

# Appendix 2b

Detailed Indicator Descriptions & Results

Fraser Valley Portion of the Defined Forest Area

June 2011



The **Teal-Jones Group**

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# List of Indicators

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# Summary of Results and Changes to the SFMP

## 2010 Annual Report: Fraser Indicators

The 2010 version of the SFMP includes several new and revised indicators. The Public Advisory Groups revisited all Sustainable Forest Management criteria over the last few years; amalgamating those indicators that were common for both portions of the DFA, creating core indicators and re-writing targets for existing indicators where it made sense to do so. This report is one of three reports for 2010, this report contains information on all indicators that apply to the Fraser portion of the DFA; see Appendix 2c for the 2010 Annual Report on the indicators that are common to the entire DFA and Appendix 2a for the 2010 Annual Report on the Honeymoon Bay portion of the DFA.

For 2010, Teal was in conformance with the target and permitted variance of 20 of the 21 indicators that are applicable to the Fraser portion of the DFA. The indicator that was determined to be in non-conformance is as follows:

- Indicator F5-3: FIA Landbase Investments

Indicator F5-3 (Forest Investment Account Landbase Investments) did not meet the target in 2010, however a total of 95% of the allocated funds were spent; explanations, analysis and rationale, including measures to address the deficiencies, are found within the 'Current Status & Results within this Appendix 2b.

## 2009 Results

No changes to indicator numbering have occurred since the last version (March 2009).

For 2009, Teal was in conformance with the target and the respective permitted variance for 44 of the 46 indicators. The indicators that were determined to be in non-conformance were as follows:

- Indicator F6-1 FN Participation in FPAG
- Indicator F6-8 FPAG Member Satisfaction

True results for the Sites of Special Significance indicators will not be available until planning for applicable cutblocks within the Hatzic area is completed. Forest Management Plans in the area have been deferred due to economic conditions, but may be initiated during 2010.

Indicator F6-1 and F6-8: FPAG membership survey and invitations to First Nation were not completed due to reduced number of meetings in 2009. These actions will be completed in 2010.

## 2008 Results

For 2008, Teal was in conformance with the target and the respective permitted variance of 45 of the 46 indicators. The indicators that were determined to be in non-conformance were as follows:

- Indicator F4-6 Permanent Access Structures

Indicator F4-6: average permanent access was 8.4%. Several small, narrow cutblocks were harvested in the year, resulting in higher than average lengths of road to access the long, narrow cutblocks.

Indicator F2-3 Successful Regeneration determined to be in conformance when survey information was compiled in 2009.



## CF1.1.2: Forest Area by Type or Species Composition

Categories for Forest Types include: forested ecosystems, non-forest ecosystems (i.e., wetlands, alpine tundra, etc.) and plantations. Plantations are defined as “a forest area that does not follow natural succession patterns due to reforestation involving high-intensity silviculture practices” and are areas that are highly managed treed areas with few natural characteristics; they are generally managed for a single purpose though not all areas subjected to intensive silvicultural treatments are plantations<sup>1</sup> (e.g., short rotation hybrid cottonwood plantations, exotic tree species plantations etc.). Forest areas that meet this definition of plantation are considered to contain much lower levels of biodiversity and habitat for natural plant and animal species.

Value	Objective	Indicator	Target	Acceptable Variance
Ecosystem Biodiversity	Conserve Ecosystem diversity at the stand and landscape levels by maintaining the variety of communities and ecosystems that naturally occur in the DFA	Forest Area by type or species composition	Maintain current forest area by type	Zero

### Current Status & Results

This is a new core indicator, developed by FPAG in 2009. It is applicable to the Fraser portion of the DFA only.

Year	Alpine Area (ha)	Wetland Area (ha)	Forested Area (ha)	Target Met (Y/N)	Variance Met (Y/N)
2010	0	839	17,249	Y	Y

Currently, Teal is not aware of any forest areas within the DFA being managed as “plantations”.

### Strategy

GIS queries will be conducted to provide this information. Annually correspondence files will be reviewed to determine if forest area has been removed from the DFA.

### Monitoring

Teal’s Forestry and Engineering Department will monitor and report any changes to area of forest types across the DFA.

<sup>1</sup> Sustainable Forest Management. CSA Standard Z809-09



## Forecast

Harvesting and other large human initiated disturbances within the DFA have occurred across the DFA for a considerable amount of time. Within the timber harvesting land base, the present forest area by type is anticipated to remain stable for the foreseeable future.



## CF1.2.1: Degree of Habitat Protection for Selected Focal Species, Including Species at Risk

Teal's Forest Stewardship Plan states Results or Strategies for Species at Risk identified in Government Action Regulations Orders. The (Northern) Spotted Owl (*Strix occidentalis*) is "Red Listed" in BC. It occurs in the south western mainland of BC, western Washington, western Oregon, and north western California. In BC it occurs from the US border northwards to about Carpenter Lake, from Howe Sound to about 160 km east of Pemberton to the windward slopes of the Cascade Mountain Range. Its full range is still unknown.

Management in BC is targeted towards the creation of protected areas (Parks), Special Resource Management Zones (SRMZs) and inventories and management of owl activity centres outside of these two areas (Matrix activity centers). Teal's FSP specifies Results or Strategies for maintaining habitat and habitat qualities in established SRMZs see <http://tealjones.com/ForestManagement.htm> to view the complete FSP.

Value	Objective	Indicator	Target	Acceptable Variance
Spotted Owl habitat (Species at Risk)	Maintain habitat in Special Resource Management Zones established by government	Degree of Habitat Protection for Selected Focal Species, Including Species at Risk	100% Compliance with the Spotted Owl result and strategy in the approved Fraser Valley Operation Forest Stewardship Plan (FSP) section 7.2.2.2	Zero

### Current Status & Results

This is a new core indicator; it is applicable to the Fraser portion of the DFA only. This indicator was originally developed by FPAG as F1-16 Spotted Owl.

Year	% Compliance with FSP R/S for FSP section 7.2.2.2	Target Met (Y/N)	Variance Met (Y/N)
2010	100	Y	Y
2009	100	Y	Y
2008	100	Y	Y
2007	100	Y	Y

To date, Teal has not operated within any of the Sustainable Resource Management Zones (SRMZs) or Matrix activity areas for Spotted Owl. Ministry of Land and Natural Resource Operations compliance inspections have not raised any issues with SRMZs or Spotted Owl.



Currently there are three SRMZs for Spotted Owl that occur within the Fraser portion of the DFA. There are no matrix activity centers within the Fraser portion of the DFA at this time.

Applicable Landscape Unit	SRMZ	SRMZ Name
Coquihalla	4	Sowaqua
Anderson/Uztluis	11	Anderson River
West Harrison/Chehalis	6	Chehalis

The Forest Stewardship Plan details the Result/ Strategy towards meeting the objectives established for these zones. The Forest Stewardship Plan outlines the area, distribution, and the attributes to be maintained for these areas in accordance with the objectives for the zones.

## Strategy

Establishment of Spotted Owl Sustainable Resource Management Zones (SRMZs) and other strategies towards protecting this species are the responsibility of government agencies; SRMZs have been established under the Forest Practices Code Act. Teal has been working cooperatively with the government in this process.

Each SRMZ in the province varies in size and is clustered around owl activity centres and are generally about 3,200 hectares in size. SRMZs are managed under Resource Management Plans which provide guidelines for forest management. The goal of management for the Spotted Owl is to stabilize and, if possible increase, populations in BC by maintaining suitable habitat. The primary goal of SRMZs is to integrate Spotted Owl management and forest management taking environmental, social, and economic concerns into account. To achieve this goal, minimum amounts of suitable owl habitat will be maintained over the long-term within each SRMZ. Spotted Owls located outside of SRMZs or protected areas may be managed under one of the eight “matrix activity centers” which are smaller but managed similarly to SRMZs. The objective of these measures is to help stabilize the owl population while being able to apply silviculture and harvesting systems that will create, enhance and maintain owl habitat.

When Teal operates within known areas of Spotted Owl habitat, Teal will incorporate the established strategies into its operational planning during all planning phases of individual cutblocks. Before harvesting, internal reviews will ensure that the plans will meet the objectives.

## Monitoring

Sustainable Resource Management Zones are mapped by the GIS department. Operational planning for harvesting or road construction within SRMZs will incorporate the required habitat management strategies into operational objectives (refer to the FSP Result/ Strategy).

After harvesting, internal inspections of harvesting and road building activities will evaluate the implementation of the plans. Cutblock information will be derived from the Phoenix database and operational planning documents.

Government agencies also do periodic inspections.

## Forecast

Harvesting activity is not anticipated within SRMZs and other Spotted Owl management areas. Where harvesting takes place in these areas, it will be conducted in a manner consistent with the Results or Strategies within the FSP.



## F1-8: Mountain Beaver Habitat

There are three subspecies of Mountain Beaver (*Aplodontia rainieri* subspecies) in southwest British Columbia:

Subspecies	Current CDC Status	Known to Occur in Fraser portion of DFA
<i>A. rufa</i>	N/A	Yes
<i>A. rufa rainieri</i>	Blue Listed	Yes
<i>A. rufa rufa</i>	Red Listed	Not located in BC

The objective of the Ministry of Environment (MoE) is to spatially establish Wildlife Habitat Areas of sufficient size to ensure protection of Species at Risk. Until Mountain Beaver is determined by MoE to be sufficiently protected through establishment of WHAs, interim measures such as protection of critical habitat areas are essential.

The following Wildlife Habitat Areas (WHA) have been established in the Chilliwack Forest District to protect Mountain Beaver Habitat:

WHA #	Hectares	Location
2-0102	78.5	Wahleach Lake Mountain

Management of critical Mountain Beaver habitat (ground burrow) during timber management involves adequate protection of riparian areas and protecting the animal's existing burrows. Forestry activities that have the potential to impact Mountain Beaver habitat include harvesting, debris piling, site preparation and vegetation control (brushing). Riparian habitat, herbaceous forage and coarse woody debris are important aspects in managing Mountain Beavers.

Value	Objective	Indicator	Target	Acceptable Variance
Mountain Beaver	Maintain and protect critical Mountain Beaver habitat	Percentage of critical Mountain Beaver habitat that is identified and managed as per the strategy	100%	Zero

### Current Status & Results

Year	# of Identified Critical Mt. Beaver Habitat	# of Identified Areas Managed per Strategy	% of Critical Mt. Beaver Habitat Managed per Strategy	Target Met (Y/N)	Variance Met (Y/N)
2010	0	N/A	N/A	Y	Y
2009	0	N/A	N/A	Y	Y
2008	0	N/A	N/A	Y	Y

In 2008-2010, there have been no Mountain Beaver dens or colonies (critical habitat) identified during development planning or field work.



## Strategy

Mountain Beaver burrows are encountered very infrequently in the Fraser portion of the DFA during forest operations. The Ministry of Environment has completed a draft Order under the Government Actions Regulation to identify all Mountain Beaver ground burrows as Wildlife Habitat Features (May 2007). Once a Wildlife Habitat Feature has been approved, section 70 of the *Forest Planning and Practices Regulation* (FPPR) requires that authorized persons carrying out primary forest activities must not damage or render ineffective a WHF unless they are granted an exemption by the Minister of Environment or delegate. More information regarding the proposed Wildlife Habitat Features may be found at:

<http://www.env.gov.bc.ca/wld/frpa/habitatfeatures.html>.

The key indicators to look for to identify ground burrows or colonies are as follows:

- Burrows are often established under the roots of trees or large pieces of coarse woody debris (particularly near riparian areas)
- Mounds of dirt at the entrance of burrows (should be able to observe from a considerable distance)
- Look for clusters of several entrances (Burrow system may have as many as 10-30 entrances)
- In flat topography, check for high spots or small knolls (easier digging)
- Look for piles of fresh or wilting vegetation, droppings and claw marks outside of entrances
- Cool, moist soils (often entrances will have water trickling down them)
- Depth of tunnels will vary depending on the water table

Teal's current management of Mountain Beaver ground burrows is on a case by case basis (i.e. each feature is considered as it is located). Where ground burrows or colonies are identified, they will be identified on site level maps/ plans and appropriate management strategies will be determined on a case by case basis, using the following strategy (consistent with recommendations from MoE, the Identified Wildlife Management Strategy for Mountain Beaver and telephone communications with MoE):



<b>Mountain Beaver Management Strategy</b>	
<b>Identify &amp; Map</b>	<ul style="list-style-type: none"> <li>- Where potential ground burrows or colonies are identified, review and confirm (consult reference material, MoE and/ or biologist as required). Ensure notes are placed on file for all assessed areas.</li> <li>- Identify confirmed burrows and colonies on all site level plans/ maps. Identify in the field using appropriate Teal CMS Field Marking Code ribbon color.</li> </ul>
<b>Avoid</b>	<ul style="list-style-type: none"> <li>- Avoid the burrow/ colony by adjusting the proposed road location or cutblock boundary (where practicable and feasible).</li> <li>- Consider establishing a forested buffer or Wildlife Tree Patch around burrows or colonies (target 25m radius).</li> <li>- If unable to avoid (i.e., no change to location or buffer), consider implementing a "No Work Zone" or "Machine Free Zone" around the feature in order to protect it from disturbance and maintain herbaceous vegetation in the vicinity.</li> </ul>
<b>Timing</b>	<ul style="list-style-type: none"> <li>- Avoid activity during the breeding season (February-March). Once born, the young remain in the burrow/ colony until May or June.</li> </ul>
<b>Protect</b>	<ul style="list-style-type: none"> <li>- Apply measures to prevent soil disturbance or soil compaction in the vicinity of the burrow/ colony (e.g., avoid skidding or machine falling). Use puncheon under machine tracks to protect soils and redistribute into the cutblock once complete.</li> <li>- Do not disturb understory vegetation in the vicinity of the burrow/ colony.</li> <li>- Maintain water and surface flow patterns in the area.</li> </ul>
<b>Road Construction</b>	<ul style="list-style-type: none"> <li>- Minimize the road length and width in the vicinity (where practicable and feasible).</li> <li>- Rough up the road section following completion of activity to encourage growth of vegetation (where practicable and feasible).</li> </ul>
<b>Silviculture</b>	<ul style="list-style-type: none"> <li>- Avoid brushing activities (manual or chemical) in the vicinity of burrows and colonies.</li> </ul>

## Monitoring

The Environment Department tallies the number of Mountain Beaver burrows and/ or colonies identified and managed according to the Teal Management Strategy (above) by reviewing operational planning documents and results of internal inspections.

## Forecast

The proposed strategy provides flexibility for management decisions and focuses on protection of critical habitat areas. It is anticipated that 100% of identified ideas will be successfully managed according to the strategy.



## F1-13: Protection of Raptor Nests

Raptors include eagles, ospreys, hawks and owls and other bird species with curved beaks that hunt with their talons (birds of prey). Raptor nests are a critical habitat component as they often require certain tree characteristics and proximity to other important habitat such as hunting and fishing ranges. Raptor nests are often used in successive years or left fallow to reduce the build up of parasites.

Value	Objective	Indicator	Target	Acceptable Variance
Eagles and other Raptors	Maintain healthy populations of eagles and other raptors by protecting established nests	Percent of identified raptor nests that are protected	100%	Zero

### Current Status & Results

Year	# of Raptor Nests Identified	# of Raptor Nests Retained	% of Raptor Nests Retained	Target Met (Y/N)	Variance Met (Y/N)
2010	1	1	100	Y	Y
2009	1	1	100	Y	Y
2008	0	0	N/A	Y	Y
2007	0	0	N/A	Y	Y

In 2010, one Goshawk nest was identified (in the vicinity of cutblock NC105) during field layout/ assessments. An assessment was completed by a Registered Professional Biologist; as per the recommendations the nest was removed from the proposed harvest area and a buffer zone was established.

In 2009, one Goshawk nest was identified (cutblock NC105) during field layout/ assessments. An assessment was completed by a Registered Professional Biologist. The nest was removed from the proposed harvest area and a buffer zone was established.

Raptor nests are protected under the Wildlife Act. Nests are periodically inventoried by government agencies and are often identified during field planning activities and during helicopter surveys. Raptor nests may also be identified through periodic referrals with local members of the community.

### Strategy

Where raptor nests are identified through field planning, government inventories or other sources they will be protected. Progress and post harvesting inspections monitor management of identified raptor nests in cutblocks.

### Monitoring

The Environment Department tallies the number of raptor nests identified and protected (by reviewing operational planning documents and internal inspections and reports annually).

Government agencies also do periodic inspections.



## Forecast

As the target is a legal requirement, the target is the forecast.



## F2-1: Invasive Plants

The *Invasive Plants Regulation* under FRPA specifies a list of invasive plant species that must be addressed within a Forest Stewardship Plan in order to prevent the introduction or spread of these species. Under FRPA, these species are referred to as “prescribed species of invasive plants”. Invasive alien plants (also commonly referred to as “weeds”) are non-native plants that have found their way into British Columbia without the insect predators and/or plant pathogens that help keep them in check as in their native habitats. Invasive plants often exhibit aggressive growth and typically out-compete native plant species in new habitats. As a result, invasive plants are difficult to control and can adversely affect BC's natural resources.

### Prescribed Species of Invasive Plants Known to Occur within the Fraser DFA

- |                               |  |                      |
|-------------------------------|--|----------------------|
| • Bull Thistle                | • Japanese Knotweed                          | • Sulphur Cinquefoil |
| • Canada Thistle              | • Oxeye Daisy                                | • St. John's Wort    |
| • Common Burdock/Burdock Spp. | • Hawkweed spp. (Orange, Smooth, Yellow etc) | • Spotted Knapweed   |
| • Diffuse Knapweed            | • Scotch Broom                               | • Common Tansy       |
| • Dalmatian Toadflax          |  | • Tansy Ragwort      |

Value	Objective	Indicator	Target	Acceptable Variance
Protection of biodiversity from invasive species	Protection of natural ecosystem resilience to disturbance from invasive species	Compliance with the Invasive Plants measures in the approved Forest Stewardship Plan (FSP)	100% Compliance with FSP Measures in FSP section 8.1	Zero

## Current Status & Results

Year	# of Non-compliances with FSP section 8.1	% Compliance	Target Met (Y/N)	Variance Met (Y/N)
2010	0	100	Y	Y
2009	0	100	Y	Y
2008	0	100	Y	Y
2007	0	100	Y	Y

In 2010, zero non-compliances were issued to Teal regarding FSP section 8.1 Invasive Plants.

In 2009, zero non-compliances were issued to Teal regarding FSP section 8.1 Invasive Plants. Ministry of Forests and Range completed 29 inspections and noted in one inspection that Teal maintains a training program and a system is in place to track invasive plants. 14 of the MoFR inspections reviewed Free Growing status, no issues were identified. Teal inspections did not identify any new cases of invasive plants within road locations or cutblocks. The MoFR Invasive Plant database is also reviewed during plan development (Site Plan) to assess any known occurrences in the vicinity of proposed blocks (one site



identified 250m from block SQ10A). Another site was identified near block 334 in Pitt Lake, mitigative prescriptions were developed within the Silviculture Treatment Regime document.

To date, no non-compliance against FSP section 8.1 Invasive Plants have been issued.

## Strategy

The Invasive Alien Plant Program - Map Display (<http://www.for.gov.bc.ca/hra/Plants/application.htm>) is maintained by the government and provides a visual database depicting known locations of invasive alien plants for species listed under FRPA and other plants with invasive characteristics.

Teal's Forest Stewardship Plan (FSP) prescribes Measures that Teal will implement to limit the spread of prescribed invasive plants resulting from its forest development activities (refer to the FSP for more detail):

- Monitor the presence and spread of invasive plants during silviculture surveys and road inspections in the plan area.
- Report recorded invasive plant infestations annually to the Invasive Alien Plant
- Re-vegetation (grass seeding) with Canada Common #1 Forage grade seed in areas with exposed mineral soil (>0.25ha) in locations where invasive plants are known to occur

## Monitoring

The Ministry of Land and Natural Resource Operations conducts inspections related to compliance with the Forest Stewardship Plan. Results of inspections are maintained by the Manager, Forestry & Engineering.

Monitoring for the presence and spread of invasive plants will also be conducted during silviculture surveys and road inspections within cutblocks and along roads under obligation to Teal within the Fraser portion of the DFA. The Invasive Alien Plant Program - Map Display will record present and new infestations.

The Forestry and Engineering Department maintains records of completed grass seeding.

## Forecast

Compliance with FSP Measure 8.1 Invasive Plants is a legal requirement, therefore, the target is the forecast.



## F2-2: Salvage of Damaged Timber

This indicator is also applicable in addressing Element 4.1 Carbon Uptake and Storage.

Forest health is an important component of forest ecosystem resilience and maintaining healthy, productive forests. The salvage of economically accessible damaged or threatened merchantable timber is a practice that will remove unhealthy forest stands and replace them with healthy regenerating forest.

Value	Objective	Indicator	Target	Acceptable Variance
Maintain healthy, productive forests; harvesting the profile – not just taking the good and healthy	Maintaining Healthy Forests across landscape	Salvage of economically accessible damaged/ diseased or threatened merchantable timber as a percent of the total amount identified	Salvage 100% of economically accessible damaged or threatened timber within two years of identification	Salvage 100% of economically accessible damaged or threatened timber within 3 years of identification

### Current Status & Results

Year	Volume of economically accessible damaged* timber identified (m <sup>3</sup> )	Volume of economically accessible damaged* timber salvaged (m <sup>3</sup> )	% of economically accessible damaged* timber salvaged	Target Met (Y/N)	Variance Met (Y/N)
2010	0	0	N/A	Y	Y
2009	0	0	N/A	Y	Y
2008	150	0	0	Y	Y
2007	60	60	100	Y	Y

\* includes damaged, diseased or threatened timber

In 2009 and 2010, there were no areas identified for salvage harvesting and no salvage activities.

Currently there are few forest health concerns within the Fraser portion of the DFA. Windthrow, root disease, insect infestations and fire are potential threats to forest health and have been known to occur within the Fraser portion of the DFA and surrounding forest land.

There are small areas with Lodgepole pine leading stands within northern interior portions of the Fraser portion of the DFA. Teal harvested 5,297 cubic metres of Mountain Pine Beetle infested stands in 2006.



## Strategy

The Forestry and Engineering department will monitor the DFA during the course of their field planning activities. Where significant forest health concerns develop, and are discovered, Teal will assess the situation and harvest damaged or threatened timber that is economically viable. Factors that influence the viability of potential salvage operations include timber quality and quantity, accessibility (i.e. proximity to established roads) and current market conditions.

## Monitoring

The Forestry and Engineering department will monitor the DFA during the course of their field planning activities. Stands with identified forest health concerns will be noted and assessed for operational viability. Records will be kept internally showing the location and assessment. Economically viable stands with forest health concerns will be incorporated into harvesting plans and recorded in the Phoenix database. Information will be reported annually.

Government agencies also conducts monitoring activities and informs applicable Licensees of potential forest health concerns or damaged timber.

## Forecast

It is anticipated that Teal will pursue all economic opportunities in a timely manner, therefore the target is the forecast.





In 2009, 36.9 hectares of brush were treated with herbicides (Glyphosate or Triclopyr) through aerial spray application. Two blocks required Pesticide Free Zones to be established. No PFZ infringements were reported by the contractor. Treatment inspections are typically completed in summer following treatment to confirm success of treatment and adherence to the PFZ (once the vegetation has died). Zero non-compliance was issued to Teal regarding Pesticide Free Zones around streams and water bodies.

To date, no non-compliance have been assessed to Teal for its pest management projects.

## Strategy

Brush control projects using herbicides are implemented annually or as brush competition and budgets warrant. Projects may include ground based applications or aerial spray programmes. The number of hectares treated each year is dependent on the number of hectares exhibiting brush competition problems that pose a threat to the regenerating forest and Free Growing status.

Teal contracts out herbicide brush control projects carried out under the supervision of personnel with a Pesticide Applicators Certificate. Chemical brushing projects are conducted under Teal's Silviculture Standard Operating Procedures which detail Chemical Brushing Procedures. These procedures specify pre-work meetings with brushing crews, documentation of pre-work meetings (Pre-work checklist) and how chemical brushing activities are to be conducted in order to identify and manage safety and environmental concerns.

Pesticide Free Zones and buffers are marked on treatment plan maps and are field marked prior to treatment. Field marking is left in the field. Post treatment assessments can readily verify where Pesticide Free Zones have been compromised due to vegetation exhibiting signs of herbicide treatment within the PFZ and are typically completed the year following treatment (once vegetation can be clearly distinguished from the non-treated areas).

## Monitoring

Pre-work checklists are completed before each chemical brushing project. Checklists and treatment plan documents are kept on file. Teal Forestry and Engineering Department staff monitor the contractor periodically during treatment. Pesticide application must be conducted under the supervision of personnel with a valid Pesticide Applicator Certificate.

Pesticide Free Zones and buffers are field marked prior to treatment. Post treatment inspections are typically completed by Forestry and Engineering Department to ensure treatment effectiveness and conformance with treatment plans and stream buffers, prior to issuing payment to contractors. Post treatment assessments can readily verify where buffers and Pesticide Free Zones (PFZs) have been compromised due to vegetation exhibiting signs of herbicide treatment. If any portion of a PFZ is determined to be compromised, an Incident Investigation Form is completed.

Government agencies also do periodic inspections.

## Forecast

As the target is based on legislated requirements, the target is the forecast.



## F3-10: Water Quality and Roads

Roads can potentially cause negative impacts to water quality and quantity. Impacts may include sedimentation and restricting water flow (i.e., blocked culverts).

Value	Objective	Indicator	Target	Acceptable Variance
Water quality	Limit or eliminate negative impacts to water quality due to roads	Number of non-compliances on roads under permit which indicate an impact has occurred on water quantity or quality	Zero non-compliances from a designated official citing infractions causing water quality or quantity impacts	Zero

### Current Status & Results

Year	# of Non-compliances related to roads and water quality	Target Met (Y/N)	Variance Met (Y/N)
2010	0	Y	Y
2009	0	Y	Y
2008	0	Y	Y
2007	0	Y	Y

In 2010, the Ministry of Lands and Natural Resource Operations completed several inspections; a few inspections indicated road maintenance issues to be addressed such as plugged culverts or ditches which Teal addressed in a timely manner. Zero non-compliances have been issued related to impacts to water quantity or quality related to roads.

In 2009, the Ministry of Forests and Range (MoFR) completed 29 inspections. A few inspections indicated road maintenance issues to be addressed such as plugged culverts or ditches. Zero non-compliances have been issued related to impacts to water quantity or quality related to roads. Teal received a complimentary email from the District Manager, Chilliwack relating to positive feedback related to Teal's operations and certification process during a Fraser Valley Regional District Meeting. Specific mention was made in relation to the activities within the Norrish Creek Community Watershed. In July 2009, Teal conducted a tour of the Norrish Creek Community Watershed with local politicians, the MoFR and the local MLA. Here is an excerpt from the subsequent press release, comments made by the MLA: "This is a great example of responsible logging in a watershed that supplies drinking water to Abbotsford, the fifth largest city in the Province, and the city of Mission. I was amazed at the quality of work being done by Teal-Jones and their contractors, and I know that the Mayors of both Abbotsford and Mission, their municipal councillors and members of the Fraser Valley Regional District shared those thoughts. Even the Ministry of Forests people on the tour thought the logging operation was excellent, clean, and done in a very sensitive manner to ensure no environmental impacts occurred in this vital water source."

Teal maintains a large network of roads under its Road Permits.

### Strategy

Teal maintains a Standard Operating Procedure for Roads (Road SOP). This document provides guidance on road activities for road construction, maintenance, deactivation and rehabilitation and the hauling of



road construction materials and equipment. All personnel are responsible to report to their supervisor if problems are anticipated or encountered. Supervisors are required to monitor activities on active road headings or other work areas. Supervisors also conduct regular road inspections and complete Road Inspection Forms documenting the inspections. The general frequency of inspections is determined by considering the complexity of the plans, crew experience, potential environmental impacts, weather conditions and rate of progress. Teal regularly conducts road inspections of its permitted roads. Road inspections are used to plan road maintenance in order to maintain the safety and environmental integrity of its roads. Road maintenance may include grading, ditch cleaning, and clearing blocked culverts. Where ditches have the potential to transport sediment into streams, sediment control devices such as silt fences or hay bales are used to prevent deleterious materials from entering the stream.

Road construction crews monitor rainfall and soil conditions to ensure that road construction activities do not impact water quantity. Road plans detail where culverts should be placed in order to ensure water can move across the road area without transporting road surface materials or disturbing natural drainage patterns.

## Monitoring

The Ministry of Forests and Range, Compliance and Enforcement branch conducts inspections on Teal's forest operations on a regular basis. The Manager, Forestry & Engineering receives and reviews all inspection reports from Ministry of Land and Natural Resource Operations and maintains a summary tracking spreadsheet. The Environmental Department reviews the compliance tracking spreadsheet and results of internal inspections (conducted to confirm that work was completed according to the plan) and reports any issues related to roads and water quality.

Additional government agencies also conduct periodic inspections.

## Forecast

As the target related to a legal requirement, the target is the forecast.



## F3-12: Quality & Quantity of Potable Water

Potable water is defined in the *Drinking Water Protection Act* as water that is provided by a domestic water system that meets the standards prescribed by legislation for water quality and is safe to drink and fit for domestic purposes without further treatment. The *Drinking Water Protection Regulation* lists standards (parameters) for potable water. Individuals or corporations may procure licenses to draw water from streams, springs and wells.

Forestry activities have the potential to impact water quality and quantity by changing the vegetation structure within the catchment area supplying water intakes. Sedimentation from roads or other soil disturbance can reduce water quality. The common water quality parameters that forestry activities can impact include: turbidity, the concentration of dissolved organic carbon, nutrient levels (mainly potassium, phosphorus, and nitrogen), water temperature, and dissolved oxygen. Chemicals used in forestry such as diesel fuel, gasoline and mixed gasoline, hydraulic oil, antifreeze and herbicides can have negative impacts to water quality if directly or indirectly introduced into the water supply system. For this indicator “associated” with potable water intakes and supply means where: (A) a cutblock or road is connected by overland flow or streams to a potable water intake and/or (B) where a cutblock or road is connected by a steep slope (greater than or equal to 60 % slope gradient), or potential slide or debris torrent run-out (deposition) area, to a potable water intake.

Naturally occurring events such as drought, flooding, animal feces, storm events, wildfire, and landslides can also impact the quality and quantity of water.

Value	Objective	Indicator	Target	Acceptable Variance
Quality and quantity of potable water	Maintain the quality and quantity of potable water after logging	Number of licensed water intakes, wells and streams where the comparison of available and comparable information from pre and post harvesting indicates negative impacts to water quality and quantity	Number of negative impacts to licensed water intakes and wells as a result of harvesting is zero	Zero

### Current Status & Results

Year	# of Licensed Water Intakes, Wells, and Streams Associated with the Fraser DFA	# of Negative Impacts to Licensed Water Intakes, Wells and Streams as a Result of Harvesting	Target Met (Y/N)	Variance Met (Y/N)
2010	71	0	Y	Y
2009	71	0	Y	Y
2008	71	0	Y	Y
2007	71	0	Y	Y



In 2010, the Ministry of Lands and Resource Management Operations completed several inspections of Teal harvesting and road construction activities; zero non-compliances related to water quality or quantity were issued. Four blocks were within the vicinity of domestic water licence intakes, however activities did not impact water quality or quantity due to the distance from intake locations. In addition, Teal has been active in the Norrish Creek Community Watershed over the year (water license supplies water to over 300,000 people in the city of Mission and Abbotsford), and no water quality concerns or issues have been brought forward. No other reported cases of negative impacts to licensed water intakes, wells or streams as a result of harvesting/ road activities were received by Teal.

In 2009, the Ministry of Lands and Resource Management Operations completed 29 inspections of Teal harvesting and road construction activities. Zero non-compliance related to water quality or quantity were issued. Teal has been active in the Norrish Creek Community Watershed over the year (water license supplies water to over 300,000 people in the city of Mission and Abbotsford), no water quality concerns or issues have been brought forward. No other reported cases of negative impacts to licensed water intakes, wells or streams as a result of harvesting/ road activities were received by Teal.

Analysis (January 2008) shows a total of 71 Water Licenses on 32 streams associated (i.e., within, flowing from or directly adjacent) with the Fraser portion of the DFA. The requirements for regular testing vary by license and Teal does not have information on how many of these licences are regularly testing their water. A review should be conducted in 2010 to determine whether there are any updates to the number of water licenses in the DFA.

## Strategy

Water License holders regularly have their water quality tested in approved laboratories. Water licensees may also conduct tests on their water supply to establish the quantity of water that can be expected to flow through or to their water system. Individual water license holders would maintain their regular regime of water quality testing and maintain records of the testing reports. These reports would be necessary for providing “available and comparable information” of the water quality/quantity history and to identify any negative impacts.

“Available and comparable information” is defined as reliable information that is voluntarily made available by the stakeholder or agency from water testing. The information will necessarily need to be comparable (i.e., comparing normal pre-harvest test results to normal post harvest results).

Where available and comparable water quality and quantity tests indicate that forestry activities have negatively impacted the quantity and quality of potable water this information will be tallied as a negative impact.

During field work, water supply infrastructure and associated streams, etc. are located and assessed. In some cases, a qualified professional hydrologist or geotechnical expert may be consulted. Layout will take into consideration the water supply and any recommendations in order to provide adequate protection.

## Monitoring

Individuals with water licenses often have their water from wells and water intakes tested for quality in approved laboratories. Testing for water quantity can be performed by the water licensee by measuring an amount of water delivered over a set period of time. With respect to this indicator, stakeholders with water licenses will continue with testing their water supply at the intervals they have in the past. This test information will be held by the water licensee. If testing shows that there is a problem, and it appears that Teal’s forestry operations may be a factor, the licensee can then submit that water test with problems to Teal with the previous test reports that provide the baseline information on that licensee’s water quality (or quantity). Teal will then contact that licensee and follow up with an investigation to determine the situation



and any role that their forest activities have played. Ongoing water testing is the responsibility of the individual licensee.

The Forestry and Engineering Department tallies the number of reported incidents of negative impacts to licensed water supplies.

## Forecast

As the target relates to a legal requirement, the target is the forecast. An updated analysis of the total number of Licensed Water Intakes in the DFA should be completed in 2010.



## F4-2: Time to Reforestation

The time to reforestation refers to the time between harvest completion and planting. Generally, most planting occurs within one year following harvesting. Planting is carried out to meet stocking requirements and to establish conifers in advance of brush competition. Prompt planting may also be undertaken to favour rapid early growth so that visual quality, hydrologic recovery and wildlife objectives are met. Prompt reforestation facilitates carbon dioxide uptake from the atmosphere and storing it in the tissue of growing trees.

Value	Objective	Indicator	Target	Acceptable Variance
Minimize the duration of un-forested condition of harvested areas	Prompt reforestation of harvested areas	Time to reforestation after harvest completion of the cutblock	Reforest 70% of harvested areas within one year	Zero

### Current Status & Results

Year	Area Harvested (ha)	Area Reforested (ha)	% Reforested within One Year	Target Met (Y/N)	Variance Met (Y/N)
2010	630.8 (completed 2009)	596.1 (planting 2010)	94.1	Y	Y
2009	298.4 (completed 2008)	441.1 (planting 2009)	147.8	Y	Y
2008	740.9 (completed 2007)	619.2 (planting 2005-2008)	83.6	Y	Y
2007	631.5 (completed 2006)	450.8 (planting 2007)	71.4	Y	Y

In 2008, planting was completed on the majority of areas that were harvested in 2007. A few of the cutblocks commenced harvesting prior to 2007, therefore some of the reported planting data is for previous years. The Target for this Indicator was revised by Teal in October 2008 to simplify the reporting process.

In 2007, the majority of the areas not planted were planted in the following spring of 2008.

In 2006, 594.0 hectares were harvested and as of the end of 2007, 421.2 hectares of these blocks were reforested or considered fully stocked (70.9%). 100% of the blocks with the legislated regeneration period expiring in 2007 were declared fully reforested (regenerated or fully stocked). See Indicator F2-3 for more information regarding Regeneration Delay.



## Strategy

Regeneration strategies are developed at the planning stages of the cutblock development (prior to harvesting). After harvesting, the site is re-inspected to determine if any changes to the plan are required. If possible, planting typically occurs within the first year following harvesting.

Under Teal's current management strategy, 100% of clearcut harvested areas are planted as soon as practical after harvest completion. To date the major species planted within the Fraser portion of the DFA have been Douglas-fir, western red cedar, cypress (yellow cedar) and interior spruce. Species selection is largely determined as per the preferred species required in approved stocking standards for each ecosystem. Planting is carried out as necessary to meet stocking requirements and to establish conifers in advance of brush competition. Prompt planting may also be undertaken to favour rapid early growth so that visual quality, hydrologic recovery and wildlife objectives are met.

Seedling shortages, plantation failures, seedling diseases and damage, adverse weather conditions, as well as levels and locations of harvesting activity can reduce or delay planting programmes. Harvested cutblocks not reforested in the year they are harvested are prioritized for planting in the next planting season. Established plantations requiring additional stocking are also prioritized for "fill planting" in order to ensure approved stocking standard targets are met. Planting programmes are typically conducted in the spring season. Some high elevation cutblocks may only be snow free for late summer or fall planting programmes.

This indicator does not include consideration of Intermediate Cut Silviculture Systems, as these areas are deemed fully stocked following harvesting activities. "Intermediate cut" blocks or portions of blocks are areas that have a high retention of trees left after harvesting. Intermediate cuts are used in areas that are considered visually sensitive or to meet wildlife objectives (i.e. Spotted Owl or Grizzly Bears). After completion of harvest activities in intermediate cuts, a ground assessment is completed to determine that the retained trees meet the prescribed criteria for density and health (i.e. limited logging damage to retained trees).

## Monitoring

Planting reports are produced and filed for each cutblock planted (by the Forestry Department). Cutblock, stocking and planting information will be derived from the Phoenix database (and the cutblock files) and/or the Results database.

The Forestry Department will tally the percentages of cutblock hectares planted within one year of harvest completion.

## Forecast

It is anticipated that the target will be exceeded as Teal maintains an aggressive reforestation program.



## F4-4: Fertilization

This indicator is only applicable where external funding for treatment is available, as outlined in the Land Base Investment Rationale (LBIR). The Land Base Investment Rationale (LBIR) is the budget/plan for spending Forest Investment Account funds under the Landbase Investment Program.

Fertilization is a silvicultural treatment that can be effectively used to increase the merchantable yield and value of established forests. By adding nutrients that are limited on a site, fertilizers can improve the growth of individual stands. However, with knowledge of the timber supply profile and the timing and magnitude of wood supply needs, fertilization can also be strategically used to accelerate the development of specific age classes and timber types. This is done to facilitate an even supply of wood at the forest level<sup>2</sup>.

Value	Objective	Indicator	Target	Acceptable Variance
Productivity of forest land base	Maintain or improve productivity of the forest land base	Percentage of identified fertilizable stands (hectares) treated over a 5 year period, where funding is available	Average over a 5 year period of 15% of identified fertilizable stands treated per year	Minimum average of 10% of identified fertilizable stands treated per year

### Current Status & Results

Year	Identified Fertilizable Stands (ha)	Stands Fertilized (ha)	% of Identified Stands Fertilized	Target Met (Y/N)	Variance Met (Y/N)
2010	1,400	1,400	100	Y	Y
2009	2,000	1,000	50	Y	Y
2008	3,819.0	3,078.0	80.6	Y	Y
2007	4,500.0	2,704.2	60.1	Y	Y

In 2010, a total of 1,400 hectares were fertilized in the Fraser Timber Supply Area (TSA) through an aerial fertilization project. It is important to note that the project was based on the funds available. There is currently no plan that identifies stands in the Timber Supply Area that are good candidate for fertilization. It is important to note there were significant changes in provincial funding for projects in the DFA; for example the list of eligible projects was changed (in 2010 fertilization was the only project eligible in the Fraser Timber Supply Area), funds are no longer allocated based upon AAC and several funding sources are now amalgamated. Since funding availability is changing Teal informed the PAGs of these changes, and they agreed to re-evaluate those indicators affected in a year's time.

In 2009, a total of 1,000 hectares were fertilized in the Fraser Timber Supply Area (TSA). The remaining 1,000 hectares identified for treatment could not be fertilized due to lack of funding. There were no stands fertilized in the Teal Jones portion of the TSA. A large fertilization program was completed in the TSA in 2008 (3,078 ha) and 2007 (2,704). The current three year average for treated areas is roughly 63%.

<sup>2</sup> Forest Practice Code Fertilization Guidebook September 1995



## Strategy

Teal's FIA budget varies from year to year as it is dependant on annual harvest levels. Teal's FIA money is pooled with other FIA money for Fraser TSA licensees. The amount of FIA fertilization is based on the Landbase Investment Rationale (LBIR) budget which allocates this pool of FIA money towards identified projects. The Landbase Investment Rational is updated year to year and forms the budget for land base investment projects.

Individual forest stands are assessed for their suitability for fertilization treatment and rated by their potential response to potential treatments. Stands are rated High, Moderate or Low potentials. Current treatment strategies are targeted towards late rotation fertilization of second growth Douglas-fir leading stands (aged 51 to 100 years, > 80% Douglas-fir) with a high fertilization potential. Younger stands (20 to 50 years old) with a high fertilization potential may also be treated. An inventory of 'fertilizable stands' and their rating was developed for the Chilliwack Forest District by forestry consultant BA Blackwell and Associates Ltd. Standards for assessment and treatment of fertilizable stands are monitored through the Forest Investment Account.

Future fertilization projects will treat fertilizable stands in order of priority of treatment (High fertilization potential to Low) as FIA funding allows.

## Monitoring

FIA funded projects, including fertilization projects funded through FIA, are administered under the financial accounting firm PricewaterhouseCoopers (PwC). As the administrator, PwC accepts work plan proposals from licensees, approves projects, verifies fieldwork and certifies project completion.

Teal's FIA projects are administered by Madrone Environmental. Teal's Environment Department will report FIA funded fertilization projects annually.

## Forecast

The target is the forecast, provided that funding is available.



## F5-3: FIA Landbase Investments

A portion of the stumpage which forest licensees pay to the province is re-invested in the forest through the Forest Investment Account (FIA)<sup>3</sup>. These funds are administered by the provincial government and distributed to forest companies for specific forest investment projects and activities. These projects are audited against their individual approved work plans and budgets. Projects that forest licensees may target for these monies include: higher-level strategic decision-making and planning, improved timber volume and value, improved biodiversity and site productivity, and informed resource management decision making.

Teal's FIA program is funded under the provincial Land Base Investment Program (LBIP). 100% of FIA funds expended by Teal are for land-base investments. This includes planning, inventory, silviculture treatments, etc.

Value	Objective	Indicator	Target	Acceptable Variance
Maintain the flow of benefits to society derived from forest management	Investment in the forest land base	Percent of allocated Forest Investment Account funds re-invested into the land base	100%	Zero

### Current Status & Results

Year	Percent of FIA Funds Re-invested into the Land Base	Target Met (Y/N)	Variance Met (Y/N)
2010	95% (\$338,308)	N	N
2009	100% (\$89,626)	Y	Y
2008	100% (\$142,372)	Y	Y
2007	100% (\$147,629)	Y	Y

In the 2010/11 fiscal year, the only project completed through the Forest Investment Account (now renamed the Land Based Investment Strategy) was forest fertilization (see indicator F4-4 Fertilization for more details). The funds were allocated to and managed by the Fraser Timber Supply Area Co-op. Although only 95% of the budget was spent, the entire project was completed (note: the funds were allocated and the job went out for bidding, the winning bid was lower than the estimated project cost. Efforts were made to spend remaining funds, including the development of prescriptions for future projects and additional area for fertilization, however, due to administrative challenges the additional area was not completed within the allowed timeline). It is important to note there were significant changes in provincial funding for projects in the DFA; for example the list of eligible projects was changed (in 2010 fertilization was the only project eligible in the Fraser Timber Supply Area), funds are no longer allocated based upon AAC and several funding sources are now amalgamated. Since funding availability is changing Teal informed the PAGs of these changes, and they agreed to re-evaluate those indicators affected in a year's time.

In the 2009/10 FIA fiscal year, projects included road deactivation prescriptions within the Norrish Creek Community Watershed (in partnership with the Chilliwack Forest District), studies completed by the

<sup>3</sup> for more details see <http://www.for.gov.bc.ca/hcp/fia/>



Boothroyd Indian Band for wolverines within four drainages in the Nahatlatch valley and the Sustainable Forest Management Plan/ Public Advisory Group.

## Strategy

Teal will continue to pursue funds available from FIA for investment in the land base. Future aerial fertilization will be a significant use of these funds. Other projects are expected to be undertaken as well. Teal anticipates that projects will be prioritized with those strategies and information gaps identified by BC's Chief Forester in the latest Timber Supply Review for the Fraser Timber Supply Area.

Future FIA funded projects will be implemented under one or more of the following categories: Strategic Resource Planning; Stand Establishment and Treatment; Infrastructure, Restoration and Rehabilitation; and Information Gathering and Management.

These FIA funds may not be used for activities for which Teal is legally obliged to undertake at its own cost.

## Monitoring

The Land Base Investment Program (LBIP) is the largest of the seven programs under the Forest Investment Account, comprising investments in land base activities planned and delivered by recipients on Crown land in accordance with government standards. FIA funded projects are administered under the financial accounting firm PricewaterhouseCoopers (PwC). As the administrator, PwC accepts work plan proposals from licensees, approves projects, verifies fieldwork and certifies project completion.

Teal's FIA projects, through the Fraser TSA Cooperative Association, are administered by Madrone Environmental Services. Madrone also directly manages a portion of Teal's FIA allocation that is outside of the TSA Coop. Teal's Environment Department will report FIA funded land base projects annually.

## Forecast

Teal is committed to continuing this work, provided government funding is available, therefore the target is the forecast.



## F5-4: Community Log Retrieval Agreements

This indicator is also applicable in addressing Element 4.1 Carbon Uptake and Storage.

The intent of this indicator is to monitor the progress of completion of community log retrieval agreements, where an interest has been expressed by individuals or communities. The FPAG recognizes that there are two parties involved in the development of protocol agreements, and that Teal can not be held accountable for the participation level of the second party.

Teal is in the process of developing a protocol agreement template that will be used to facilitate log salvage by interested individuals and communities. These agreements will provide guidance for both Teal and outside parties for facilitating log salvage from Teal's cutblocks. Salvaged logs may be used to manufacture durable forest products and for firewood. These agreements are targeted towards interested Proponents from the local communities of the Fraser portion of the DFA.

Value	Objective	Indicator	Target	Acceptable Variance
Economic benefits to local communities; maximize efficient use of timber	Community access to wood fibre; opportunities for the efficient use of timber which Teal can't economically market	Progress towards individual signed protocol agreements for Community Log Retrieval with interested individuals or groups from Communities	Report annually on the status of individual protocol agreements for Community Log Retrieval	Zero

### Current Status & Results

This indicator and target was amended in October 2008 to acknowledge that there are two parties involved in completion of agreements and that Teal can only be held accountable for their efforts to engage the other party and not the actual participation of the other party. The amendment was completed to address the non-conforming target and variance for the 2007 results.

Year	# of Requests for Community Log Retrieval Agreements	# of Community Log Retrieval Agreements Developed	Target Met (Y/N)	Variance Met (Y/N)
2010	1 (Boston Bar Band)	0	Y	Y
2009	1 (Boston Bar Band)	0	Y	Y
2008	1 (Boston Bar Band)	0	Y	Y
2007	1 (February 2007) (# of Written Expressions of Interest (Month/Year of expression of interest))	0	N (Target was Agreements completed within 1.5 years)	N

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In 2010, no further progress was made regarding a Community Log Retrieval Agreement. Due to changes in the market the piles are no longer available.

In 2009, no further progress was made regarding a Community Log Retrieval Agreement. The Boston Bar Band is working on identifying a new representative for the FPAG and the Log Retrieval Agreement project. The outstanding issues that must be resolved by the proponent before the agreement can process are addressing WorkSafe BC requirements, stumpage and environmental protection.

Some provisions for facilitating log retrieval for firewood have been established in a separate agreement with the Boston Bar First Nation. It is anticipated that other First Nations and non-First Nation individuals will be interested in signing log retrieval agreements.

## Strategy

Teal is committed to working in cooperation with the Boston Bar First Nation (Band) to develop the log retrieval agreement. Teal has an open invitation to meet with the proponent to discuss this issue.

Outstanding issues that must be addressed before the agreement can proceed are Worksafe BC, stumpage, and provisions to ensure that Teal's legal and environmental certification obligations can be met.

Boston Bar is working to identify a representative to replace Mr. John Warren at these discussions.

## Monitoring

The Environmental Department will communicate with the Manager, Forestry & Engineering (and review the communications file/ FPAG meeting minutes) and report on the status of this indicator.

## Forecast

Due to the unfortunate passing of one of the primary members of the proponent group there has been considerable delay in developing the agreement.

The FPAG reviewed and discussed this indicator and target in 2008 and agreed that Teal cannot be held accountable in the SFMP for situations that Teal does not have direct control over (i.e., the agreement cannot proceed until the proponent address the outstanding issues). As a result, the deadline has been removed from the indicator and target, and the wording has been amended to report on the status of the agreement to the FPAG.



## F5-5: Economic Benefits to Local Communities

The intent of this indicator is to monitor the progress of Memorandum of Understandings (MoU) to address the creation of economic activity and employment in the Fraser Canyon area, where an interest has been expressed by an individual or community. The FPAG recognizes that there are two parties involved in the development of MoUs, and that Teal can not be held accountable for the participation level of the second party.

Economic benefits for communities associated with the Defined Forest Area include direct and indirect employment under Teal Jones Group and its sub-contractors and suppliers. This indicator is directed towards how Teal creates other economic benefits within these communities by having an open business relationship allowing parties to put forward business proposals that involve Teal and its assets outside of the DFA. Business proposals may include partnerships and leasing arrangements.

This indicator is specifically directed to the relationship between Teal and community representatives in the central Fraser Canyon with respect to Teal's inactive lumber mill and property in the community of Boston Bar. While this facility is outside of the Defined Forest Area, Teal is still open to reviewing proposals from local business interests to develop economic activity that may be of mutual interest to both parties and generate much needed economic activity in these communities. This indicator serves to demonstrate progress towards economic benefits and that the parties are meeting in good faith to arrive at a solution to this issue.

Value	Objective	Indicator	Target	Acceptable Variance
Economic benefits to local communities	Generate employment opportunities in communities associated with the Fraser DFA	The progress (Memorandum of Understanding – MoU) made by the community representatives and Teal representatives towards creation of economic activity and employment in the central Fraser Canyon	Report annually on the status of MoUs	Zero

### Current Status & Results

Year	# of Requests for MoU	# of Signed MoU	Target Met (Y/N)	Variance Met (Y/N)
2010	1 (Boston Bar Mill Site)	0	Y	Y
2009	1 (Boston Bar Mill Site)	0	Y	Y
2008	1 (Boston Bar Mill Site)	0	Y	Y
2007	1 (Boston Bar Mill Site)	0	N (target completion April 1, 2008)	Not established



To date, the Boston Bar Mill Site Memorandum of Understanding has not been completed. Teal has communicated that before the MoU can proceed, the proponent (Fraser Canyon) needs to develop a business plan that effectively addresses the Labour (United Steel Workers) issues on the Boston Bar mill site (owned by JS Jones). The proponent agreed that a business plan addressing these issues would be necessary for Teal to effectively consider a proposal. (See FPAG Meeting Minutes February 20, 2008). Regrettably, one of the primary proponents of this initiative, John Warren, passed away suddenly in early March 2008. Understandably, this will have a significant impact on the capacity of the proponent to complete the Business Plan and address union labour issues.

## Strategy

Teal is committed to working in cooperation with the Fraser Canyon to develop the MoU regarding employment and economic activity at the Boston Bar mill site (owned by JS Jones). Teal has an open invitation to meet with the proponent to develop these documents.

Teal has requested that the Fraser Canyon develop a Business Plan that effectively addresses the Labour (United Steel Workers) issues.

Teal will continue to meet with the proponent and offer assistance (when requested) regarding development of the business plan.

When the proponent puts forward a business plan that meets the criteria, it will be brought to Teal management and owners for evaluation.

## Monitoring

The Environmental Department will continue to monitor the progress on this initiative and report on an ongoing basis. Progress will be monitored through discussions with the Manager, Forestry & Engineering and reviews of the external communications file.

## Forecast

Due to the unfortunate passing of one of the primary members of the proponent group there has been considerable delay in developing the MoU.

The FPAG reviewed and discussed this indicator and target at several meetings in 2008 and agreed that Teal cannot be held accountable in the SFMP for situations that Teal does not have direct control over (i.e., the MoU cannot proceed until the proponent develops a Business Plan that address union labour issues). As a result, the deadline has been removed from the indicator and target, and the wording has been amended to report on the status of the agreement to the FPAG.



## F5-6: Reporting Terrain Related Threats

This indicator is placed under Element 5.3 Fair Distribution of Benefits and Costs because the FPAG has identified concerns for community safety and the potential impacts to community safety as a “cost” of timber harvesting (including road construction).

Stream or terrain related threats to public safety may exist naturally in the landscape of the DFA. Many of these natural hazards may exist without any knowledge of government agencies tasked with disaster preparedness. Hazards may include natural log jams, sediment wedges or terrain instability that may potentially cause damage or dangerous conditions to the public or publicly owned infrastructure. Forest licensees may become aware of these natural hazards in the course of forest development. While the existence of these hazards may defer the area from the development of roads or harvesting, they are not necessarily communicated to the associated government agencies responsible for disaster preparedness. This indicator serves to facilitate the communication of these potential threats to the applicable Regional District so that they may be aware of them and plan accordingly.

The Regional Districts (RD) that are associated with the Fraser portion of the DFA are the Greater Vancouver RD, Fraser Valley RD, Squamish – Lillooet RD, Thompson-Nicola RD, and the Okanagan-Similkameen RD.

Value	Objective	Indicator	Target	Acceptable Variance
Community safety	Report stream or terrain related threats to public safety to the applicable Regional District	Percentage of identified stream or terrain related threats reported to the applicable Regional District	100%	Zero

### Current Status & Results

Year	# of Terrain Related Threats to Public Safety Identified in the Fraser DFA	# of Terrain Related Threats to Public Safety Reported to the Applicable Regional District	Target Met (Y/N)	Variance Met (Y/N)
2010	0	N/A	Y	Y
2009	0	N/A	Y	Y
2008	0	N/A	Y	Y
2007	0	N/A	Y	Y

In 2010, there were no terrain related threats to Public Safety Identified in the Fraser DFA.

In 2009, copies of completed terrain assessments (as well as hydrological and visual) were referred to the Fraser Valley Regional District for the Norrish Creek Watershed (no terrain related threats exist). Terrain stability assessments were completed by qualified professionals on 52 cutblocks and associated road construction activity (36 in the Hope operation, 5 in Norrish Creek and 11 in Pitt Lake). The majority of the assessment concluded very low to low terrain hazard. Areas with moderate hazard levels prescribed mitigating measures such as adhere to rainfall shutdown limits, operate during drier weather conditions and appropriate removal of the side-cast material. All high hazard areas were deleted from the proposed



harvest areas and appropriate buffers established per the recommendations of the assessments. One area in Pitt Lake (H217) recommended further assessment of avalanche hazard by a qualified professional if operations planned to occur during winter weather conditions

To date, no terrain related threats to public safety have been identified in the Fraser portion of the DFA.

## Strategy

Unknown, naturally occurring terrain or stream related threats to public safety are considered to be relatively rare within the Fraser portion of the DFA. During cutblock and road planning activities, terrain and related threats to public safety may be encountered occasionally in the field. Often these areas are purposely avoided in forest development where terrain and stream instability is evident.

Where potential development has included these areas, a Terrain Stability Field Assessment conducted by a qualified professional would identify these areas and provide recommendations. Recommendations often include amending the proposed development to avoid the unstable terrain or provide appropriate management strategies to reduce the potential for instability. Where any terrain related threats to public safety are identified in the field, they will be reported to the applicable Regional District by the Divisional Engineer.

## Monitoring

The Forestry & Engineering Departments will track all identified sites with terrain or stream related threats to public safety (typically identified through Terrain Stability Field Assessments) and the Divisional Engineer will report them to the applicable Regional District. The Environmental Department will report the number of terrain related threats identified in the field and the subsequent reporting to the Regional District(s).

## Forecast

All identified threats to public safety related to completed Terrain Stability Field Assessments will be communicated to the respective Regional Districts (the target is the forecast).



## F5-7: Conformance with Assessments

This indicator is placed under Element 5.3 Fair Distribution of Benefits and Costs because the FPAG has identified concerns for infrastructure and community property and the potential impacts as a “cost” of timber harvesting (including road construction) activities.

Qualified professionals are retained by Teal to conduct terrain, hydrological or other assessments beyond the scope of practice for forestry and engineering personnel. These assessments are typically made where there are signs of slope or hydrological instability or the potential for flooding and where this terrain is associated with forest development of roads and cutblocks. These assessments are normally conducted where forest values may be threatened. Where human infrastructure and private and community property may be affected by these processes, these assessments become an even greater priority. Determination of risk to human safety, and threat to private and community property would be indicated by stakeholder comments, or determined by Teal Engineering Staff and/or geotechnical field assessment reports. Where potential development has included these areas, a Terrain Stability Field Assessment and/or a hydrological assessment will be conducted by a qualified professional who would identify these areas and provide recommendations. Recommendations often include amending the proposed development to avoid the associated terrain or provide appropriate management strategies to reduce the potential for instability or flooding. These recommendations are then incorporated into the management planning for the associated cutblocks and/or roads.

Flooding can be exacerbated by the removal of the forest canopy or alteration of natural water patterns. Debris torrents are “defined as rapid, channelized flows of saturated, poorly sorted non-plastic soil and organic debris”<sup>4</sup>. Landslides are described in Indicators F3-3 & F3-4. Flooding, debris torrents and landslides, in certain circumstances, can cause extensive property damage and loss of human life.

Value	Objective	Indicator	Target	Acceptable Variance
Human safety; Infrastructure and private & community Property	Protect human safety, infrastructure, private and community property from any impacts resulting from slides, debris torrents, or flooding that can be attributed to harvesting or roads	Completion and conformance with site specific hydrological and/ or terrain stability assessment reports from qualified professionals (selected with input from the potentially affected community) where human safety, infrastructure, private or community property is at risk due to slides, debris torrents or flooding that can be attributed to harvesting or roads	100% conformance with recommendations from qualified professional reports	Zero

<sup>4</sup> Slaymaker, O., 1988. The Distinctive Attributes of Debris Torrents. Journal of Hydrological Sciences. No. 33, pp. 567-573.



## Current Status & Results

Year	% Conformance with Recommendations from Qualified Professional Reports	Target Met (Y/N)	Variance Met (Y/N)
2010	100	Y	Y
2009	100	Y	Y
2008	100	Y	Y
2007	100	Y	Y

In 2010, 42 Terrain Stability Field Assessments (TSFA) were completed in the Pitt Lake, Norrish Creek and Hope operating areas. Zero hydrological assessments were completed. A Watershed Assessment was updated for the Norrish Creek Community Watershed.

In 2009, 25 Terrain Stability Field Assessments (TSFA) were completed in the Pitt Lake, Norrish Creek and Hope operating areas. Zero hydrological assessments were completed in 2009. A Watershed Assessment has been completed for the Norrish Creek Community Watershed. Ministry of Forests and Range completed 29 inspections during the year and zero non-compliance were issued related to roads (one inspection confirmed end-haul prescription was completed as planned, several inspections identified minor road maintenance issued such as plugged culverts or missing bridge delineators and one inspection led to the closure of a bridge related to safety concerns).

Examples of recommendations generated from TSFA reports are adherence to rainfall shutdown criteria, end haul sections with slope stability issues, machine free zones, deletions of harvest areas from plans, etc.). Teal harvesting and road inspections did not identify any issues with following the plans/prescriptions.

The Norrish Creek cutblocks are located in the vicinity of the community water supply intake, no water quality issues or concerns were raised by the City of Abbotsford. A tour was conducted in the Norrish Creek Community Watershed with local politicians in July. Positive feedback was received from the Tour and from a Press Release made by the local MLA. Teal maintains regular communication and referral of harvesting and road plans with representatives of the Norrish Creek Community Watershed. TSFAs are also referred to the Fraser Valley Regional District.

No activities have occurred in the Hatzic operating area in 2008 (due to poor market conditions). Activities are tentatively planned for 2010.

## Strategy

Proposed roads and/or cutblocks located on potentially unstable areas are assessed by a qualified professional during the planning stages of layout. Community Watersheds or other drainages with sensitive hydrology are periodically assessed for hydrological impacts of harvesting. Where proposed activities may increase the risk of landslides debris torrents, etc, or undesirable watershed characteristics beyond an acceptable level, the assessment will recommend an alternate road or cutblock configuration or other measures to reduce the risk. These recommendations and changes are incorporated into the block or road design and harvesting and road prescriptions.

Representatives (community or FPAG members) in the Pitt Lake and Norrish Creek operating areas have requested to have input in the selection of the qualified professional completing the assessments (ultimately the final decisions rest with the Teal Forestry and Engineering Department).



Final harvesting and/or road building plans ensure that recommendations prescribed in assessment documents are implemented in the field.

## Monitoring

The Environmental Departments tallies the number of blocks and roads located steep terrain that could potentially include terrain that may threaten infrastructure or private or community property or terrain that may lead to flooding of these properties and reviews the conformance with respective professional assessment reports via review of Logging/ Road Construction Plans and results of internal inspections.

Government agencies also do periodic inspections.

## Forecast

Forest planning is reviewed and signed off by Registered Professional Foresters (RPF) who are registered to practice professional forestry in BC. RPFs are bound by professional code of ethics that requires consultation of outside expertise when their own knowledge, experience and training is not adequate to assess the particular situation (e.g., terrain stability, hydrological assessments). The same code of ethics requires that the RPF ensures implementation of the results of the assessments. Where recommendations have been made, the RPF must review the recommendations and generate the final plans/ prescriptions (this may include discussions with the qualified professional to discuss alternate options). Where final plans/ prescriptions vary from recommendations of the qualified professional, the RPF documents supporting rationale to file to support the variation from the recommendations (e.g., emails, phone log, etc.). As a result, the target is the forecast.



## F5-12: Observing/ Reporting Criminal Behaviour

Criminal behaviour is a common problem in the Fraser portion of the DFA where public access is available or cannot be restricted. Criminal behaviour includes poaching, illegal firearms discharge, vandalism, environmental damage from off-road vehicles, damage to recreation sites and First Nation's cultural features, and illegal dumping, etc. This behaviour, as discussed at FPAG meetings, impacts a wide cross section of DFA stakeholders and FPAG sectors including First Nations, local residents, naturalists, public utilities, Regional Districts, and Teal.

One of the most effective methods of reducing this behaviour in forest lands is to observe and report criminal or suspicious behaviour to law enforcement authorities. Some volunteer outdoor recreation groups actively train and patrol forested areas of concern in order to observe and report this kind of behaviour. Assisting these established, trained and active groups, where they have expressed a need, will help to provide a stronger, consistent and more effective approach to this issue.

Value	Objective	Indicator	Target	Acceptable Variance
Protection of forest values from public abuse	Limit damage caused by members of the public to forest values	Provision of reasonable support, where requested, to volunteer groups to facilitate observing and reporting of criminal behaviour in the Fraser DFA	Provide all reasonable support where requested	Zero

### Current Status & Results

Year	# of Reasonable Requests for Support	# of Reasonable Requests for Support Met	Target Met (Y/N)	Variance Met (Y/N)
2010	0	N/A	Y	Y
2009	0	N/A	Y	Y
2008	0	N/A	Y	Y
2007	0	N/A	Y	Y

In November 2009, FPAG members from the Hatzic Valley identified a concern related to ATV use and criminal behaviour along Davis Lake and requested support from Teal to limit access to the general public. Communication with community representatives is in progress.

In 2009, there were no requests received for support from community groups (e.g., volunteer outdoor recreation groups).



## Strategy

Where requests for support to Teal are made from volunteer outdoor recreation groups that actively participate in observation and reporting programs, Teal will evaluate the request and provide all reasonable support. Teal's Manager of Forestry and Engineering will determine what requests are considered reasonable. It is anticipated that these requests for support will involve requests for updated maps of forest roads, copies of gate keys, signage, donations in-kind, and meetings to discuss current "hot spots", road access and harvesting activity.

## Monitoring

The Environmental Department communicates with the Manager, Forestry and Engineering (reviews the external communication file) and summarize the number of requests for support from volunteer groups that actively participate in observing and reporting programs and the respective support provided by Teal.

## Forecast

To date, Teal has not received any requests for support from recreation groups regarding monitoring of criminal behaviour in the Fraser portion of the DFA. Where reasonable requests are made, Teal is committed to providing support, where possible.



## F6-10: SSS Community Meetings

Sites of Special Significance are defined<sup>5</sup> as known Community Watersheds (officially recognized watersheds) and areas immediately upslope and/or upstream of, or within one kilometre of private land, Indian Reservations, and communities where a higher level of referral (communication with community members and stakeholders) is necessary in order to identify and respond to the concerns and interests of the affected individuals or community.

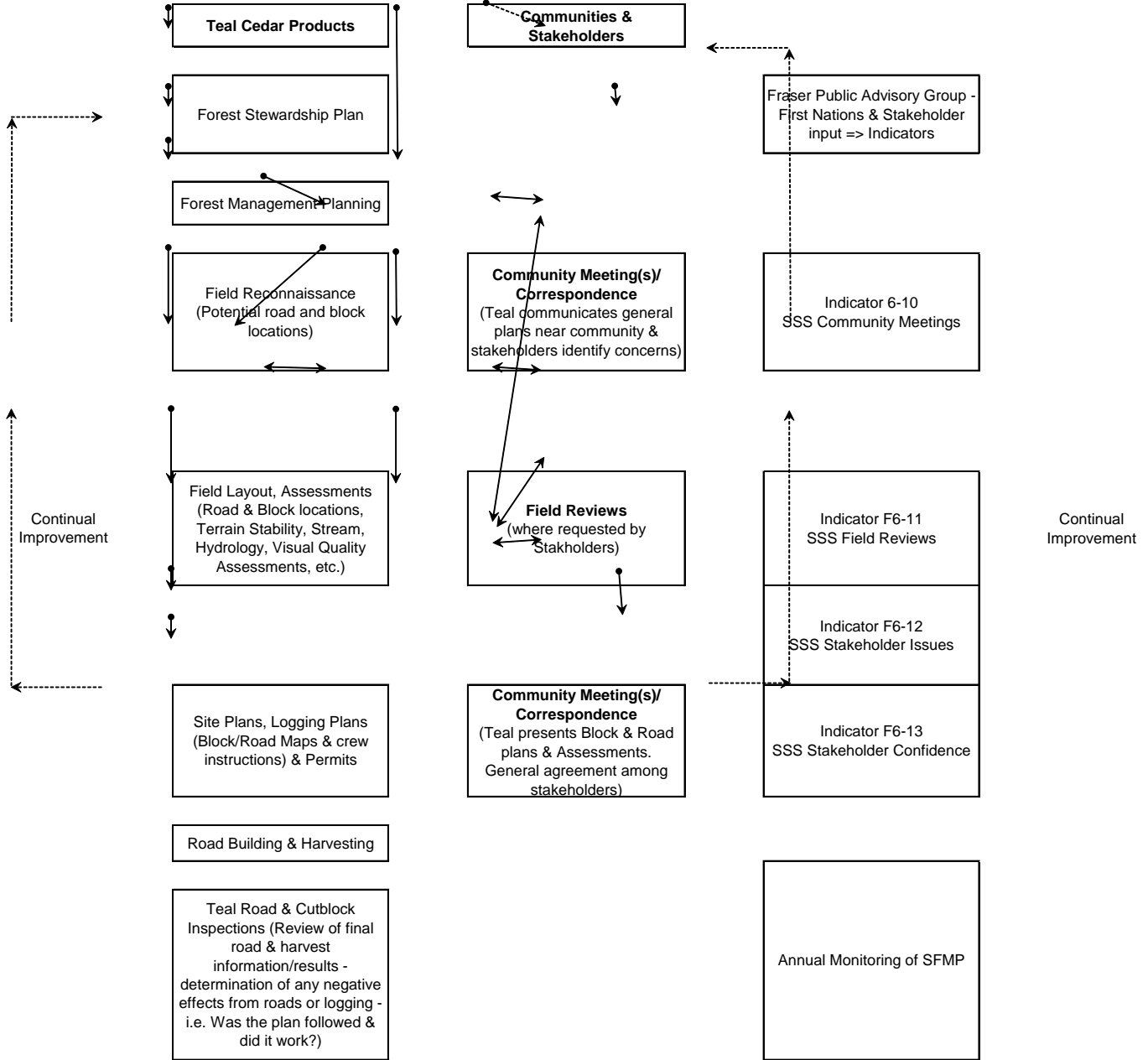
Issues and values may include: visual quality, water quality and quantity, Species at Risk or locally important species, ecological values, flora (plants) and fauna (animals), noise, etc. Stakeholders may hunt, pick berries and mushrooms, hike, photograph or otherwise generally appreciate the diversity of natural life that occurs near their communities and its contribution to their happiness or way of life. Local stakeholders may have detailed information on the diversity of plants and animals near their communities that forest licensees such as Teal or even government agencies responsible for managing wildlife may not have prior knowledge of. Managing local flora and fauna can be problematic as animal populations move seasonally or with natural population cycles. Similarly, plant populations can change with natural and human induced vegetation succession or disturbance. These natural changes can lead to pronounced variations over time in terms of biodiversity and abundance when assessed at a sub-regional or local level, such as SSS.

The following Sites of Special Significance have been identified by the FPAG:

Immediately Upslope/ Up-Stream or within 1km of the following Communities	Community Watersheds
Boston Bar	Gurney Creek
Cacuse (Deer) Point	Jamieson Creek
Hatzic Valley	Norrish Creek
Gurney Creek	
Hope	
Indian Reservations (in the Fraser portion of the DFA)	

Several indicators have been developed in relation to Sites of Special Significance and the Communication Plan (refer to Figure 1).

<sup>5</sup> Sites of Special Significance definition developed with input of the Fraser Public Advisory Group in 2007 (see Meeting Minutes January 30, 2007)



**Figure 1: Sites of Special Significance (SSS) Communications Plan (Part 1)**



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Value	Objective	Indicator	Target	Acceptable Variance
Sites of Special Significance (SSS); Community trust	General stakeholder confidence that forest management plans and assessments adequately address specific, identified issues and values within SSS; To build local communities' trust in Teal's forest management through public meetings	The percentage of public meetings held according to the SSS Community Communications Plan	100%	Meetings may be postponed where forest planning is curtailed for operational reasons

## Current Status & Results

Year	Number of SSS with Planned Development	Number of Public Meeting held per Communication Plan	%	Target Met (Y/N)	Variance Met (Y/N)
2010	0	0	100	Y	Y
2009	2 (Hatzic Valley, Norrish Creek)	Norrish Creek – Not Required Hatzic Valley – Planned for 2010 (meetings will be required in 2010)	100	Y	Y
2008	1 (Norrish Creek)	Not Required	100	Y	Y
2007	2 (Hatzic Valley, Norrish Creek)	0 (Communication Plan not developed)	0	N	N

In 2010, Teal did not hold any public meetings.

In 2009, Teal completed road construction, reconstruction and harvesting within the Norrish Creek Community Watershed (5 cutblocks). The Norrish Creek Community Watershed (Private Landowner Spokesperson and FPAG member Jeanie Warkentin) and Teal have made arrangements to communicate proposed development through a referral process outside of this Sites of Special Significance Indicator requirements (i.e., Community Meeting not required). In 2009, referral packages for activity proposed for were sent to the Norrish Creek Private Landowner Spokesperson (FPAG member Jeanne Warkentin), City of Abbotsford, Fraser Valley Regional District and several local First Nations.

Teal received a complimentary email from the District Manager, Chilliwack relating to positive feedback related to Teal's operations and certification process during a Fraser Valley Regional District Meeting. Specific mention was made in relation to the activities within the Norrish Creek Community Watershed.

In July 2009, Teal conducted a tour of the Norrish Creek Community Watershed with local politicians, the MoFR and the local MLA. Here is an excerpt from the subsequent press release, comments made by the MLA: "This is a great example of responsible logging in a watershed that supplies drinking water to Abbotsford, the fifth largest city in the Province, and the city of Mission. I was amazed at the quality of work being done by Teal-Jones and their contractors, and I know that the Mayors of both Abbotsford and Mission, their municipal councillors and members of the Fraser Valley Regional District shared those thoughts. Even the Ministry of Forests people on the tour thought the logging operation was excellent,



clean, and done in a very sensitive manner to ensure no environmental impacts occurred in this vital water source."

There was zero activity within any of the other identified Sites of Special Significance.

Due to poor market conditions, no activity has occurred to date within the Hatzic Valley. An outstanding action item remains from a meeting held in 2007 with Teal and some representatives of the Hatzic Valley to review the Hydrological Overview Assessment; representatives have requested a meeting with the Hydrologist that completed the overview assessment to discuss the results of the assessment and express their concerns/ historical knowledge of the area. Activity is planned in the Hatzic valley for 2010, the Communication Plan will be initiated and implemented prior to any activity occurring. Communications took place between Teal, the MoFR and Hatzic Valley Ratepayers Association during 2009 and early in 2010 regarding local concerns related to any road and harvesting activity proposed in the area. The MoFR sent out a letter to licensees summarizing the concerns and citing numerous resources/ assessment reports that have been completed for the area (e.g., terrain assessments, hydrology assessments, etc).

## Strategy

Year	Communication Plan (Part 2)	
	Planned Development	Identified SSS
2010	Road Construction/ Reconstruction, Harvesting	Norrish Creek Community Watershed Hatzic Valley
2009	Road Construction/ Reconstruction, Harvesting	Norrish Creek Community Watershed
2008	Road Construction/ Reconstruction, Harvesting	Norrish Creek Community Watershed

Unless another process for referrals has been established and agreed to by all parties involved, open community meetings will be held when planning in Sites of Special Significance is initiated (refer to [Figure 1: Sites of Special Significance \(SSS\) Communications Plan](#)).

The Communications Plan illustrates the typical forest management planning timeline, the corresponding timeline for conducting initial open community meetings and how the associated SFMP indicators are linked to these activities. Annually, Teal will specify any proposed forest management activity within Sites of Special Significance and develop a specific communication plan with potential dates for community meetings, field reviews, etc. where required (i.e., unless a previous agreement for communication outside of meetings has been agreed to by both parties (e.g., Norrish Creek Community Watershed).

In respect to this indicator, forest management planning means site specific (field) road and cutblock planning in areas of Sites of Special Significance. At the initial open community meetings, Teal will gather stakeholder input, and then begin to initiate any requested field reviews, and incorporate stakeholder input into assessments and field layout. When assessments have been completed and a majority of the field layout has been completed, open community meetings, to review assessments as well as road and cutblock designs, can be held to let stakeholders see how development has incorporated their concerns and values. At this point, Teal will be able to evaluate the level of stakeholder agreement that their values and concerns were adequately addressed.

## Monitoring

The Forestry and Engineering Department reviews the internal communication file (and referral binder) for records relating to the number of public meetings and referrals each year where forest management issues were discussed, in relation to SSS.



## Forecast

Planning and forest management activity is expected to shift between operations within the DFA (i.e., operations will shift from year to year across the DFA and activity will not occur within or near SSS every year. Where specific parties have made arrangements for communication and referral outside of this process, community meetings will not be required (e.g., Norrish Creek Community Watershed).



## F6-11: SSS Field Reviews

This indicator is tied to the Sites of Special Significance Communication Plan ([F6-10: SSS Community Meetings](#) and [Figure 1: Sites of Special Significance \(SSS\) Communications Plan](#)). Moreover, it is intended to apply to the identified Sites of Special Significance.

Field reviews were defined by the FPAG<sup>6</sup> as *an opportunity for a concerned stakeholder to have an on-site examination of proposed road and harvest plans; an opportunity to provide input and ask questions*. In respect to this indicator, “reasonable” is defined<sup>6</sup> as a rational and practical number of requests to discuss and examine forest development plans as they relate to specific identified issues or concerns. The Divisional Engineer will determine if the request for a field review is reasonable.

Field reviews form an invaluable part of the information exchange between Teal and concerned stakeholders. Field reviews ensure that critical values such as water intakes, private property lines, un-mapped trails, unique forest features, caves, important streams, mushrooming areas, etc., are identified in the field and managed within plans.

During forest management planning in Sites of Special Significance, stakeholders that are concerned about how the proposed forest development may affect their values may ask to accompany field engineers to review the proposed development in the field.

Requests for field reviews may be made at any time during the field layout phase of forest development as well as at the completion of field layout to confirm that their values are adequately addressed. By conducting field reviews, stakeholders can be confident that that forest development adequately considers/addresses their specific, identified issues and values and balance these with other forest uses.

Value	Objective	Indicator	Target	Acceptable Variance
Sites of Special Significance (SSS); Community trust	General stakeholder confidence that forest management plans and assessments adequately address specific, identified issues and values within SSS; To build local communities' trust in Teal's forest management through public meetings	Percent of requested field reviews within SSS from stakeholders completed with stakeholder(s) during forest management planning	Complete 100% of reasonable requested field reviews with stakeholders	Zero

<sup>6</sup> “Field Review” & “reasonable” definitions developed with input of the Fraser Public Advisory Group in 2007 (see Meeting Minutes June 12, 2007)



## Current Status & Results

Year	Number of Reasonable Requested Field Reviews from Stakeholders	Number of Reasonable Requested Field Reviews from Stakeholders Completed	% of Reasonable Requested Field Reviews Completed	Target Met (Y/N)	Variance Met (Y/N)
2010	0	0	100	Y	Y
2009	0	0	100	Y	Y
2008	0	0	100	Y	Y
2007	1	1	100	Y	Y

In 2010, there were no requests for field reviews in relation to the identified Sites of Special Significance.

In 2009, there were no requests for field reviews in relation to the identified Sites of Special Significance (SSS). The Norrish Creek Community Watershed is the only SSS that contained activity in the year. Communication between Teal and the Norrish Creek landowners occurs in the form of referrals prior to all activity. Teal conducted a field trip in 2009 with the local governments and First Nations to visit the Norrish Creek area (further detail provided under Indicator F6-10 above).

Activity is tentatively planned for the Hatzic Valley SSS in 2010. Communication will be initiated with applicable stakeholders prior to activity occurring per the SSS indicators under this SFMP (i.e., community meetings, field reviews).

In 2007, Teal conducted a field review with three local stakeholders from the Hatzic valley. This review was targeted towards identifying streams associated with a water license held by two of the stakeholders. This review occurred prior to finalization of this indicator.

## Strategy

Stakeholders have the opportunity to request field reviews of forest management planning within Sites of Special Significance through the community meetings held in accordance with the SSS Communication Plan (refer to Figure 1, Indicator 6-10) or through correspondence with Teal's Engineering Department.

Teal's Engineering Department will converse with the stakeholder regarding their concerns. If a field review is deemed to be necessary in order to satisfactorily review the stakeholder's issues in the field, a field review will be conducted at the appropriate time in the planning cycle.

Requests for field reviews will be documented in public meeting notes or within specific block files as well as within the external communications file. Field notes and post field review correspondence will be documented and filed in the same locations.

## Monitoring

The Engineering Department will record all requests for field reviews and all field reviews conducted or where the issues were mutually resolved without a field tour.

The Environmental Department will report the number of requested field reviews and the number of field reviews that were conducted or where stakeholder concerns were otherwise resolved.



## Forecast

The forecast is the target. However, as forest management planning can occur over a period of years and may be concentrated in certain areas of the DFA at different times, field reviews may only be conducted when there is a plan to begin development planning work within the identified Sites of Special Significance.

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## F6-12: SSS Stakeholder Issues

This indicator is tied to the Sites of Special Significance Communication Plan ([F6-10: SSS Community Meetings](#) and [Figure 1: Sites of Special Significance \(SSS\) Communications Plan](#)). Moreover, it is intended to apply to the identified Sites of Special Significance.

Within SSS there can often be a diverse and strongly held set of issues raised by local stakeholders in their concern and regard for the forested lands near their communities or private property. Issues and values may include: visual quality, water quality and quantity, Species at Risk or locally important species, ecological values, logging and road building noise, private property lines, terrain hazards, etc.

Stakeholders often want some assurance that their concerns are heard and that they are addressed during forest management planning so that a balance can be made between forest management and stakeholder issues and concerns.

Specific identified concerns of stakeholders in the Hatzic Valley include: (1) hydrology and flooding of the Hatzic Valley and potential forestry impacts, (2) slope stability including debris torrents, (3) wildlife habitat, (4) drinking water quality and quantity, and (5) endangered species (including Oregon Spotted Frog).

Specific concerns identified by stakeholders from the Norrish Creek Community Watershed include harvesting effects on (1) debris torrenting in Norrish Creek, (2) potential location of logging roads near or through private property, and (3) noise from helicopter logging.

Value	Objective	Indicator	Target	Acceptable Variance
Sites of Special Significance (SSS); Community trust	General stakeholder confidence that forest management plans and assessments adequately address specific, identified issues and values within SSS; To build local communities' trust in Teal's forest management through public meetings	Percent of specific, identified stakeholder issues and values within SSS addressed in forest management planning and assessments	100%	Zero



## Current Status & Results

Year	# of Identified Issues and Values	SSS	# of Identified Issues and Values Addressed	% Addressed	Target Met (Y/N)	Variance Met (Y/N)
2010	3	Norrish Creek	Ongoing	100	Y	Y
	5	Hatzic Valley	Ongoing	N/A	N/A	N/A
2009	3	Norrish Creek	Ongoing	100	Y	Y
	5	Hatzic Valley	Ongoing	N/A	N/A	N/A
2008	3	Norrish Creek	Ongoing	100	Y	Y
	5	Hatzic Valley	Ongoing	N/A	N/A	N/A
2007	3	Norrish Creek	Ongoing	100	Y	Y
	5	Hatzic Valley	Ongoing	N/A	N/A	N/A

In 2009 and 2010, five identified issues and values for the Hatzic Valley remain unaddressed. Due to poor markets, the proposed development within the Hatzic Valley SSS has been postponed (since 2007). Activity is tentatively planned for 2011-12, at that time communications will be initiated per the SFMP SSS indicator process (e.g., Community Meetings, Field Reviews). Teal has engaged in communication with the Norrish Creek Community Watershed regarding proposed activity through a referral process (as agreed to by both parties). Teal is addressing the issues identified on a case by case basis with the community representatives.

## Strategy

Stakeholders have the opportunity to identify concerns and values in regards to forest management planning within Sites of Special Significance through the community meetings held in accordance with the SSS Communication Plan (refer to Figure 1, Indicator 6-10) or through correspondence with Teal's Engineering Department.

Stakeholder issues and values should be presented to Teal as early as possible in the forest management planning timeline in order to ensure efficiencies with layout. At the early stages of planning, there is typically a general idea of where cutblocks and associated roads may be located.

As planning develops and assessments are completed, the specific, identified issues will be addressed prior to finalizing road and cutblock configuration. At, or prior to, completion of forest management planning activities, Teal will meet with concerned stakeholders to present the plans for the area, discuss how specific, identified issues and values were addressed and to review any professional assessments that address these concerns. Whenever possible, the authors of any professional reports will be available to directly respond to questions from stakeholders about their concerns in regards to these assessments and planning.

Where Teal has built an open, constructive relationship with local communities and/or stakeholders, conducting community meetings may not be necessary. For example, for residents near Norrish Creek, the referral process between Teal and the stakeholders is conducted by referring planning proposals in letter form (often including maps) to a community representative for stakeholder comments, conducting field reviews and follow up communications, where required.



The Forestry and Engineering Department will conduct information gathering meetings or planning referrals with the associated communities and/or stakeholders when forest development is anticipated for SSS. Issues and concerns will be documented in public meeting notes or within specific block files as well as within the external communications file. Follow-up correspondence will be documented and filed in the same locations.

Teal will strive to adequately respond to each of the specific identified issues and values.

## Monitoring

The Environmental Department will communicate with the Engineering Department and the Manager Forestry & Engineering as well as review the external communications file and minutes from open public meetings and report the number of specific, identified issues and values and the number of these issues and values that are addressed and communicated to the relevant stakeholders.

## Forecast

The target is the forecast.



## F6-13: SSS Stakeholder Confidence

This indicator is tied to the Sites of Special Significance Communication Plan ([F6-10: SSS Community Meetings](#) and [Figure 1: Sites of Special Significance \(SSS\) Communications Plan](#)). Moreover, it is intended to apply to the identified Sites of Special Significance.

Stakeholder confidence in forest management is an important part of building an open, constructive relationship between Teal and local stakeholders. Stakeholder confidence in forest management planning can be improved by conducting initial meetings to gather specific, identified stakeholder issues and values, following through with any required assessments and then incorporating the recommendations into the final cutblock and road designs.

In subsequent open community meetings, reviewing a summary of the identified issues and values, the associated assessments that were completed and how the recommendations from these assessments and other stakeholder issues were incorporated into cutblock and road plans will allow stakeholders to evaluate how their values and concerns were addressed.

Value	Objective	Indicator	Target	Acceptable Variance
Sites of Special Significance (SSS); Community trust	General stakeholder confidence that forest management plans and assessments adequately address specific, identified issues and values within SSS; To build local communities' trust in Teal's forest management through public meetings	General agreement at open SSS community meetings among stakeholders who have the potential to be directly impacted, held during forest management planning, that professional plans and assessments address stakeholders' specific, identified issues and values associated with SSS	Seek general consensus (100%)	- 25 % (i.e., 75% in agreement)

### Current Status & Results

Year	# of Community Meetings	Consensus Achieved (%)	Target Met (Y/N)	Variance Met (Y/N)
2010	0	N/A	Y	Y
2009	0	N/A	Y	Y
2008	0	N/A	Y	Y
2007	0	N/A	N	N

Since this indicator was finalized, forest management planning and related assessments have not progressed to the point where this indicator can be evaluated. Current forest management planning in the Hatzic Valley SSS has been postponed due to current market conditions for forest products. It is anticipated that Teal is working towards successfully meeting this target prior to harvesting, tentatively planned for 2011-12.



A forest tour was conducted in the Norrish Creek Community Watershed with local politicians in 2009. Positive feedback was received related to Teal's harvesting and road construction activities within the Watershed (refer to Indicator F6-10 for further detail.)

Where Teal has built an open, constructive relationship with local communities and/or stakeholders, conducting extensive public meetings may not be necessary. For example, for residents near Norrish Creek, the referral process between Teal and the stakeholders is conducted by referring planning proposals in letter form (often including maps) for stakeholder comments. Field reviews are often utilized to facilitate information sharing and in building stakeholder confidence with respect to forest management near their community. General agreement is assessed with follow-up correspondence or where the stakeholders have indicated that their concerns have been met.

## Strategy

Refer to the Strategy for [F6-12: SSS Stakeholder Issues](#).

Teal Forestry and Engineering staff will evaluate the level of "general agreement" that the plans and assessments address stakeholders' specific, identified issues and values associated with Sites of Special Significance. This may be evaluated via an open vote at public meetings, meeting survey forms, or where meeting attendees otherwise express their level of agreement. The Forestry and Engineering Department will note the specific identified issues and values and the level of general agreement that these issues and values have been adequately addressed.

Teal will strive to seek general agreement among stakeholders that professional plans adequately address their specific, identified issues and values. Where less than 100% of stakeholders are in agreement that professional plans and assessments address their concerns, Teal will make reasonable efforts to respond to their outstanding concerns.

## Monitoring

The Environmental Department will review the external communications file and notes from open public meetings and report the number of specific, identified issues and values and the level of "general agreement" among stakeholders for each specific, identified issue and value. This information will be summarized under "Current Status & Results".

## Forecast

To date, Teal has not conducted any formal community meetings under the SSS Indicators ([Figure 1: Sites of Special Significance \(SSS\) Communications Plan](#)). Teal is confident that implementation of the Communications Plan will result in general consensus/ agreement with local communities at the end of each process that is initiated. However, as we gain more experience with community meetings, this indicator and target may need to be reviewed.