



**Forest
Practices
Board**

**Audit of Small Scale Salvage in
the Cariboo Chilcotin Natural Resource
District**

FPB/ARC/227

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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 forest industry practices to ensure compliance with the *Forest and Range Practices Act* (FRPA) and the *Wildfire Act*.

As part of its 2018 compliance audit program, the Board randomly selected the Cariboo Chilcotin Natural Resource District for a full scope compliance audit. Within the district, the Board selected licensees within the small scale salvage program for audit.

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

Background

Small scale salvage is the harvest of individual trees or small patches of dead or damaged timber (e.g., trees that are wind-thrown, infested by insects, or damaged by fire). During the audit period, almost all small scale salvage activity in the audit area was aimed at addressing a Douglas-fir bark beetle infestation (see map on page 3).

Douglas-fir bark beetle (the beetle) is the main killer of mature Douglas-fir in BC. The beetle usually attacks weak or dying trees, but when the population is large enough it attacks and kills healthy trees. The beetle's life cycle is key to the timing of salvage activities.

The life cycle of the beetle is usually one year. Adult beetles lay eggs in long galleries under the bark. Over the winter, the action of the larval feeding in the phloem and other biological processes typically kills an infested tree. Adult beetles emerge in the spring and fly to new host trees from May to August.

The beetle prefers felled trees, slash, stumps, windfall, over-mature and decadent trees, and stressed or damaged trees. Salvage is focused on harvesting and removing currently attacked trees, and destroying the logging residue in the winter before beetles emerge. Best practices have been published by several research sources that help to contain or suppress Douglas-fir bark beetle infestations.

Both the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (the ministry) and prospective salvagers are involved in identifying specific areas for small-scale salvage operations. Each year, the ministry identifies, records and maps beetle-attack centres as candidates for salvage. Prospective salvagers review the maps and indicate an "area of interest" to the ministry.

Areas of interest need to have a specific location and target volume that does not exceed 2000 cubic metres. The ministry checks the areas of interest for overlap with competing interests or archaeology sites. The salvager may also need to consult with major licensees. Once it has been determined that there are no conflicts, the salvager probes the area of interest for beetles when the summer beetle flights are over, marks currently attacked trees for salvage, and establishes gross

block boundaries and skid trails. This information is included in a professional application. The ministry reviews the application, consults with First Nations, and issues a forest licence to cut (FLTC). While district staff consult with First Nations, it is up to the licensee to inform trappers and other tenure holders of its plans. There is no overarching forest stewardship plan, although the professional application will not be approved unless it is consistent with FRPA and associated regulations.

Once the FLTC is issued, marked timber must be harvested and delivered to a processing facility by March 31st, which is before beetles emerge in search of new trees to attack. Non-merchantable logging residue must be either burned or chipped before beetles emerge, to destroy the beetle and prevent further spread. Where this is not possible, salvagers will attempt to hold the beetle in an infested area using pheromones, traps, or trap trees. Section 41 of the *Forest Planning and Practices Regulation* states that a person who uses trap trees or pheromones to concentrate insect populations must ensure that the insect brood is destroyed before the next emergence.

Licensees do not build roads. Instead they use existing roads, often under an exemption from any road authority. For silvicultural obligations, licensees pay a silviculture levy to government and the district manager assumes the obligation.

Due to the small size of openings, harvesting does not usually trigger a reforestation obligation. For openings larger than 1 hectare, the ministry is responsible for ensuring that a stand is satisfactorily stocked and a free-growing stand is established.

There is not much government oversight after a licence is issued, which is consistent with government's model of relying on professionals. A licensee's professional must sign a "Certificate of Completion" to certify that everything has been done according to plan.

Audit Approach and Scope

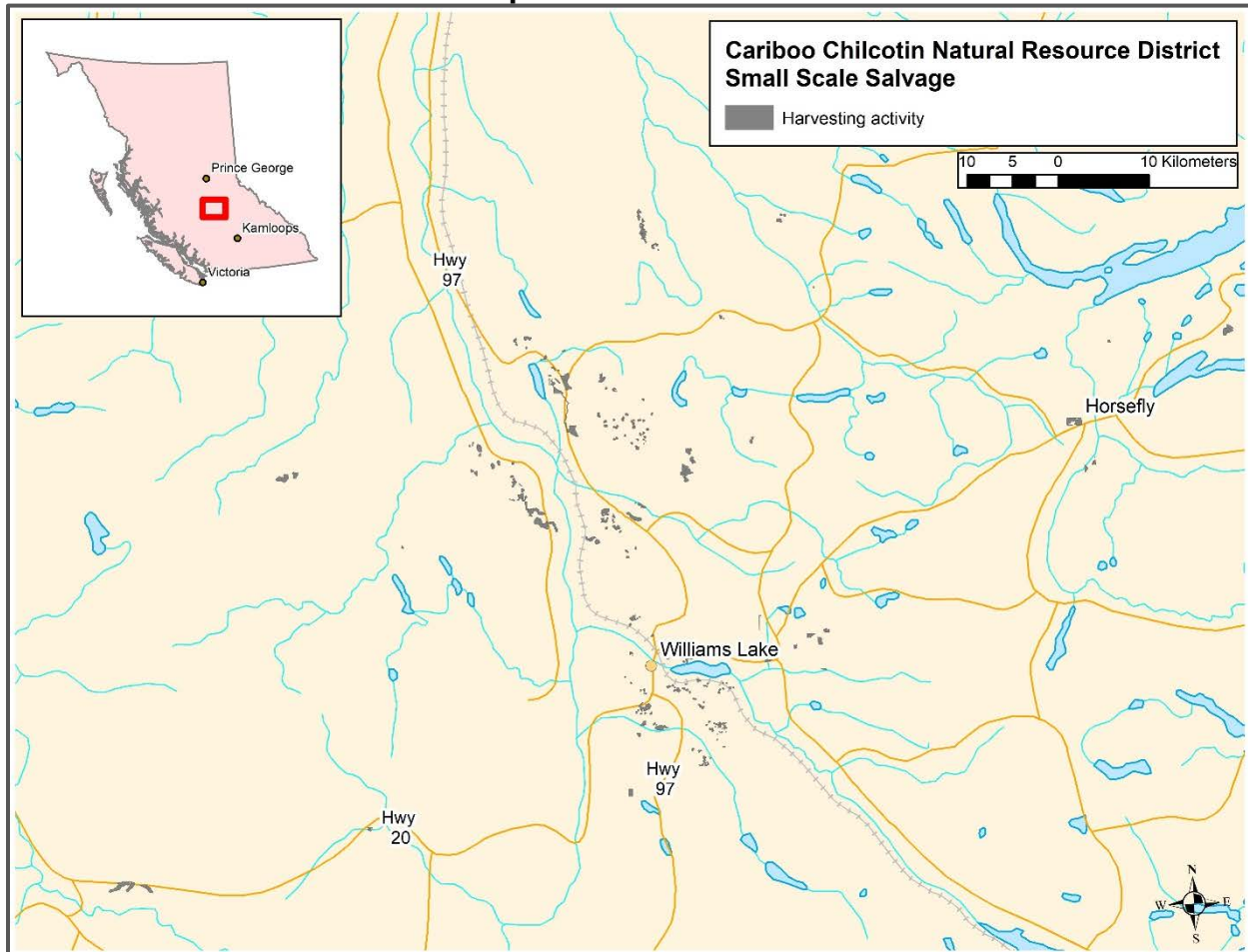
This was a full scope compliance audit and all activities carried out between September 1, 2017, and September 28, 2018, were eligible for audit. These included operational planning, timber harvesting, wildfire protection, and silviculture.

Auditors assessed these activities for compliance with FRPA, the *Wildfire Act*, and applicable regulations. This work included interviewing ministry staff, licensees and their consultants, and visiting sites to review field practices. Sites were accessed by truck.

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*.

Three forest professionals and a chartered professional accountant made up the audit team. The forest professionals were in the field from September 24 to 28, 2018.

Map of the Audit Area



Planning and Practices Examined

District Manager Responsibilities

Silviculture Obligations and Activities

When individual trees or small groups of trees are harvested, the area normally remains satisfactorily stocked and no planting is necessary. For larger areas, planting is required and the district manager assumes any silviculture obligations.

The district manager planted eight areas and brushed one area during the audit period. Auditors visited one planting block and reviewed documents related to all of the planting and brushing.

Six blocks were due to be regenerated by the end of the audit period. There were no areas due or overdue for the establishment of a free-growing stand by the end of the audit period. Auditors reviewed all relevant documentation and visited one site due for regeneration.

Small Scale Salvage Licensee Responsibilities

Operational Planning

Auditors examined the professional applications and maps for consistency with legal requirements and government orders regarding old growth and wildlife. Auditors also confirmed whether site conditions were accurately identified during field sampling.

Timber Harvesting

Thirty-two licensees harvested timber from 53 FLTCs during the one-year audit period. Auditors examined 42 FLTCs held by 25 licensees.

Wildfire Protection

Auditors did not encounter any active work sites during fieldwork so wildfire preparedness was not assessed. Auditors examined fire hazard assessment and abatement practices as part of the harvest sampling.

Findings

The audit found that the district manager's planning and activities complied with FRPA as of September 2018.

The audit found that the activities of the small scale salvage licensees generally complied with FRPA and the *Wildfire Act* as of September 2018. The audit found that one licensee harvested two small areas outside the licence area and several licensees did not complete fire hazard assessments. Both practices require improvement.

District Manager Responsibilities

Silviculture

At the planting site sampled, many of the newly planted trees did not survive the summer, likely due to drought and exposure. The district regularly monitors planted sites to assess the need for replanting, and this site will be examined in 2019. The district manager is responsible for ensuring that free-growing obligations are met. The seed used for growing stock met the chief forester's seed transfer guidance.

There were no concerns with brushing. Overall, auditors had no concerns with silvicultural activities and obligations.

Small Scale Salvage Licensees Responsibilities

Unauthorized Harvest - Forestry Licence to Cut A96089 held by Juan Ditoro

On FLTC A96089, auditors found that a small amount of harvesting had occurred outside of this licence area at two locations. The tenure holder located the FLTC boundaries using substandard methods and did not establish easy-to-identify field markings in the correct location to prevent operating outside of the authorized area. In addition, the licence only permits the harvest of infested Douglas-fir, and auditors found that a small amount of spruce and aspen had been felled.

Section 52 of FRPA states that a person must not cut, damage or destroy Crown timber without authorization. The licensee cut Crown timber without authorization at two small locations but there was no significant damage to other Crown resources, reserves, or management areas, and

one of the areas has since been amended into this licence. Therefore, this non-compliance is considered an area requiring improvement.

Operational Planning

With the exception of a few burned and wind thrown areas, small scale salvage harvesting was focused on trees infested by the Douglas-fir bark beetle. This is consistent with the Williams Lake timber supply area forest health strategy. All licences were in "high priority suppression areas" where the objective is to reduce beetle populations and maintain them at a relatively low level. All harvest is to be directed at currently attacked trees and the goal is to control the outbreak and stop the spread.

A licensee's professional application is the operational plan that describes what will be harvested and where. Through a combination of legislative and contractual requirements, the forest professional must consider and manage for visual quality, recreation, soils, riparian features, biodiversity, old growth and wildlife, among other values. Auditors reviewed all of the professional applications to ensure they accurately reflected values and met legal requirements.

Auditors had no concerns with operational planning.

Timber Harvesting

With the exception of the issue identified above, harvesting was conducted in accordance with the professional applications, legal requirements and contractual obligations. Natural drainage patterns were maintained and riparian features were accurately identified and protected. Most harvesting took place between January and March and soil disturbance was minimal due to the frozen ground. Damage to retained trees while harvesting infested trees was not significant. Meeting visual quality objectives was not an issue in scenic areas due to the limited amount of harvest and the removal of individual stems.

As mentioned above, to effectively manage a beetle infestation, it is important to remove and destroy infested trees and debris before the beetles emerge and fly to new hosts. In some cases, it was not possible to remove or destroy all infested material before the next flight. Some licensees used funnel traps and trap trees to hold the beetle in the operating area, and other licensees had time remaining in their licence term to salvage beetle-attacked trees and abate the slash.

Wildfire Protection

Fire Hazard Assessment

Based on the timing of harvest and the term of the licences, 13 fire hazard assessments were required to be completed by the time auditors were in the field. Only one licensee provided a fire hazard assessment. Several licensees told the Board that they do not document a formal fire hazard assessment, however, they pile and burn slash to abate any hazard as a standard practice. Completing a fire hazard assessment is a legal requirement and it demonstrates that a licensee has been diligent. Where fire hazard assessments are not completed but a hazard has been abated, the Board considers this to be an area requiring improvement.

Fire Hazard Abatement

Slash was either piled or piled and burned on completed cutblocks. Where slash could not be burned before open fires were prohibited in the spring, trap trees and funnel traps were deployed to hold the beetle until the piles could be burned in the fall.

Audit Opinion

In my opinion, the operational planning, timber harvesting, silviculture and fire protection activities carried out by the district manager and small scale salvage licensees in the Cariboo Chilcotin Natural Resource District between September 1, 2017, and September 28, 2018, complied in all significant respects with the requirements of the *Forest and Range Practices Act*, the *Wildfire Act* and related regulations, as of September 2018.

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

Without qualifying my opinion, I draw attention to the *Small Scale Salvage Licensees – Unauthorized Harvest*, and *Fire Hazard Assessment* 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 *Forest and Range Practices Act*, and *Wildfire Act*.



Christopher R. Mosher CPA, CA, EP(CEA)
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Victoria, British Columbia
March 18, 2019

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*. Compliance audits examine forest or range planning and practices to determine whether or not they meet FRPA and / or *Wildfire Act* requirements. The Board conducts about 10 compliance audits annually. Most of these are audits of agreement holders. The Board also audits the government's BC Timber Sales Program (BCTS).

Selection of auditees

To begin with, auditors randomly select an area of the Province, such as a natural resource 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, auditors choose the auditee(s) that best suits the selected risk and priorities. The audit selections are not based on past performance.

For example, in 2016, the Board randomly selected the Dawson Creek portion of the Peace Natural Resource District as a location for an audit. After assessing the activities within the area, it was noted that there were two community forest agreements that had not yet been audited by the Board. As the Board strives to audit an array of licence types and sizes each year, these two community forest agreements were selected for audit.

For BCTS audits, a district or timber supply area within 2 of the 12 business areas in the province are selected randomly for audit. Only those areas that have not been audited by the Board in the past five years are eligible for selection.

Audit Standards

The audits are conducted in accordance with auditing standards developed by the Board. These standards include 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 and 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. For smaller audits, the sample will include the full population.

Auditors' work includes interviewing licensee staff, reviewing applicable plans, assessing features from helicopters and measuring specific features like riparian reserve zone width using ground procedures. The audit teams generally spend three to five days in the field.

Evaluating the Results

The Board recognizes that compliance with the requirements of FRPA and the *Wildfire Act* 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 legal 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 *Wildfire Act* requirements.

Unsound Practice – where the auditor identifies a significant practice that, although in compliance with FRPA or the *Wildfire Act*, 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, these events 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 more non-compliance events.

If a significant breach of the legislation 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, Natural Resource Operations and Rural Development.

Reporting

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

The Board reviews the draft report 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 reviews representations from parties that may potentially be adversely affected, makes any necessary changes to the report, and decides if recommendations are warranted. The report is then finalized and released: first to the auditee and then to the public and government seven days later.



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