SFM Plan
Appendix 1: Detailed Indicator & Results

Port Alberni Forest Operation

April 12, 2018
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SFM Criteria, Values, Objectives, Indicators & Targets

This section of the SFM Plan describes Port Alberni Forest Operation’s 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 WIWAG members, Port Alberni Forest Operation staff and other Western Forest staff.

WFP works closely with the WIWAG to identify the local values, objectives, indicators, targets and acceptable variances that reflect the national criteria. These have been incorporated into this SFM planning and practice.

As used in this plan:

- **Values** are DFA characteristics, components, or qualities considered by the advisory group to be important in relation to a CSA SFM element or other locally identified element.
- **Objectives** are broad statements describing a desired future state or condition of a value.
- **Indicators** are variables that measure or describe the state or condition of a value.
- **Targets** are specific statements describing a desired future state or condition of an indicator. Where possible, targets are clearly defined, time-limited and quantified.
- **Acceptable Variances** specify the range of performance results (+ and/or – relative to the Target) that is deemed to be an acceptable outcome. A result outside this range does not always indicate unacceptable performance. (For example, it could reflect: the impact of an uncontrollable event, such as a natural disaster; the fact that the Target was based on poor quality or inadequate data; or the effects of a responsible choice between two competing Objectives.) A result outside the Acceptable Variance range does, however, require review, assessment and, possibly, a revision of either the objective, target or management practices.
- **Forecasts** are explicit statements of the expected future condition of an indicator.
- **Legal References** are provided where they exist.

Performance Reporting

On an annual basis, the 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 Port Alberni Forest Operations Management, and presented for review to WIWAG in the spring of each year (typically April). Western Forest Products maintains a matrix which assigns the responsibilities of each indicator to key staff.
Internal audits will also evaluate the quality, validity, and meaningfulness of the locally determined indicators and all of the targets.

**Summary of Results**

- Port Alberni Forest Operation, 2017 Annual Report
- Port Alberni Forest Operation, 2016 Annual Report
- Port Alberni Forest Operation, 2015 Annual Report
- Port Alberni Forest Operation, 2014 Annual Report
- Port Alberni Forest Operation, 2013 Annual Report

Refer to: [http://www.westernforest.com/wiwag/sfm_plan.htm](http://www.westernforest.com/wiwag/sfm_plan.htm)

**Summary of Changes**

The 2010 SFM Plan is a plan designed to meet the requirements of the CSA Z809-08 Standard and replaces all previous versions. The 2018 SFM Plan and reporting will be compliant to the new CSA Z809-16 Standard.
Indicator 1.1.1: Ecosystem Area by Type

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.

<table>
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<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
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<tr>
<td>Older seral stages</td>
<td>1.1 Ecosystem Diversity</td>
<td>Older seral stages</td>
<td>All ecosystem types by biogeoclimatic variant have greater than 50% of the productive forest area in mid, mature, and old seral stages annually</td>
<td>- 5% by type for up to 10 years</td>
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<tr>
<td>by ecosystem type</td>
<td>by ecosystem type</td>
<td>Ecosystem area by</td>
<td></td>
<td></td>
</tr>
<tr>
<td>on the DFA</td>
<td>are maintained</td>
<td>type</td>
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History
Core Indicator under CSA Z809-08 (related to old indicator 1).

Basis for the Target
The biogeoclimatic variants in the DFA represent a wide geographic range, a diversity of climatic conditions, and significant differences in vegetation, soil, and ecosystem productivity. Historically, timber harvesting has focused in productive variants that yield quality forest products. The long history of timber harvesting in the DFA has generated a diversity of stand age classes across the variants. However, historic harvesting has generally progressed from productive variants close to communities to less productive variants in more remote areas if the DFA. The 50% level for ecosystem area by type and seral stage provides reasonable assurance that there is adequate representation of each existing ecosystem types in their older age stages being maintained and replaced at all times on the DFA.

The variance is to account for natural disturbances associated with insects, disease, windthrow, wildfire, land use decisions, and historic harvesting patterns that may have influenced variants disproportionately.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>BEC Zone / Variant</th>
<th>Early (ha)</th>
<th>Mid (ha)</th>
<th>Mature (ha)</th>
<th>Old (ha)</th>
<th>Total Area Mid-Old (ha)</th>
<th>Total Productive Area of BEC Zone (ha)</th>
<th>% Rep. of Productive</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
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<td>CWHmm1</td>
<td>1,430</td>
<td>416</td>
<td>443</td>
<td>1,911</td>
<td>2,770</td>
<td>4,200</td>
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<td>682</td>
<td>646</td>
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<td>4,159</td>
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<td>228</td>
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<td>3,517</td>
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Mid, mature, and old seral stages describe stands greater than or equal to 40 years old.

**Performance and Interpretation**

2017: Similar to 2016, the target was met for 2017 except for the CWHvh1 as referenced in the forecast. The CWHvh1 continues to be the variant that is closest to the target of 50%. Harvest history in the DFA generally progressed away from established communities. This variant represents the outer coast of the DFA where the harvesting history is relatively recent. The variance was updated for 2017 after discussion about harvest history with the advisory group. This variance will carry forward into the New Standard reporting. All other variants are above the 50% target.

**Strategies & Implementation**

Several initiatives and legal requirements have been set relating to protected areas that helps to contribute to ecosystem representation, including Parks and protected areas, Old Growth Management Areas, Wildlife Habitat Areas, Ungulate Winter Ranges, Wildlife Tree Patches and other stand level retention initiative such as the WFP Variable Retention Strategy, etc.

In addition, a fairly significant portion of the DFA in older seral stages exists in the non-contributing land-base (e.g., inoperable) and will not be harvested.

**Forecasts**

The current status shows representation 50% and above for each BEC zone and represents a long history of harvesting. The Timber Supply Analysis also supports forecasting that the target will be met in the long term. The one exception is expected to be the CWHvh1 where the 2013 to 2023 year forecast is likely to be between 45% and 50% because of historic harvesting patterns in the DFA.

**Monitoring**

The Operations Forester requests inventory information from corporate staff after year end harvesting has been updated in the Cengea database.

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<tr>
<th>Year</th>
<th>CWHmm1</th>
<th>CWHmm2</th>
<th>CWHvh1</th>
<th>CWHhm1</th>
<th>CWHmm1</th>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>26676</td>
<td>18682</td>
<td>1594</td>
<td>20069</td>
<td>40346</td>
<td>67023</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5855</td>
<td>1030</td>
<td>574</td>
<td>8773</td>
<td>10376</td>
<td>16231</td>
<td>64</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4432</td>
<td>7040</td>
<td>700</td>
<td>1945</td>
<td>9685</td>
<td>14117</td>
<td>69</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>52</td>
<td>4</td>
<td>32</td>
<td>2070</td>
<td>2106</td>
<td>2158</td>
<td>98</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Indicator 1.1.2: Forest Area Species

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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>The representation of commercial species on the DFA</td>
<td>Species conversion on the DFA is limited</td>
<td>Forest area by type or species composition</td>
<td>The three year movement in the representation of each commercial tree species (as expressed by the forest area by species composition) in the inventory remains within 2% of the 2012 baseline level</td>
<td>+/- 1% by species. i.e; Douglas-fir at 20.6% could be as high as 23.6% or as low as 17.6% in 2018.</td>
</tr>
</tbody>
</table>

History
Core Indicator under CSA Z809-08 (related to old indicator 3).

Basis for the Target
The target is based on the natural occurrence of commercial species and their ability to adapt to the biogeoclimatic conditions in the DFA. Maintaining the current tree species diversity is a fundamental strategy for climate change and forest health. The variance is to account for the artificial regeneration (tree planting) that will occur to favour the more desirable commercial species and the potential changes in climatic conditions.

Current Status & Results
Given the DFA changed significantly with area removals in 2010 the new baseline will be 2012. The tree species representation is set to be re-assessed in 2018.

<table>
<thead>
<tr>
<th>Species</th>
<th>Baseline % 2012</th>
<th>2015 %</th>
<th>chg</th>
<th>Target Met</th>
<th>Variance Met</th>
</tr>
</thead>
<tbody>
<tr>
<td>Douglas-fir</td>
<td>20.6</td>
<td>20.3</td>
<td>-0.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pine</td>
<td>0.4</td>
<td>0.4</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Western Red Cedar</td>
<td>19.3</td>
<td>19.5</td>
<td>+0.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yellow Cedar</td>
<td>3.0</td>
<td>3.4</td>
<td>+0.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sitka Spruce</td>
<td>0.4</td>
<td>0.5</td>
<td>+0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hemlock (western &amp; mountain)</td>
<td>42.0</td>
<td>41.4</td>
<td>-0.6</td>
<td>Next Report is for 2018</td>
<td>n/a</td>
</tr>
<tr>
<td>Amabilis Fir</td>
<td>12.5</td>
<td>12.6</td>
<td>+0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deciduous (Alder and Maple)</td>
<td>1.9</td>
<td>1.8</td>
<td>-0.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Performance and Interpretation
2017: The variance was adjusted after conversation with the advisory group and will be used to describe results with the next report in 2018 under the New CSA Standard. Species compositions have remained relatively constant since 2012. Western Red Cedar and Yellow Cedar continue to be planted in proportionately greater numbers to enhance stand value and support cultural interests. Sitka Spruce and Amabilis Fir have been planted in greater numbers to reforest the harvested areas of “off-site” Douglas-fir second growth and to minimize browse damage.
Strategies & Implementation

WFP conducts reforestation activities consistent with legally required and approved stocking standards in the Forest Stewardship Plan (FSP) that include the applicable tree species permitted for each ecosystem type and site series. Regeneration and Free growing surveys and milestone obligations ensure cutblocks are regenerated in accordance with approved stocking standards.

Forecasts

It is anticipated that the target in 2018 will be achieved as regeneration and species composition is driven by requirements detailed in the FSP. The Timber Supply Analysis supports the forecast of no major changes in tree species over the long term.

The species representation is expected to change slightly over time due to climate change and adaptive management plans that include regeneration to more heat tolerant or commercially valuable species such as Douglas-fir and Western Red Cedar. Some Noble Fir (non-native species) may also be planted at higher elevations due to research data that supports higher health and vigour than some native species such as Amabilis Fir. As the factors associated with climate change become better understood the target may need to be adjusted.

Monitoring

The Operations Forester is responsible for coordinating GIS analysis (GIS Department), planting, and assessment programs. The report will be based on all species (area weighted) excluding NSR classified lands and miscellaneous species.
Indicator 1.1.3: Forest Area By Stand Age

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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>The older age stands on the DFA</td>
<td>Older age stands on the DFA are maintained</td>
<td>Forest area by seral stage or age class</td>
<td>81+ age stands are maintained to at least 35% of the productive forest area measured on a five year rolling average</td>
<td>Down to 30% for up to 10 years</td>
</tr>
</tbody>
</table>

History
Core Indicator under CSA Z809-08.

Basis for the Target
The target balances the current allowable annual cut (AAC), the desire for species diversity, and the current age class distribution of the productive forest. For many species, if habitat requirements are present populations will remain stable. Older age stands are often the most difficult to manage primarily because of the time required for their development. Forest stands at 81+ foster unique communities across the forest landscape. Maintaining at least 35% of the older age stand will ensure that these unique communities are preserved.

The variance is to account for natural disturbances associated with insects, disease, windthrow, wildfire, land use decisions, and historic harvesting patterns that exist or may develop.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Productive Forest Area (ha)</th>
<th>Age (yrs.)</th>
<th>Productive Area 81+ (ha)</th>
<th>% Productive Area 81+ of Total</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 yr (2013-2017)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>119,550</td>
<td>81+</td>
<td>45,843</td>
<td>38</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>119,907</td>
<td>81+</td>
<td>45,910</td>
<td>38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>119,117</td>
<td>81+</td>
<td>44,029</td>
<td>37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>117,420</td>
<td>81+</td>
<td>44,266</td>
<td>38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>117,478</td>
<td>81+</td>
<td>45,338</td>
<td>39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Performance and Interpretation
2017: The target and variance for this indicator was adjusted in 2017 after discussion with the advisory group to better reflect the intent of the Objective. The Objective was written to describe maintaining older stands on the DFA. The target previously described the rate at which older age stands would be reduced. The new target uses the information % Productive Area 81+ years that has been reported as a descriptor for many years.
Strategies & Implementation

Several initiatives and legal requirements have been set relating to protected areas that help to contribute to older age classes, including Parks and protected areas, Old Growth Management Areas, Wildlife Habitat Areas, Ungulate Winter Ranges, Wildlife Tree Patches, etc. In addition, a significant portion of the DFA referred to as the non-contributing land-base (NCLB) is not operable for physical and economic reasons and will therefore contribute to the protection of older age classes.

Over time, young stands in the NCLB will age and add to the current supply of older stands. Finally, the corporate strategy to use retention silviculture systems on the DFA provides additional stands of older age classes.

Forecasts

Although harvesting activities are normally concentrated within the older age stands, Figure 4 from the Timber Supply Analysis for Management Plan 5 indicates that the older age classes are still approximated near 35% of the productive forest in the year 2058.

Monitoring

The Operations Forester requests a GIS and inventory analysis after year end harvesting has been updated in the Cengea database.
Indicator 1.1.4: Stand Level 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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>The variety of structure at the stand level</td>
<td>Habitat for selected focal species, including species at risk. A portion of the existing stand structure is retained</td>
<td>Degree of within stand structural retention</td>
<td>The average within-stand retention level of all cutblocks harvested in the year is no less than 15% of the total area under prescription</td>
<td>-1%</td>
</tr>
</tbody>
</table>

**History**
Core Indicator under CSA Z809-08 (relates to old indicator 10).

**Basis for the Target**
The target is based on a combination of a FRPA requirement for stand retention and the WFP corporate retention (VR) strategy which is guided by principles associated with the Vancouver Island Land Use Plan (VILUP). The retention strategy may be adjusted from time to time. The variance is to account for situations where the harvest may be directed towards zones where retention requirements are less (e.g. Enhanced Forestry Zone).

**Current Status & Results**

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Cutblock Retention (% of TAUP)</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>21.8</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>17.7</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>22.0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>17.8</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>15.5</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

**Performance and Interpretation**
2017: The target was met for 2017. The increase in retention reflects cutblocks where dispersed retention was left to conserve soil values associated with steep terrain.

**Strategies & Implementation**
Retention for each block is planned based on the required protection of different resources (e.g. riparian, wildlife, cultural, soils). If the minimum level of retention is not yet met, additional area is retained to ensure the retention targets are met. Refer to the SFM Plan Management Strategies for details. Salvage harvesting opportunities may not adhere to the retention strategy and retention levels, but this is anticipated to represent a small portion of the harvested volume.

**Forecasts**
The average block retention is expected to remain above the target moving forward as the VR Strategy continues to be deployed across the DFA. For 2018 retention levels are expected to be relatively constant.
Monitoring
The Operations Forester reports on this indicator using the Variable Retention Tracking Report from the Cengea database. This report uses cutblocks defined as harvest started in the reporting year.
Indicator 1.2.1: Habitat Protection

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitat for focal species, including species at risk existing in the DFA</td>
<td>Maintain or increase habitat for selected focal species, including species at risk</td>
<td>Degree of habitat protection for selected focal species, including species at risk</td>
<td>The amounts (in ha) of habitat protected for selected focal species remains the same or increases year after year</td>
<td>Decrease by 1%</td>
</tr>
</tbody>
</table>

**History**

Core Indicator under CSA Z809-08.

**Basis for the Target**

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

“Habitat, in terms of both quantity and quality, is a key component of the health of species and animal populations” (CSA Sustainable Forest Management, 2008). Forest management can have both positive and negative effects for wildlife and their habitat. It is important to ensure forest habitat necessary 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.
The Northern Red-legged Frog is a moderate-sized frog occurring from southwestern BC to northwestern California. It generally inhabits moist, lower elevation forests and requires both aquatic breeding habitat and terrestrial foraging habitat. The Red-legged Frog is listed as Special Concern on SARA Schedule 1, provincially blue-listed, listed on the Forest and Range Practices Act (FRPA) Category of Species at Risk and is considered Identified Wildlife, and has a Conservation Priority of 1.

Scouler’s Corydalis is a 60 – 120 cm tall plant with rosy-pink, spurred flowers. It is limited in distribution to the Pacific Northwest and in BC is only found on southwestern Vancouver Island. Scouler’s Corydalis is not listed by SARA, has been provincially down-listed to yellow and has a Conservation Priority of 3. It is listed on the Forest and Range Practices Act (FRPA) Category of Species at Risk and is considered Identified Wildlife.

### Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Type of Habitat Protected/Species</th>
<th>Area (ha)</th>
<th>Measure</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Legal</td>
<td>Proposed</td>
<td>Voluntary</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>UWR</td>
<td>2130</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MAMU</td>
<td>3133</td>
<td>1531</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Goshawk</td>
<td>0</td>
<td>241</td>
<td>637</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Red-legged Frog</td>
<td>51</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scouler’s Corydalis</td>
<td>74</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>UWR</td>
<td>2130</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MAMU</td>
<td>3149</td>
<td>1521</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Goshawk</td>
<td>0</td>
<td>0</td>
<td>739</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Red-legged Frog</td>
<td>51</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scouler’s Corydalis</td>
<td>74</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>UWR</td>
<td>2130</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MAMU</td>
<td>3149</td>
<td>1527</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Goshawk</td>
<td>0</td>
<td>0</td>
<td>417</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Red-legged Frog</td>
<td>51</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scouler’s Corydalis</td>
<td>73</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
### Performance and Interpretation

**2017:** There were minor changes in murrelet habitat accounting due to some updated aerial survey work and a redistribution of habitat to proposed Klanawa Old Growth Management Areas (OGMAs). A significant change occurred in the Goshawk habitat as the View Lake voluntary reserve became a government *Area of Interest* (AOI) that WFP supported to move forward. While this area is not yet officially a proposed Wildlife Habitat Area (WHA) it is considered close in receiving the status. There are other AOIs in the DFA but they are not yet counted as proposed WHAs.

### Strategies & Implementation

In general the management strategy for this indicator includes:

- **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 eventually move proposed areas through the process to become legally established.
- **When it is necessary to build roads through or harvest adjacent to one of these reserves, WFP attempts to minimize the impact and provides replacement habitat of similar quality, if necessary.**
- **Species at Risk training is delivered to the operations to aid staff in identifying and working around Species at Risk.**
- **Northern Goshawk Management Protocol has been developed to guide operations managing forest activities around nests.**
- **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 OGMAs become legally established, the habitat conserved for focal species is expected to increase over the short to medium term. In the long-term, it is anticipated that as BC government Implementation Plans come into effect for Northern Goshawk and Marbled Murrelet, the hectares attributed to WHAs will increase.

Monitoring
The Wildlife Biologist & GIS Technician provides updated information in relation to this indicator to support the indicator basis for the target, current results, strategies and implementation and monitoring methods, as required.

The Operations Forester is responsible for coordinating GIS Analysis (shape files are obtained from the government as protected areas are approved).

- 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.
Indicator 1.2.2: Suitable Habitat

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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of suitable habitat for selected focal species, including species at risk existing in the DFA</td>
<td>To ensure the long-term availability of habitat for selected focal species including species at risk</td>
<td>Degree of suitable habitat in the long term for selected focal species, including species at risk</td>
<td>The amount (in ha) of potentially suitable habitat available within WHA, UWR, OGMA and NCLB remains the same or increases over time (measured every five years)</td>
<td>UWR – decrease by 1% MAMU – decrease by 2%</td>
</tr>
</tbody>
</table>

History
Core Indicator under CSA Z809-08.

Basis for the Target
The target and variance are based on legal requirements under FRPA regarding established protection/management areas for species at risk, ungulates, and old growth management. 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.

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.

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## Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Type of Habitat Protected/Species</th>
<th>Measure</th>
<th>Legal Reserves (ha)</th>
<th>NCLB¹ (ha)</th>
<th>Baseline (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>UWR</td>
<td>Spatially delineated ungulate winter range</td>
<td>n/a</td>
<td>n/a</td>
<td>Reported next</td>
</tr>
<tr>
<td></td>
<td>Potential MAMU Nesting Habitat</td>
<td>Potentially Suitable Habitat in WHA, UWR, OGMA and NCLB</td>
<td>n/a</td>
<td>n/a</td>
<td>in 2018</td>
</tr>
<tr>
<td>2013</td>
<td>UWR</td>
<td>Spatially delineated ungulate winter range</td>
<td>2,130</td>
<td>0</td>
<td>2,130</td>
</tr>
<tr>
<td></td>
<td>Potential MAMU Nesting Habitat</td>
<td>Potentially Suitable Habitat in WHA, UWR, OGMA and NCLB</td>
<td>5116</td>
<td>16,389</td>
<td>21,505</td>
</tr>
</tbody>
</table>

¹Non-contributing landbase as defined by TFL 44 Management Plan 4.

**Ungulate Winter Ranges** have been legally established for all tenures within the DFA. A total of 2130 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 measured as the total area spatially delineated and conserved for ungulate winter range over the long-term and must meet or exceed the target of 2130 ha.

**Marbled Murrelet nesting habitat** has been delineated within the DFA. Potentially suitable habitat was modelled. 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 land base (generally unharvestable) will be retained in the long-term. The potentially suitable habitat available in reserves was calculated using the current legal WHA, UWR and OGMAs. The non-contributing land base was calculated using data from the TFL 44 Management Plan 5 (2010) dataset created for the timber supply analysis.

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 21,505 (16,389 + 5,116) ha.

### Performance and Interpretation

**2017:** Last report year was 2013; the next report year on this indicator is 2018.

### Strategies & Implementation

The FSP contains results and strategies for management activities within or adjacent to established WHA, UWR, and OGMAs, including provisions for amendments where permitted within the specific Order establishing the habitat area. The general management strategy is as follows:

- 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 OGMAs and WHAs 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. However, winter ranges are currently being evaluated in the Great Central Lake Area which may increase the total reserve area.

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 modelled. It is expected that within the amount forecast not all will be suitable.

To forecast suitable habitat into the future only modelling can be used as the inventory gives the current state. Potentially suitable habitat was modelled 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 “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 ≥ 28.5 m tall or site index ≥18.

3) The table below shows the result of this modelling exercise. In essence, as current young stands grow, substantially more potentially suitable habitat is available in the long-term for the Marbled Murrelet.

<table>
<thead>
<tr>
<th>Habitat Type</th>
<th>Legal Reserves (ha)</th>
<th>NCLB 1 (ha)</th>
<th>Total (ha)</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ungulate Winter Range</td>
<td>2,130</td>
<td>0</td>
<td>2130</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>Potential MAMU Nesting Habitat</td>
<td>5,595</td>
<td>33,030</td>
<td>38,625</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

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.
Monitoring

The Wildlife Biologist & GIS Technician provide updated information in relation to this indicator to support the indicator basis for the target, current results, strategies and implementation and monitoring methods, as required. The general monitoring measures are as follows:

- 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 land base will be recalculated with new timber supply analysis

The Operations Forester coordinates GIS Analysis (shape files are maintained by government and are made available to licensees once areas are approved/established).
**Indicator 1.2.3: Native Species Regeneration**

**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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native tree species replacement on the DFA</td>
<td>Native tree species harvested on the DFA are replaced by native tree species</td>
<td>Proportion of regeneration comprised of native species</td>
<td>At a minimum 99% of the trees planted be native species based on a five year rolling average</td>
<td>-2.0%</td>
</tr>
</tbody>
</table>

**History**
Core Indicator under CSA Z809-08.

**Basis for the Target**
The target is based on legal requirements under FRPA and the associated Chief Forester’s Standards for Seed Use.

The variance is based on possible future regeneration that includes a small proportion of Noble Fir or other non-native species as climate change and browse resistance are more closely examined. Noble fir is a desirable species to reforest on TFL 44 at elevations greater than 700 meters due to its tolerance to heavy snow packs and its wood quality. At higher elevations where the planting of Douglas-fir is limited by snowpack, Noble fir becomes a good option. Young Noble Fir seedlings are very stiff and sturdy, possessing a large caliper at a young age and browse resistant. This allows these trees to be successful on areas with a high snowpack, on slopes with heavy snowfall, and areas of high ungulate use. Unlike other true firs, such as Amabilis Fir, Noble Fir produces a stronger more durable wood, with a very high strength-to-weight ratio.

Research completed by the Ministry of Forests in 1992 found Noble Fir grows well on sites in the warmer variants of the Dry and Moist Maritime Coastal Western Hemlock subzones, and the wetter variant of the moist Mountain Hemlocks subzone. This is consistent to the future planting strategy of Noble Fir on TFL 44.

**Current Status & Results**

<table>
<thead>
<tr>
<th>Year</th>
<th>Planted</th>
<th>Native Species Planted</th>
<th>% Native Species (yr)</th>
<th>% Native Species (5 yr rolling avg)</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>553,270</td>
<td>551,380</td>
<td>99.7</td>
<td>99.2</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>1,320,431</td>
<td>1,304,641</td>
<td>98.8</td>
<td>99.3</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>1,259,498</td>
<td>1,247,438</td>
<td>99.0</td>
<td>99.5</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>1,491,456</td>
<td>1,481,058</td>
<td>99.3</td>
<td>99.6</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>2,146,231</td>
<td>2,131,351</td>
<td>99.3</td>
<td>-</td>
<td>-</td>
<td>n/a</td>
</tr>
</tbody>
</table>

**Performance and Interpretation**
2017: The target was met with 1,890 Noble Fir being planted in 2017.

**Strategies & Implementation**
The FSP contains the approved stocking standards for regeneration, which includes specific species, densities and minimum heights for each ecosystem type found in the DFA.
Forecasts

It is anticipated that the target will be achieved as it is a legal requirement. The regeneration of non-native species is expected to be rare; however, their performance will be monitored to determine if site conditions or seedling growth justify a target adjustment.

Monitoring

The Area Planner is responsible to coordinate annual reports of planted species and associated quantities through the Plant Wizard and/or Cengea database and/or the SPAR database.
Indicator 1.3.1: Genetic Diversity

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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genetically modified organisms on the DFA</td>
<td>Genetically modified organisms are not introduced in the DFA</td>
<td>The percent of the trees planted annually that is genetically modified organisms</td>
<td>The percent of the trees planted annually that is genetically modified organisms is 0%</td>
<td>None</td>
</tr>
</tbody>
</table>

History
Core Element under CSA Z809-08.

Basis for the Target
The target aligns with the current legal status: no genetically modified organisms are currently allowed.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>% Genetically Modified Trees Planted</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Performance and Interpretation
2017: Only seedlings from registered seedlots are planted on the DFA. No genetically modified organisms are planted. The background information associated with Indicator 1.2.3 contains a detailed breakdown of registered seedlots that are used in the DFA.

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.

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

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

Monitoring
The primary means to maintain the silviculture records is through the entry of activity information in Cengea by the Area Planner. Planting specific data is also recorded within the Plant Wizard database and the provincial SPAR database for seeds and seedlings.
Indicator 1.4.1: Sites with Management Strategies

Element: 1.4 Protected areas & sites of special biological, geological, heritage or 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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sites of special geological, biological, or cultural significance in the DFA</td>
<td>Management of sites of special geological, biological, or cultural significance in the DFA</td>
<td>Proportion of identified sites with implemented management strategies</td>
<td>100% of identified sites have implemented management strategies</td>
<td>-1 site per year</td>
</tr>
</tbody>
</table>

History
Core Indicator under CSA Z809-08 (related to old Indicator 39).

Basis for the Target
Some sites (e.g. karst sites, eagle nests) are managed consistent with legal requirements. Sites without legal requirements will be managed where practical with input from willing interest groups. The variance addresses unanticipated categories of special sites without legal requirements and currently known management strategies.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th># of Sites Identified</th>
<th># of Sites Implemented Management Strategies</th>
<th>% Managed</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>13</td>
<td>13</td>
<td>100</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>15</td>
<td>15</td>
<td>100</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>25</td>
<td>25</td>
<td>100</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>38</td>
<td>38</td>
<td>100</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>26</td>
<td>26</td>
<td>100</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Performance and Interpretation
2017: For this Indicator 6 nest trees and 7 bear dens were listed. These sites have management strategies identified to protect the features. Similar to 2016 few sites were identified because of reduced timber harvesting activities.

Strategies & Implementation
WIWAG has identified a desire to ensure protection/conservation of special sites in the DFA such as historical/memorial sites (e.g., World War II plane crash sites, old railway grade, etc.), special habitat features (e.g. eagle and northern goshawk nests), geological sites (e.g. karst), and other special sites of interest. Where applicable, sites will be added to the GIS layers for future tracking.

Where these sites are identified during planning activities, WFP will develop management strategies, on a case by case basis. The WFP EMS ensures activities are carried out in accordance with protection measures (through Site Plans, Harvest and Road Instructions, EMS Pre-works and Inspections to assess implementation of plans and prescriptions. Identified sites are reported as they occur within or adjacent to harvest and road activities for the year of harvest completion.
Forecasts

Sites of specific significance typically involve bear dens, rare nests, karst and historic sites. The presence of specific sites can be influenced by timber type (e.g. old growth and second growth). As harvest activities transition to second growth it is expected that the discovery of bear den sites will decrease, historic/memorial sites will increase, and that nest and karst sites will remain relatively constant if the total AAC is harvested annually.

Monitoring

The GIS Analyst reviews the wildlife and karst data layers to identify special sites encountered in a given year. The WIWAG Facilitator reports on any additional sites identified by WIWAG to be added to this indicator for future tracking and reporting.
Indicator 1.4.2: Cultural Sites

Element: 1.4 Protected Areas & Sites of Special Biological or 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 biological, or cultural significance within the DFA and implement management strategies appropriate to their long-term maintenance.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identified sacred and culturally important sites on the DFA</td>
<td>Provide protection for identified sacred and culturally important sites on the DFA</td>
<td>Protection of sites of special significance</td>
<td>100% of identified sacred and culturally important sites (i.e., archaeological sites) are managed according to measures jointly developed by WFP and First Nations</td>
<td>-10%</td>
</tr>
</tbody>
</table>

History

Core Indicator under CSA Z809-08.

Basis for the Target

This indicator has historically focused on aboriginal archaeological sites because of their reoccurring presence on the DFA as discovered with the assistance of First Nation communities. A broader view of other significant sites continues to be captured in Indicator 1.4.1. There are legal requirements under Heritage Conservation Act, FRPA, and the results/strategies from the Forest Stewardship Plan for management of Cultural Heritage Resources.

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

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th># First Nations Special Sites Identified</th>
<th>Sites Managed (percent)</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>1</td>
<td>100%</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>1</td>
<td>100%</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>3</td>
<td>100%</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>1</td>
<td>100%</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>2</td>
<td>100%</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Performance and Interpretation

2017: There were 10 cutblocks that had Archaeological Impact Assessments (AIA’s) completed based on archaeological potential from the AOA and from observations made by field crews. One CMT was discovered in the near vicinity but not in the cutblock. No Site Alteration Permit was required.

Strategies & Implementation

Based on Archaeological Overview Assessments (AOA), the DFA has been categorized into areas based upon archaeological site potential and the need for an archaeological impact assessment (AIA). Also, oral history, photographs and traditional use information may be available for identifying important sites. Important sacred and culturally important sites (i.e. archaeological sites) are usually identified by the First Nation through information sharing and cultural referral.
processes. It is recognized that First Nations may not be prepared to identify the nature of all sacred and culturally important sites and options for management strategies.

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

One of the primary archaeological resources identified in the AIA process are Culturally Modified Trees (CMTs). A CMT is a tree that has been altered by native people as part of their traditional use of the forest. Where archaeological resources may be affected by proposed timber harvesting activities, WFP will apply to the Provincial Government for a Site Alteration Permit (SAP). Before issuing a SAP the government refers the application to First Nations.

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

**Forecasts**

At this time, joint development of management options is completed through the participation in the AIA field work, referral of the AIA report, and the referral of the Site Alteration Permit to review and consider the proposed management options. Through these processes, it is anticipated that the target will be achieved.

In the event that a particular First Nation expresses any concerns with the existing process, alternatives may need to be developed.

**Monitoring**

The Operations Forester reports on the number of cultural/archaeological sites identified within cutblocks harvested during the year (Cengea, Forest Ops.). Effectiveness of management strategies (e.g. CMT buffering) is monitored during post harvest assessments.
Indicator 1.4.A: Sensitive Ecosystem Training

Element: 1.4 Protected Areas & Sites of Special Biological or 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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitive ecosystems in the DFA</td>
<td>Sensitive ecosystems are identified and their important qualities protected</td>
<td>% of Planners trained in the Sensitive Ecosystem Inventory in the previous 24 months</td>
<td>75%</td>
<td>-10%</td>
</tr>
</tbody>
</table>

History

This indicator is carried forward from the 2009-2011 SFM Plan (indicator 7).

Basis for the Target

To identify and protect sensitive ecosystems the training of field planners in recognition and management options is important. Multiple planners visit an area during road and cutblock development; therefore, if at least 75% of the planners receive training the area will be adequately assessed. Training on a 24 month cycle is reasonable given that the status of sensitive ecosystems is relatively static. The variance accounts for planners who are new to the DFA or who may work on a casual basis.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th># of Planners Trained</th>
<th>% Trained</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>16/19</td>
<td>84</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>35/46</td>
<td>76</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>35/36</td>
<td>97</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>15/23</td>
<td>65</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>2013</td>
<td>18/20</td>
<td>90</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Performance and Interpretation

2017: For 2017 16 staff planners and contractor principles participated in the training. An additional 20 planners outside of the scope of reporting also took the training.

Strategies & Implementation

Sensitive Ecosystems are defined as those Biogeoclimatic Ecosystem Classification variants and site associations that have been identified through government processes as “sensitive” and typically include rare and endangered plant communities.

Sensitive ecosystems are tracked in the GIS Layers and are reviewed during planning activities (the sites are identified based on high level overview ecosystem mapping). During planning activities, the areas are reviewed in the field to confirm presence and/or adjust mapping boundaries to match the actual field information. General management strategies include focusing stand level retention on areas identified as sensitive ecosystems.

Training in the identification of sensitive ecosystems (in addition to species at risk, invasive plants etc.) is required to ensure that field confirmation/identification of these sites is completed.
accurately. Staff planners and principles of planning contractors/consultants will be captured in this training.

**Forecasts**

WFP has an internal program to ensure planners receive training in sensitive ecosystems on a 24 month cycle. It is estimated that 20 planners and planning contractors/consultants will receive the training on the 24 month cycle.

**Monitoring**

Operations Forester (with assistance from Administrative staff) generates training reports to summarize the number of Planners requiring training, and the number completed within the previous 24 months.
## Indicator 2.1.1a: Reforestation Success

**Element: 2.1 Forest Ecosystem Resilience**  
*Conserve ecosystem resilience by maintaining both ecosystem processes and ecosystem conditions.*

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>The timely establishment of regeneration on the DFA</td>
<td>Harvested areas on the DFA are regenerated promptly</td>
<td>Reforestation Success</td>
<td>Hectares of forest land missing its milestone obligation annually is zero</td>
<td>None</td>
</tr>
</tbody>
</table>

### History
Core Indicator under CSA Z809-08.

### Basis for the Target
The target and variance are tied to future yield assumptions in the Timber Supply Review associated with the DFA. Prompt reforestation with ecologically suitable species is linked to the Long Term Harvest Level (LTHL) of the DFA.

### Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Regen (RG) or Free Growing (FG)</th>
<th>Hectares with RG or Late FG Date</th>
<th>Hectares meeting RG or FG Date (early or late)</th>
<th>Hectares missing RG or Late FG Date</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>Regen</td>
<td>2014.8</td>
<td>2014.8</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Free Growing</td>
<td>738.7</td>
<td>738.7</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>Regen</td>
<td>1233.9</td>
<td>1233.9</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Free Growing</td>
<td>1234.2</td>
<td>1234.2</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>Regen</td>
<td>127.4</td>
<td>127.4</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Free Growing</td>
<td>677.7</td>
<td>677.7</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>Regen</td>
<td>1279.4</td>
<td>1279.4</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Free Growing</td>
<td>1877.2</td>
<td>1877.2</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>Regen</td>
<td>1105.4</td>
<td>1105.4</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Free Growing</td>
<td>760.9</td>
<td>760.9</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

### Performance and Interpretation
**2017:** All 2753.5 hectares included in the scope of the target either met the regeneration delay or the free growing milestones. No hectares were out of compliance.

### Strategies & Implementation
Milestone obligations are regeneration delay and free growing dates that are established within the Forest Stewardship Plan (approved stocking standards) based on ecosystem types. Timelines are set in motion upon harvest start dates.

Timely planting with appropriate species and brush control are the primary management tools that ensure reforestation and free growing commitments are met.

Government and WFP databases are compared to ensure that SUs approaching their time limit for regeneration are given planting priority. The Forestry department conducts surveys to ensure the success of reforestation.
Forecasts
It is anticipated that the target will be met, as it is a legal requirement.

Monitoring
Plantations are regularly assessed in the field to ensure milestone obligations are met and reported to government. The Operations Forester generates reports from Cengea and the government’s RESULTS database to summarize compliance with milestone obligations.
Indicator 2.1.1b: Reforestation Success

Element 4.1 Carbon Uptake and Storage
Maintain the processes that take carbon from the atmosphere and store it in forest ecosystems.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>The uptake and storage of carbon on the DFA</td>
<td>The uptake and storage of carbon is enhanced</td>
<td>Reforestation success</td>
<td>Equivalent years of Not Sufficiently Reforested (NSR) expressed against the five year rolling average of annual area harvested is less than two years</td>
<td>+0.75 years</td>
</tr>
</tbody>
</table>

History
Core Indicator under CSA Z809-08 (and previous Indicator PA25).

Basis for the Target
The target is based on legal requirements under FRPA for regeneration delay. The variance allows for minor discrepancies related to the challenges surrounding forecasting seed and seedling requirements one to two years ahead based on estimated harvest levels/plans.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>NSR Area (productive ha)</th>
<th>Area Harvested (ha)</th>
<th>Area Harvested, 5 Year Average (ha)</th>
<th>NSR Equivalency (years)</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>275.2</td>
<td>343.6</td>
<td>889.3</td>
<td>0.31</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>410.2</td>
<td>540.8</td>
<td>1179.2</td>
<td>0.35</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>812.7</td>
<td>1088.6</td>
<td>1313.7</td>
<td>0.62</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>1107.2</td>
<td>1172.6</td>
<td>1297.1</td>
<td>0.85</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>1148.2</td>
<td>1332.4</td>
<td>1147.0</td>
<td>1.0</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Performance and Interpretation
2017: For 2017 less than 1 year (0.31) of average annual harvest has not been reforested and is well within the target. 553,270 trees were planted in 2017. Reduced timber harvesting activity and a surplus of planting stock allowed the NSR equivalency value to decrease.

Strategies & Implementation
Planting with appropriate species and brush control are the primary management tools that ensure reforestation and free growing commitments are met on time.

Natural regeneration is unpredictable on the DFA. Artificial regeneration through timely tree planting is the favored method for successful tree occupancy of harvested areas.

Plantations are regularly assessed in the field to ensure milestone obligations are met and reported to government. New plantations are established in the spring and the fall of each year and assessed for survival the year following tree planting.

Forecasts
NSR Equivalency is expected to increase from 2017 levels as timber harvesting returns to near normal levels in 2018.
Monitoring
The Operations Forester generates reports from the Cengea Database detailing the total NSR hectares and the area harvested for cutblocks completed at the end of a calendar year. NSR equivalency (years) equals the NSR area (ha) divided by the 5 year rolling average of annual area harvested.
Indicator 2.2.1a: Additions/Deletions to Forest Area

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>The productivity of the DFA</td>
<td>The productivity of the DFA is maintained over time</td>
<td>Additions and deletions to the forest area</td>
<td>The net percent of forest area harvested each year in the DFA that is converted to permanent access structure (PAS) does not exceed 7%</td>
<td>+ 1%</td>
</tr>
</tbody>
</table>

History
Core Indicator under CSA Z809-08 (old indicator 17).

Basis for the Target
The target and variance is based on legal requirements under FRPA. PAS is permitted to exceed 7% in specific situations for variables such as safety considerations and terrain constraints, etc. provided appropriate rationale is documented.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>TAUP (ha)</th>
<th>Permanent Access (ha)</th>
<th>Access as % of TAUP</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>460.8</td>
<td>24.3</td>
<td>5.3</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>700.7</td>
<td>31.5</td>
<td>4.5</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>1278.6</td>
<td>83.3</td>
<td>7.0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>1371.6</td>
<td>87.9</td>
<td>6.4</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>1587.98</td>
<td>104.5</td>
<td>6.6</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Performance and Interpretation
2017: The permanent access (roads) as a function of the Total Area Under Prescription (TAUP) increased to 5.3%. The 2017 value increased because a greater proportion of the harvest was conventional (not helicopter) requiring more road construction as compared to 2016.

Strategies & Implementation
To minimize permanent access structures, appropriate yarding systems are applied to minimize roads constructed and roads are debuilt and reforested (net percent) where necessary or appropriate. The 7% target is applied during planning to each block. Strategies that related to this indicator can also be found in the SFM Plan Management Strategies (Site Restoration).

Forecasts
Based on historical data, it is anticipated that the average PAS will range between 5-7% (allowing for slight variations between harvested cutblocks) and will return to higher levels in 2018-2019.

Monitoring
The Operations Forester reports on the annual Total Area Under Prescription (TAUP), PAS hectares and PAS % for the cutblocks harvested each year using the Cengea database.
Indicator 2.2.1b: Additions/Deletions to Forest Area

Element 4.2 Forest Land Conversion
*Protect forest lands from deforestation or conversion to non-forests, where ecologically appropriate.*

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retention of forest land for growing trees</td>
<td>Avoid excessive conversion of forest lands into other uses</td>
<td>Additions and deletions to the forest area</td>
<td>The net percent of the DFA forest land that is annually converted to other uses by the licensee (Special Use Permits [SUP] etc.) is less than 0.001%</td>
<td>+0.0005%</td>
</tr>
</tbody>
</table>

**History**

Core Indicator under CSA Z809-08 (related to old indicator 26).

**Basis for the Target**

Given the long history of timber harvesting in the DFA and the existing infrastructure, only very small amounts of forest land are likely to be converted to other uses. Some losses are required for capacity expansion such as Dryland Sorts, landfills etc. Similarly, the reclaiming of previously converted lands is very site specific and usually associated with small areas in the DFA. Areas most commonly reclaimed are decommissioned roads.

**Current Status & Results**

<table>
<thead>
<tr>
<th>Year</th>
<th>Forest Area Including Road Area (ha)</th>
<th>Net Conversion (%)</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>127,620</td>
<td>Very slight increase</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>127,620</td>
<td>Very slight increase</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>127,620</td>
<td>0.0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>127,620</td>
<td>0.0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>127,620</td>
<td>0.0</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

**Performance and Interpretation**

2017: In 2017 there was no known forest land converted to other uses that would prohibit the growing of trees. A road section called KM2191 in cutblock 871310 was planted reclaiming about 0.2 hectares to productive forest.

**Strategies & Implementation**

All Crown land in a tree farm license is designated as “Provincial Forest” land. This designation limits the ability of the company to convert the land to other uses. The *Land Act* establishes that land can be converted for easements or rights-of-way, or for other purposes, if the Chief Forester deems those uses to be compatible with uses described in the *Forest and Range Practices Act (Provincial Forest Use Regulation)*. There are also circumstances where areas (e.g. roads having surfacing removed) are reclaimed through rehabilitation and reforestation.

**Forecasts**

It is anticipated that the net area converted to other uses will be very low given the existing infrastructure that is in place.

**Monitoring**

The Operations Forester coordinates the receipt of information from corporate staff in the Properties and Permits Department for losses of forest land and compares it to areas that are reclaimed.
Indicator 2.2.2: Sustainable Harvest

Element: 2.2 Forest Ecosystem condition and 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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>The production of timber on the DFA</td>
<td>To maintain the production of timber at the level defined by the Long Term Harvest Level (LTHL)</td>
<td>Proportion of the calculated long-term sustainable harvest level that is actually harvested</td>
<td>The harvest level is 98 to 102% of the Long Term Harvest Level (LTHL) by cut control period.</td>
<td>+8% -3%</td>
</tr>
</tbody>
</table>

History

Core Indicator under CSA Z809-08 (relates to old indicator 28). On May 5th, 2011 the Chief Forester of B.C. approved Management Plan (MP) #5 and determined the Allowable Annual Cut (AAC) for TFL 44 to be 800,000 m³/year. The Base Case harvest schedule submitted as part of MP #5 indicated an initial harvest level of approximately 837,000 m³/year and a LTHL of 806,600 m³/year. Since the AAC was set below the LTHL of the Base Case, the current AAC of 782,482 m³ is the most suitable estimate of the LTHL.

Basis for the Target

Customer demand and government legislation are the basis for pursuing 100% of the Long Term Harvest Level (LTHL) or Allowable Annual Cut in a given cut control period. Legislation is written to encourage harvesting the LTHL in a cut control period to maintain economic stability. Cut control periods are typically five years but can be re-set to a lesser period by a licensee upon notification to government.

The variance is for fluctuations in customer demand. The upper variance is guided by government legislation which levies financial penalties when the harvest level is greater than 110%.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual Harvest Level (m³)</th>
<th>LTHL (m³)</th>
<th>Annual Harvest as % of LTHL</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Year Period 2016-2020</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>237,921</td>
<td>782,482</td>
<td>30%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>386,152</td>
<td>782,482</td>
<td>49%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Year Period 2013-2015</td>
<td>2,444,696</td>
<td>2,347,446</td>
<td>104.14%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Performance and Interpretation

2017: The current cut control period is from 2016 to 2020 inclusive. At the end of this period the harvest from the DFA is planned to be 3,912,410 m³. For the first two years of the cut control period (2016-2017) the harvest is estimated at 624,073 m³ or 40% of the two year allocation of 1,564,964 m³ (782,482 m³ X2). The effects of reduced harvesting from the contractual dispute carried into 2017. The target and variance were re-worded to better illustrate a range in performance. From a practical perspective is not possible to harvest to an exact volume on an annual basis.
Strategies & Implementation

WFP’s broad strategy is to meet customer demands by supplying and developing good quality products that will allow the annual harvest to be 100% of the LTHL. The cut control period may be re-set periodically from its five year term to account for market fluctuations. There is potential for government to award undercut volumes of greater than 5% of the AAC to third parties.

The LTHL is calculated by Corporate Forestry by evaluating the rate of growth. The Province’s Chief Forester takes this number into consideration when the AAC for the Licence is determined. LTHL is dependent on area, the productivity of the forestland, level of silviculture (e.g. numbers of trees established per ha, control of competing vegetation, fertilization etc.) and harvest constraints (e.g. restrictions on the rate of harvest). All of these factors are defined in the strategic analysis.

Forecasts

With good customer demand and a resolution to contractual uncertainties it is expected that WFP will make up the current harvest shortfall in its AAC before the end of the 2016-2020 cut control period.

Monitoring

The Operations Forester is responsible for coordinating harvest volume data using the Cut Control Statements provided by the Ministry of Forests, Lands and Natural Resource Operations. These official statements are received in the second quarter of the year following the reporting year. The Harvest Billing System scale reports and billed/unbilled waste volumes are used to estimate the harvested volume in the reporting year.
Indicator 3.1.1: Soil Disturbance

Element: 3.1 Soil Quality and Quantity

Conserve soil resources by maintaining soil quality and quantity.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>The quality of forest soils in the DFA</td>
<td>Harvesting operations do not excessively disturb forest soils</td>
<td>Level of soil disturbance</td>
<td>The number of cutblocks harvested annually in which soil disturbance exceeds 5% of the net area to reforest is zero</td>
<td>None</td>
</tr>
</tbody>
</table>

History
Core Indicator under CSA Z809-08 (relates to old indicator 16).

Basis for the Target
The target and variance is based on the desire to maintain soil productivity to grow successive timber crops that align with timber supply assumptions. Specific numbers are tied to legal requirements established in FRPA for sensitive soils. Non-sensitive soils have a limit of 10% soil disturbance and roadside areas have a limit of 25%.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th># Cutblocks Exceeding 5% Soil Disturbance</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Performance and Interpretation
2017: Of the 26 cutblocks that were assessed in 2017 none were determined to have soil disturbance exceeding 5%.

Strategies & Implementation
The strategy to not exceed 5% of the Net Area to be Reforested is identified in Standard Operating Procedures (SOPs) as to:
- identify sensitive soils in the planning stages through field work (limits are recorded in Site Plans),
- assign the appropriate harvest method (ground based, cable, aerial) for the soil conditions,
- assign the appropriate equipment to the soil conditions (hoe-chuck vs. skidder),
- use woody debris to insulate soil disturbance,
- curtail operations during wet weather.

Soil disturbance is assessed during cutblock inspections and post harvest inspections. SOPs are updated with new information for minimizing soil disturbance as required. Cutblocks may exceed 5% for non-sensitive soils and roadside work areas as permitted under FRPA.

Forecasts
The historical performance indicates that the current Standard Operating Procedures and feedback strategies will ensure that cutblock soil disturbance is maintained at or below 5%.
Monitoring
The Operations Forester reviews the postharvest assessment reports for cutblocks harvested within the year and reports the number of cutblocks that are recorded as exceeding the 5% soil disturbance limit.
### Indicator 3.1.A: Limit Herbicides

#### Element: 3.1 Soil Quality and Quantity
*Conserve soil resources by maintaining soil quality and quantity.*

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance (annually)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The natural chemistry of forest soils in the DFA</td>
<td>The natural chemistry of forest soils is maintained</td>
<td>The percent of the DFA area where herbicides are applied</td>
<td>&lt; 0.1%</td>
<td>+0.05%</td>
</tr>
</tbody>
</table>

#### History

This indicator is carried forward from the 2009-2011 SFMP (indicator 18).

#### Basis for the Target

The DFA has remote locations of competing vegetation most responsive to herbicide treatments. These remote locations are the most cost effective for treatment in areas of greater than 80 hectares. The variance is based on seasonal (weather) and public consultation constraints that may delay treatments in a given year.

#### Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Total DFA (ha)</th>
<th>Area Treated (ha)</th>
<th>Percent Treated (%)</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>139,446</td>
<td>20.7</td>
<td>0.02</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>139,446</td>
<td>57.5</td>
<td>0.04</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>139,446</td>
<td>0.0</td>
<td>0.0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>139,446</td>
<td>0.0</td>
<td>0.0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>139,446</td>
<td>0.0</td>
<td>0.0</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

#### Performance and Interpretation

**2017:** Six Cutblocks had herbicides applied as a basal spray in the DFA in 2017. Herbicides may be applied only after approval of a Pest Management Plan (PMP). The PMP for the DFA was issued in 2014 for a five year period.

#### Strategies & Implementation

The primary strategy is to minimize the use of toxic herbicides for brush treatments. To minimize the use of herbicides, harvested areas are reforested promptly so that planted seedlings may thrive amidst competing vegetation. Where effective manual treatments are available for competing vegetation (e.g. red alder), herbicides are avoided. Only herbicides deemed slightly toxic (e.g. glyphosate and Triclopyr) are used.

Pre-harvest planning includes a review of vegetation levels and potential challenges during Site Plan field work. Post-Harvest silviculture surveys also review vegetation levels. Treatments are prescribed within the Cengea database as forward planning activities, where required to meet regeneration milestones (regeneration and free growing). Pesticide Free Zones associated with streams are established according to the specifications of the Pest Management Plan for the DFA. These Zones assist to ensure water quality is maintained for treatments areas.
Forecasts
It is anticipated that the percent treated will typically be less than 0.1%, based on the historical average. Only a small patch of Japanese Knotweed is planned for 2018.

Monitoring
The Operations Forester generates reports of areas treated from the Cengea database.
Indicator 3.1.2: Downed Woody Debris

**Element: 3.1 Soil Quality and Quantity**
Conserve soil resources by maintaining soil quality and quantity.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood debris available for soil processes on the DFA</td>
<td>Maintain sufficient amounts of wood debris for soil processes</td>
<td>Level of downed woody debris</td>
<td>&gt; 40 m³ per hectare (annually)</td>
<td>-5.0 m³ per hectare</td>
</tr>
</tbody>
</table>

**History**
Core Indicator under CSA Z809-08.

**Basis for the Target**
The target and variance is guided by a FRPA requirement to retain about 10 m³ per hectare.

**Current Status & Results**

<table>
<thead>
<tr>
<th>Year</th>
<th>Downed Woody Debris (m³) per hectare</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>140</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>152</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>120</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>106</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>141</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

**Performance and Interpretation**
2017: Downed woody debris levels decreased slightly in 2017 primarily because of less helicopter harvest (higher waste), more second growth harvest (lower waste), and lower waste rates in old growth conventional cutblocks.

**Strategies & Implementation**
Coastal stands often have significant levels of downed and dead standing woody debris at various levels of decomposition. Harvesting operations may remove some dead woody debris but more often add to these levels by leaving non-merchantable and decaying wood on site. Yarding activities attempt to leave non-merchantable wood dispersed on site rather than create unnecessary road-side accumulations. Broadcast burning of woody debris has been virtually eliminated as a site preparation tool. Finally, the corporate retention strategy leaves standing timber that will serve as sources for downed woody debris in the future.

**Forecasts**
The level of downed woody debris is affected by the degree of old growth vs. second growth harvesting, the amount of conventional vs. helicopter yarding and the timber values. Old growth harvesting particularly helicopter logging has the highest levels of residue downed woody debris. Old growth waste levels are about double the levels in second growth because of more decay and breakage. For 2018 waste rates per hectare are expected to drop as higher log values generate greater recovery levels across old growth and second growth timber.

**Monitoring**
The level of downed woody debris will be measured through information uploaded to the government Waste system. The Operations Forester reviews the results of waste data submitted to government in a calendar year and divides the total submitted waste volume by the harvested area of the associated cutblocks.
## Indicator 3.2.1: Watershed Disturbance

### Element: 3.2 Water Quality and Quantity
Conserve water resources by maintaining water quality and quantity.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water quality and quantity</td>
<td>Management operations do not endanger water quality and quantity</td>
<td>Proportion of watershed or water management areas with recent stand-replacing disturbance</td>
<td>The annual number of watersheds greater than 3000 hectares in size that have more than 30% of their area in the 0-20 years age class is 2 or less</td>
<td>+1 Watershed</td>
</tr>
</tbody>
</table>

### History
Core Indicator under CSA Z809-08 (relates to old indicator 2 and 13 which measured harvesting as a percentage of landscape units).

### Basis for the Target
In general terms, watershed health is related to the amount of forest area that exists in a non-hydrological recovered state (younger stands). The value of 30% by area and age class reflects a science-based approach to hydrological recovery. The variance reflects the potential for increased harvest in watersheds for product demands or damaged timber salvage and adjustments for recent changes in the DFA.

### Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Watersheds with area &gt; 3,000 hectares</th>
<th>Total Productive Area (ha)</th>
<th>Total area harvested in last 20 years (ha)</th>
<th>Percent of Total Productive Forest in Watershed</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>Caycuse River</td>
<td>5,303</td>
<td>902</td>
<td>17.0%</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Coleman Creek</td>
<td>8,113</td>
<td>1,488</td>
<td>18.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Franklin River</td>
<td>5,382</td>
<td>1,586</td>
<td>29.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Great Central Lake</td>
<td>18,941</td>
<td>2,014</td>
<td>10.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Henderson Lake</td>
<td>7,648</td>
<td>1,201</td>
<td>15.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Klanawa River</td>
<td>22,608</td>
<td>6,350</td>
<td>28.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nitinat River</td>
<td>18,168</td>
<td>2,249</td>
<td>12.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sarita River</td>
<td>5,129</td>
<td>630</td>
<td>12.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Walbran Creek</td>
<td>4,687</td>
<td>1,110</td>
<td>23.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>Caycuse River</td>
<td>5,309</td>
<td>909</td>
<td>17.1%</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Coleman Creek</td>
<td>8,113</td>
<td>1,466</td>
<td>18.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Franklin River</td>
<td>5,385</td>
<td>1,544</td>
<td>28.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Great Central Lake</td>
<td>19,782</td>
<td>1,922</td>
<td>9.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Henderson Lake</td>
<td>7,646</td>
<td>1,186</td>
<td>15.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Klanawa River</td>
<td>22,612</td>
<td>6,444</td>
<td>28.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nitinat River</td>
<td>18,172</td>
<td>2,304</td>
<td>12.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sarita River</td>
<td>5,128</td>
<td>602</td>
<td>11.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Walbran Creek</td>
<td>4,688</td>
<td>1,150</td>
<td>24.5%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Performance and Interpretation

#### 2017:
For 2017 no watershed exceeded 30%.

### Strategies & Implementation

The harvest level strategies are documented within the Timber Supply Analysis and the TFL 44 Management Plan (#5). The broad strategy is to distribute the harvest across the DFA considering the objectives of landscape level zonation (Special, General, and Enhanced), and the rates of cut associated with Fisheries Sensitive Watersheds and steep terrain.

### Forecasts

It is anticipated that the Franklin watershed could exceed 30% by 2018.

### Monitoring

The Operations Forester coordinates a corporate GIS Analysis that updates the inventory age and the harvested areas for the previous year.
Indicator 3.2.A: Watershed Condition

Element: 3.2 Water Quality and Quantity
Conserve water resources by maintaining water quality and quantity.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>The hydrological condition of sensitive forested watersheds in the DFA</td>
<td>The hydrological condition of sensitive watersheds is improved</td>
<td>The average number of landslides originating from harvested areas in the high landslide frequency zone of Alberni Inlet East</td>
<td>The average number of landslides per year is 5.6 or less per 100 net hectares harvested from areas in the high landslide frequency zone (based on a ten year rolling average measured every 3 years)</td>
<td>+1.0 Landslide</td>
</tr>
</tbody>
</table>

History

This indicator replaces an earlier designation of “red and orange” listed watershed basins described in a watershed assessment performed every 10 years. The infrequency of this assessment created a need to describe a more frequently reported indicator. This indicator was re-written and the target first established for 2012.

Basis for the Target

Landslides have the potential to accelerate the delivery of sediments and bedload material to sensitive streams in the DFA, possibly affecting the hydrologic condition of forested watersheds. The DFA has two Fisheries Sensitive Watersheds in the high landslide frequency zone. The target is based on historic landslide data dating back to 1995 and a reduction in landslide frequency since 2007. The reduction in landslide frequency is expected to improve the long term hydrologic condition of the sensitive watersheds. The landslide inventory of the DFA is updated every three to five years by a qualified professional specializing in terrain evaluation, slope stability assessments, watershed assessments, road deactivation, railway grade and road construction, and road maintenance and reconstruction. The variance accounts for the potential for catastrophic events or the uncertain impacts of climate change.

Current Status & Results

<table>
<thead>
<tr>
<th>Year Harvested</th>
<th>10 Year Landslide Frequency</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>Next scheduled update 2019</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>1.1</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>Next scheduled update 2016</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>Next scheduled update 2016</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>Next scheduled update 2016</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>2012</td>
<td>5.5</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2011</td>
<td>6.1</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Performance and Interpretation

2017: The next scheduled update is 2019.
Strategies & Implementation

Western Forest Products maintains a Terrain Risk Management Strategy (TRMS) to guide its forest professionals in choosing appropriate risk management strategies when planning forest roads and cutblocks. The TRMS was developed and is supported with research findings and input from respected terrain and forest professionals. When planning forest roads and cutblocks, forest professionals use the TRMS to consider the potential for landslide occurrence, sediment delivery to streams, and values at risk. They will also consult terrain specialists to guide their management decisions. To assist with the reduction in landslide frequency Western Forest Products ensures that roads are properly inspected, maintained or deactivated. Additional strategies related to this indicator can be found in the SFM Plan Management Strategies.

Forecasts

The landslide frequency has fallen or remained stable for several consecutive periods. While trends are encouraging the most recently harvested areas have not been fully tested. Nevertheless, recent adjustments to harvest practices on steep slopes based on evolving research show promise for reductions in frequency. Heavy rain/wind events in 2014-2015 triggered a greater than average number of landslides in the DFA. Should the adjustments to harvest practices on steep slopes not withstand the more intense winter storms associated with climate change, the 10 year rolling average could increase from its current level in the 2019 report.

Monitoring

The Operations Engineer ensures the landslide inventory is updated every three years. The Operations Engineer consults the most current version of the landslide inventory and determines the number of landslides by harvest year and relates the information to the total harvest by year in the high landslide frequency zone.
Indicator 3.2.B: Community Watersheds

Element: 3.2 Water Quality and Quantity
Conserve water resources by maintaining water quality and quantity.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water quality in community watersheds in the DFA</td>
<td>Water quality in community watersheds is maintained</td>
<td>The number of water-related non-compliances or non-conformances in community watersheds</td>
<td>Zero</td>
<td>None</td>
</tr>
</tbody>
</table>

History
This indicator is carried forward from the 2009-2011 SFMP (indicator 19).

Basis for the Target
The target and variance are based on legal requirements under FRPA and the WFP EMS.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th># of non-Conformance</th>
<th># of non-Compliance</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>0</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>0</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>0</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>0</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>0</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Performance and Interpretation

Strategies & Implementation
Standard Operating procedures (SOPs) govern and limit any negative impacts to water quality. Moreover, the current FSP has strategies for sediment control in community watersheds specific to ditch cleaning, culvert replacement, road surfacing and road maintenance.

Forecasts
It is anticipated that the target and variance will be met, as the target is related to a legal requirement. No harvesting is expected in community watersheds until 2019.

Monitoring
The Operations Forester reviews the central file for external and internal audits, inspections and/or investigations and the Cengea database Incident Tracking System for reports of non-conformance or non-compliance. Conformance and compliance to the SOP’s is monitored through cutblock, road and post harvest inspections.
Indicator 3.2.C: S4 Streams

Element: 3.2 Water Quality and Quantity
Conserve water resources by maintaining water quality and quantity.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4 fish streams in</td>
<td>Maintain or increase the level of protection</td>
<td>The percent of stream area of S4 fish, streams</td>
<td>Measured annually, the percent area that is buffered within a 30</td>
<td>-5%</td>
</tr>
<tr>
<td>the DFA</td>
<td>for S4 fish streams</td>
<td>that are buffered with stand level retention</td>
<td>meter corridor associated with S4 fish streams is 80% or greater</td>
<td></td>
</tr>
</tbody>
</table>

History
This indicator is carried forward from the 2009-2011 SFMP (indicator 20).

Basis for the Target
The target is based on maintaining habitat to support WIWAG input on riparian habitat and fish and an objective under FRPA. Historically, a WIWAG subcommittee established the targets after discussion and field measurements of actual achievements.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th># Cutblocks</th>
<th>Total Area 30m Corridor (ha)</th>
<th>Logged Area of 30m Stream Corridor (ha)</th>
<th>Amount of 30m Corridor Intact (%)</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>2</td>
<td>0.1</td>
<td>0.0</td>
<td>100</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>3</td>
<td>1.7</td>
<td>0.1</td>
<td>94</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>12</td>
<td>7.0</td>
<td>1.3</td>
<td>82</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Performance and Interpretation
2017: Very small sample available in 2017 but indicator achieved. Diagram illustrates an example of where the white portion in the 30 meter corridor is logged.

Strategies & Implementation
Planners utilize riparian areas when considering the best location for the placement of retention. Retention along streams is determined at cutblock design. Riparian values are often used to determine the location of VR patches. Yarding systems and windthrow hazard are other factors...
that require consideration. Strategies related to this indicator can also be found in the SFM Plan. Management Strategies (Riparian Management).

**Forecasts**

The new methodology of calculation established in 2015 will be monitored for conformance to the target. It is expected that the target will be achieved for 2018.

**Monitoring**

The Operations Forester coordinates review of the cutblocks deemed harvest complete and reports the required data/results. Streams are measured by GIS methodologies. The post harvest assessment process monitors the effectiveness of the stream buffers.
**Indicator 3.2.D: S5 Streams**

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>S5 streams in the DFA</td>
<td>Maintain or increase the level of protection for S5 streams</td>
<td>The percent of stream length of S5 streams that are buffered with stand level retention</td>
<td>Measured annually, the percent area that is buffered within a 30 meter corridor associated with S5 fish streams is 60% or greater</td>
<td>-5%</td>
</tr>
</tbody>
</table>

**History**

This indicator is carried forward from the 2009-2011 SFMP (indicator 21).

**Basis for the Target**

The target is based on maintaining habitat to support WIWAG input on riparian habitat and downstream fish values and an objective under FRPA.

**Current Status & Results**

<table>
<thead>
<tr>
<th>Year</th>
<th># Cutblocks</th>
<th>Tot Area 30m Corridor (ha)</th>
<th>Logged Area of 30m Stream Corridor (ha)</th>
<th>Amount of 30m Corridor Intact (%)</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>20</td>
<td>26</td>
<td>3.8</td>
<td>85</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>21</td>
<td>26.6</td>
<td>5.9</td>
<td>78</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>41</td>
<td>59.3</td>
<td>12.4</td>
<td>79</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

**Performance and Interpretation**

2017: The target for this indicator was achieved.

**Strategies & Implementation**

Planners utilize riparian areas when considering the best location for the placement of retention. Retention along streams is determined at cutblock design. Riparian values are often used to determine the location of VR patches. Yarding systems and windthrow hazard are other factors that require consideration. Strategies related to this indicator can also be found in the SFM Plan Management Strategies (Riparian Management).

**Forecasts**

The new methodology of calculation established in 2015 will be monitored for conformance to the target. It is expected that the target will be achieved for 2018.

**Monitoring**

The Operations Forester coordinates review of the cutblocks deemed harvest complete and reports the required data/results. Streams are measured by GIS methodologies. The post harvest assessment process monitors the effectiveness of the stream buffers.
Indicator 4.1.1: Net Carbon Uptake

Element: 4.1 Carbon Uptake and Storage
Maintain the processes that take carbon from the atmosphere and store it in forest ecosystems.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>The uptake of carbon</td>
<td>The net rate of carbon uptake by the forest is positive over time</td>
<td>Net carbon uptake</td>
<td>The net annual carbon uptake on the DFA is positive</td>
<td>1 year negative</td>
</tr>
</tbody>
</table>

History
Core Indicator under CSA Z809-08.

Basis for the Target
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 & Results
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.

<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
<th>CO2e (tonnes)</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>Carbon uptake (from growing stock TFL 44)</td>
<td>604,961</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Carbon removed (to short-lived products)</td>
<td>-84,531</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuel Consumed (harvest &amp; transport)</td>
<td>-2,891</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Debris burned (debris disposal/operational fires)</td>
<td>-127,485</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NET Carbon Uptake</td>
<td>390,053</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>Carbon uptake (from growing stock TFL 44)</td>
<td>603,231</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Carbon removed (to short-lived products)</td>
<td>-88,172</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuel Consumed (harvest &amp; transport)</td>
<td>-3,294</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Debris burned (debris disposal/operational fires)</td>
<td>-89,713</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NET Carbon Uptake</td>
<td>422,052</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>Carbon uptake (from growing stock TFL 44)</td>
<td>617,055</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Carbon removed (to short-lived products)</td>
<td>-302,267</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuel Consumed (harvest &amp; transport)</td>
<td>-11,283</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Debris burned (debris disposal/operational fires)</td>
<td>-158,964</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NET Carbon Uptake</td>
<td>144,541</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>Carbon uptake (from growing stock TFL 44)</td>
<td>612,296</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Carbon removed (to short-lived products)</td>
<td>-302,267</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuel Consumed (harvest &amp; transport)</td>
<td>-11,380</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Debris burned (debris disposal/operational fires)</td>
<td>-168,402</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NET Carbon Uptake</td>
<td>130,247</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Performance and Interpretation

2017: The Net Carbon Uptake remained relatively high as in 2016 because of reduced operations in the DFA. More carbon was released through burning in 2017 than in 2016.

To calculate performance of this indicator, the following applies:

- The net carbon uptake on the DFA is simply defined as the difference between the total carbon uptake on the DFA by its growing stock, minus the net carbon removed from the DFA through harvest operations and the total carbon emitted through fuel consumption during forest management operations.
- 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:
  - carbon uptake (from growing stock)
  - carbon removed (to short-lived products)
  - fuel consumed (harvest & transport)
  - debris burned (debris disposal/operational fires)
  - net carbon uptake

- Carbon uptake is 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 m³) is multiplied by the average carbon density estimates (kg/m³) 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 m³) is multiplied by the average carbon density estimates (kg/m³) by species to obtain the gross carbon removed. This is then multiplied by a factor of 60% to estimate the tonnes of carbon removed to short-lived products. For simplicity, only stemwood volume is considered in the calculation which is consistent with the results of yield curves.
- An average weight of carbon emitted from fuel consumption per cubic meter of log production (Kg fuel Carbon/m³) is calculated using a factor derived from five Timberlands Operations. This factor is then multiplied by the volume production (m³) for Port Alberni to calculate the total weight (in tonnes) of carbon emitted from fuel consumption.
- Finally, the carbon emitted through forest practices such as debris burning or through other operationally caused fires is estimated by multiplying the approximate volume of wood consumed (in m³) by the average carbon density estimates (kg/m³) of all of the entire harvested volume to obtain the carbon uptake in tonnes of carbon.

<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>Carbon uptake (from growing stock TFL 44)</td>
<td>629,510</td>
</tr>
<tr>
<td></td>
<td>Carbon removed (to short-lived products)</td>
<td>-297,141</td>
</tr>
<tr>
<td></td>
<td>Fuel Consumed (harvest &amp; transport)</td>
<td>-13,325</td>
</tr>
<tr>
<td></td>
<td>Debris burned (debris disposal/operational fires)</td>
<td>-246,129</td>
</tr>
<tr>
<td></td>
<td><strong>NET Carbon Uptake</strong></td>
<td><strong>72,915</strong></td>
</tr>
</tbody>
</table>

1 Short lived products refers to paper, cardboard, and firewood.
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/strategies 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.
- 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. Results for 2017 are expected to be higher than 2016, for net carbon uptake, because of increased operations forecasted.

Monitoring

The Operations Forester coordinates calculation of the Net Carbon Uptake using Cengea and the GIS database (assistance may be provided by corporate personnel).

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),
- volume harvested annually,
- species profile of the harvested volume,
- age (i.e. old growth vs. 2nd growth) profile of the harvested volume,
- annual fuel consumption (gasoline, diesel fuel, aircraft fuel) based on a factor applied to the annual harvest in cubic meters (M³). See description of process below.
- annual area burnt in operationally caused forest fires,
- annual area burnt in broadcast silviculture fires,
- total number of debris piles burned annually for silviculture or fire abatement reasons and their average size.
The parameters listed above are entered in a spreadsheet built to calculate the carbon values emitted. It includes conversion factors extracted from recognized and credible international research literature. These factors include carbon density (CO₂e) of wood by species in tonnes/m³, carbon density of various fuel types in tonnes/L and proportion (%) of wood harvested that is stored in short-lived products.

Fuel consumption is calculated based on a factor derived from an average of all 5 WFP CSA DFA’s from data gathered for the 2012 – 2016 reporting periods. The factor is applied to the annual M³ of harvest as reported for the CSA reporting period. This includes diesel, gasoline and avgas consumption. This factor will be reviewed and revised every 5 years to account for changes in harvest types, technology and equipment. The current factor is 16.67 kg of carbon per M³ of harvest. The rationale for using a factor is that fuel accounts for a relatively low portion of the carbon produced; already uses factors for contractors as they do not report fuel consumption; and has not seen significant fluctuations over the time it has been calculated (2009 – 2016).
Indicator 5.1.1: Benefits Derived From the DFA

Element: 5.1 Timber and Non-Timber Benefits
*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.*

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber and non-timber</td>
<td>Timber and non-timber benefits are evaluated</td>
<td>Documentation of the diversity of timber and non-timber resources, including products and services produced in the DFA</td>
<td>Report on the corporate EBITDA, stumpage payments to the Provincial Government, payments to employees and contractors and local purchases</td>
<td>None</td>
</tr>
</tbody>
</table>

History
Core Indicator under CSA Z809-08.

Basis for the Target
The Port Alberni Forest Operation is a significant contributor to the corporate EBITDA. The corporate EBITDA is a benchmark of the net effect of all activities relating to the quantity and quality of timber and non-timber benefits, products and services produced. WFP produces quality products to customers while making payments to the provincial government, employees and contractors for goods and services.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Corporate EBITDA</th>
<th>Stumpage</th>
<th>Employees &amp; Contractors</th>
<th>Local Purchases</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>$152.6 million</td>
<td>$2,226,777</td>
<td>$13,841,200</td>
<td>$185,081</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>$148.2 million</td>
<td>$1,256,153</td>
<td>$14,071,749</td>
<td>$250,842</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>$117.1 million</td>
<td>$3,020,544</td>
<td>$34,312,876</td>
<td>$276,908</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>$108.5 million</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>$128.8 million</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2012</td>
<td>$50.6 million</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Performance and Interpretation
*2017: The corporate EBITDA for 2017 of $152.6 million increased from $148.2 million in 2016. From the Fiscal 2017 Year-End Results: Western…delivered a Company-record annual adjusted EBITDA…despite the most difficult coastal log harvest conditions in recent history. We continued to make progress in consolidating our operating platform and refining our sales and marketing strategy. We increased our operating income prior to restructuring and other income by 6% year-over-year, and achieved an average annualized lumber price above $1,000 per thousand board feet. Constrained log supply limited lumber production and sales volumes… shipments to China to capitalize on strong market demand and pricing, while at the same time partially mitigating the impact of US duties….Western exported less than 9% of our log availability in 2017, whereas the rest of the coastal industry exported an estimated 36% of log production, including timber harvested from the Province of British Columbia’s Timber Sales (“BCTS”) tenures. Press Release, February 15, 2018.*

Similar to 2016 payments to employees, contractors and local purchases remain relatively low because of reduced timber harvesting activities. Stumpage to the Crown was almost double that of...
2016 despite the annual harvest was almost 150,000 m³ less for 2017. This is related to significantly higher log prices for certain log species in 2017. Local purchases declined as the harvest level dropped again in 2017.

Strategies & Implementation

The forest provides a wide range of benefits, products and services to the local community and the province. The general types of timber and non-timber benefits from the forest include: outdoor activities and recreation opportunities (e.g. hiking, boating, camping), sustainable harvest of timber and non-timber resources (e.g. mushroom harvesting, salal harvesting), hunting, fishing, and trapping activities, opportunities for ecotourism (e.g. bird-watching, wildlife viewing), cultural and heritage resources, and ecological goods and services (e.g. drinking water provision)

“EBITDA stands for “Earnings Before Interest, Taxes, Depreciation, and Amortization”, a definition is provided in the SFMP Glossary. Since EBITDA provides a basic measure of the operating cash being generated from a business unit, it is an important indicator of financial performance. Positive operating cash flow allows an operating unit to pay off interest, debt, taxes, fund working capital, and reinvest in the business” (source: Western Matters Newsletter Fall 2010).

Several other indicators provide supporting evidence to the quality and quantity of timber and non-timber benefits, including but not limited to 3.2.A-D, 5.1.A-C and 6.3.1.

Forecasts

From the Fiscal 2017 Year-End Results: Western’s long-term business objective is to create superior value for shareholders by building a margin-focused log and lumber business of scale to compete successfully in global softwood markets. We believe this will be achieved by maximizing the sustainable utilization of our forest tenures, operating safe, efficient, low-cost manufacturing facilities and producing and selling high-value specialty products for global markets. We seek to manage our business with a focus on operating cash flow and maximizing the value of our fibre resource through the production cycle, from the planning of our logging operations to the production, marketing and sale of our log and lumber products. We routinely evaluate our performance using the measure Return on Capital Employed.

It is anticipated that the EBITDA will be maintained or improve over time as the demand for forest products remains positive and as WFP’s capital investment projects are realized. However, based on historical results, the EBITDA will likely fluctuate over time. Similarly, payments to the provincial government, employees, and contractors for goods and services will fluctuate with harvest levels in the DFA. Harvest levels are expected to increase in 2018.

Monitoring

The Operations Forester coordinates reporting of the current EBITDA from annual corporate reports and stumpage/employee/contractor payments from accounting reports.
Indicator 5.1.A: Park Perimeter

**Element: 5.1 Timber and Non-Timber Benefits**
Manage the forest sustainably to produce and acceptable and feasible mix of timber and non-timber benefits. Evaluate timber and non-timber forest products and forest-based services.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Park and ecological reserve perimeters in the DFA</td>
<td>Operations in the DFA are planned to minimize risk to park and ecological reserve perimeters</td>
<td>The percent of park and ecological reserve perimeters where harvesting has occurred</td>
<td>The percent of the area within 100 meters of park and ecological reserve perimeters harvested over the previous five year period is 4% or less</td>
<td>+ 1%</td>
</tr>
</tbody>
</table>

**History**
This indicator is a slight adaptation from the 2009-2011 SFMP (indicator 9).

**Basis for the Target**
The target is based on the current Timber Supply Analysis and AAC, which do not exclude harvest volumes from the productive forest area, LTHL and AAC calculations (i.e. forested areas along park perimeters are included in the productive forest area and are used to calculate future harvest levels). The 100 meter buffered area represents about 1% of the DFA. Therefore, it is estimated that 4% of the buffer could be harvested in a five year period. The variance is to account for the need to respect logical timber harvesting boundaries in the planning process.

**Current Status & Results**

<table>
<thead>
<tr>
<th>Year</th>
<th>Park/Reserve Perimeter (km)</th>
<th>Area within 100 meters of Perimeter (ha)</th>
<th>Harvesting in Previous 5 years (ha)</th>
<th>% of Area Harvested in Previous 5 yrs.</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>137.8</td>
<td>1460.4</td>
<td>46.4</td>
<td>3.2</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>137.8</td>
<td>1409.5</td>
<td>57.2</td>
<td>4.1</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>2015</td>
<td>134.7</td>
<td>1348.4</td>
<td>39.8</td>
<td>3.0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>134.2</td>
<td>1344.6</td>
<td>28.6</td>
<td>2.1</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>134.4</td>
<td>1344.8</td>
<td>21.1</td>
<td>1.6</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

**Performance and Interpretation**
2017: Annually there is potential for updates to DFA/Park boundaries based on new fieldwork to confirm boundaries. Parks Canada posted a new park shape that changed the configuration of the park and influenced the *Area within 100 meters of Perimeter.*

**Strategies & Implementation**
Historical results show that application of existing management strategies for items like wildlife, riparian, culture, windthrow etc., constrain the harvest areas sufficiently in order to achieve this indicator. The general strategy when harvesting adjacent to these areas is to deactivate roads to discourage vehicle traffic, conduct operations to minimize windthrow, verify boundaries to avoid trespass, and to retain coarse woody debris that may be introduced to boundary areas as a result of felling danger trees.
Forecasts
It is anticipated that the percentage of park/ecological reserve perimeter harvested will be near 4% for 2017 and will remain within the 1% variance.

Monitoring
The Operations Forester coordinates GIS analysis of harvested area within 100 meters of parks and ecological reserves on an annual basis. The DFA line in relation to the park boundary will form the basis of the analysis. The post harvest assessment process will monitor the integrity of park and ecological reserve perimeters.
Indicator 5.1.B: Recreation Access

Element: 5.1 Timber and Non-Timber Benefits
*Manage the forest sustainably to produce and acceptable and feasible mix of timber and non-timber benefits.
*Evaluate timber and non-timber forest products and forest-based services.*

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to recreation areas in the DFA</td>
<td>To maintain public access to the identified recreation areas</td>
<td>The level of public access to the recreation areas outlined in the recreation access inventory</td>
<td>The number of roads identified in the recreation access inventory that are accessible is 10 or more (inventory includes class of road by 2-wheel, 4-wheel and foot access)</td>
<td>None</td>
</tr>
</tbody>
</table>

History
This indicator is carried forward from the 2009-2011 SFM Plan (indicator 29).

Basis for the Target
The target of ten or more accessible sites is based on the evaluation of the existing recreational opportunities in the DFA considering features accessed and the amount of use. Public use is estimated as low for most of the identified sites.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th># Identified Roads</th>
<th># Identified Roads with Access</th>
<th>Identified Roads with Access (%)</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>13</td>
<td>13</td>
<td>100</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>13</td>
<td>13</td>
<td>100</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>13</td>
<td>13</td>
<td>100</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>13</td>
<td>13</td>
<td>100</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>13</td>
<td>13</td>
<td>100</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Performance and Interpretation

Strategies & Implementation
Many of the identified roads are main roads that most likely will not be deactivated. When deactivation plans are being developed, the Recreation Access Inventory is reviewed to ensure the target is met.

Forecasts
It is anticipated that the identified roads with access will remain at 100% based on historical results. Recreation values and use will increase with time and more roads will be identified as important to recreation. Runner’s Trail was added to the inventory in 2010 and now connects to the Spine Trail which was added to the inventory in 2013. Use of these trails is not well known but is expected to increase with time.

Monitoring
The Operations Forester reviews the Recreation Inventory on an annual basis and compares with Deactivation Plans.
Indicator 5.1.C: Mushroom Habitat Access

Element: 5.1 Timber and Non-Timber Benefits
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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mushroom habitat that is accessible in the DFA</td>
<td>Accessibility to mushroom habitat is maintained</td>
<td>The proportion of the DFA with accessible mushroom habitat</td>
<td>The proportion of the DFA within 200 meters of a maintained road and 20 years in age or greater is no less than 40% (measured every two years)</td>
<td>-10%</td>
</tr>
</tbody>
</table>

History
This indicator is carried forward from the 2009-2011 SFM Plan (Indicator 27).

Basis for the Target
The target and the variance are based upon the possibility of the movement of portable bridges making significant areas unavailable. This indicator has been developed based on the rationale that much of the non-timber forest product collection takes place within 200 meters of maintained road.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Total DFA Productive Forest (1)</th>
<th>Forest area within 200m of maintained roads and in 20+ year age class</th>
<th>Percent of DFA (%)</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>Next reported in 2018</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>119,907</td>
<td>49,257</td>
<td>41.1</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>117,564</td>
<td>46,318</td>
<td>39.4</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>2012</td>
<td>117,749</td>
<td>50,737</td>
<td>43.1</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2010</td>
<td>117,751</td>
<td>49,662</td>
<td>42.2</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2009</td>
<td>146,924</td>
<td>70,060</td>
<td>48.0</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Performance and Interpretation
2017: This indicator will be reported next in 2018.

Strategies & Implementation
No special management strategy is required for this indicator at this time. Historical results show that existing management strategies related to road maintenance and access to the DFA combined with harvest methods that require road access within the harvest areas and the high costs associated with helicopter logging should result in no impediments to this target.

Forecasts
The value for this indicator is expected to remain close to or slightly below 40% for the next report period. If the target is not met for two measurement periods then a more detailed analysis of mushroom harvesting in the DFA will be required to determine if it is being significantly impacted.

Monitoring
The Operations Forester is responsible to coordinate GIS Analysis. GIS is used to evaluate where the roads intersect with the relevant age classes, excluding de-built and planned permanent deactivation.
**Indicator 5.2.1: Communities & Sustainability**

**Element: 5.2 Communities and Sustainability**
Contribute to the sustainability of communities by providing diverse opportunities to derive benefits from forests and by supporting local community economies.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community sustainability</td>
<td>Support community sustainability</td>
<td>Level of investment in initiatives that contribute to community sustainability</td>
<td>The annual level of donations (dollar and in-kind) to the community will exceed $3000</td>
<td>-$2000</td>
</tr>
</tbody>
</table>

**History**
Core Indicator under CSA Z809-08. This indicator is revised from the 2009-2011 SFM Plan (Indicator 35).

**Basis for the Target**
The target reflects an improvement in economic activity for Port Alberni Forest Operation. The variance is maintained to account for periods of economic difficulty and market downturns.

**Current Status & Results**

<table>
<thead>
<tr>
<th>Year</th>
<th>Donation Recipient</th>
<th>Total ($)</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>City of Parksville, Alberni District Secondary School, West Coast Aquatic, National Forest Week, Alberni District Fall Fair Association, Royal Canadian Legion, Triconic Challenge</td>
<td>$ 9,365.22</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>United Steelworkers Assn, West Coast Aquatic Society, First Nations, Alberni District Secondary School, AV Bulldogs, National Forest Week, Royal Canadian Legion, PA Family Guidance Association, City of Port Alberni, Arrowsmith Services, Alberni District Fall Fair (seedlings)</td>
<td>$ 22,625.86</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>First Nations, Saanich Hospital, McLean Mill, West Coast Aquatic Society, Alberni District Secondary School, AV Dirt Bike Association, Alberni District Fall Fair Association, National Forest Week, BC Fire Training Association, AV Bulldogs, Red Shirt Foundation</td>
<td>$ 26,110.30 + FN In Kind</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>Alberni District Fall Fair, McLean Mill, Vancouver Island University, First Nations, National Forest Week, West Coast Aquatic Society</td>
<td>$ 20,372.82</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>
Performance and Interpretation

2017: WFP made material, cash, and in-kind donations to the various groups identified. Requests for donations are considered by the local operation with direction from the corporation. Donation levels have decreased after two consecutive years of reduced harvest on the DFA.

Strategies & Implementation

Historically, investments in initiatives that contribute to community sustainability have mainly centered on the maintenance of recreation sites and salmon enhancement projects. Other projects would be considered for support in the context of the economic circumstances at the time they are identified.

Forecasts

It is anticipated that the target will be met based on historical averages reflecting WFP’s commitment to local communities, including participation in initiatives such as public education and salmon enhancement, but will likely vary annually depending on the overall health of the forest industry and WFP. Given the operation is emerging from reduced harvest levels in 2016-2017 the level of donations is expected to be maintained or slightly higher for 2018 reporting.

Monitoring

The Operations Accountant reports the level of donations.
Indicator 5.2.2: Training & Skills Development

**Element: 5.2 Communities and Sustainability**

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

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee</td>
<td>Develop</td>
<td>Level of participation and support in training and skills development</td>
<td>Annual level of investment in training and skills development for forest planning staff and associated contractor principles averages 5 person-days per year</td>
<td>-0.5 person-days</td>
</tr>
<tr>
<td>skills</td>
<td>employee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**History**

Core Indicator under CSA Z809-08.

**Basis for the Target**

The target addresses the need for forest planning staff and associated contractor principles to be competent in the results-based era of the Forest and Range Practices Act and the Association of BC Forest Professionals continuing competency/education requirements. Moreover, the financial need of the business requires technological training of key workers to remain competitive. The variance is to account for training being reduced during times of market downturns.

**Current Status & Results**

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Person Days of Professional Training</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>10.6</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>9.3</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>6.0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>7.4</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>8.9</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

**Performance and Interpretation**

2017: Planning staff and contractor principles participated in a wide range of training including: safety, first aid, wildlife management, aboriginal and treaty rights, professional development activities (e.g. Use of Lidar, stream management), firefighting, and systems training.

**Strategies & Implementation**

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

This target is intended to measure the average number of person days of completed training per year in the category of skill/professional development. Skill/professional development training includes, but is not limited to workshops such as the Coastal Silviculture Committee, Association of BC Forest Professionals (ABCFP), soil conservation, stream management, variable retention etc.). Employee training records are maintained in the WFP Training Database.
Forecasts
It is anticipated that the target will generally be met or exceeded as older forest professionals continue to retire from the workforce at an accelerated rate and are replaced with younger professionals requiring training. Moreover, the profession continues to become more complex technically, environmentally and with safety initiatives all requiring enhanced levels of training.

Monitoring
The Operations Forester coordinates a report from the Training Database for total training hours by skill/professional development category.
Indicator 5.2.3: Employment

Element: 5.2 Communities and Sustainability
Contribute to the sustainability of communities by providing diverse opportunities to derive benefits from forests and by supporting local community economies.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment</td>
<td>Provide employment</td>
<td>Level of direct and indirect employment</td>
<td>The annual level of direct and indirect employment is 1974 person-years or greater over a five year rolling average</td>
<td>-20 (1%)</td>
</tr>
</tbody>
</table>

History
Core Indicator under CSA Z809-08.

Basis for the Target
The target is based on employment statistics for the Coastal BC Forest Industry 2011 PricewaterhouseCoopers Survey. The Long Term Harvest Level (LTHL) of 782,482 cubic meters could generate employment of 1974 direct and indirect jobs. The variance is to account for adjustments in harvest levels from year to year attributed to customer demand.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Employment Person Years</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 yr. average (rolling) 2013-2017</td>
<td>1533</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>5 yr. average (rolling) 2012-2016</td>
<td>2148</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>5 yr. average (rolling) 2011-2015</td>
<td>2564</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Performance and Interpretation
2017: The current employment person years is calculated from the 2017 harvest level estimate of 237,921 m³ (from Indicator 2.2.2) and the PricewaterhouseCoopers 2011 coastal average of 0.0025229 direct and indirect jobs for every cubic meter harvested. Employment was significantly less in 2017 because of reduced timber harvesting operations.

Note: the 2016 harvest level was updated to 386,152 m³ to include late billings which changed the person-years of employment from 700 to 974; 2017 harvest level estimated at 237,921 m³
5 Year Average is based upon; 2013 – 2459, 2014 – 2026, 2015 – 1608, 2016 – 974, 2017 - 600

Strategies & Implementation
It is currently Western’s strategy to set a harvest level that aligns as much as possible with market demand within the AAC limits set by legal agreements and regulation. Also, employment is guided by agreements with the union and contractor rights.
Forecasts

It is expected that the actual employment levels will fluctuate due to the cyclical nature of the forest industry. Other external forces that can affect employment include extended weather extremes, productivity gains due to technological advancements and unforeseen land base reductions. Given the current AAC it is anticipated that the target is achievable going forward; nevertheless, the current five year average has likely peaked and will begin to normalize towards the target over the next few years. The 2014-2018 average will fall below the target and variance but the annual level employment will increase significantly in 2018.

Monitoring

The Operations Forester is responsible to collect this information using cut control statements and publically available reports regarding average number of (Full Time Equivalent) FTE jobs per m³ harvested (e.g. PricewaterhouseCoopers reports or equivalent). Cut control statements also include waste billings.
Indicator 5.2.4: Aboriginal Lands & Tenure

Element: 5.2 Communities and Sustainability
Contribute to the sustainability of communities by providing diverse opportunities to derive benefits from forests and by supporting local community economies.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal forest economy</td>
<td>Maintain the aboriginal forest economy</td>
<td>Level of Aboriginal participation in the forest economy</td>
<td>Eight contractual arrangements with aboriginal communities annually</td>
<td>-4 contracts</td>
</tr>
</tbody>
</table>

History
Core Indicator under CSA Z809-08.

Basis for the Target
WFP has a history of contractual arrangements with willing aboriginal communities in primary logging, log salvage and assessment work. The DFA has been reduced significantly in recent years to accommodate, in part, First Nation interests including treaty. The aboriginal forest economy has been enhanced through forest tenure opportunities in the former DFA. Future contractual arrangements will evolve as treaties are finalized. The variance addresses any gaps that could develop between the services required and the capacity available for the parties.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Contractual Arrangements</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>7</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>2016</td>
<td>7</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>2015</td>
<td>11</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>12</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>12</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Performance and Interpretation
2017: In 2017 contractual arrangement with First Nations included cultural assessments and timber harvesting work. Not all contracts had activity in 2017 because of reduced timber harvesting activities. Some arrangements need to be renewed but the intent is still in place. For 2018 this indicator has changed to capture training arrangements and contractual arrangements that flow in both directions.

Strategies & Implementation
The target is intended to measure contractual arrangements with willing participants that have the potential for mutual benefits for WFP and the aboriginal community.
WFP will continue to explore mutually beneficial and economically viable business opportunities with willing participants.

Forecasts
The importance and scale of business arrangements should be maintained as aboriginal communities and WFP explore opportunities post treaty.

Monitoring
The Operations Forester reports on the number contractual arrangements on an annual basis.
Indicator 6.1.1: Understanding Title & 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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal title and rights</td>
<td>Evidence of a good understanding of the nature of Aboriginal title and rights</td>
<td>Target evidence will be an update to annual employee training on Aboriginal title and rights</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

History

Core Indicator under CSA Z809-08.

Basis for the Target

Forest professionals working with aboriginal peoples have a responsibility to understand how forest practices influence aboriginal title and rights. Aboriginal case law relating to title and rights is increasing. With the enactment of the Maa-nuluht Final Agreement training of employees is necessary to understand the treaty title and rights flowing from the Agreement. Recognizing title and rights is also a component of WFP’s corporate Sustainable Forest Management Statement for Timberlands.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Summary of Annual Training/ Employees Trained</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>Training reviewed the Tsilquot’In Decision; Updates to the Replacement FSP and how it relates to Cedar Side Agreements in the Maa-nuluht Treaty. Training specific to Planning Staff in the Port Alberni Forest Operation</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>Training continued on Maa-nuluht Treaty Rights associated with the Forest Stewardship Plan and better understanding of Aboriginal Rights and Title in areas of high strength of claim within the DFA. Instruction given to the broader Planning Staff</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>Training continued for forest professionals on the Tsilquot’In Supreme Court Decision; The Reasonable Opportunity Agreement (Maa-nuluht) came into practice with government training to the Operational Planner and subsequent instruction to the broader Planning Staff</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>Training on the Supreme Court Decision: Williams Case (Tsilquot’In); Self-direct training on the Reasonable Opportunity Agreement attached to Maa-nuluht Treaty Rights. Training on these two items was also passed onto Operational Planning Staff</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>Legal Training on Aboriginal Rights and Title/Operations Manager and Operations Forester; Continued Training on Maa-nuluht Treaty Rights/Operations Forester</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Performance and Interpretation

2017: Training on the listed items occurred with Planning Staff for the DFA as led by Erin Badesso.
Strategies & Implementation
Several staff members are specifically focused on working with aboriginal peoples in the DFA. These staff members liaise with aboriginal peoples and government agencies to understand the nature of aboriginal rights and title. They also participate in formal training and communicate key learnings to other staff members to assist in preparing information for sharing. WFP will report on training that has been completed in relation to Aboriginal rights and title (in the form of workshops, presentations, on-line courses/webinars etc.). Training records are tracked in the WFP Training Database.

Forecasts
Three First Nations associated with the DFA are in treaty effective April 1, 2011, other treaties continue to be negotiated. Business relationships with First Nations continue to evolve, therefore it is anticipated that some level of training in relation to Aboriginal rights and title will occur on an annual basis.

Monitoring
The Operations Forester generates a report from the WFP Training Database and reports on the number of planning personnel that received training related to Aboriginal title and treaty rights.
Indicator 6.1.2: Acceptance of Management Plans

**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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal understanding of plans</td>
<td>Aboriginal understanding of plans is increased over time</td>
<td>Evidence of best efforts to obtain acceptance of management plans based on Aboriginal communities having a clear understanding of the plans</td>
<td>Target evidence will be annual sample of correspondence with Aboriginal communities to gain acceptance of management plans</td>
<td>None</td>
</tr>
</tbody>
</table>

**History**
Core Indicator under CSA Z809-08.

**Basis for the Target**
The target and variance is tied to legal requirements under the Forest Act and FRPA related to First Nation information sharing. Although there are legal obligations to consult with First Nations, there are also obligations for First Nations to participate in the information sharing process relating to understanding the plans.

**Current Status & Results**

<table>
<thead>
<tr>
<th>Year</th>
<th>First Nation Information Sharing Summary</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
</table>
| 2017 | All First Nations associated with the DFA:  
In January 2017 all First Nations who have traditional territory or Maa-nulth First Nation Areas associated with the DFA were provided opportunity to comment on the Replacement Forest Stewardship Plan (FSP). Government also consulted with selected First Nation communities. A record of comments received by WFP was also forwarded to government as part of their FSP approval process. | Y | n/a |
| 2016 | All First Nations associated with the DFA:  
In 2016 all First Nations who have traditional territory or Maa-nulth First Nation Areas associated with the DFA were provided opportunity to comment on a proposed extension of the term of the Forest Stewardship Plan. Government also consulted on the proposed extension. No comments were received by First Nations and government subsequently approved an 8 month extension. | Y | n/a |
| 2015 | Sample First Nation:  
In 2015 all First Nations who have traditional territory associated with the DFA were distributed content from the Sustainable Forest Management Plan; specifically, the detailed indicator results and the Annual Report. In May 2015 the Provincial Government invited First Nations to comment on a proposed amendment to WFP’s Forest Stewardship Plan (FSP) associated with the DFA. The proposed amendment addresses a stocking standards framework associated with partial harvesting where trees reserved from harvest contribute towards the regenerating forest. | Y | n/a |
2014

Sample First Nation:
On January 2, 2014 contact was initiated with the First Nation in respect of a Pest Management Plan (PMP) for the application of herbicides on the DFA. The First Nation had questions about application of herbicides near streams, frequency of applications, impacts on wildlife, elk management, and human food sources. WFP provided a response to questions asked.

| Y | n/a |

2013

Sample First Nation:
On December 20, 2013 WFP meets with the First Nation to discuss its potential harvesting plans in a sensitive watershed within the DFA. WFP understands that the area has important cultural ties to a particular family and meets with a family member to exchange information. Another meeting is forward planned as a result.

| Y | n/a |

Performance and Interpretation

2017: The Forest Stewardship Plan (FSP) for the DFA was replaced by WFP and approved by government effective December 4, 2017. All First Nations listed in the Sustainable Forest Management Plan (SFMP) had opportunity early in 2017 to comment on the content of the replacement FSP prior to approval.

Strategies & Implementation

Management Plan (MP) referrals include TFL Management Plan, Forest Stewardship Plans (FSP), Pest Management Plans (PMP), and the Sustainable Forest Management Plan.

For the TFL Management Plan, FSP and PMP, referrals occur as required under legislation. These Plans are typically referred at intervals of five years or greater.

The Sustainable Forest Management Plan is referred to all First Nations in the DFA when the plan is periodically revised and updated. The annual report is also available on the WIWAG web site. For privacy purposes, neither confidential information nor First Nation names will form part of the target evidence.

Forecasts

Plan referrals for TFL MPs, FSPs, and PMPs are legally required. In addition, the legislation requires documentation and records of comments received, as well as records of changes to the plans to address the concerns/comments. A replacement FSP was be referred to First Nations in 2017.

Monitoring

The Operations Forester reviews central files to review information sharing/referrals and records as applicable evidence for one First Nation each year (ensuring that where possible, different First Nations are represented in the annual reporting). Given that most Plans are referred at intervals greater than five years, there is the possibility that no target evidence will be available in some years.
Indicator 6.1.3: Cultural Activities & Practices

**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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Areas where culturally important practices and activities occur</td>
<td>Areas where culturally important practices and activities occur are managed for or protected</td>
<td>Level of management and/or protection of areas where culturally important practices and activities occur</td>
<td>Identified areas where culturally important practices and activities occur are managed and/or protected 100% of the time unless the First Nation or Provincial governments decide otherwise</td>
<td>None</td>
</tr>
</tbody>
</table>

**History**
Core Indicator under CSA Z809-08 (related to old indicator 39).

**Basis for the Target**
The target and variance are based on legal requirements under FRPA and the Heritage Conservation Act.

**Current Status & Results**

<table>
<thead>
<tr>
<th>Year</th>
<th>Identified Areas</th>
<th>Sites Managed (percent)</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>1</td>
<td>100%</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>3</td>
<td>100%</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>5</td>
<td>100%</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>3</td>
<td>100%</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>5-7</td>
<td>100%</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

**Performance and Interpretation**
2017: One broad site was identified as having particular interest to a First Nation. WFP committed to further discussion with the First Nation once additional site information is obtained in advance of any proposed timber harvesting activities. Some introductory discussions occurred about having a portion of the area of interest included in an Old Growth Management Area (OGMA).

**Strategies & Implementation**
Important areas are usually identified by the First Nation through information sharing and cultural referral processes. Once areas are identified (e.g. fishing sites) there will be discussions with First Nations about how to manage the sites. Discussions will include tailoring measures to manage or protect on a site by site basis, as previous history shows that a blanket protection prescription is not always the most effective way to manage a site. Information sharing meetings occur on a regular basis where management strategies can be discussed.

**Forecasts**
It is anticipated that all identified sites will be managed and/or protected, unless agreements worked out directly with the First Nation or the government decides otherwise (through the approval of Cutting Permits and Road Permits).
Monitoring

The Operations Forester reviews GIS information, Site Plans, Harvest and Road Instructions and EMS Inspection results, and comments returned from First Nations on proposed activities. The number of special sites that are identified and managed/protected are reported once from either pre-harvest, during harvest, or post-harvest activities.
Indicator 6.2.1: Respect for Aboriginal Knowledge

Element: 6.2 Respect for Aboriginal Forest Values, Knowledge & Uses
Respect traditional Aboriginal forest values, knowledge and uses as identified through the Aboriginal input process.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal</td>
<td>knowledge provided is used and</td>
<td>Evidence of understanding and use of Aboriginal knowledge through the</td>
<td>Target evidence will be an example of information shared, or comments received by, or management of a culturally important resource or value for one Aboriginal community annually</td>
<td>None</td>
</tr>
<tr>
<td>knowledge</td>
<td>respected</td>
<td>engagement of willing Aboriginal communities, using a process that</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
<pre><code>                                                                                   | identifies and manages culturally important resources and values                                                                                       |                           |
</code></pre>

History
Core Indicator under CSA Z809-08.

Basis for the Target
The target and variance are based on legal requirements under FRPA.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Information Sharing</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>Sample First Nation: On January 23, 2017 WFP shared with the First Nation a series of map sheets and</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>a matrix of site information identifying the approximate location of planned cutblocks and roads for</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>timber harvesting activities proposed for the future. The maps and other information (e.g. cedar</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>content, old growth vs. second growth, leading species, archaeological potential) was shared to</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>assist the First Nations determine how proposed activities may potentially affect cultural heritage</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>resources.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>Sample First Nation: On March 4, 2016 WFP shared with a group of First Nations a series of map</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>sheets and a matrix of site information identifying the approximate location of planned cutblocks</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>and roads for timber harvesting activities proposed for the future. The maps and other information</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(e.g. cedar content, old growth vs. second growth, leading species, archaeological potential) was</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>shared to assist the First Nations determine how proposed activities may impact their treaty rights</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>to fish, hunt and gather aquatic plants. One of the First Nations requested more information on the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>location of the proposed timber harvesting and also expressed a desire to be included in a future</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>field trip.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>Sample First Nation: On April 28, 2015 WFP shared with the First Nation a series of map sheets and</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>a matrix of site information identifying the approximate location of planned cutblocks and roads for</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>timber harvesting activities proposed for the future. The maps and other information (e.g. cedar</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>content, old growth vs. second growth, leading species, archaeological potential) was shared to</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>assist the First Nation identify culturally important resources or values to WFP. In August, 2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WFP began receiving comments on our proposed timber harvesting activities.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Sample First Nation:
On April 14, 2014 WFP shared with the First Nation a series of map sheets and a matrix of site information identifying the approximate location of planned cutblocks and roads for timber harvesting activities proposed in 2017-2018. The maps and other information (e.g. cedar content, old growth vs. second growth, leading species, archaeological potential) was shared to assist the First Nation identify to WFP culturally important resources or values. On August 12, 2014 WFP received comments on our proposal from the First Nation.

Sample First Nation:
On July 19, 2013 WFP shared with the First Nation a series of map sheets and a matrix of site information identifying the approximate location of planned cutblocks and roads for timber harvesting activities proposed in 2014-2015. The maps and other information (e.g. cedar content, old growth vs. second growth, leading species, archaeological potential) was shared to assist the First Nation identify to WFP culturally important resources or values. On September 30, 2013 WFP received comments on our proposal from the First Nation.

Performance and Interpretation

2017: WFP shared with First Nations a series of maps and a matrix of site information identifying the approximate location of planned cutblocks and roads for timber harvesting activities proposed in the near future within their respective territories or Maa-nulth First Nation Areas.

Strategies & Implementation

WFP shares information annually with First Nations on proposed cutblocks and roads in the DFA. In addition, under special circumstances the Provincial government may engage in formal consultation.

Refer to Indicator 6.1.2 for further information on the management strategies for information sharing processes.

Forecasts

As the target and variance is tied to a legal requirement, it is anticipated that the target will be achieved annually.

Monitoring

The Operations Forester reviews the central file catalogue/records of information sharing completed and summarizes results for one First Nation within the SFMP report.
Indicator 6.3.1: Local Economy

Element: 6.3 Forest Community Well-being and Resilience
Encourage, co-operate with, or help to provide opportunities for economic diversity within the community.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other forest</td>
<td>Support other</td>
<td>Level of participation and support in initiatives that contribute to</td>
<td>Annual target evidences will come from two or more of (but not be limited to): (1) volume production of shake and shingle, (2) hectares released for hogging, (3) hectares released for commercial firewood cutting (4) amount spent on road grading, (5) trail construction/rehabilitation (6) log sales to local purchasers</td>
<td>None</td>
</tr>
<tr>
<td>users</td>
<td>forest users</td>
<td>community sustainability</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**History**
Core Indicator under CSA Z809-08.

**Basis for the Target**
WFP encourages and co-operates both directly and indirectly with other forest-dependent businesses in the community through agreements, contracts and other spin-off opportunities (e.g. access available from road construction and maintenance). Evidences are drawn from existing or potential opportunities for economic diversity within the community that are reportable from in-house information systems. The shake and shingle business is important to small operators and their milling customers, hogging supports local power generation, road grading provides easier access for casual forest users and trail rehabilitation provides recreation in support of the local economy.

**Current Status & Results**

<table>
<thead>
<tr>
<th>Year</th>
<th>Type of Support</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>Shake &amp; Shingle 1,211m³</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Road Grading / Maintenance $528,445</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Log sales to local purchasers 18,730 m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maps given to special products salvagers</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Opportunity provided for a local bee keeper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>Shake &amp; Shingle 1,577 m³</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Road Grading / Maintenance $656,961</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Log sales to local purchasers 26,688 m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Portable sawmill @ Silverside Sort</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maps given to government for firewood cutters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>Shake &amp; Shingle 1,268 m³</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Road Grading / Maintenance $1,588,936</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Log sales to local purchasers 74,143 m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Portable sawmill @ Silverside Sort</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maps given to government for firewood cutters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>Shake &amp; Shingle 1,224.9 m³</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Road Grading / Maintenance $1,889,552</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hogging 194.313 m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sawmill @ Silverside Sort</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trail Rehabilitation: 135 meters @ $1665</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Performance and Interpretation

2017: In 2017 WFP continued to support local businesses for road grading/access, salvage work, and local log purchases. A new salvager was provided an opportunity to recover a specialty product from logging debris and a bee keeper was given a location to place hives.

Strategies & Implementation

WFP engages in many activities that support/strengthen the local economy and foster a cooperative relationship with the community and local business owners, including minor forest products (firewood, shake and shingle, salvage), log sales, hogging, salal picking, mushroom picking, trail rehabilitation, visual quality management, road access for recreation activities and protection/management of historical sites.

Forecasts

WFP maintains a long history of cooperation with local business owners and the community, including relationship building, capacity development, support of minor forest products and non-timber forest products.

It is anticipated that WFP will be able to provide multiple examples of support for the local economy due to historical support. However, during periods of economic downturns in the industry, support may be limited or non-existent for short durations.

Monitoring

The Operations Forester reviews LIMS, the Cengea database and central file (may include accounting records or AAC records) and reports on the efforts to engage and support the local economy and relationship building through the level of support for each category. The road and grading and maintenance values are net of government contributions.
## Indicator 6.3.2: Improve Safety Standards

**Element: 6.3 Forest Community Well-being and Resilience**  
*Encourage, co-operate with, or help to provide opportunities for economic diversity within the community.*

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective Description</th>
<th>Indicator</th>
<th>Target Description</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worker safety</td>
<td>Existence of an active worker safety program</td>
<td>Evidence of co-operation with DFA-related workers to improve and enhance safety standards, procedures, and outcomes in all DFA-related workplaces and affected communities</td>
<td>Annual target evidences will come from two or more of (but not be limited to): (1) the Medical Incident Rate report, (2) hazard alert report (3) general contractor training sessions (4) safety focus topics</td>
<td>None</td>
</tr>
</tbody>
</table>

### History

Core Indicator under CSA Z809-08 (relates to old indicator 33).

### Basis for the Target

Safety Programs are required under the WorkSafe BC legislation and the Occupational Health and Safety Regulation. The Medical Incident Rate (MIR) is a broad measure that captures the effectiveness of safety programs. The Hazard Alert reports document safety incidences and the learnings and suggestions to avoid future occurrences. General contractor training sessions provide opportunities to review and improve safety performance. Safety focus topics provide a program to heighten awareness around specific categories of injuries (e.g. hand injuries). Target evidences are readily available and require participation from workers to formulate safety reports, achieve safety results or to provide safety training. Hazard alerts are distributed to contractors and employees as incidents/hazards occur and are posted on the WFP intranet. In the event that incident investigations are required under the Safety or EMS, they are completed in collaboration with contractors/union reps where applicable.

### Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>MIR Report</th>
<th>Hazard Alert Report</th>
<th># of General Safety Training Sessions</th>
<th>Key Safety Focus Topics</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>4.05</td>
<td>1</td>
<td>9</td>
<td>9</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>1.97</td>
<td>0</td>
<td>9</td>
<td>6</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>2.40</td>
<td>1</td>
<td>14</td>
<td>4</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>2.31</td>
<td>1</td>
<td>18</td>
<td>11</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>3.96</td>
<td>1</td>
<td>9</td>
<td>12</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>
Performance and Interpretation

2017: Port Alberni Forest Operations Medical Incident Rate (MIR) increased from 1.97 in 2016 to 4.05 in 2017 for WFP staff and contractors combined. One possible explanation of this increase in injury is a reduced work year creating upset conditions and loss of focus for individuals. Moreover, some workers did not do their normal jobs possibly increasing their potential for injury. Safety focus topics for workers included: mentor safety observations, equipment inspections, and distance between workers (safe separation). General safety training sessions included: safety start-up meetings, adapting to winter driving conditions, search and rescue, and incident investigation.

Strategies & Implementation

Safety performance is a key measurable for PAFO. Improvements in Safety are supported by the EH&S Team, corporate polices, standards, hazard reports, work procedures etc. Locally PAFO manages safety utilizing an OHS Program, emergency response procedures and by maintaining a “Safe” company status with the BC Forestry Safety Council. Continual Improvement is a key component of the WFP Safety System, WorkSafe BC requirements and the Forest Safety Council SAFE Company certification requirements. WFP also conducts periodic meetings with Contractors to review and discuss safety topics and implement annual safety improvement plans.

MIR (Medical Incidence Rate) is defined in the SFM Plan Glossary and will be reported for all contractors and employees in PAFO. The rate is calculated using the following formula:

\[
\frac{(\text{Medical Treatment} + \text{Restricted Work} + \text{Lost Time cases}) \times 200,000}{\text{Exposure Hours (Total hours worked by all hourly and salary employees by operation)}}
\]

Forecasts

It is anticipated that injury rates will be reduced in 2018 as the work year will be lengthened and safety programs continue to adapt for reduced workplace injury.

Monitoring

The Operations Forester reviews safety files and the corporate safety tracking system/stats to document supporting evidence.
Indicator 6.3.3: Safety Program

Element: 6.3 Forest Community Well-being and Resilience
Encourage, co-operate with, or help to provide opportunities for economic diversity within the community.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worker safety</td>
<td>Worker safety improves over time</td>
<td>Evidence that a worker safety program has been implemented and is periodically reviewed and improved</td>
<td>SAFE Company Certification is maintained annually by WFP and its large contractors.</td>
<td>2 contractors registered with BC Forest Safety Council to become SAFE Certified</td>
</tr>
</tbody>
</table>

History
Core Indicator under CSA Z809-08. This indicator was updated in 2011 to reflect maintaining a SAFE Company Certification for WFP and its large contractors. A large contractor is defined as having greater than 10,000 exposure hours.

Basis for the Target
WFP corporate directive. The variance indicates contractors may be registered with the BC Forest Safety Council and in the process of becoming SAFE certified.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>SAFE Company Certification Maintained</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>5/5</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>3/3</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>9/10</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>2014</td>
<td>10/10</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>11/11</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Performance and Interpretation
2017: All five of the five contractors exceeding 10,000 hours were Safe Certified indicating their commitment to safety through formal programs. Safe Certification of contractors is a key element to improving safety on the DFA.

Strategies & Implementation
SAFE company audits are mandated annually by the BC Forest Safety Council. Successful audits maintain a company’s SAFE Certification and provide evidence that a worker safety program has been implemented and is periodically reviewed and improved. The Safe Certification status of companies is located at: [http://www.bcforestsafe.org/safe_companies/whos_safe.html](http://www.bcforestsafe.org/safe_companies/whos_safe.html). PAFO is responsible for implementing its safety program and continuing to meet the requirements of SAFE Company certification. All staff are responsible to assist the Operation in maintaining, implementing and improving the safety program. WFP’s contractors implement and maintain their own safety programs to meet the requirements of the SAFE Company certification. Prior to commencing work for WFP, a review is completed to ensure contractors are currently SAFE Company certified or registered.
Forecasts
WFP has made a business decision to maintain SAFE certification. Provided the program is maintained, WFP and its contractors will continue to maintain SAFE certification.

Monitoring
The Operations Forester reviews the status of SAFE certification and reports on the results from the BC Forest Safety Council website.
Indicator 6.4.1: WIWAG Satisfaction

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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFM Public participation process</td>
<td>SFM Public participation process works well</td>
<td>Level of participant satisfaction with the public participation process</td>
<td>The level of participant satisfaction as reported by the satisfaction survey is 3 or less (reported every two years)</td>
<td>A maximum of one consecutive survey with a satisfaction level of greater than 3.</td>
</tr>
</tbody>
</table>

History
Core Indicator under CSA Z809-08 (relates to old indicator 42) for 2010.

Basis for the Target
A satisfaction survey of WIWAG gives direct feedback to the participation process. A score of three or less provides evidence of a positive process. The variance is to account for controversial issues considered by participants or unforeseen circumstances (e.g. a shortage of financial resources to accommodate normal participation process during economic downturns).

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Satisfaction Survey Completed (Y/N)</th>
<th>Satisfaction Level</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>Next survey in 2018</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>Yes</td>
<td>1.6</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>Yes</td>
<td>1.7</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2012</td>
<td>Yes</td>
<td>&lt;2</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Performance and Interpretation
2017: The next Satisfaction Survey is scheduled for April 2018 and then changed to be conducted annually.

Strategies & Implementation
A Satisfaction Survey is typically completed with the WIWAG every two years. The survey format was revised in 2010 to include samples of surveys from other CSA Advisory Groups. The survey responses are coded as: 1 (excellent), 2 (good), 3 (satisfactory), 4 (poor), 5 (unsatisfactory). Action items will be assigned to address all items that received a score of greater than three.

Feedback relating to specific presentations will be gathered following each presentation to help with the accuracy of survey results.

Forecasts
It is anticipated that the target will be met based on historical results that show a general level of satisfaction with the progress and communication between WFP and WIWAG. WFP will strive for continual improvement in survey results and to maintain or improve the score of satisfaction over time.

Monitoring
The WIWAG Facilitator reports on the results of the Satisfaction Survey.
Indicator 6.4.2: WIWAG Capacity Building

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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public participation capacity</td>
<td>Develop/improve public participation capacity over time</td>
<td>Evidence of efforts to promote capacity development and meaningful participation in general</td>
<td>Target evidence will be the listing of educational opportunities provided to the advisory group or general public annually</td>
<td>None</td>
</tr>
</tbody>
</table>

History
Core Indicator under CSA Z809-08 (related to old indicator 43 and 45).

Basis for the Target
WIWAG has historically responded positively to educational opportunities provided by technical experts. These opportunities have enabled WIWAG members to provide valuable advice through the participation process.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th># Educational Sessions</th>
<th>Description of Session</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>5</td>
<td>Four WIWAG meetings were held in 2017. Meetings included a WFP operational update for timberlands and local sawmills and a question/answer period. February 2017 Erin Badesso shared a presentation prepared by Mike Davis, WFP Tenures Forester, on the Vulnerabilities for Community Sustainability Linked to Timber Supply. In addition, there was discussion on required changes to Indicators to embrace the new Standard of CAN/CSA-Z809-16. April 2017 Annual review of Detailed Indicator Results by Erin Badesso. June 2017 Erin Badesso presented on the Emissions of Carbon Dioxide and Carbon Uptake and Storage in the DFA. In addition preparations for the new Standard continued by discussing changes to Indicators and the Sustainable Forest Management Plan. Rick Avis gave an update on Painted Turtles in the Port Alberni area moving from Endangered to Threatened. November 2017 Tyson Berkenstock presented on The Role and Importance of Wetlands including the classification of wetlands, specific wildlife/plant species, their ability to store carbon, and their protection while planning timber harvesting activities. Erin Badesso continued discussion on preparing to embrace the new CSA standard. A discussion on the Festival of Forestry hosted for K to 12 teachers in part on the DFA. Future presentation upcoming by Will Sloan who will compare and contrast CSA and SFI certification.</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>15</td>
<td>Four WIWAG meetings were held in 2016. At each meeting an update on WFP and a question and answer about operations locally and potential trends, impacts and mill operations.</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>
February 2016 Marissa Hallaway, WFP Field Planner presented the evolution of the Biogeoclimatic Ecosystem Classification (BEC)

Discussion regarding MAMU and Western Goshawk – February 2016

Stream Changes over the years as presented through a GIS model has been implemented to track harvesting associated with S4 and S5 streams. The new model improves the rigor of reporting on the associated indicators - February 2016 Erin Badesso

Update on LEED recognizes CSA Forest Certification in Green Building Standards. As well the US Green Building Council (USGBC) has announced changes to their LEED building rating system that will recognize CSA’s forest certification program.

April 14 Annual - Detailed Indicator Results – Erin Badesso

June 9 John Deal WFP, Strategic Planning Biologist and Sue McDonald - WFP, Wildlife Biologist updated the Species at Risk to the AG with a focus on Goshawk and Marbled Murrelet recovery strategy. Attention on developing practices associated with Migratory Birds including maintenance of populations and communities over time and participation in government programs to protect threatened and endangered species

Will Sloan WFP, Certification Coordinator presented an Indicator update and more clarity around LEED Forest Certification and Certification Audits. Explanation of 2017 as our re-registration audit and in the past, this has included Port Alberni and Stillwater.

Will Sloan Certification Coordinator explained how Indicator 4.1.1 Carbon Uptake and Storage results are tabulated. In addition Will spoke of the evolving science around this measurement and that the 2014 calculation method was changed slightly. We now have the ability to measure on a micro stand level.

Special all PAG meeting September 22-23 in Port McNeill hosted by WFP and the NIWAG

Western Painted Turtle habitat enhancement project – Rick Avis update. This is a DNA project, the Western Painted Turtle has not been found on TFL44 yet. Christian Engelstoft leading project. Turtles are distributed widely which indicates wild habitat, not introduced, this project started in 2010.

Satisfaction Survey results and discussion for Indicator 6.4.1

September WFP and WIWAG participate at the Annual Alberni Valley Fall Fair information booth

November members who all attended the North Island PAG’s All-PAG meeting September 22 and 23 presented (Judy and Harold Carlson and Barb Baker) pictures and engaged the AG in an overall discussion about speakers and field tour.

November WFP Forest Stewardship Plan was presented by Brian Marcus WFP Area Planner and Standard Operating Procedures

November a more formal presentation on the new CAN/CSA-Z809-16 March 2016 Standard with timelines. 35 core indicators under the New Standard. All current indicators substantially “match” the 35 core indicators under the New Standard except 2 - Erin Badesso

2015 12 Five WIWAG meetings were held in 2015 these meetings in addition to presentations listed also include company updates and on-going dialogue.

Kevin Somerville - WFP Log distribution associated with the Port

Y n/a
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>Four WIWAG meetings were held in 2014. These meetings in addition to presentations listed also include company updates and ongoing dialogue. Murray Hall Fibre Supply (complete presentation on website) Murray Hall - 30 years of experience in managing sawmill activities, coordinating pulp and paper operations, and developing cost structures. He also has experience in conducting geographical fibre and sawmills viability studies, analyzing regional fibre competitive forces, logging efficiencies, and developing forestry based strategic plans in Western Canada and US Pacific Northwest, presentation broad range discussion which links to Criterion 2 and 5 and multiple indicators. Erin Badesso Pest Management Plan for Forest Vegetation Management (plan on website) Linking to Criterion 1 and 6 Indicator(s) 6.5.1 Marbled Murrelet Recovery Strategy John Deal, WFP Strategic Planning Biologist, Campbell River; Marbled Murrelet Recovery Strategy. Linking to Criterion 1.</td>
</tr>
</tbody>
</table>
## Indicator(s) 1.1.1; 1.1.2; 1.2.1; 1.2.2

### Ian Parnell
Senior Species at Risk Biologist, Species at Risk Recovery Unit, Canadian Wildlife Service, Environment Canada

**Criterion 1 Indicator(s) 1.1.1; 1.1.2; 1.2.1; 1.2.2**

Annual Detailed Indicator & Results - Data set - Erin Badesso – Continual Improvement

Presentation from Erin Badesso comprehensive handout that looks closely at selected Indicator and Results within a specific geographic area of the DFA based on a picture of the Klanawa Drainage Effective December 31, 2013

**Total Area of the DFA:** 139,446 Ha

**Total Productive Area of the DFA:** 117,478 Ha

**Total Productive Area of the Klanawa Watershed:** 22,602 Ha

**Total Area depicted:** 2436 Ha (1.7% of the DFA)

**Total Productive Area Depicted:** 2,265 Ha (2% of the DFA; 10% of Watershed)

Comprehensive discussion on Indicators and what each indicator means when we see it from the landscape from the June 12, 2014 minutes links to all Criterion 1 – 6 and multiple indicators to gain a broader understanding.

Explanation of Indicator 3.2.A: Watershed Condition which replaced an earlier designation of "red and orange" listed watershed basins described in a watershed assessment performed every 10 years.

Discussion on Soil and Water WFP has shared examples of environmental incidents WFP has had in the past. WIWAG was presented with examples of minor environmental incidents relating to soil conservation and stream management reported to the Compliance and Enforcement wing of government. Discussion of the incidents, internal investigations, clean-up, and learnings were shared with WIWAG links to Criterion 3 Indicator(s) 3.1; 3.2.

WFP local government meetings links to Criterion 5 and 6

WFP meetings with FN links to Criterion 5 and 6 Indicator(s) 5.2.1

Annual Fall Fair WFP Booth with WIWAG participation (September) linking to Indicator(s) 5.2.1; 6.5.1; 6.5.2

National Forestry Week – WFP at FLNRO (September) linking to Indicator(s) 5.2.1; 6.5.1; 6.5.2 including maps and slide presentation

### Makenzie Leine – Communication

Presentation/discussion on AG involvement on greater roles for WFP within the community, Timberlands Factsheet survey (March) linking to Criterion 6

Carbon Update and Storage briefing/handout formula used to calculate to help educate WIWAG (March) Linking to Criterion 4 Role in global ecological cycles Indicators

FLNR Presentation on Mapping; tenures district map where people can access information for various crown tenure applications (March) Linking to Criterion 5 Economic and Social Benefit Indicators

Role of Recreation within the DFA – Jessica McKierahan, Recreation Officer, South Coast Recreation District, Ministry of Forests (FLNRO) (March) Linking to Criterion 5 Indicator 5.1b

Jane Cameron, chair of the Stillwater CSA Community Advisory Group, has just become a member of the CSA Technical Committee for the Z809 Standard (June) Linking to better understanding of the CSA Standard

WFP Town Hall Meeting 6 WIWAG Representatives attended Linking back to Criterion 5 and 6

WFP local government meetings

---

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
<th>Y</th>
<th>n/a</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Performance and Interpretation

2017: The Advisory Group and guests from the general public were exposed to a range of educational topics listed above. The content and guest speakers were often recommended by or discussed in advance with the Advisory Group. Topics were selected in support of discussion items required under the new Standard.

Strategies & Implementation

Annual planned education opportunities are defined by WIWAG and included in the SFM Plan Communications Plan. Guest Speakers and presentations are scheduled as opportunity and discussions arise during meetings.

Forecasts

It is anticipated that educational opportunities will be provided on an annual basis, provided sufficient capacity and funding exists.

Monitoring

The Operations Forester (with assistance from the WIWAG Facilitator) reviews the central files, WIWAG minutes and WIWAG website and reports on educational opportunities provided to the WIWAG.
Indicator 6.4.3: Aboriginal Participation in SFM

**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.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal participation capacity</td>
<td>Develop/improve aboriginal participation capacity over time</td>
<td>Evidence of efforts to promote capacity development and meaningful participation for Aboriginal communities</td>
<td>Annual target evidence will be a listing of efforts to engage willing Aboriginal communities in the SFM process</td>
<td>None</td>
</tr>
</tbody>
</table>

**History**
Core Indicator under CSA Z809-08 (relates to old indicator 41).

**Basis for the Target**
WFP’s Environment Policy to engage aboriginal peoples in environmental programs.

**Current Status & Results**

<table>
<thead>
<tr>
<th>Year</th>
<th># of First Nations</th>
<th>Evidence of Efforts to Engage</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>15</td>
<td>Invitation to participate in WIWAG was offered to 11 First Nations together with a distribution of the 2016 Indicator report. Fifteen First Nations were invited to review the Sustainable Forest Management Plan distributed during the review and comment period for the replacement Forest Stewardship Plan (FSP). Finally, one First Nations had a brief introduction to SFM during the FSP review.</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>13</td>
<td>Invitation to participate in WIWAG was offered to the 13 First Nation communities together with a distribution of the 2015 Detailed Indicator report.</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>13</td>
<td>Invitation to participate with WIWAG was offered to 12 First Nation communities and one tribal council. Communication of the results of the 2014 Detailed Indicators.</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>13</td>
<td>Invitation to participate with WIWAG offered to one tribal council and 9 First Nation communities. Communication of complete 2013 Indicator results with the same communities. Meetings with two First Nations towards SFMP orientation</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>11</td>
<td>Communication of complete 2012 Indicator results, Meetings with two First Nations discussing SFM, WIWAG meetings attended by a First Nation Representative on the ACRD)</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>
Performance and Interpretation

2017: First Nations are invited to participate in the SFM process. Invitations to view the Sustainable Forest Management Plan were offered during their review of the proposed replacement Forest Stewardship Plan (FSP). During the FSP replacement process WFP spoke with one First Nation about how CSA indicator 7.1.2 in the New Standard could potentially address their specific comment.

Strategies & Implementation

The SFMP is shared with all First Nations in the DFA. First Nations are invited to attend WIWAG meetings and provide comments on the development of targets and indicators. First Nations are invited to participate in SFMP orientation sessions available during scheduled business and/or information sharing meetings. WFP will continue to work with First Nations to understand the need for capacity development to participate meaningfully in the process.

The WIWAG Facilitator engages First Nations through letters, emails and telephone calls. A communication log is maintained to record the efforts to engage.

Forecasts

It is anticipated that all First Nations with significant traditional territory associated with the DFA will be communicated with on a regular basis in attempt to engage participation with the WIWAG and the SFMP. The target measures WFP and WIWAG efforts to engage rather than actual participation by the First Nations, as we only have direct control over our efforts to engage.

Monitoring

The Operations Forester/WIWAG Facilitator reviews correspondence files/communication log to report on the efforts to engage First Nations in participation in WIWAG and review of the SFM Plan.
**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 interaction with forest ecosystems.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public education and knowledge</td>
<td>Increase/develop public education and knowledge over time</td>
<td>Number of people reached through educational outreach</td>
<td>The annual number of people reached through educational outreach is estimated to be greater than 250 people</td>
<td>None</td>
</tr>
</tbody>
</table>

**History**
Core Indicator under CSA Z809-08.

**Basis for the Target**
Periodically WFP is asked to engage the public to enhance education (e.g. forest tours). Annually these requests plus established outreach activities (e.g. Fall Fair) form the basis for the target. WFP developed an educational display that is available for use at the Fall Fair, National Forestry Week and other public venues. It is estimated that at least fifty people will have meaningful interactions with hosts during these venues.

**Current Status & Results**

<table>
<thead>
<tr>
<th>Year</th>
<th>Educational Outreach Activity/Estimated # of People Reached</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>WIWAG Website &amp; Meetings Fall Fair Booth National Forestry Week Festival of Forestry Teachers Tour Operational Woods Tour 1000+</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>WIWAG Website &amp; Meetings Fall Fair Booth National Forestry Week Mayor’s Business Leader Breakfast Presentation Senior Forester’s Tour 1000+</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>WIWAG Website &amp; Meetings Fall Fair Booth Operational Woods Tours McLean Mill presentation at National Forestry Week HFN/City of PA Educational Forum Fibre Supply mtg with Mayor &amp; City Manager FMLT/CRIT Tour China Creek Watershed Meeting with Mayor and Council 1000+</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>
### Performance and Interpretation

**2017:** Educational outreach occurred though WIWAG meetings, a booth at the Fall Fair, National Forestry Week participation, Festival of Forestry teacher tour, and a customer woods tour. These engagements allow for the presentation or discussion of Sustainable Forest Management Elements including results of specific indicators.

### Strategies & Implementation

WFP engages in several activities that involve educational outreach to the community, including the WIWAG Public Advisory Group and the website maintained by WFP (WIWAG includes open invitations to the local community for various events such as presentations), Fall Fair event/show, forest tours, open houses for various plan consultations (e.g. TFL Management Plan, FSP, SFM Plan, etc.).

### Forecasts

It is anticipated that the target will be exceeded based on historical participation. However, during economic downturns, participation may be lower.

### Monitoring

The Operations Forester (with assistance from the WIWAG Facilitator) reports on the number of events/estimated people reached in regards to educational outreach activities (records maintained in central file, WIWAG minutes etc.).
Indicator 6.5.2: Public Concerns

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 interaction with forest ecosystems.

<table>
<thead>
<tr>
<th>Value</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevant information</td>
<td>Relevant information is provided</td>
<td>Availability of summary information on issues of concern to the public</td>
<td>Summary information on issues of concern to the public are posted annually on the WIWAG website</td>
<td>None</td>
</tr>
</tbody>
</table>

History
Core Indicator under CSA Z809-08.

Basis for the Target
The WIWAG website has been established and recognized as a transparent means of communicating issues to the public and then working towards their resolution.

Current Status & Results

<table>
<thead>
<tr>
<th>Year</th>
<th># Meeting Minutes Posted</th>
<th># Presentations Posted</th>
<th># Press Releases Posted</th>
<th># Articles Posted</th>
<th>Target Met (Y/N)</th>
<th>Variance Met (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2016</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2015</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2014</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
<tr>
<td>2013</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>Y</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Performance and Interpretation
2017: In 2017, questions and concerns were raised in WIWAG meetings and through public venues detailed in Indicator 6.5.1. Questions continue to center on log distribution (export vs. domestic), job loss (Somass Mill closure), supporting community initiatives (Indicator 5.2.1), and access to the backcountry. The DFA does have some gates to restrict access according to the terms of existing road permits. Temporary gates may be erected and locked within one kilometer of active logging sites for public safety, protection of equipment and inventory, and for fire protection. As reported in Indicator 5.1.1 WFP exported less than 9% of its log availability in 2017, whereas the rest of the coastal industry exported an estimated 36% of log production.

Strategies & Implementation
In general, the concerns raised by the public are addressed through indicator development, WIWAG meeting discussions, workshops, and meeting presentations (open to the public). Public concerns are also heard and answered annually at booths set up at the local Fall Fair, National Forestry Week celebrations, career fairs, school and community events, and through woods tours. The WIWAG website is the main vehicle for communication with the public. In addition, WIWAG may periodically issue press releases and newspaper articles.
Forecasts
It is anticipated that the target will be achieved based on a mature WIWAG website.

Monitoring
The Operations Forester (with assistance from the WIWAG facilitator) reviews the WIWAG website and ensures information posted. Supporting information may be recorded in the WIWAG minutes.