



**Forest
Practices
Board**

Audit of Forest Planning and Practices

*BC Timber Sales and Timber Sale Licence Holders
Boundary Timber Supply Area
Kootenay Business Area*

FPB/ARC/179

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Audit Results

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* (WA).

As part of its 2015 compliance audit program, the Forest Practices Board randomly selected the Boundary timber supply area portion of BC Timber Sales' (BCTS) Kootenay Business Area for audit. A map of the audit area appears on page 2.

This report explains what the Board audited and the results. Detailed information about the Board's compliance audit process is provided in Appendix 1.



Overlooking Grand Forks

Background

The Boundary timber supply area (TSA) covers approximately 659 000 hectares of the southern interior, beside the international border. The TSA covers the Kettle River and Granby River drainages and communities include Grand Forks, Midway, Greenwood, Rock Creek, Beaverdell and Christina Lake.

The forests of the area are diverse. Lodgepole pine, Douglas-fir and larch are the most common tree species, with some areas dominated by spruce and subalpine fir. These forests support a wide variety of wildlife species, including species at risk and regionally significant species such as flammulated owls, Coeur d'Alene salamander and grizzly bear.

The TSA has many lakes and streams that support rainbow trout, Kokanee, bass, walleye, brook trout and brown trout. Recreational use of forests is high due to the proximity of several provincial parks (e.g., Granby, Gladstone and Conkle Lake Parks), as well as numerous smaller parks, recreation sites and trails. Recreational activities include hiking, mountain biking,

hunting, fishing, boating, backcountry recreation, snowmobiling, skiing and wildlife viewing. There are also cattle grazing tenures throughout the operating area.

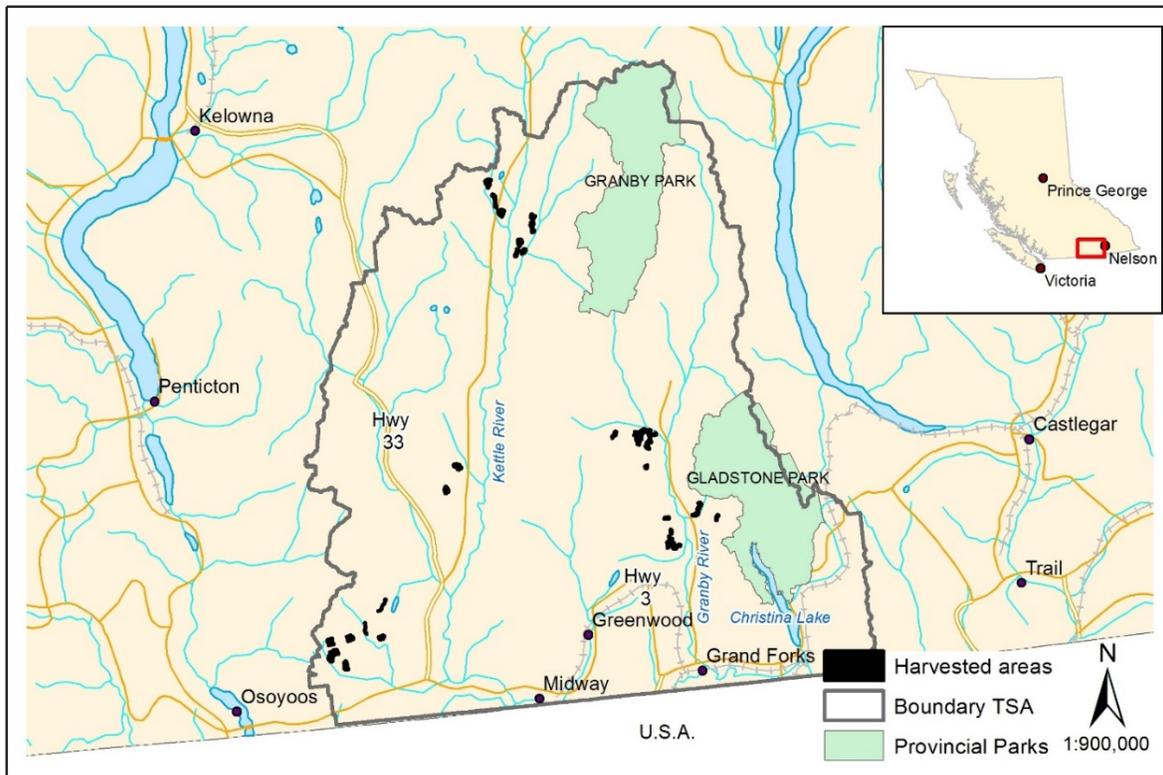
There is a high level of public interest in forest management in the area. When this audit was announced, three members of the public contacted the Board to express concerns. A local conservation group—Friends and Residents of the North Fork—has requested a moratorium on harvesting in grizzly bear habitat because it is concerned there is already excessive road density and degradation of habitat. According to the group, BCTS is planning cutblocks adjacent to park boundaries, there is no connectivity between Granby and Gladstone parks for bears, there is motorized access to Gladstone Park, and levels of wood waste are too high.

Two woodlot licence holders also contacted the board with concerns about the amount of wood supply allocated to the BCTS program, wood waste, the future timber supply, BCTS’s response to insect infestations, and its apparent reluctance to direct harvesting to steep slopes.

Auditors appreciated hearing about these issues in advance of the field work.

BCTS manages its activities from Nelson and a field office in Grand Forks, where staff prepares operational plans, auctions timber sales and issues timber sale licences and road permits. Successful bidders are awarded a timber sale licence and must fulfill licence, permit and operational plan obligations, including timber harvesting and road work, within cutblocks. BC Timber Sales' allowable annual cut from the Boundary TSA is about 288 000 cubic metres and about 185 000 cubic metres was harvested by licensees during the audit period.

Map of the Audit Area



Audit Approach and Scope

This was a full scope compliance audit with a one-year timeframe. All activities carried out between May 1, 2014, and May 28, 2015, by BCTS and timber sale licence holders, were subject to audit.

BCTS is responsible for operational planning, including preparing forest stewardship plans (FSPs) and site plans, silviculture activities, major structure¹ 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, WA, and applicable regulations. The standards and procedures used to carry out this audit are set out in the Board's *Compliance Audit Reference Manual, Version 7.0, September, 2012*.

Two forest professionals, one professional engineer, and a chartered professional accountant made up the audit team. The audit team was in the field with BCTS staff from May 25 - 28, 2015. Sites were accessed by truck and by helicopter.

Planning and Practices Examined

BCTS Responsibilities

Operational Planning

BCTS planned activities in its 2006 FSP,² which remains in effect until 2016. The FSP and stand-level site plans were examined to ensure that they met legislative requirements. Auditors also considered site plans during harvesting, road and silviculture field sampling to ensure that they accurately identified site conditions.

The Kootenay Boundary Higher Level Plan Order (KBHLPO) covers the Boundary TSA. Objectives specified by the KBHLPO relevant to the TSA were included in the FSP. Relevant government orders (e.g., grizzly bear *Government Action Regulation* order), were either referenced in, or form part of, the FSP.

¹ 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

² 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 FSPs, licensees are 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.

Road & Major Structure Construction, Maintenance, Deactivation

During the audit period, BCTS built 5 kilometres of forest service road, maintained 1016 kilometres of forest service road, installed 2 new bridges and maintained 74 bridges and major structures. BCTS did not deactivate any roads during the audit period.

Auditors examined construction of all 5 kilometres of new road, maintenance of 237 kilometres of road, the installation of both bridges and the maintenance of 28 major structures.

Silviculture Obligations and Activities

BCTS planted 38 cutblocks and brushed 10 cutblocks during the audit period. Site preparation for planting was done on 3 blocks. Regeneration obligations were due on 36 cutblocks and free-growing obligations were either declared or due on a further 68 cutblocks. Auditors examined 4 planted cutblocks, 1 brushed cutblock, 1 site-prepared cutblock, 4 cutblocks with regeneration obligations due, and 19 cutblocks with free-growing obligations.

Timber Sale Licensee Responsibilities

Timber Harvesting

Seven timber sale licensees harvested 42 cutblocks, covering 1213 hectares, and auditors examined 38 of the cutblocks, totalling 1140 hectares.

Road Construction, Maintenance, Deactivation

Timber sale licensees constructed 36 kilometres of road and maintained 221 kilometres of road. Auditors examined all new road construction and 40 kilometres of road maintenance. Licensees deactivated 66 kilometres of road of which auditors examined 36 kilometres. There were no new bridges or major structures built by licensees during the audit period.

Fire Protection

Auditors encountered one active work site and examined licensee compliance with the WA requirements for fire preparedness. Auditors also examined fire hazard assessment and abatement activities and obligations on the 38 cutblocks in the harvest sample.

Findings

The audit found that BCTS's planning and activities complied with FRPA and the WA as of May 2015.

The audit found that, except for an issue involving maintenance of natural surface drainage patterns described below, the activities of the timber sale licensees complied with FRPA and the WA as of May 2015. The audit also found that several licensees' fire hazard assessment practices require improvement.

BCTS Responsibilities

Operational Planning

Planning was consistent with the FSP and legislative 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. For example, to protect and preserve grizzly bear, government requires specific measures including timing restrictions on activities, retaining non-merchantable vegetation, prohibiting the use of herbicides, retaining woody debris and retaining, where practicable, a 20-metre visual screening buffer on main haul roads. The idea of the buffer is that it may reduce the likelihood of deer hunters shooting into cutblocks from the road, which would disturb grizzly bears. The site plans reflected these requirements.

Road Construction, Maintenance and Deactivation

Construction

Road construction was conventional cut and fill construction on relatively flat ground, and roads were well-built by contractors. Natural drainage patterns were maintained on completed road sections.

Government engineers reviewed both new bridge designs and documentation was complete. Both structures were built to a suitable standard and had no structural, safety, environmental or maintenance issues.

Maintenance

BCTS has a system for risk rating road sections and assigning an inspection frequency ranging from twice per year for very high risk roads to once every 3 years for low risk roads. The forest service roads that BCTS is responsible for have been adequately maintained to retain the structural integrity of the prism. The majority of culverts were functional and water was managed to maintain natural drainage patterns.

Structures on forest service roads are inspected by government engineers and BCTS is responsible for surface maintenance. The 26 bridges sampled were generally very well maintained. Where structural issues were found, BCTS had a maintenance or replacement plan already in place.

Deactivation

BCTS did not deactivate any roads during the audit period.

Silviculture Activities and Obligations

BCTS plants cutblocks with suitable tree species and stock and is meeting its current regeneration and free-growing obligations. There were no concerns with silviculture planning or practices.

Timber Sale Licensee Responsibilities

Road Maintenance – TSL A84555 held by 579264 BC Ltd.

The licensee needed to reconstruct 1000 metres of the Almond 3300 road to access a cutblock. The road is located above both unstable and potentially unstable terrain, and had been deactivated after past logging. A terrain stability assessment was prepared and it included specific prescriptions to mitigate the risk of landslides after the road was reconstructed. The

timber sale document also included contractual requirements to install culverts at specific locations to maintain natural surface drainage patterns.

When auditors visited the block, there was no ditch line on the road and no culverts had been installed as per the plan. Several seepages were encountered, which flowed down the road grade instead of being carried across the road in drainage structures. Seasonal deactivation, including backup of cross ditches and waterbars as prescribed, was not completed and natural drainage was not maintained.

Auditors were told that as the operator prepared to haul out the last loads of wood in the fall of 2014, heavy rain fell. The temperature then dropped and equipment was frozen in place. It could not haul out the remaining wood nor deactivate the road before winter set in.

Section 39 (1) of the *Forest Planning and Practices Regulation* requires a person who builds a road to maintain natural surface drainage patterns on the area both during and after construction. Natural drainage was not maintained and this is considered a significant non-compliance because of the risk of a landslide and the delivery of sediment to the creek below.

In mid-June 2015, the operator returned to the block, hauled the remaining wood and deactivated the road. It provided a report with photos to the auditors. BC Timber Sales staff inspected the work on June 25, 2015, and found that the road had been fully deactivated, cross ditches had been constructed where needed and a ditch line established where possible.

Wildfire Protection

At the sole active harvesting operation encountered, workers were adequately prepared with the appropriate equipment for fighting a wildfire. The fire preparedness requirements of the WA were met.

The WA 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. 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. As a result, hazard abatement was not an issue. However, only one licensee completed and documented a hazard assessment for two blocks. A further two blocks sampled had just become active and an assessment was not yet required. This left 38 blocks where licensees did not formally assess the fire hazard. Without documenting the fire hazard assessment, the licensee cannot demonstrate that it has been diligent in identifying a hazard. As a result, fire hazard assessment is an area requiring improvement for all timber sale licence holders but one.

Harvesting

In general, 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. Activities were also consistent with the government order to manage and protect grizzly bear, including timing restrictions and the maintenance of visual screens on main roads.

There were, however, two exceptions where harvesting near streams was not consistent with plans. Depending on the width of a stream, a riparian reserve zone may be established where

no harvesting is permitted. Beyond the riparian reserve zone, a riparian management zone may be established where all or a certain portion of the trees may be harvested.

In the first exception, the site plan called for a 20-metre riparian management zone to be established in the field on an S2 stream. Within this area, 11-14 square metres per hectare of stems greater than 12.5 centimetres in diameter were to be retained and, where practicable, non-merchantable vegetation was to be retained. Despite this, less than the prescribed number of leave trees were retained. In the second example, the site plan called for a 20-metre riparian management zone on an S3 stream where 11-14 square metres per hectare of stems greater than 12.5 centimetres in diameter would be retained and, where practicable, non-merchantable vegetation would be retained. The majority of the riparian management zone was harvested and used as a skid trail, and less than the prescribed number of leave trees was retained. In both cases, the prescribed riparian reserve zones where no harvest was permitted were intact.

The total area harvested where some trees should have been retained was less than one hectare. While the area affected is not considered significant, if the practice was not addressed, there could be a significant issue on another block in the future. BCTS was aware of these two issues and believes that part of the problem may be that loggers cannot easily estimate the basal area of trees per hectare. BCTS formed a committee to come up with an easier way to understand retention, and early indications are that in future they will provide guidance specifying the retention of a certain percentage of trees of a certain size instead of basal area.

Road Construction, Maintenance and Deactivation

Timber sale licence holders built short spur roads to access cutblocks as well as in-block roads. In general, natural surface drainage patterns were maintained and exposed soil was seeded. Notably, all in-block roads were rehabilitated after harvest, meaning that the soil was decompacted, recontoured and covered with slash. These roads are now ready to be planted. With the exception of the Almond 3300 road discussed above, there were no concerns with licensee road construction, maintenance or deactivation.

Public Concerns

Auditors considered the issues raised by members of the public, as described in the background section of this report. The Board's audit jurisdiction is limited to assessing compliance with FRPA, the WA, and the appropriateness of government enforcement. Issues such as wood waste, land use, allocation of timber, and timber supply are not governed by the *Forest and Range Practices Act* and cannot be addressed in a Board compliance audit. With respect to grizzly bear management, some of the public expectations expressed in the Kootenay Boundary Higher Level Plan Order, such as road density, are not legal requirements, which is frustrating to the Friends and Residents of the North Fork organization. BCTS and TSL holders complied with the legal requirements related to the Order, but may not have met the public's expectations.

Audit Opinion

In my opinion, except for the road maintenance issue discussed below, the operational planning, timber harvesting, road construction, deactivation and maintenance, silviculture, and fire protection activities carried out by BC Timber Sales and its timber sale licence holders in the Boundary timber supply area within the Kootenay Business Area, between May 1, 2014, and May 28, 2015, complied in all significant respects with the requirements of the *Forest and Range Practices Act*, the *Wildfire Act* and related regulations, as of May 2015.

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 *Timber Sale Licensee Responsibility - Road Maintenance* section of the report, the audit identified a significant non-compliance related to the maintenance of natural surface drainage.

Without further qualifying my opinion, I draw attention to the *Wildfire Protection* section of the report, which describes an area requiring improvement related to fire hazard assessment.

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. Such an audit includes examining sufficient forest planning and practices to support an overall evaluation of compliance with FRPA, and WA.



Christopher R. Mosher CPA, CA, EP(CEA)
Director, Audits

Victoria, British Columbia
July 20, 2015

Appendix 1:

Forest Practices Board Compliance Audit Process

Background

The Forest Practices Board conducts audits of government and 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 8 or 9 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.

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.

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

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.



**Forest
Practices
Board**

PO Box 9905 Stn Prov Govt

Victoria, BC V8X 9R1 Canada

Tel. 250.213.4700 | Fax 250.213.4725 | Toll Free 1.800.994.5899

For more information on the Board, please visit our website at: www.bcfpb.ca