



**Forest  
Practices  
Board**

## **Forestry Audit: BC Timber Sales and Timber Sale Licensees**

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*Babine Business Area  
Skeena-Stikine Natural Resource District*

**FPB/ARC/211**

April 2018

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# Audit Results

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## Introduction

The Forest Practices Board is the public's watchdog for sound forest and range practices in British Columbia. One of the Board's roles is to audit the practices of the forest industry to ensure compliance with the *Forest and Range Practices Act* (FRPA) and the *Wildfire Act*.

As part of its 2017 compliance audit program, the Forest Practices Board randomly selected the Skeena-Stikine Natural Resource District portion of BC Timber Sales' (BCTS) Babine Business Area for audit. A map of the audit area appears on page 2.

This report explains what the Board audited and the results. Appendix 1 provides detailed information about the Board's compliance audit process.



*Timber harvesting in BCTS's Copper Operating Area*

## Background

The Babine Business Area of BCTS is within the Skeena-Stikine and Nadina Natural Resource Districts. The audit focused on BCTS's activities within the Bulkley Timber Supply Area (TSA) portion of the Skeena-Stikine Natural Resource District.

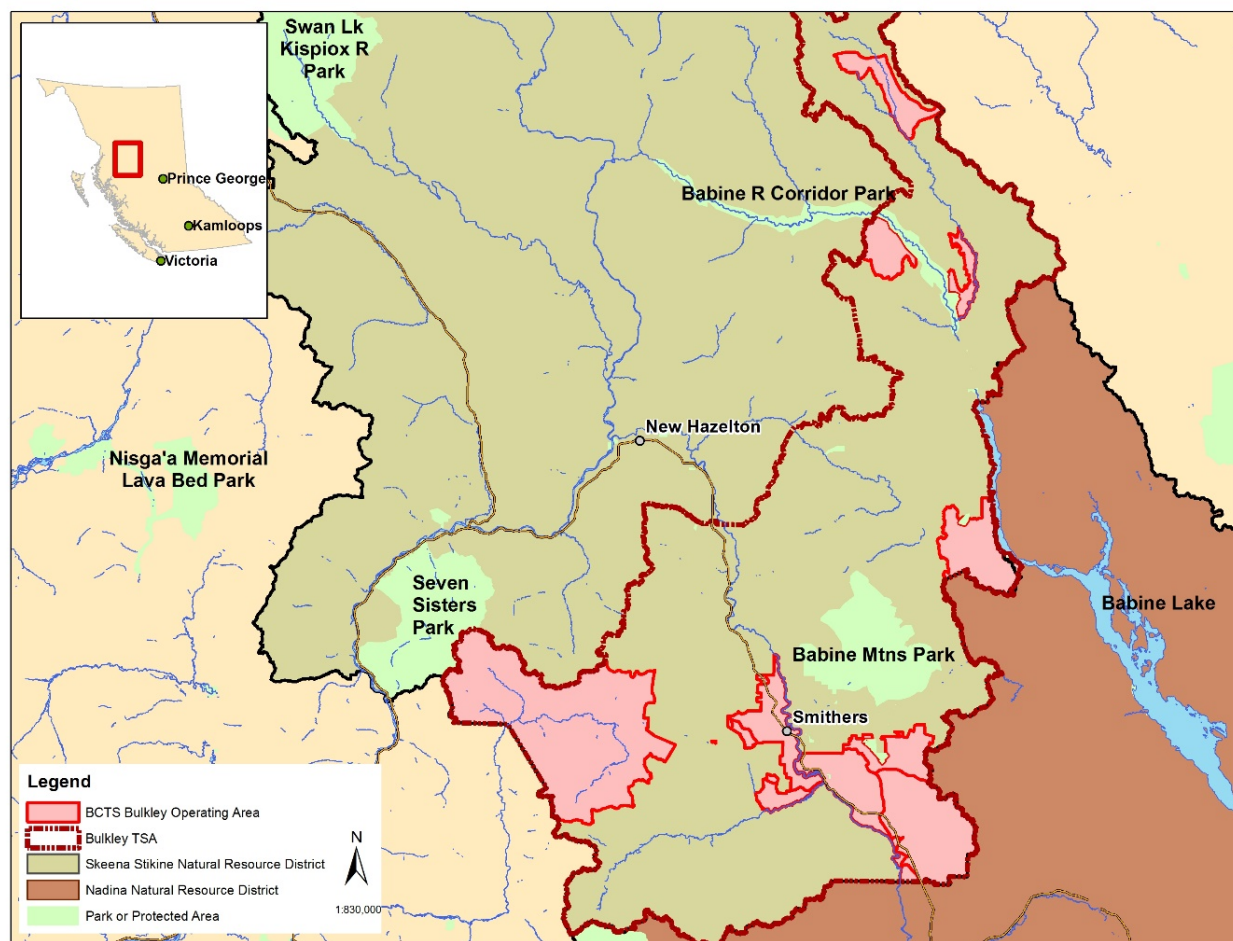
The Bulkley TSA is located in northwestern BC and covers about 760 000 hectares. BCTS has several operating areas dispersed throughout the TSA. Outdoor recreation is popular within the TSA, with recreation activities concentrated on the lakes, mountains and parks, including Babine Lake, Hudson Bay Mountain and Babine Mountains Provincial Park.

The Bulkley TSA contains the communities of Smithers, Telkwa, Witset, and Fort Babine. The traditional territories of several First Nations also overlap the Bulkley TSA.

The administrative and management centre for the business area is the BCTS timber sales office located in Burns Lake. A field team in Smithers manages activities in the district. Staff prepare operational plans, auction timber sales, issue timber sale licences and road permits and fulfill silviculture obligations. Successful bidders are awarded a timber sale licence and must fulfill licence, permit and operational plan obligations, including timber harvesting and roadwork within cutblocks.

BC Timber Sales' annual apportionment from the Bulkley Timber Supply Area is about 209 000 cubic metres. Over the past two years, timber sale licensees harvested about 332 000 cubic metres.

## Map of the Audit Area



## Audit Approach and Scope

This was a full scope compliance audit with a two-year timeframe. All activities carried out between June 1, 2015, and June 7, 2017, by BCTS and timber sale licensees, were subject to audit.

BCTS is responsible for operational planning, including preparing forest stewardship plans (FSP)<sup>i</sup> and site plans, silviculture activities, major structure<sup>ii</sup> maintenance and construction, and some road construction, maintenance and deactivation outside of cutblocks.

Timber sale licensees are responsible for timber harvesting, fire protection, and most road construction, maintenance and deactivation within cutblocks.

Auditors assessed these activities for compliance with FRPA, the *Wildfire Act*, and applicable regulations. This work included interviewing BCTS staff, reviewing the FSP and site plans, assessing silviculture records and site visits with BCTS staff to review field practices. Sites were accessed by truck and helicopter.

The standards and procedures used to carry out this audit are set out in the Board's *Compliance Audit Reference Manual, Version 7.1, July 2016*.

Two forest professionals, one professional engineer/forester, and a chartered professional accountant made up the audit team. The audit team was in the field from June 5-7, 2017.

## **Planning and Practices Examined**

### **BCTS Responsibilities**

#### *Operational Planning*

BCTS planned activities in its 2007 FSP, which remained in effect until December 2017. Auditors examined the FSP and stand-level site plans to ensure that they met legal requirements. During harvesting, road and silviculture field sampling, auditors also confirmed whether site plans accurately identified site conditions.

The Bulkley Land and Resource Management Plan covers the Bulkley TSA. The plan contains objectives established by government order in 2000 and was amended in 2006. Two other government orders were either referenced in, or form part of, the FSP: one to establish fisheries sensitive watersheds and the other to establish the Telkwa caribou wildlife habitat area.

The primary forest resources associated with BCTS's activities during the audit period are fish streams, cultural heritage features, visual quality and grizzly bear habitat. The FLNRO regional manager has also issued an expectation letter regarding northern goshawk breeding areas.

#### *Road Construction, Maintenance, Deactivation*

During the audit period, BCTS built 3.7 kilometres of forest service road, had maintenance obligations on 326 kilometres of forest service road and deactivated 33 kilometres of road. BCTS did not install any new bridges or major culverts during the audit period but maintained 61 bridges and 12 major culverts.

Auditors examined all 3.7 kilometres of road construction, 149 kilometres of road maintenance, 11 kilometres of the deactivated roads, as well as 26 bridges and 5 major culverts.

#### *Silviculture Obligations and Activities*

BCTS planted 22 cutblocks during the audit period. Regeneration obligations were due or declared on 25 cutblocks and free-growing obligations were due or declared on 34 cutblocks. BCTS did not site prepare, brush, space or prune any cutblocks during the audit period. Auditors examined 16 planted cutblocks, 18 cutblocks with regeneration obligations, and 23 cutblocks with free-growing obligations.



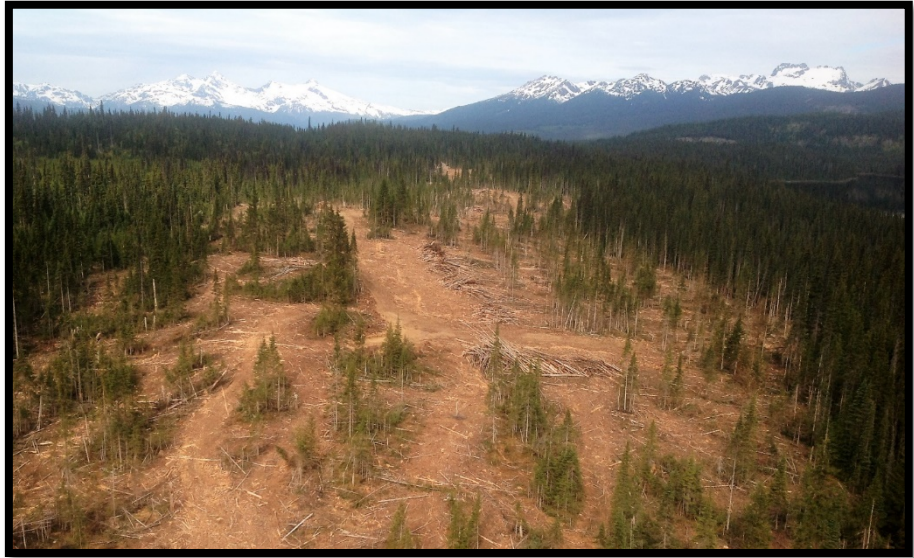
## Timber Sale Licensee Responsibilities

### *Timber Harvesting*

Eleven timber sale licensees harvested 33 cutblocks, covering 1672 hectares. Auditors examined harvesting by all 11 of the licensees on 24 cutblocks, totaling 1370 hectares.

### *Road Construction, Maintenance, Deactivation*

Timber sale licensees constructed 59 kilometres of road, had maintenance obligations on 60 kilometres of road and deactivated 90 kilometres of road. Licensees constructed 2 bridges and deactivated 4 bridges.



*A recently harvested cutblock west of Smithers in the Copper Valley. The licensee piled slash adjacent to the road for disposal and retained trees to provide visual screening, structural diversity, perching/nesting habitat, and to contribute to long-term coarse woody debris.*

Auditors examined 34 kilometres of constructed road, 42 kilometres of maintained road, 47 kilometres of deactivated road and all of the bridges.

### *Wildfire Protection*

Auditors did not encounter any active work sites. Licensees had fire hazard assessment obligations due on 31 cutblocks and abatement obligations due and/or completed on 11 cutblocks.

Auditors examined fire hazard assessments on 12 cutblocks and abatement obligations and activities on 2 cutblocks. Auditors also assessed whether there were any overdue abatement obligations for the 34 cutblocks examined for planting and regeneration obligations.

## Audit Findings

The audit found that BCTS's planning and practices generally complied with FRPA and the *Wildfire Act* as of June 2017, but found non-compliances with bridge maintenance and drainage of a major culvert, an unsound practice with bridge and culvert maintenance, and an area requiring improvement for terrain stability on a section of road.

The audit found that most of the timber sale licensees' practices complied with FRPA and the *Wildfire Act* as of June 2017. However, one licensee had not maintained natural drainage patterns on a section of road and several licensees' fire hazard assessment practices require improvement.

## BCTS Responsibilities

### *Bridge Maintenance*

Auditors examined maintenance on 26 bridges and found that 6 of them had structural defects, including rotten, broken or missing components, or abutment erosion. The government's regional

engineer had identified the defects during inspections conducted in 2015 and 2016 and provided the inspection reports to BCTS staff.

Section 75<sup>iii</sup> of the *Forest Planning and Practices Regulation* (FPPR) requires BCTS to either correct the known defects, close or remove the bridges, restrict traffic loads and/or place signs on each bridge approach stating the maximum load capacity. Auditors found that BCTS had restricted access to two of the bridges by locking and maintaining a gate, but had not completed any of these steps for the other four bridges. This non-compliance is considered significant and is indicative of a systemic issue, where BCTS did not ensure its structures were safe.

Subsequent to the audit, BCTS posted load limit or bridge closed signs at all six bridges. After consulting with other stakeholders, BCTS also restricted access to each bridge by installing rock barriers, allowing only ATV traffic.

### ***Major Culvert Drainage***

The auditors assessed a fish stream crossing where the Ministry of Transportation installed a major culvert (2400 by 1200 millimetres) in 1984 and a small overflow culvert later on. In 2003, BCTS assumed responsibility for the crossing and, in 2009, installed an overflow culvert to improve flow capacity. However, the capacity was still too low to prevent aggradation of gravel and sediment at the crossing, as auditors noted the major culvert was damaged and gravel and sediment had collected upstream and within the culvert due to its limited flow capacity. An inspection by the government's regional engineer in 2015 identified that the structures did not meet flow requirements and recommended replacing the existing structures. When flow requirements are not met, there is a higher risk that a culvert may fail and create a safety hazard, damage downstream resources, as well as adversely affect fish passage and/or fish habitat.

Section 74<sup>iv</sup> of the FPPR requires a person who installs a culvert for the purpose of constructing or maintaining a road to ensure that the culvert passes the highest peak flow of the stream that can reasonably be expected, which was not done when BCTS installed the overflow culvert, which is a non-compliance. This non-compliance is considered significant because BCTS did not ensure peak flow requirements were met for these culverts installed on an active forest service road.

Subsequent to the audit, BCTS cleaned the inlet and outlet of the culvert as a short-term measure, and plans to monitor the culvert during high flow periods until they replace it in 2018.

### ***Unsound Practice***

While assessing maintenance on three structures, including one bridge and two wooden box culverts, auditors found that they contained defects, including rotten and broken guardrails on the bridge and rotten stringers and sills on the culverts. The government's regional engineer identified the defects during previous inspections in 2015 and 2016 and provided the inspection reports to BCTS staff.

Although bridge guardrails, which are also referred to as bullrails, are attached to bridges to act as visual aids for logging truck drivers and to help ensure smaller vehicles do not accidentally veer off the bridge, they are not technically considered part of the structural components of a bridge. As such, not addressing known concerns with these components of a bridge, for example replacing guardrails, is not considered to be a non-compliance with section 75 of the FPPR.

However, without replacing the guardrails, BCTS used the bridge for industrial purposes during the audit period. In addition, although both culverts have known structural deficiencies, the initial

attempts to block these roads were insufficient and they are both publicly accessible. Not acting promptly on known safety concerns is not considered to be sound safety management.

Subsequent to the audit, BCTS staff stated that, in 2018, they plan to remove the box culverts when they deactivate the road. They also plan to repair the guardrails on the bridge and inspect all their other bridges in 2018.

### ***Landslide on McDonnell FSR***

When assessing road maintenance, auditors noted a landslide, approximately 0.2 hectares in size, at the 50-kilometre point on the McDonnell FSR. During a major rainfall event in the fall of 2016, a minor cutslope failure had blocked the ditchline and partially blocked a culvert, diverting water that then saturated the soils on a steep slab of bedrock, causing the slide. The slide carried downslope for approximately 100 metres and settled into the forest floor before it reached a fish stream below. BCTS had not used this road for industrial purposes for 15 years, had last inspected the road in the summer of 2016, but did not conduct an inspection after the rainfall event.

The FPPR requires a person who maintains a wilderness road to ensure they protect the structural integrity of the road prism, the clearing width and the drainage systems.<sup>v</sup> BCTS failed to do so on this section of the McDonnell FSR, causing a landslide. As the slide did not have a material adverse effect on a forest resource, this non-compliance is considered an area requiring improvement.

Subsequent to the audit, BCTS erected road closure and slide warning signs and consulted with the Skeena regional geomorphologist to develop a remediation plan to stabilize the road. In addition, BCTS staff implemented the initial measures to stabilize the road, including cleaning ditches, constructing waterbars above and below the slide area and cleaning the culvert inlet. BCTS staff have re-classified this section of road as high risk and increased their inspection frequency to at least once per year or more frequently depending on weather events.

### ***Operational Planning***

Planning was consistent with the FSP and legal requirements. The FSP met the legal content requirements and addressed the legal orders that apply to forest practices in the audit area.

BCTS addressed site-specific resources in the site plans by accurately identifying and prescribing practices for resource features, including streams and wetlands and cultural heritage features. For example, to protect and conserve cultural heritage resources, the government requires a licensee to specify results or strategies in their FSP to mitigate the potential impacts that may be caused by forest practices. In its FSP, BCTS commits to engaging in information sharing with First Nations, conducting cultural heritage resource evaluations, to identify any potential cultural heritage features and evaluate potential impacts of planned activities, and modifying planned activities, where necessary, to protect or conserve the feature. The site plans reflected these commitments.

### ***Road Construction, Maintenance and Deactivation***

#### ***Construction***

BCTS constructed roads using conventional cut and fill methods on flat- to moderately-sloped ground. Roads were well built and natural drainage patterns were maintained during and after construction.

BCTS did not construct any bridges or major culverts during the audit period.



### *Maintenance*

BCTS has a system for risk rating road sections and assigning an inspection frequency ranging from once per year for very high risk roads to once every two to three years for low risk roads. With the exception of the above findings, the sampled forest service roads that BCTS is responsible for have been adequately maintained to retain the structural integrity of the road prism. All of the culverts examined were functional and water was managed to maintain natural drainage patterns. BCTS grass seeded and monitored its roads in areas where the risk of the establishment of invasive plants is high. Structures on forest service roads are inspected by government engineers and BCTS is responsible for surface maintenance, including corrective actions recommended by government engineers.

### *Deactivation*

BCTS completed and implemented deactivation prescriptions where required. BCTS maintained natural drainage patterns and ensured the road prism was stable.

Other than the findings noted above, there were no other issues noted with respect to road and bridge construction, maintenance or deactivation.

### *Silviculture Activities and Obligations*

BCTS planted cutblocks with suitable tree species and stock within the required timeframes.

BCTS monitored and tended its plantations to ensure it met free-growing requirements. Cutblocks contained the range of healthy, well-spaced, acceptable trees required to meet free-growing requirements within the required periods.

BCTS met its regeneration, free-growing and annual reporting requirements. There were no concerns with silviculture planning or practices.

## **Timber Sale Licensee Responsibilities**

### *Maintenance of Natural Drainage — TSL A84620 held by Babine Forest Products Ltd. (Babine)*

Babine constructed an access road and an in-block spur road to access TSL A84620.

Auditors found that Babine did not maintain natural drainage patterns at four locations along the access road and at an S6 stream crossing on the spur road. As a result, water was either blocked or flowed down the ditch-line to the next crossing and into the forest, where the water and sediment settled into the forest floor.

In the site plan, BCTS prescribed a culvert at the S6 crossing on the in-block spur road. However, given the short-term nature of the road and that Babine planned to harvest the cutblock during the winter when no water was flowing, BCTS agreed that Babine could construct a temporary log crossing, provided that they remove it prior to spring freshet. Auditors noted that Babine did not remove the crossing prior to spring freshet and water was pooling upslope from the crossing.

FRPA requires a person who builds a road to maintain natural surface drainage patterns on the road, both during and after construction,<sup>vi</sup> which was not done in this case. As the resulting sediment settled into the forest floor, this non-compliance is considered an area requiring improvement.

Subsequent to the audit, Babine deactivated the roads to restore natural drainage.

## ***Wildfire Protection***

As there were no active sites during the field audit due to spring breakup, auditors did not assess the fire preparedness requirements of the *Wildfire Act*.

The *Wildfire Act* requires licensees to assess the fire hazard at specified intervals, including an assessment of the fuel hazard and its associated risk of a fire starting or spreading. Furthermore, the licensee must provide a copy of a fire hazard assessment to an official when requested.<sup>vii</sup> If the assessment identifies a hazard, it must be abated. It is the standard practice of all licensees audited to pile slash and then burn it when it is safe to do so. As a result, hazard abatement was not an issue.

However, auditors requested fire hazard assessments from 8 licensees on 12 cutblocks and none of the licensees could provide them because none had conducted formal fire hazard assessments. Without documenting the fire hazard assessment, the licensee cannot demonstrate that it has been diligent in identifying a hazard. The lack of fire hazard assessments is an area requiring improvement for all timber sale licence holders.

## ***Harvesting***

Harvesting was conducted in accordance with the requirements of legislation and site plans. Soil disturbance was well managed and within limits, and natural drainage patterns were maintained. Riparian and cultural heritage features were accurately identified and protected. No harvesting concerns were noted.

## ***Road Construction, Maintenance and Deactivation***

Licensees built short spur roads to access cutblocks, as well as in-block roads. Licensees generally maintained natural surface drainage patterns and grass seeded exposed soils to minimize surface erosion and to control invasive plants. In addition, the licensees rehabilitated all in-block roads after harvest, by de-compacting and re-contouring the road prism, covering them with slash and installing access barriers and warning signs. These roads are now ready to be planted. Other than the issue noted above, there were no concerns with licensee road construction, maintenance or deactivation.

Licensees constructed two bridges during the audit period. The licensees prepared the required documentation for the bridge installations and both bridges met safety and environmental requirements. Although the auditors noted structural defects on both of the installed bridges, likely occurring during the 2017 spring freshet, the licensees repaired the bridges prior to resuming industrial activity.

For the four bridges removed during the audit period, auditors found the licensees had protected the stream channels by not disturbing them during removal, seeding the channel banks and installing access barriers and signs. There were no concerns with licensee bridge construction or deactivation.

## Audit Opinion

In my opinion, except for the issues described below, the operational planning, timber harvesting, road construction, maintenance and deactivation, silviculture, and fire protection activities carried out by BC Timber Sales and its timber sale licensees in the Skeena-Stikine Natural Resource District, within the Babine business area, between June 1, 2015, and June 7, 2017, complied in all significant respects with the requirements of the *Forest and Range Practices Act*, the *Wildfire Act* and related regulations, as of June 2017.

In reference to compliance, the term “in all significant respects” recognizes that there may be minor instances of non-compliance that either may not be detected by the audit, or that are detected but not considered worthy of inclusion in the audit report.

As described in the *BC Timber Sales Responsibility – Bridge Maintenance* section of the report, the audit identified a significant non-compliance related to the safety of bridges.

As described in the *BC Timber Sales Responsibility – Major Culvert Drainage* section of the report, the audit identified a significant non-compliance related to peak flow requirements.

Without further qualifying my opinion, I draw attention to the *BC Timber Sales Responsibility – Unsound Practice and Landslide on McDonnell FSR* sections of the report, which describes an unsound practice related to road safety and an area requiring improvement.

Also without further qualifying my opinion, I draw attention to the *Timber Sale Licensee Responsibilities – Maintenance of Natural Drainage and Wildfire Protection* sections of the report, which describe two areas requiring improvement.

The *Audit Approach and Scope* and the *Planning and Practices Examined* sections of this report describe the basis of the audit work performed in reaching the above conclusion. The audit was conducted in accordance with the auditing standards of the Forest Practices Board, including adherence to the auditor independence standards and the ethical requirements, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour. Such an audit includes examining sufficient forest planning and practices to support an overall evaluation of compliance with FRPA and WA.



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Director, Audits

Victoria, British Columbia  
March 14, 2018

# Appendix 1:

## Forest Practices Board Compliance Audit Process

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### Background

The Forest Practices Board conducts audits of government and range agreement holders under the *Forest and Range Practices Act* (FRPA), section 122, and the *Wildfire Act* (WA). Compliance audits examine forest or range planning and practices to determine whether or not they meet FRPA and/or WA requirements.

### Selection of Auditees

The Board conducts about eight or nine compliance audits annually. Most of these are audits of agreement holders. The Board also audits the government's BC Timber Sales Program (BCTS). This section describes the process for selecting agreement holders to audit.

To begin with, auditors randomly select an area of the Province, such as a district. Then the auditors review the forest resources, geographic features, operating conditions and other factors in the area selected. These are considered in conjunction with Board strategic priorities (updated annually), and the type of audit is determined. At this stage, we choose the auditee(s) that best suits the selected risk and priorities. The audit selections are not based on past performance.

For example, in 2010, the Board randomly selected the Mackenzie district as a location for an audit. After assessing the activities within that area, we discovered that a large licensee had recently closed operations due to financial problems. As the Board has expressed concern in the past about financially strapped companies failing to meet outstanding obligations, such as reforestation and road maintenance, and we knew that some of the licence area is very remote, the new licence holder was selected for audit.

For BCTS audits, a district within one of the 12 business areas within the province is selected randomly for audit.

### Audit Standards

Audits by the Board are conducted in accordance with the auditing standards developed by the Board. These standards are consistent with Canadian generally accepted auditing standards. The standards for compliance audits are described in the Board's *Compliance Audit Reference Manual*.

### Audit Process

#### Conducting the Audit

Once the Board randomly selects an area or district and determines the scope of audit to be conducted and the licensee(s) to be audited, all activities carried out during the period subject to audit are identified (such as harvesting or replanting, and road construction or deactivation activities). Items that make up each forest activity are referred to as a population. For example, all sites harvested form the timber harvesting population and all road sections constructed form the road construction population.

A separate sample is then selected for each population (e.g., the cutblocks selected for auditing timber harvesting). Within each population, more audit effort (i.e., more audit sampling) is allocated to areas where the risk of non-compliance is greater.

Audit fieldwork includes assessments of features using helicopters and ground procedures, such as measuring specific features like riparian reserve zone width. The audit teams generally spend one week in the field.

## **Evaluating the Results**

The Board recognizes that compliance with the many requirements of FRPA and WA, is more a matter of degree than absolute adherence. Determining compliance, and assessing the significance of non-compliance, requires the exercise of professional judgment within the direction provided by the Board.

The audit team, composed of professionals and technical experts, first determines whether forest practices comply with legislated requirements. For those practices considered to not be in compliance, the audit team then evaluates the significance of the non-compliance, based on a number of criteria, including the magnitude of the event, the frequency of its occurrence and the severity of the consequences.

Auditors categorize their findings into the following levels of compliance:

**Compliance** – where the auditor finds that practices meet FRPA and WA requirements.

**Unsound Practice** – where the auditor identifies a significant practice that, although found to be in compliance with FRPA or WA, is not considered to be sound management.

**Not significant non-compliance** – where the auditor, upon reaching a non-compliance conclusion, determines that one or more non-compliance event(s) is not significant and not generally worthy of reporting. However, in certain circumstances, events that are considered not significant non-compliance may be reported as an area requiring improvement.

**Significant non-compliance** – where the auditor determines a non-compliance event(s) or condition(s) is or has the potential to be significant, and is considered worthy of reporting.

**Significant breach** – where the auditor finds that significant harm has occurred, or is beginning to occur, to persons or the environment as a result of one or many non-compliance events.

If it is determined that a significant breach has occurred, the auditor is required by the *Forest Practices Board Regulation* to immediately advise the Board, the party being audited, and the Minister of Forests, Lands and Natural Resource Operations.

## **Reporting**

Based on the above evaluation, the auditor then prepares a draft audit report. The party being audited is given a draft of the report for review and comment before it is submitted to the Board.

Once the auditor submits the draft report, the Board reviews it and determines if the audit findings may adversely affect any party or person. If so, the party or person must be given an opportunity to make representations before the Board decides the matter and issues a final report. The representations allow parties that may potentially be adversely affected to present their views to the Board.

The Board then reviews the draft report from the auditor and the representations from parties that may potentially be adversely affected before preparing its final report. Once the representations have been completed, the report is finalized and released: first to the auditee and then to the public and government.



## ENDNOTES

- <sup>i</sup> **A forest stewardship plan (FSP)** is a key planning element in the FRPA framework and the only plan subject to public review and comment and government approval. In its FSP BCTS is required to identify results and/or strategies consistent with government objectives for values such as water, wildlife and soils. These results and strategies must be measurable and once approved are subject to government enforcement. FSPs identify areas within which road construction and harvesting will occur but are not required to show the specific locations of future roads and cut blocks. FSPs can have a term of up to five years.
- <sup>ii</sup> **Major structure** includes bridges and major culverts.
- Bridge means a temporary or permanent crossing structure with a span length equal to or greater than 6 metres or an abutment height of 4 metres or greater.
  - Major culvert has a pipe diameter of 2 metres or greater or is a pipe or open bottom arch with a span greater than 2.13 metres.  
[http://www.for.gov.bc.ca/hth/engineering/documents/publications\\_guidebooks/manuals\\_standards/Eng-Manual.pdf](http://www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/manuals_standards/Eng-Manual.pdf)
- <sup>iii</sup> **FPPR Structural defects** – Section 75: A person who maintains a road must do one or more of the following if a structural defect or deficiency occurs on a bridge that is part of that road:
- correct the defect or deficiency to the extent necessary to protect
    - industrial users of the bridge, and
    - downstream property, improvements or forest resources that could be affected if the bridge fails;
  - close, remove or replace the bridge;
  - restrict traffic loads to a safe level;
  - place a sign, on each bridge approach, stating the maximum load capacity of the bridge.
- <sup>iv</sup> **FPPR Peak flow** – Section 74 (1): A person who builds a bridge across a stream or installs a culvert in a stream for the purpose of constructing or maintaining a road must ensure that the bridge or culvert is designed to pass the highest peak flow of the stream that can reasonably be expected within the return periods specified below for the length of time it is anticipated the bridge or culvert will remain on the site:
- | <u>Anticipated period the bridge or culvert will remain on the site</u>                        | <u>Peak flow return period</u> |
|--|--------------------------------|
| For a bridge or culvert that will remain on site for up to 3 years                             | 10 years                       |
| For a bridge that will remain on site from 3 to 15 years                                       | 50 years                       |
| For a bridge that will remain on site for over 15 years  | 100 years                      |
| For a culvert that will remain on site for over 3 years  | 100 years                      |
| For a bridge or culvert within a community watershed that will remain on site for over 3 years | 100 years                      |
- <sup>v</sup> **FPPR Road maintenance** – Section 79 (6): A person required to maintain a road must ensure all of the following:
- the structural integrity of the road prism and clearing width are protected;
  - the drainage systems of the road are functional;
  - the road can be used safely by industrial users.
- FPPR Wilderness roads** – Section 81: Despite section 22.2 [non-industrial use of a road] of the Act and section 79 [road maintenance], if a forest service road, or a road authorized under a road permit, a cutting permit, a timber sale licence that does not provide for cutting permits, a special use permit or a woodlot licence is not being used by industrial users,
- section 79 (6) (a) and (b) apply to that road only to the extent necessary to ensure there is no material adverse effect on a forest resource, and
  - section 79 (6) (c) does not apply to that road.
- <sup>vi</sup> **FPPR Natural surface drainage patterns** – Section 39 (1): If an authorized person constructs a road, a temporary access structure or a permanent access structure on an area, the person must maintain natural surface drainage patterns on the area both during and after construction.
- (2) Despite subsection (1), if it is not practicable for an authorized person to maintain natural surface drainage patterns during the construction of a road, a temporary access structure or permanent access structure, the person must ensure that the altered surface drainage pattern is compatible with the original natural surface drainage pattern by the earlier of
- the end of the construction, and
  - the next freshet.
- <sup>vii</sup> **WA Hazard assessment and abatement** - Section 7 (1) of the Wildfire Act states “In prescribed circumstances and at prescribed intervals, a person carrying out an industrial activity or a prescribed activity on forest land or grass land or within 1 km of forest land or grass land must conduct fire hazard assessments.”
- Wildfire Regulation Hazard Assessment** - Section 11(3) of the Wildfire Regulation states “Subject to subsection (3.1) of this section, the prescribed intervals, at which persons described in section 7 (1) of the Act must conduct fire hazard assessments, are
- 6 month intervals during the period during which the persons, in any area other than the area described in subsection (2), are carrying on the industrial activity or the prescribed activity, and
  - the shorter interval between the most recent 6-month interval and the date on which the activity ceases for an expected period of 6 months or more.”



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