</b>
2014	BC006,BC120,BC231,BC235,DA005, DA008,DA013,DA128,DA308, KC030, KC031,KC040,KC129,KC130, KH159,LG218AH,LG226,ME012H,NA 005,NA138,NE125,NE150,NS046,NS0 63H,NS107,NS107A,NS116,NW163H, NW451,WP118,WS140	CMT/CHR	<b>100%</b>

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## **Strategies & Implementation**

WFP's strategy is to attempt to identify in advance all development areas (roads and cutblocks) where an assessment for culturally important resources and values is warranted. Through Information Sharing meetings, the need and depth or extent of the assessments is confirmed.

WFP carries out all agreed upon assessments. Normally CMT/CHR assessments are carried out by members of the First Nation involved while a qualified Archeologist will be retained for carrying out an AIA.

Alternatively, when the need and type of assessment cannot be agreed on or when the wood values in an area do not support the cost of a requested AIA, WFP will cancel the specific plan or delay implementation until market conditions improve and make an assessment feasible.

## **Forecasts**

No change in Government policies and regulation is anticipated in this area. The need for assessing for Cultural Heritage Resource is expected to continue. WFP expects to continue meeting this target based on its current practice and past performance.

## **Details/ Data Set**

The requested and/or needed Archaeological Survey and Assessment are recorded and tracked in the individual cutblock planning files.

## **Monitoring**

A review of the cutblock files provides the information for the Operations Foresters to report performance in the SFM Plan Annual Report.

## Indicator 6.3.1 Cooperation with forest-dependent groups to strengthen and diversify the local economy

### Element: 6.3 Forest community well-being & resilience

*Encourage, co-operate with, or help to provide opportunities for economic diversity within the community.*

Value	Objective	Indicator	Target	Variance
Other forest users	Support other forest users	6.3.1 Evidence that the organization has cooperated with other forest-dependent businesses, forest users and the local community to strengthen and diversify the local economy	Yearly, maintain local access to at least 3 minimum categories of raw material types, when Englewood Operation is operating	-1 material type

### History

New Core Indicator in 2010 with SFMP 11. It incorporates pre-existing indicator #40.5.

### Justification

Local mills that process logs or special products for secondary manufacturing contribute to community stability on North Vancouver Island. In order to support local diversification, there are 3 main types of raw material that is derived historically from the Nimpkish DFA and currently made available for local purchase at fair market prices:

- (1) low value/non merchantable logs used for supplying Northland Power Inc.'s Chipping facility in Beaver Cove,
- (2) post harvest salvage material that is manufactured locally into special forest products (such as shingle and shake blocks) and
- (3) low value cedar logs (ie company log sorts such as Cedar Utility Shingle and/or Cedar Pulp Camp-run) that are sold to various local buyers.

To account for market fluctuations in demand, a variance of 1 material type category is allowed in a given year.

### Current Status & Interpretation-

Year	Amount of Volume Recovered by Northland Power Chips (m <sup>3</sup> )	Amount of Volume Recovered by Special Forest Products (m <sup>3</sup> )	Amount of Log Sales (m <sup>3</sup> )
2010	28,997	472	1,841
2011	26,297	527	1,303
2012	6,681	501	606
2013	15,266	544	1,538
2014	10,193	346	1,391

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**Indicator results for local log sales**

<b>Community</b>	<b>Volume Sold Locally in 2010 (m<sup>3</sup>)</b>	<b>Volume Sold Locally in 2011 (m<sup>3</sup>)</b>	<b>Volume Sold Locally in 2012 (m<sup>3</sup>)</b>	<b>Volume Sold Locally in 2013 (m<sup>3</sup>)</b>	<b>Volume Sold Locally in 2014 (m<sup>3</sup>)</b>
Port McNeill	40	126	115	172	1044
Port Hardy	1221	110	47	112	-
Sointula	580	1067	444	1254	193
Campbell River	Not tracked	Not tracked	Not tracked	Not tracked	88
Quatsino	Not tracked	Not tracked	Not tracked	Not tracked	17
Courtenay	Not tracked	Not tracked	Not tracked	Not tracked	5
Telegraph Cove	Not tracked	Not tracked	Not tracked	Not tracked	44
<b>Total</b>	1841	1303	606	1538	1391

The amount recovered The average for 5 years (2010-2014) is 1335m<sup>3</sup>. The total for 2014 is above the average for 5 years. The amount of volume recovered by Northland Power Chips and Special Forest Products has declined from 2013 this decline was attributed to operational challenges experienced by Northland Power. WFP had blocks available to offer for salvage opportunity but at the time there were operational challenges experienced by Northland Power to capitalize on the opportunity. The amount of log sales has decreased slightly along with the amount of volume recovered by special forest products.

### **Strategies & Implementation**

Following primary harvesting, cutblocks are assessed to determine their suitability for recovering other raw material such as special forest products and chipper salvage material. Normally, the blocks are assessed in detail by either a Northland representative (for chipper salvage material) or other approved contractors (for special forest products). When specific cutblocks are requested by external sources, plans are then formulated by WFP and the blocks are issued for recovery activities. Local Log sales generally occur at Beaver Cove dryland sort when sufficient volumes of lower value logs exist and are requested.

The definition of “local” has been taken from the Mount Waddington Regional District geographic definition. It encompasses the town of Alert Bay, Port Alice, Port Hardy and Port McNeill.

### **Forecasts**

Local demand for raw material is beyond WFP’s control and there are no effective forecasting tools to predict future market demand. Nonetheless, there is no expectation that current long standing company policies to make available material to other users will change in the near future.

### **Details/ Data Set**

Low value/non merchantable logs destined for Northland Power’s Chip facility are made available when primary harvesting has been completed in cutblocks, and as they are requested by a Northland representative. A target volume is not appropriate for this product due to ever changing variables such as Northland’s supply needs, WFP cutblocks that are available at any given time, and available cutblocks that are economic for Northland to operate in (which would include such items as proximity to Beaver Cove, volume of material within the block and current stumpage rates).

Post harvest salvage material is made available to local salvagers as they request it on an individual cutblock basis. Cutblocks are not made available for special forest products (sfp) salvage recovery until after the residue and waste surveys have been completed. The rates charged for this type of material are based on market conditions. A target volume is not appropriate for this product due to

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the highly variable nature of its supply. The material that is made available for sfp is primarily a by-product of logging and is dependant upon how much harvesting occurs within any given year and utilization efforts in the primary harvesting phase. Generally, the availability of this product is in short supply on TFL 37.

WFP's ability to distribute logs into the local market is largely determined by company sawmilling requirements, trade agreements and market conditions. Lower value logs (ie such as shingle grade) however, are sold to local buyers based on the inter-relationship of three factors: (1) availability of product (2) demand by local buyers and (3) agreement upon fair market price. WFP recognizes the importance of supplying this type of product to support the local economy (Regional District of Mount Waddington). Setting an annual target volume for this product is not appropriate due to various factors including supply and market demand. WFP Englewood Operation is committed to filling local requests for the purchase of lower valued logs where possible and based on the above mentioned factors.

**Maintaining access to the 3 categories of raw material is assessed as follows:**

<b>Local Access to Raw Material</b>	<b>Assessment Criteria</b>
<b>Categories 1 &amp; 2 (Chipper Salvage Wood and Special Forest Products)</b>	(1) Pertinent Cutting Permits (CP's) are active (2) Contracts or Agreements are in place and current (3) Cutblocks are issued for chipping and/or salvage activities when requested by external parties (and when deemed appropriate by WFP).
<b>Category 3 (Local Log Sales)</b>	(1) No written complaints are received by NWAC or WFP Management regarding restriction of local access to low value logs.

**Monitoring**

The amount of volume utilized as chipper salvage material is tracked via queries in MFLNRO's Harvest Billing System (HBS) on Northland's designated scale site (796). Volume attributed to Timbermark 37/94 (according to HBS) over the past few years is as follows:

<b>Year</b>	<b>Timbermark 37/94 Volume (m<sup>3</sup>)</b>	<b>Timbermark 37/97 volume (m<sup>3</sup>)</b>
2006	21,048	61
2007	14,168	336
2008	4418	271
2009	109	37
2010	0	521
2011	0	548
2012	0	414
2013	5,326	485
2014	2,040	346

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All data has been taken from Ministry Forest Land and Natural Resource Operations (MFLNRO) Harvest Billing System (HBS)

For SFMP information purposes, volume recovered under WFP salvage permit will be reported annually.

The volume of local log sales is tracked via corporate log supply databases such as LIMS. For SFMP information purposes, volume of local log sales will be reported annually (by community).

## Indicator 6.3.2 Cooperation with workers to improve safety standards and procedures

### Element: 6.3 Forest community well-being & resilience

*Encourage, co-operate with, or help to provide opportunities for economic diversity within the community.*

Value	Objective	Indicator	Target	Variance
Worker safety	There is an active worker safety program	6.3.2 Evidence of cooperation with DFA-related workers and their unions to improve and enhance safety standards, procedures and outcomes in all DFA-related workplaces and affected communities	Implement & maintain Occupational Health and Safety Committee	None

### History

This is a new Core Indicator and Target for the Z809-08 SFMP.

### Justification

The safety committee addresses all elements. Maintaining an effective Occupational Health and Safety Committee is a requirement under the Occupational Health and Safety Regulations of WorkSafe BC. No variance is applicable.

### Current Status & Interpretation-

The Englewood Occupational Health and Safety Committees meet once a month when the Operation is operating. Minutes including a Corrective Action Log are produced and distributed.

Year	Number of Occupational Health and Safety Committee Minutes (e.g. monthly, if operating).	Goal of Program met (Y/N)
2010	9	Yes
2011	12	Yes
2012	10	Yes
2013	10	Yes
2014	11	Yes

In 2014 a total of 11 meetings were held. There were curtailments due to weather in August. The total number of meetings within a year is variable due to weather and markets. 2014 was an exceptionally dry year with sustained temps that required shutdowns due to heat. In 2014 there were a total of 11 meetings held. This target is met.

### Strategies & Implementation

Maintain SAFE Company registration through the BC Forest Safety Council. Investigate, track and report incidents; review findings with OH&S Committees and employees.

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Appendix 2: Detailed Indicator & Results  
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Maintain Safe Work Procedures (SWP) and WFP Safety Policies; these are reviewed at least yearly and following any related incident.

### **Forecasts**

Conduct regular (monthly) OH&S Committee meeting. WFP has maintained a safety committee for many years. The committee's functions and effectiveness can be shown to have evolved and improved over the years. An effective safety committee is an integral component of an effective safety program. Given WFP's strong commitment to an effective safety program, no change in policy is anticipated and safety committees are expected to continue, improve and evolve over time.

### **Details/ Data Set**

Meeting minutes of OH&S Committee within the Operations health and safety plan.

### **Monitoring**

The Operations Administrators will provide an annual summary of Operation's OH&S Committee meetings (i.e. minutes). WFP Safety Advisory staffs are in place and provide advice and support to the Operation. A company wide Incident Investigation Process and tracking system (SITRUS) is also in effect to ensure learning from incidents are communicated throughout the Timberlands.

## Indicator 6.3.3 Worker safety program implementation and review

### Element: 6.3 Forest community well-being & resilience

*Encourage, co-operate with, or help to provide opportunities for economic diversity within the community.*

Value	Objective	Indicator	Target	Variance
Worker safety	Worker safety improves over time	6.3.3 Evidence that a worker safety program has been implemented and is periodically reviewed and improved	Maintain SAFE Company certification and WFP Safety System	None

### History

This is a new Core Indicator and Target for the Z809-08 SFM Plan.

### Justification

This indicator provides evidence that a worker safety program has been implemented. A worker safety program can be demonstrated through SAFE Company Certification with the BC Forest Safety Council and an effective Company safety program. An effective safety program is one that not only meets the requirements necessary to achieve and maintain SAFE Company certification, but also can be considered effective in continually improving worker safety through regular reviews and adaptation.

### Current Status & Interpretation

SAFE Company Certification has been around since 2007 and has been a WFP Safety Policy from its inception. All contractors working for WFP in Timberlands Operations are required to maintain valid SAFE Company Certification and valid registration with WorkSafe BC. In the event that they do not maintain SAFE Company Certification/Registration they will follow the policies and procedures of WFP's SAFE Company Certification and Safety System.

WFP's current Forest Safety Council Certificate number is 9070161 and is Valid as a BASE audit until November 15, 2016.

### Strategies & Implementation

Each Operation is responsible for implementing the Company safety program and continuing to meet the requirements of SAFE Company certification. The program is applicable to staff, union and contract workers. Elements include the Safety Policy, Safety Standards, Safety Standard Audits, Safe Work Procedures, Safety Inspections, Incident Investigations, Corrective Action Log, Safety statistics collected and reviewed monthly and the WFP Safety Advisors. WFP Health and Safety advisors assist the Operations in maintaining and improving the safety program.

WFP's goal is to continually reduce its medical incident rate (MIR). MIR reduction can be directly linked to an effective safety program.

### Forecasts

Since Safety is a core value of WFP, no change in the policy to maintain the SAFE Company Certification though the BC Forest Safety Council is anticipated.

### Details/ Data Set

SAFE Company certification and audit results. WFP Safety Advisory staff reports.

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## Monitoring

The Operations Administrators will provide evidence of continued Certification with the BC Forest Safety Council (i.e. Internal and External Audits).

# Indicator 6.4.1 Level satisfaction with the public participation process

## Element: 6.4 Fair and Effective Decision Making

*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*

Value	Objective	Indicator	Target	Variance
SFM public participation process	SFM public participation process works well	6.4.1 Level of participant satisfaction with the public participation process	Overall positive results from an annual NWAC member survey	NWAC member survey completed every 2 <sup>nd</sup> year

### History

New Core Indicator in 2010 with CSA Z809-08. It incorporates previous indicator 53 from the Z809-08 SFM Plan.

### Justification

This target provides a measure of the success of the Public Advisory Group process. The CSA Z809-08 SFM Standard contains a requirement for the Public Advisory Group process to create and maintain a mechanism to measure participants' satisfaction with the public participation process. A survey of the NWAC members was carried out in late 2013 at the year-end meeting provides the data for this indicator.

The results of the survey will serve to identify areas of strength as well as those for improvement. The variance is to allow for the possibility that circumstances may affect the timing and or appropriateness of a survey in a given year.

### Current Status & Interpretation

A survey of NWAC members was conducted in 2014 that indicated overall satisfaction with the process.

The overall results for the surveys returned show that 87% of the answers were in the "Very Satisfied" category and 13% were somewhat satisfied. It was noted that the company representatives were excellent and that people valued the honest, open discussion within the group.

Overall the process seems to be working and members are satisfied with the meetings. Some suggestions for improvement for 2014 are:

- 1) Solicit a representative or representatives for youth for Nimpkish Woodlands Advisory Committee and continue to ensure that there is a broad representation of sectors, eg: parks, karst, local government and more consistent attendance of the meetings.
- 2) Revisit the meeting schedule to further try to ensure the timing of the meetings is agreeable to the majority of members.
- 3) Discuss whether NWAC is fulfilling the terms of reference during the next annual review.
- 4) Build on suggestions from the November 27<sup>th</sup> meeting to engage a broader range of speakers.

WFP EFO continues to solicit new members and maintain existing members on the Committee to ensure an active representation of sectors is present. The terms of reference is reviewed annually and will continue to be. Active solicitation of the group with respect to meeting dates, and speakers will remain an open dialogue. Meeting dates will be flexible throughout the year, along with available speakers.

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## **Strategies & Implementation**

A survey is being prepared using examples from other WFP advisory groups.

## **Forecasts**

Based on the fact that the NWAC has been in effect since 1999 and has remained an effective public input process supported by voluntary participants, and that in that time all issues have been resolved to the satisfaction of the participants, it is expected that the results of annual surveys will remain generally positive over time.

## **Monitoring**

The Operations Planner will ensure a public satisfaction survey is conducted once a year. The Operations Planner will tally and summarize the results of the NWAC member survey and include the results in the SFMP annual report.

## Indicator 6.4.2 Capacity development and meaningful participation

### Element: 6.4 Fair and Effective Decision Making

*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*

Value	Objective	Indicator	Target	Variance
Public capacity to meaningfully participate.	Develop/improve public participation capacity over time.	6.4.2 Evidence of efforts to promote capacity development and meaningful participation in general	The list of educational opportunities provided annually to the public is reported.	None

### History

New Core Indicator in 2010 with CSA Z809-08 SFMP. Core Indicators 6.5.1 and 6.5.2 also support this indicator and target.

### Justification

This indicator provides a measure of efforts at increasing public awareness and understanding of forest management issues and addressing public concerns. All occasions for interactive exchanges with the public at large represent opportunities to expand public awareness and capacity to make educated evaluations and decisions regarding forest resource management issues. As a reporting target, no variance is offered.

### Current Status & Interpretation

A summary of from 2010-2014 is provided below. The "Trees Clean the Air" presentation was organized as part of National Forestry Week. Public Education continues to be maintained and this target has been met.

Date	Event	Group
January 26, 2013	Logging Fundamentals Training Program- Randy Boas	Nimpkish Woodlands Advisory Committee
April 9 <sup>th</sup> , 2013	Neil Smith- Mount Waddington Heritage Register and Possible Projects in the Nimpkish Defined Forest Area	
May 14, 2013	Elk, Northern Goshawk Presentations by Jeanne Matthews, Graham, and Sue McDonald	
September 12, 2013	Biomass Energy Initiatives-Dominik Roser/Dr Marian Marinescu (FP Innovations) and Brendan Mohan (WFP)	
December 12, 2013	Kevin Laird (WFP) and Darren Rowsell (MFLNRO) presentation on Stumpage	

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February 12,2014	Forestry Career Day-	Carihi High
June 17 <sup>th</sup> ,2014	Presentation of Annual Report Indicators	Mount Waddington Regional District
September 23 <sup>rd</sup> , 2014	Retired Foresters Tour	Englewood Staff
October 23 <sup>rd</sup> ,2014	Forestry Tour	North Island Secondary School
November 20, 2014	GIS Day presentation to Woss school by Jed Jackson (GIS Analyst)	Englewood Forest Operation Office
April 17th, 2014	Annette van Niejenhuis- Tree Seed and Research Projects	
June 5th, 2014	Dean Hunchuk, Waste and Residue TFL 37	
September 18 <sup>th</sup> , 2014	Pat English- Forest Sector Land Use and Economic Development Policies	All presentations to the Nimpkish Woodlands Advisory Committee
October 23 <sup>rd</sup> , 2014	Shannon Janzen-Recruitment and Retention	
November 27 <sup>th</sup> , 2014	Jay Dixon and Kathleen McArthur-NISS Partners with the Community	

## Strategies & Implementation

Within the Advisory Committee process, presentations from outside experts are a key component of the efforts made to advance knowledge and capacity of participants.

Outside the NWAC process, regular scheduled events such as National Forestry Week provide other core opportunities for direct interactions with members of the general public at any level. Other occasions are usually generated from specific requests or inquiries for tours by interested parties or customers and for speaking engagements (e.g., schools). WFP endeavors to meet or facilitate all reasonable requests.

## Forecasts

Based on past requests and events, it is anticipated that a number of opportunities for improving public knowledge and capacity to participate in public input processes will continue to present themselves and to be accommodated by WFP.

## Details/ Data Set

This indicator is determined by tallying the number of expert presentations, Community visits and other public education opportunities completed in a calendar year along with a description of what was discussed.

## Monitoring

The Operations Planners will summarize the number of expert presentations, Community visits and other public education opportunities completed in a calendar year along with a description of what was discussed from NWAC minutes and files and report the results in the annual SFM Report.

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## Indicator 6.4.3 Capacity development and participation for Aboriginal communities

### Element: 6.4 Fair and Effective Decision Making

*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*

Value	Objective	Indicator	Target	Variance
Aboriginal capacity to meaningfully participate.	Develop/improve aboriginal participation capacity over time	6.4.3 Evidence of efforts to promote capacity development and meaningful participation for Aboriginal communities	Target 1 – The list of efforts to engage the Aboriginal Communities in the SFM Process annually. Target 2 – The number of training positions made available to First Nations is at least 1 per year.	None  0 for 1 year.

### **Target 1 – Efforts to Engage First Nations**

#### **History**

New Core Indicator in 2010 with CSA Z809-08. It incorporates parts of pre-existing indicators # 46 from the Z809-02 SFM Plan.

#### **Justification**

In order to effectively incorporate Aboriginal rights and interests into SFM plans, a process should be established to identify, address, and protect Aboriginal rights, uses, cultural resources, and values. Protocol agreements between WFP and First Nations represent the core of such process. In addition, the participation of First Nations in the NWAC process provides an additional opportunity to have meaningful participation. The list of WFP's efforts in these areas provides part of the evidence for this Indicator. As a reporting target, a variance is not proposed.

#### **Current Status & Interpretation**

Date	First Nation Group	Participation in NWAC Meetings
May 26 <sup>th</sup> , 2010 July 7 <sup>th</sup> , 2010 September 16 <sup>th</sup> , 2010 October 27 <sup>th</sup> , 2010	'Namgis	3 of 4 meetings
February 9 <sup>th</sup> , 2011 March 17 <sup>th</sup> , 2011 June 16 <sup>th</sup> , 2011 November 8 <sup>th</sup> , 2011	'Namgis	4 of 4 meetings

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<p>April 4<sup>th</sup>, 2012 June 5<sup>th</sup>, 2012 October 9, 2012 November 13<sup>th</sup>, 2012 September 26-27<sup>th</sup>, 2012</p>	<p>‘Namgis</p>	<p>2 of 5 meetings- staff transition</p>
<p>February 26, 2013 April 9<sup>th</sup>, 2013 May 14, 2013 September 12, 2013 December 12, 2013‘Namgis</p> <p>Tuesday April 16, 2013-Alert Bay ‘Namgis Forestry Office Meeting with Doug Aberley and Rachel Dalton to review WFP Englewood’s Annual Report</p>	<p>‘Namgis, Tlowitsis, Mowachaht/Muchalaht</p> <p>‘Namgis</p>	<p>0/5 meetings</p> <p>1</p>
<p>April 17<sup>th</sup>, 2014 June 5<sup>th</sup>, 2014 September 18<sup>th</sup>, 2014 October 23<sup>rd</sup>, 2014 November 27<sup>th</sup>, 2014 May 7, 2014</p>	<p>‘Namgis, Tlowitsis, Mowachaht/Muchalaht</p> <p>Annual Report Review with ‘Namgis First Nation-Rachel Dalton, Doug Aberley, Trevor Egely and Kelly McMahon in Alert Bay</p>	<p>0/5</p> <p>1</p>

The ‘Namgis First Nation did not participate in any of the Nimpkish Woodlands Advisory Committee meetings in 2014. On May 7<sup>th</sup> of 2014 a meeting was attended by two WFP Representative and ‘Namgis First Nation reviewing the results of 2013 SFMP Indicators. Specific feedback was given by the First Nations to integrate in the Sustainable Forest Management Indicators.

A similar meeting is scheduled to review the results of the 2014 indicators for April of 2015 in Alert Bay.

### Strategies & Implementation

In addition to the regular consultation with First Nations described under indicator 6.1.2 (Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans), the three local First Nations remain as invited participants of the NWAC with each notification of upcoming NWAC meetings. Efforts will continue to contact and involve Aboriginal forest users and communities in SFM planning.

WFP maintains the Nimpkish Woodlands Advisory Committee as a supplementary means to provide meaningful First Nations input into resource activities in Nimpkish DFA.

### Forecasts

WFP expects to typically host 2 or 3 NWAC meetings a year and will continue to encourage and invite First Nations to participate on the NWAC. Based on past performance, it is expected that the ‘Namgis First Nation will continue to have a representative participate in NWAC. However it is not possible to predict if the other First Nations will ever choose to participate.

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## Details/ Data Set

### Monitoring

Operations Foresters will plan for and track this target, this will be completed through meeting minutes from Nimpkish Woodlands Advisory Committee (NWAC) meetings and other NWAC correspondence.

### **Target 2 – First Nation Training Positions**

#### History

New Core Indicator in 2010 with CSA Z809-08.

#### Justification

An aspect of capacity building is the building of skill set that can facilitate employment within the Forest Industry. As employment level within the aboriginal community is a major concern for First Nations, WFP's efforts made to further capacity development within their community are valuable. As this is a new target with no history of performance, a variance of one year without a position available is used to help account for the possibility that willing and able candidates cannot be identified and/or that poor market conditions preclude the availability of such position.

#### Current Status & Interpretation

Englewood had five training positions filled by First Nation workers within the Planning Department (1), Yarding and Loading (3) Railway Department (1)

In addition to the direct WFP employment there are 4 'Namgis First Nations kept busy on a CMT Survey Crew.

#### Strategies & Implementation

WFP continues to engage with the 'Namgis Community Leaders in developing renewed relationships and expand their capacity as a means to solidify their economic status.

#### Forecasts

It is expected that entry level positions and opportunities can continue to be made available over the long term. However, the availability of candidates from the First Nations cannot be predicted. Also, the isolated location of the main First Nation community on Cormorant Island presents challenges in logistic for long term employment within the Operation.

## Details/ Data Set

Year	First Nation	Department
2010	2	Railway
2011	4	Railway (1) Planning (2) and Grade (1)
2012	5	Planning (1) Yarding and Loading (2) Railway (2)
2013	4	Planning (1) Yarding and Loading (1) Railway (1) Welding, Shop (1)
2014	5	Planning (1) Yarding and Loading (3) Railway (1)

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## Monitoring

The Administrator Supervisor tracks and reports the number of positions made available on an annual basis.

## Indicator 6.5.1 Educational outreach

### Element: 6.5 Information for Decision-making

*Provide relevant information and educational opportunities to interested parties to support their involvement in the public participation process, and increase knowledge of ecosystem processes and human interactions with forest ecosystems.*

Value	Objective	Indicator	Target	Variance
Public education and knowledge	Increase/develop public education and knowledge over time	6.5.1 Number of people reached through educational outreach	At least 25 people are reached annually through educational outreach events.	1 year < 25

### History

New Core Indicator in 2010 with CSA Z809-08.

### Justification

The target quantifies the level of the Operation's success at reaching and teaching members of the public about Forest Management issues. As a new target, the variance of 1 year under the target number helps account for the uncertainty about the willingness of the public to participate in any given opportunity.

### Current Status & Interpretation

Year	Events	Description	Number Reached	Target met
2012	Nimpkish Woodlands Advisory Committee	<ul style="list-style-type: none"> <li>3 expert presentations SFMP 12 presentations. First Nations Traditional Use (Jim Stafford), Caving, and Trail Presentation</li> </ul>	45	Yes
2012	National Forestry Week	<ul style="list-style-type: none"> <li>Forestry Tour (cone picking, tree planting, Woss River Trail hike) September 27<sup>th</sup>, 2012.</li> </ul>	7	Yes
2012	Earth Day Community Cleanup	<ul style="list-style-type: none"> <li>Woss Cleanup on Earth Week-April 24<sup>th</sup>, 2012</li> </ul>	15	Yes
2013	Railway and Dryland Sort Tour	<ul style="list-style-type: none"> <li>Forestry Tour of Railway and Dryland Sort to a group of Europeans. Tour was organized with MoFLNRO. October 9, 2013.</li> </ul>	25	Yes
2013	'Namgis First Nation Career Fair-Alert Bay	Career Fair with discussion on forestry/harvesting and a discussion on career opportunities	120	Yes
2013	National Forestry Week	Woss Elementary School – Interpretive Trail Walk, and discussion on Invasive plants accompanied by Smokey the Bear. September 26 <sup>th</sup> , 2013	10	Yes
2013	Carihi High Engineering/Forestry Field Day	Intro to engineering and forestry (deflection lines, stream traverse, tree species selection, block orientation)	10	Yes

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Year	Events	Description	Number Reached	Target met
2013	February 26 <sup>th</sup> 2013	<b>5 expert presentations SFMP 13 presentations to NWAC</b> Logging Fundamentals (Randy Boas)	75	yes
	April 9 <sup>th</sup> , 2013	Mount Waddington Heritage Register and possible Nimpkish Valley Projects by Neil Smith		
	May 14 <sup>th</sup> , 2013	Elk Presentation by Graham Hues/Jeanne Matthews, Northern Goshawk Presentation by Sue McDonald		
	September 12, 2013	Biomass Energy Initiatives-Dominik Roser FP Innovations, Dr. Marian Marinescu FP Innovations and Brendan Mohan WFP		
	December 12, 2013	Stumpage presentation – Kevin Laird (WFP) and Darren Rowsell (MoFLNRO)		

Year	Events	Description	Number Reached	Target met
2014	February 12,2014	Forestry Career Day- Carihi High	50	yes
	June 17 <sup>th</sup> ,2014	Presentation of Annual Report Indicators-Mount Waddington Regional District	20	
	September 23 <sup>rd</sup> , 2014	Retired Foresters Tour- Englewood Staff	15	
	October 23 <sup>rd</sup> ,2014	Forestry Tour-North Island Secondary School	15	
	November 20 <sup>th</sup> , 2014	GIS Presentation-Jed Jackson-Woss Elementary School Students	6	
	<b>NWAC Meetings</b>			
	April 17th, 2014	Annette van Niejenhuis- Tree Seed and Research Projects	15	
	June 5th, 2014	Dean Hunchuk, Waste and Residue TFL 37	15	
	September 18 <sup>th</sup> , 2014	Pat English- Forest Sector Land Use and Economic Development Policies	15	
	October 23 <sup>rd</sup> , 2014	Shannon Janzen-Recruitment and Retention	15	
	November 27 <sup>th</sup> , 2014	Jay Dixon and Kathleen McArthur-NISS Partners with the Community	15	

In 2014 a Career Day at Carihi High and Forestry Field Tour were provided by WFP EFO staff. Production and planning staff were involved with a Retired Forester's Tour on September 23<sup>rd</sup>, 2014 and numerous Nimpkish Woodlands Advisory Committee presentations were given on a broad array of topics decided upon by the group. It is to be noted that the successfully attended Joint Public Advisory Meeting was on October 23<sup>rd</sup> with a talk by Shannon Janzen on Recruitment and Retention.

Similar to 2013 five newsletters were digitally sent to past and present Englewood employees with hardcopies followed up in the yard office in 2014. The newsletters are mainly safety focussed but also contain some operational and SFM related information. This target has been met.

### Strategies & Implementation

Within the Advisory Committee process, presentations from outside experts are a key component of the efforts made to advance public education and knowledge over time.

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Outside the NWAC process, regular scheduled events such as National Forestry Week provide other core opportunities for direct interactions with members of the general public at any level. Other occasions are usually generated from specific requests or inquiries for tours by interested parties or customers and for speaking engagements (e.g., schools). WFP endeavors to meet or facilitate all reasonable requests.

### **Forecasts**

Based on past requests and events, it is expected that opportunities to increase public knowledge and understanding of Forest Management over time will continue to be identified and accommodated by WFP. The use of the newsletters may also be expanded over time to incorporate more SFM information.

### **Details/ Data Set**

Part of the information is based on attendance or sign-up sheets such as attendance records for NWAC meetings when appropriate.

### **Monitoring**

Operations Planners plan for and track this target.

## Indicator 6.5.2 Availability of information on issues of concern to the public

### Element: 6.5 Information for Decision-making

*Provide relevant information and educational opportunities to interested parties to support their involvement in the public participation process, and increase knowledge of ecosystem processes and human interactions with forest ecosystems.*

Value	Objective	Indicator	Target	Variance
Relevant information for the public.	Relevant information is provided.	6.5.2 Availability of summary information on issues of concern to the public	1) SFMP Annual Report will be advertised annually and maintained on website; 2) FSP will be advertised annually and maintained on website, and a summary of any non confidential public comments received from FSP advertising or open houses will be prepared; 3) A summary of Corporate Monitoring and Research Projects and Alliances will be maintained annually	None  None  1 year missed

### **Target 1 – SFM Report Availability**

#### **History**

New Core Indicator in 2010 with CSA Z809-08.

#### **Justification**

The annual SFM Report summarizes WFP's performance against the targets established in the SFMP. As such it is a key source of information for the public on the wide ranging set of criteria. A variance is not appropriate for this target and none is proposed.

#### **Current Status & Interpretation**

The latest Englewood SFM Report is for 2014 and is dated March 2015. It is available from the WFP Internet site at: [http://www.westernforest.com/company/environment/certification\\_CSA.php](http://www.westernforest.com/company/environment/certification_CSA.php)

It is also available on the North Island Public Advisory Group Internet Website located at:

<http://www.northislandpag.com/>

The 2015 Report is expected to be available in early 2016.

#### **Strategies & Implementation**

WFP's main communication strategy is to employ its world wide website to make its SFM Report available to the general public. Alternatively, electronic copies can be provided in response to specific requests.

#### **Forecasts**

Given that the CSA Standard requires this information to be made available to the public, it is expected that the web will continue to be used for this purpose for the foreseeable future.

#### **Details/ Data Set**

Refer to Current Status for latest data.

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## **Monitoring**

The Certification Forester ensures SFM Reports are posted on the Intranet as they are completed and become available. The Operation is responsible to prepare the Report on a timely basis under the coordination of the Senior Operations Planner.

### **Target 2 – FSP Advertising**

#### **History**

New Core Indicator in 2010 with CSA Z809-08.

#### **Justification**

The Forest Stewardship Plan (FSP) is a legal document that outlines general information on the required results and strategies applied to operational plans. Combined with a summary of non-confidential comments received during the planning process, the FSP provides substantial information on specific operational issues associated with development of the forest resource. A variance is not appropriate for this target and none is proposed.

#### **Current Status & Interpretation**

The current North Vancouver Island FSP incorporates all of the Englewood Operation and is available from the WFP website at: <http://www.westernforest.com/company/stewardship/planning.php>.

An add for the NVIR FSP was run in the July 17, 2014 edition of the North Island Gazette newspaper. The NVIR FSP was available on the WFP website in 2014. There were no public comments received from FSP advertising in 2014. Note that the NVIR FSP covers two separate Defined Forest Areas. These results are for the NVIR DFA only. The target was met.

#### **Strategies & Implementation**

WFP's main communication strategy is to employ its world wide website to make all FSPs available to the general public. It is a voluntary practice in response to concern that with the abolition of Forest Development Plans (FDP), less information would be available to the public.

In addition, newspaper ads are also published from time to time to remind the public that the plan exists and remain available for review and comments.

#### **Forecasts**

As this is a simple and cost effective means to make plans readily available to the general public, a change in the WFP policy to post all its legally required plans to its website is not anticipated.

#### **Details/ Data Set**

Refer to Current Status for latest data.

## **Monitoring**

The Senior Forest Planner is responsible to ensure the latest applicable Forest Stewardship Plan is available from the WFP website.

### **Target 3 – Research Summary**

#### **History**

New Core Indicator in 2010 with CSA Z809-08.

#### **Justification**

A summary report on research projects WFP is corporately involved with provides another gamut of specialized information for the public on a wide range of topics of interest. Many of the research

projects covered support the Adaptive Management program of the company's Western Forest Strategy. A variance is not appropriate for this target and none is proposed.

### **Current Status & Interpretation**

The latest Summary Report on monitoring and research projects for 2014 is detailed by active and ongoing projects. It is available by request through Kelly McMahon, Area Planner Englewood Forest Operations. Some of the ongoing and active projects include:

Variable Retention Adaptive Management, Salal Cedar Hemlock Integrated Research Program (SCHIPR), Species at Risk Studies, Silviculture Strategies and Best Practices, Seed Orchard Pollination Dynamics, Seed Orchard Pest Management, Tree Improvement Studies, Growth and Yield (LiDAR Enhanced Forest Inventory Project).

### **Strategies & Implementation**

WFP's main communication strategy is to employ its world wide website to make all FSP available to the general public. It is a voluntary practice that is proven to be very cost effective.

### **Forecasts**

As this is a simple and cost effective means to make information readily available to the general public, a change in the WFP policy to post summary information such as the report on monitoring and research projects to its website is not anticipated.

### **Details/ Data Set**

Refer to Current Status for latest data.

### **Monitoring**

The Strategic Planning Biologist updates the Summary report on Monitoring and research projects and ensures it is posted on the Internet.

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# Abbreviations & Definitions

AAC	(Allowable Annual Cut): The annual rate of timber harvesting specified for an area of land by the chief forester of the BC Ministry of Forests. The chief forester sets AACs for timber supply areas (TSAs) and Tree Farm Licences (TFLs) in accordance with Section 8 of the Forest Act.
AM	(Adaptive Management) A learning approach to management that incorporates the experience gained from the results of previous actions into decisions. It is a continuous process requiring constant monitoring and analysis of the results of past actions that are used to update current plans and strategies.
Anadromous	Anadromous fish are those that begin life in freshwater, but leave to spend part of their life rearing in the ocean before returning to freshwater to spawn as sexually mature adults. Anadromous salmonids include coho salmon, chinook salmon, pink salmon, chum salmon, sockeye salmon, steelhead (rainbow) trout, cutthroat trout, Dolly Varden char and bull trout. <sup>14</sup>
BCTS	(British Columbia Timber Sales) An independent organization within the B.C. Ministry of Forests created to develop Crown timber for auction to establish market price and capture the value of the asset for the public. The vision of BC Timber Sales is to be “An effective timber marketer generating wealth through sustainable resource management”.
BEC	(Biogeoclimatic Ecosystem Classification) A hierarchical classification scheme having three levels of integration; regional, local and chronological; and combining climatic, vegetation and site factors. The hierarchical classification includes Biogeoclimatic Zone → sub-zone ⇒ variant ⇒ site series.
BEC Variant	A subdivision of a biogeoclimatic subzone. Variants reflect further differences in regional climate and are generally recognized for areas slightly drier, wetter, snowier, warmer or colder than other areas in the subzone.
BEC Zone	A geographic area having similar patterns of energy flow, vegetation, and soils as a result of a broadly homogenous macroclimate. British Columbia has 14 biogeoclimatic zones, of which the CWH (Coastal Western Hemlock), and MH (Mountain Hemlock) are found in the Nimpkish Valley.
Biodiversity	(or biological diversity) The variability among living organisms from all sources including inter alia terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems. <sup>4</sup>
BEO	(Biodiversity Emphasis Option) The VILUP outlines a range of three options for emphasizing biodiversity at the landscape level: high, intermediate and low. Each option is designed to provide a different level of natural biodiversity and a different risk of losing elements of natural biodiversity. In reality, these options are points on a continuum, and in between lie a range of options that may be selected depending on the relative priority allocated to biodiversity conservation and timber production in an area.
Blue-listed Species	In British Columbia, the designation of an indigenous species, sub-species, or population as being vulnerable or at risk because of low or declining numbers or presence in vulnerable habitats. Included in this classification are populations generally suspected of being vulnerable, but for which information is too limited to allow designation in another category. <sup>6</sup>

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Botanical Forest Products	Non-timber based products gathered from forest and range land. There are seven recognized categories: wild edible mushrooms, floral greenery, medicinal products, fruits and berries, herbs and vegetables, landscaping products, and craft products. <sup>1</sup>
CCFM	(Canadian Council of Forest Ministers) A task force formed in 1995 to guide the development and implementation of criteria and indicators towards sustainable forest management in Canada.
CDC	(Conservation Data Centre) The British Columbia Conservation Data Centre (CDC) (see Blue-listed and Red-listed Species). The staff specialists at the CDC, in co-operation with scientists and specialists throughout the province, have identified those vertebrate animals, vascular plants and plant associations communities in the province, which have become most vulnerable. Each of these rare and endangered species and plant communities associations has been assigned a <a href="#">global</a> and <a href="#">provincial</a> rarity rank according to an objective set of criteria established by <a href="#">The Nature Conservancy of the United States</a> , and a status on the provincial <a href="#">Red or Blue lists</a> .
CHR	(Cultural Heritage Resource)- <i>The Forest Act</i> defines a cultural heritage resource as "an object, a site or the location of a traditional societal practice that is of historical, cultural or archaeological significance to British Columbia, a community or an aboriginal people." Section 10 of the <i>Forest Planning and Practices Regulation</i> (FPPR) further refines the definition of a cultural heritage resource under the <i>Forest and Range Practices Act</i> (FRPA). The FPPR states the following objective set by government: "to conserve, or, if necessary, protect cultural heritage resources that are: 1. the focus of a traditional use, by an aboriginal people, and that are of continuing importance to that people; and 2. not regulated under the <i>Heritage Conservation Act</i> ."
CMI	(Change Monitoring Inventory) A permanent plot design that allows for the repeated measuring of forest attributes at defined locations to provide status and trend data.
CMT	(Culturally Modified Tree) A tree that has been altered by native people as part of their traditional use of the forest. Non-native people also have altered trees, and it is sometimes difficult to determine if an alteration (modification) is of native or non-native origin. There are no reasons why the term "CMT" could not be applied to a tree altered by non-native people. However, the term is commonly used to refer to trees modified by native people in the course of traditional tree utilization.
Compliance	The conduct or results of activities in accordance with legal requirements.
Conformance	Meeting non-legal requirements such as policies, work instructions or standards.
COSEWIC	The Committee on the Status of Endangered Wildlife In Canada (COSEWIC) determines the national status of wild Canadian species, sub-species and separate populations suspected of being in danger. It bases its decisions on the best up-to-date scientific information available.
CWD	(Coarse Woody Debris) The larger dead and mostly down woody material that is in various stages of decomposition. Sound and rotting logs and stumps that provide habitat for plants, animals and insects and a source of nutrients for soil development. Material generally greater than 8–10 cm in diameter.
dbh	(Diameter at Breast Height) The outside-bark stem diameter of a tree measured at breast height, 1.3 metres above the high side of the ground.

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DFA	(Defined Forest Area) A specified area of forest, including land and water (regardless of ownership or tenure) to which the requirements of the CSA SFM system standard apply.
EBITDA	Earnings before interest, taxes, depreciation and amortization (EBITDA) is a non-GAAP metric that can be used to evaluate a company's profitability. EBITDA = Operating Revenue – Operating Expenses + Other Revenue. Its name comes from the fact that Operating Expenses do not include interest, taxes or amortization. EBITDA is not a defined measure according to Generally Accepted Accounting Principles (GAAP), and thus can be calculated however a company wishes.
Ecosystem	A dynamic complex of plants, animals, and micro-organisms and their non-living environment interacting as a functioning unit. The term "ecosystem" can describe small-scale units, such as a drop of water, as well as large-scale units, such as the biosphere. <sup>4</sup> Ecosystems are commonly described according to the major type of vegetation, for example, forest ecosystem, old growth ecosystem, or range ecosystem.
Ecosystem Group	A prerequisite for ecosystem representation analysis and interpreting results is to classify mapped ecosystems into a manageable number of groups. An ecosystem group is one or more site series of relatively similar plant communities characteristics that also consider ecosystem abundance and sensitive plant communities.
EFZ	(Enhanced Forestry Zone) The government's announcement of the VILUP characterised three types of resource management zones (RMZs). Among these, EFZs are designated as priority use areas suitable for intensive resource development (typically forestry), with due consideration to other resource values.
Element	A concept used to define the scope of each CCFM SFM criteria. Each CCFM SFM criterion contains several elements. The CSA SFM elements were derived from national-scale elements developed by the CCFM for more specific local applications. The elements serve to elaborate and specify the scope of their associated criterion.
EMS	(Environmental Management System) An Environmental Management System is a set of standards established by the International Organisation for Standardization (ISO 14001). This process includes commitment, public participation, preparation, planning, implementation, measuring and assessing performance, and review and improvement of a management system. The incorporation of feedback loops into the process allows for ongoing enhancement of the integrity and performance of the management system, and is designed to lead to continual improvement.
Ecosystem-Based Management	A management approach that recognizes the natural variability of an ecosystem and attempts to emulate these natural responses with man-made disturbances, while managing forests for a range of values. Specific practices maintain ecosystem principles into planning at the landscape level.
EMU	(Ecosystem Management Unit) Stratification of a forest area into zones based on a combination of ecological processes and higher-level plan objectives. These designations facilitate the implementation of ecosystem-based management.
EPRP	(Emergency Preparedness and Response Plan) A plan detailing how a company intends to prepare for (e.g., equipment location, who to call, etc.) and respond to (i.e., actions to be taken) emergency incidents.

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FDP	(Forest Development Plan) An operational plan guided by the principles of integrated resource management (the consideration of timber and non-timber values), which details the logistics of timber development over a period of usually five years. Methods, schedules, and responsibilities for accessing, harvesting, renewing, and protecting the resource, are set out to enable site-specific operations to proceed.
Forecast	An explicit statement of the expected future condition of an indicator.
Forest	An ecosystem dominated by trees and other woody vegetation growing more or less closely together, its related flora and fauna, and the values attributed to it.
FPC	(Forest Practices Code) The Code is a term commonly used to refer to the Forest Practices Code of BC Act, the regulations made by Cabinet under the act and the standards established by the chief forester. The term may sometimes be used to refer to field guides as well. It should be remembered that unlike the act, the regulations and standards, field guides are not legally enforceable.
FRA	(Forest and Range Agreement) Interim agreements between the MoF and eligible First Nations designed to provide for "workable accommodation" of aboriginal interests that may be impacted by forestry decisions during the term of the agreement, until such time as those interests are resolved through treaty. These agreements provide the Ministry with operational stability and assist First Nations to achieve their economic objectives by providing revenue and direct award of timber tenure.
FRPA	(Forest and Range Practices Act) This act and its regulations govern the activities of forest and range licensees in B.C. The statute sets the requirements for planning, road building, logging, reforestation, and grazing.
Free growing	Young trees that are as high or higher than competing brush vegetation with one metre of free-growing space surrounding their leaders. As defined by legislation, a free growing crop means a crop of trees, the growth of which is not impeded by competition from plants, shrubs or other trees. Silviculture regulations further define the exact parameters that a crop of trees must meet, such as species, density and size, to be considered free growing.
FSP	(Forest Stewardship Plan) An operational plan that explicitly states the results or strategies licensees will implement to address government-set objectives for key forest values, such as soil, water, fish, wildlife, and biodiversity within riparian areas. This plan may be in place for up to five years.
GHG	(Green house gas). A gas, such as water vapour, carbon dioxide, methane, chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs), that absorbs and re-emits infrared radiation, warming the earth's surface and contributing to climate change.
GIS	(Geographic Information System) Computer systems designed to allow users to collect, manage, and analyse large volumes of spatially referenced information and associated attribute data.
GMZ	(General Management Zone) The government's announcement of the VILUP characterised three types of resource management zones (RMZs). Among these, GMZs are designated as priority use areas to be managed for a variety of resource uses, such as forestry, mining, grazing, tourism, guide outfitting, and recreation.

HCI	(Hydrologic Condition Index) - A coarse-filter approach for providing a relative index to assess the potential impacts that climate, watershed character and manage may have on increased water flows that will ultimately affect water-related values.
HLB	(Harvestable Landbase) A term used in ecosystem representation analysis that represents the productive forest areas, including lightly managed areas that contributes to, and are available for, long-term timber supply. HLB is defined by reducing the total landbase according to specified management assumptions classified as the non-harvestable landbase (NHLB).
HLP	(Higher Level Plan) Defined in the Forest Practices Code of British Columbia Act as: <ul style="list-style-type: none"> <li>• a plan formulated pursuant to Section 4(c) of the Ministry of Forests Act and designated as a higher level plan by the district manager in accordance with direction from the chief forester;</li> <li>• a management plan designated as a higher level plan by the chief forester for tree farm licences and by the regional manager for other agreements under the Forest Act,</li> <li>• an objective for a resource management zone;</li> <li>• an objective for a landscape unit or sensitive area;</li> <li>• an objective for a recreation site, recreation trail or interpretive forest site, and;</li> </ul> a plan or agreement declared to be a higher level plan by the ministers or the Lieutenant Governor in Council under this or any other act.
Indicator	A variable that measures or describes the state or condition of a value.
ITS	(Issue Tracking System) A component of WFP's EMS. It is used to record and track environmental incidents that have the potential for becoming a non-compliance with legal requirements or a non-conformance with WFP's operational procedures.
IWMS	(Identified Wildlife Management Strategy) Those species at risk that the deputy minister of Environment, Lands and Parks or a person authorised by that deputy minister, and the chief forester, agree will be managed through a higher level plan, wildlife habitat area or general wildlife measure.
Karst	The broad term for soluble rocks, often including cave systems. Karst on Vancouver Island is typically formed in limestone and exhibits surficial features such as sinkholes, springs, cave entrances and grikes (M. Davis, BC Speleological Federation, pers. comm.). Underground drainages form cave systems and can transport water from one surface drainage to another, sometimes passing under surface ridges and drainage divides.
Long-term	At a minimum, twice the period in years of the average life expectancy of the predominant tree species up to a maximum of 300 years.
LU	(Landscape Units) An area of land and water used for long-term planning of resource management activities. It is important for designing strategies and patterns for landscape level biodiversity and for managing other forest resources. A landscape unit may be used by the District Manager to establish objectives for any propose permitted under section 2 of the Forest Practices Code of British Columbia Act.

LUP	(Landscape Unit Plan) The Forest Practices Code of British Columbia Act enables the Ministry of Forests to initiate landscape unit plans that cover individual watersheds or groups of watersheds at 1:20 000 to 1:50 000 scale. The purpose of these plans is to provide direction on biodiversity, old growth forest retention, wildlife habitat maintenance and timber harvesting.
MoELP	(Ministry of Environment, Land and Parks) Past provincial government agency responsible for various areas currently addressed by the MWLAP.
MoF	(Ministry of Forests) BC Provincial government and ministry responsible for the management and protection of the province's forest and range resources for the best balance of economic, social, and environmental benefits to British Columbia. In June 2005, the BC Government realigned ministerial responsibilities. The MoF used in this document is now managed under the Ministry of Forests and Range.
Monitor	Repeated observation, through time, of selected objects and values in the ecosystem to determine the state of the system. In particular, it entails the comparison of objects (e.g., organisms) and processes (e.g., stream flow) before and after management actions to determine the effect of those actions upon the ecosystem.
MP	(Management Plan) A detailed long-term plan required for Tree Farm Licences that involves inventories and management objectives for managing forest and other resources.
MSRM	(Ministry of Sustainable Resource Management) The lead provincial government agency responsible for planning, policies and resource information in support of the sustainable economic development of Crown land, water and resources. In June 2005, the BC Government realigned ministerial responsibilities. Responsibilities of the MSRM referred to in this document are now managed under the Ministry of Agriculture and Lands.
MWLAP	<p>(Ministry of Water, Land and Air Protection - formerly the MoELP) The lead provincial government agency responsible for:</p> <ul style="list-style-type: none"> <li>• Environmental protection of water, land and air quality including climate change and environmental emergencies,</li> <li>• Environmental stewardship of biodiversity, including wildlife, fish and protected areas,</li> <li>• Park and wildlife recreation management, including hunting, angling, park recreation, and</li> <li>• Wildlife viewing, Environmental monitoring and enforcement including the Conservation Officer Service, and State of Environment reporting.</li> </ul> <p>In June 2005, the BC Government realigned ministerial responsibilities. Most responsibilities in the MWLAP used in this document are now managed under the Ministry of Environment, while integrated land management responsibilities are now under the Ministry of Agriculture and Lands.</p>
NCLB	(Non-Contributing Landbase) A term used in timber supply analyses that represents the productive forest area, including all partially constrained areas that are constrained from harvest due to some regulatory or physical impediment to harvesting (e.g., old growth management areas, ungulate winter ranges, wildlife habitat areas, physically inoperable areas, riparian reserve zone).

NDT	(Natural disturbance type) An area that is characterized by a natural disturbance regime, such as wildfires, which affects the natural distribution of seral stages. For example areas subject to less frequent stand-initiating disturbances usually have more old forests.
NHLB	(Non-Harvestable Landbase) A term used in ecosystem representation analyses that represents the productive, forested lands areas that are greater than 90% constrained from harvest due to some regulatory or physical impediment to harvesting (e.g., old growth management areas, ungulate winter ranges, wildlife habitat areas, physically inoperable areas, riparian reserve zone).
NICC	(North Island - Central Coast) An organizational unit of the BC MoF called a forest district, that encompasses Nimpkish Valley on Vancouver Island in the south to Princess Royal Island in the north and stretches from the Pacific Ocean to Tweedsmuir Provincial Park.
NRMB	(Nimpkish Resource Management Board) A partnership of stakeholders committed to the well being of salmon stocks on Northern Vancouver Island ( <a href="http://www.nrmb.net/">http://www.nrmb.net/</a> ).
NSR	(Non-Satisfactorily Restocked) Productive forest land that has been denuded and has failed, partially or completely, to regenerate either naturally or by planting or seeding to the specified or desired free growing standards for the site.
NVAF	(Net Volume Adjustment Factor) Within the ground-sampling phase of a VRI, NVAF sampling is a mandatory component that is integral in the calculation of inventory adjustment factors. NVAF sampling collects data on a number of selected trees to account for errors in the estimates of net tree volume. It is calculated from the ratio of actual to estimates of sample tree volumes and is applied as a correction to VRI ground sample volumes. This data, used in conjunction with the original ground sampling data, provides an unbiased estimate of the net volume in the project area.
NWAC	(Nimpkish Woodlands Advisory Committee) An ongoing committee of individuals representing by a broad range of interests relating to the Nimpkish DFA, established to facilitate the public participation process under the CSA SFM system standard.
Objective	A broad statement describing a desired future state or condition of a value.
OGMA	(Old Growth Management Area) Defined in the Forest Practices Code of British Columbia Act Operational Planning Regulation as an area established under a higher level plan which contains or is managed to replace structural old growth attributes. Old growth forests on BC's coast are characterised by the following: <ul style="list-style-type: none"> <li>• Two or more tree species of variable sizes and spacing;</li> <li>• Large live trees;</li> <li>• Patchy understory;</li> <li>• A deep, multi-layered crown canopy with gaps;</li> <li>• Standing dead trees (snags) and coarse woody debris of variable sizes.</li> </ul>
OSB	(Oriented Strand Board) A type of mat-formed panel with oriented face and back-stands and possibly cross-oriented core strands, and made of strands whose length is at least twice their width.

PMP	(Pest Management Plan) A plan that describes: (a) a program for controlling pests or reducing pest damage using integrated pest management, and (b) the methods of handling, preparing, mixing, applying and otherwise using pesticides within that program.
Preferred and Acceptable Species	Preferred and acceptable tree species are those commercial tree species that are suited to the growing conditions of the site, and are identified in the Silviculture Prescription.
PAs	(Protected Areas) Areas such as provincial parks, federal parks, wilderness areas, ecological reserves, and recreation areas that have protected designations according to federal and provincial statutes. Protected areas are land and freshwater or marine areas set aside to protect the province's diverse natural and cultural heritage.
RDMW	Regional District of Mount Waddington.
Red-listed Species	In British Columbia, the designation of an indigenous species, sub-species, or population as endangered or threatened because of its low abundance and consequent danger of extirpation or extinction. Endangered species are any indigenous species threatened with imminent extinction or extirpation throughout all or a significant portion of their range in BC Threatened species are any indigenous species that are likely to become endangered in BC if factors affecting that vulnerability are not reversed.
Regeneration Delay	The maximum time allowed in a prescription, between the start of harvesting in the area to which the prescription applies, and the earliest date by which the prescription requires a minimum number of acceptable well-spaced trees per hectare to be growing in that area.
RISC	(Resource Inventory Standards Committee) A multi-agency responsible for establishing standards for natural and cultural resources inventories, including collection, storage, analysis, interpretation and reporting of inventory data.
RMZ	(Resource Management Zone) A division or zone of the planning area that is distinct from other zones with respect to biophysical characteristics, resource issues or resource management direction. RMZs are drawn on a map to describe general management intent. These zones are further defined in the VILUP using descriptive objectives and strategies to explain future land use and resource management activities.
Rotation	The planned number of years between the formation and regeneration of a tree crop or stand and its final cutting at a specified stage of maturity.
SARA	(Species at Risk Act) The Act is a key federal government commitment to prevent wildlife species from becoming extinct and secure the necessary actions for their recovery. It provides for the legal protection of wildlife species and the conservation of their biological diversity.
Selection silviculture system	A silviculture system that removes mature timber either as single scattered individuals or in small groups at relatively short intervals repeated indefinitely, where the continual establishment of regeneration is encouraged and an uneven-aged stand is maintained. As defined in the Code's Operation Planning Regulation, group selection removes trees to create openings in a stand less than twice the height of mature trees in the stand.
Seral Stage	Any stage of development of an ecosystem from a disturbed, unvegetated state to a climax plant community. (FP Code)

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SFM	(Sustainable Forest Management) Management to maintain and enhance the long-term health of forest ecosystems, while providing ecological, economic, social, and cultural opportunities for the benefit of present and future generations.
SFM plan	(Sustainable Forest Management Plan) A plan that directs tactical and operational plans and practices, as the outcome of the strategic planning for a DFA.
Site Degradation	Productive forest land significantly degraded or permanently lost to forest production.
Site Index	An expression of the forest site quality of a stand, at a specified age, based either on the site height, or on the top height (height of the largest diameter tree on a 0.01 ha plot, providing the tree is suitable), which is a more objective measure (FPCode). The measure of the relative productive capacity of a site for a particular tree species, based on height at a given reference or base age (50).
Site Series	Variation in site conditions encountered within a biogeoclimatic unit is accommodated within the site classification of BEC. The site series describes all land areas capable of supporting specific climax vegetation. This can usually be related to a specified range of soil moisture and nutrient regimes within a subzone or variant, but sometimes other factors, such as aspect or disturbance history, are important determinants as well. A classification of site series for most of the biogeoclimatic units of the province has been developed by the BC Ministry of Forests and is presented in regional field guides. <sup>12</sup>
SMZ	(Special Management Zone) The government's announcement of the VILUP characterised three types of resource management zones (RMZs). Among these, SMZs are designated as priority use areas for sensitive management of wildlife, old growth, visual, recreation and other non-timber resources.
Snag	Standing dead tree or part of a dead tree.
SP	(Site Plan or Silviculture Prescription) Site plans describe standards units for soil disturbance and stocking standards, and show how the results and strategies in approved FSPs apply to the site. Site plans are not approved by government.
SPAR	(Seed Planning and Registry System) A web-based information management system supported by the MoF that provides clients with direct on-line access to a provincial registry of forest tree seed and a comprehensive seedling ordering system for meeting annual reforestation needs.
Stand Level	The level of forest management at which a relatively homogeneous land unit can be managed under a single prescription, or set of treatments, to meet well-defined objectives.
STR	(Single Tree Retention) An area occupied by single, or very small groups of trees that are located in a cutblock where the trees could directly impact on, or be directly impacted by, a forest practice carried out in the cutblock. These are established to meet ecosystem-based tree retention targets.
Strategy	A coordinated action set designed to meet established targets.
Target	A specific statement describing a desired future state or condition of an indicator. If possible, targets should be clearly defined, time-limited and quantified.



TAUP	(Total Area Under Prescription) The Total net area to be reforested (NAR) plus the area of no-planned reforestation (NPR) on a cutblock. This includes all areas considered non-productive and areas that will not be reforested due to a unique reason (e.g., WTP).
TEM	(Terrestrial Ecosystem Mapping) Stratification of a landscape into map units, according to a combination of ecological features, primarily climate, physiography, surficial material, bedrock geology, soil, and vegetation. TEM is a methodology that requires direct air photo interpretation of ecosystem attributes by a mapper(s).
TFL	(Tree Farm Licence) A stewardship agreement based on a sustained yield, land-based management unit. This includes the right to harvest a specified volume of timber annually and the obligation to carry out all phases of forest management on behalf of the Ministry of Forests. The licence has a term of 25 years and is replaceable every 10 years.
THLB	(Timber harvesting landbase) A term used in timber supply analyses that represents the productive forest area, including portions of all partially constrained areas that contributes to, and is available for, long-term timber supply. THLB is defined by reducing the total landbase according to specified management assumptions classified as the non-contributing landbase (NCLB).
Timber	Timber means trees, whether standing, fallen, living, dead, limbed, bucked or peeled (Forest Act).
Timber supply analysis	An assessment of future timber supplies over long planning horizons (more than 200 years) by using timber supply models for different scenarios identified in the planning process.
Timber supply review	The timber supply review program regularly updates timber supply in each of the 37 TSAs and 34 TFLs areas throughout the province. By law, the chief forester must re-determine the AAC at least once every five years to ensure AACs are current and reflect new information, new practices and new government policies.
TL	(Timber licence) An area-based tenures which revert to the government when merchantable timber on the area has been harvested and the land reforested. Many of these licences have been incorporated into tree farm licences.
TSM	(Terrain Stability Mapping) A method to categorise, describe and delineate characteristics and attributes of surficial materials, landforms, and geological processes within the natural landscape. Terrain stability mapping is a method to delineate areas of slope stability with respect to stable, potentially unstable, and unstable terrain within a particular landscape. Terrain stability map polygons indicate areas or zones of initiation of slope failure.
Twenty year plan	A TFL licensee submits an operational timber supply projection that indicates the availability of timber by setting out a hypothetical sequence of harvesting over a period of at least 20 years, consistent with proposed management objectives. The main purpose of the plan is to demonstrate whether or not the harvests projected in the base case over the next 20 years are spatially feasible, taking into account constraining factors such as Code requirements, timber harvesting landbase deductions and the volume assignments per hectare on each entry.
Value	A DFA characteristic, component, or quality considered by an interested party to be important in relation to a CSA SFM element or other locally identified element.

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Appendix 2: Detailed Indicator & Results  
The current version is available on the Western intranet site.

VIA	(Visual Impact Assessment) An evaluation of the visual impact of resource development proposals on forest landscape.
VILUP	(Vancouver Island Land Use Plan) The regional land use plan and higher-level plan for Vancouver Island (in effect since December 2000) that includes broad management objectives for resource management zones and specific targets for some resources.
VRI	(Vegetation Resources Inventory) A photo-based, two-phased vegetation inventory program consisting of: <ul style="list-style-type: none"> <li>• Phase I - Photo Interpretation involves estimating vegetation polygon characteristics, from existing information, aerial photography, or other sources. No sampling is done in Phase I.</li> <li>• Phase II - Ground Sampling provides the information necessary to determine how much of a given characteristic is within the inventory area. Ground samples alone cannot be collected in sufficient numbers to provide the specific locations of the land cover characteristics being inventoried.</li> </ul>
Waste Wood	The volume of timber left on the harvested area that should have been removed in accordance with the minimum utilisation standards in the cutting authority. It forms part of the allowable annual cut for cut-control purposes.
Waterbody	Any land covered by water.
WHA	(Wildlife Habitat Area) A mapped area of land that is necessary to meet the habitat requirements of one or more species of identified wildlife.
Wildlife Habitat Feature	A significant mineral lick or wallow, an active nest of a bald eagle, osprey or great blue heron, or any other feature agreed to by the district manager and a designated environment official.
Wildlife Tree	Any standing dead or live tree with special characteristics that provide valuable habitat for the conservation or enhancement of wildlife - Wildlife Tree Committee of British Columbia
Windthrow	A tree or trees uprooted by the wind.
WTP	(Wildlife tree patch) At a stand level, this is synonymous with WTR (wildlife tree retention).
WTR	(Wildlife tree retention) An area occupied by wildlife trees that is located in a cutblock or in an area that is contiguous to a cutblock where the wildlife trees could directly impact on, or be directly impacted by, a forest practice carried out in the cutblock.