

**Audit of Forest Planning  
and Practices**

**Forest Licence A20020  
West Fraser Mills Ltd.**



August 1998  
FPB/ARC/08

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## A. Report from the Board

This is the Forest Practices Board's report on a compliance audit<sup>1</sup> of Forest Licence A20020<sup>2</sup> held by West Fraser Mills Ltd. (West Fraser). Forest Licence A20020 is within the Williams Lake Timber Supply Area (see map on page C5). The areas of operations are between the towns of Williams Lake and Alexis Creek within the Williams Lake and Chilcotin forest districts.

The audit examined West Fraser's forest planning and practices for the period September 1, 1996, to August 31, 1997, to assess compliance with the *Forest Practices Code of British Columbia Act* and related regulations (the Code). The audit covers the full range of Code related forestry activities undertaken by West Fraser in the audit time frame. The audit included a complete examination of operational plans, including all aspects of the forest development plan, silviculture prescriptions, logging plans and fire preparedness plans, and forest practices including timber harvesting, silviculture, fire protection, and road construction, maintenance, and deactivation.

Prior to completing this report, the Board received written representations from West Fraser and from the Ministry of Forests, as required by section 182 of the Act.

**Forest resources:** means resources and values associated with forest and range including, without limitation, timber, water, wildlife, fisheries, recreation, botanical forest products, forage and biological diversity.

### Conclusions

The Board's conclusions are based on an audit of the following forest plans and practices:

- the 1996-2001 Forest Development Plan, the 1997 Fire Preparedness Plan, 107 silviculture prescriptions and 135 logging plans;
- timber harvesting of 134 cutblocks;
- construction of 43 road sections totaling 123 kilometres;
- maintenance of approximately 250 kilometres of road, involving activities such as surfacing and culvert and ditch cleaning;

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<sup>1</sup> Part B of this document provides background information on the Board's audit program and the process followed by the Board in preparing its report.

<sup>2</sup> The report from the auditor (Part C of this document) provides specifics about the operating areas of Forest License A20020, the forest planning and field activities of West Fraser that were the subject of this audit, and the audit results.

- deactivation of 10 road sections totaling 53 kilometres; and
- silviculture activities such as site preparation, planting, mistletoe eradication and regeneration surveys on 78 cutblocks.

Forest planning generally complied with Code requirements, except that West Fraser's forest development plan did not identify the significant risk presented to forest resources in their operating areas by mountain pine beetle.

The Board concluded that the risk presented by mountain pine beetle in West Fraser's operating area is significant because of the large area of highly susceptible lodgepole pine stands, the history of catastrophic losses to the mountain pine beetle in the area, and the increase in beetle populations in parts of the operating area between 1992 and 1995. As this significant risk was not identified, the forest development plan did not propose management strategies to reduce those risks as required by section 29(1)(c) of the *Operational Planning Regulation*.

In the Board's opinion, management strategies are a critical element of the forest development plan as they address the integration of beetle management activities with other harvesting plans. By bringing beetle management activities into the five year cycle of the forest development plan, potential impacts on other resources can be addressed early in the planning cycle and beetle management activities can be conducted in a manner that minimizes these impacts.

A clearly documented strategy allows the full range of available options to be used and helps focus management activities on the most critical areas where the risk of timber losses is highest. It also ensures that the various resource agencies and the public are aware of the strategy. Incorporating the strategy into the forest development plan may avoid the need to change operational plans on a site by site basis and may also allow a more rapid response to outbreaks of mountain pine beetle.

West Fraser's forest practices, including timber harvesting, silviculture, fire protection, and road construction, maintenance and deactivation, complied with Code requirements. The instances of non-compliance were few in number and inconsequential. This level of compliance with the practices requirements of the Code is noteworthy.

The lack of a strategy in the forest development plan to manage risk to forest resources from mountain pine beetle cannot be entirely attributed to West Fraser. This is a volume based licence, with operating areas located near the operating areas of other licencees and the small business forest enterprise program. Without a comprehensive strategy, developed by the Ministry of Forests, to coordinate effort among all parties with operations in the Williams Lake TSA, any strategy developed by West Fraser would have limited effectiveness.

The Board is of the opinion that the Ministry of Forests must play a significant role in the development of a landscape level strategy to deal with the risk to forest resources from mountain pine beetle in the Williams Lake TSA. This strategy would assist individual licencees, including West Fraser, to propose management strategies in their forest development plans and comply with the Code.

Both West Fraser and the Ministry of Forests have advised the Board that they undertake programs to detect beetle outbreaks and they plan harvesting activities to control outbreaks. However, as the risk to forest resources was not considered significant by these parties, beetle management activities are conducted on a stand by stand basis, rather than driven by a strategic plan. The Board is aware of the on-going activities but is of the opinion that these do not constitute a comprehensive management strategy to reduce the risks to forest resources from the mountain pine beetle, as referred to in the Code and the *Bark Beetle Management Guidebook*. A beetle management strategy is intended to address the range of appropriate practices within specific areas of the licence, allow the prioritization of management activities, and ensure that the potential impacts of the beetle and beetle management activities on other resources are minimized over a longer term. Since the approval of West Fraser's 1996 forest development plan, the Ministry has been developing area-specific beetle management plans for some portions of the TSA which will guide beetle management activities in the future. These beetle management plans will likely provide an appropriate framework within which future forest development plans can address beetle management needs.

## Recommendations

1. The Board recommends that the Ministry of Forests continue work to develop a comprehensive strategy to deal with the significant risk to forest resources presented by the mountain pine beetle for the entire Williams Lake TSA. This strategy will provide the framework within which West Fraser can propose management strategies to reduce risks from mountain pine beetle in their forest development plan and comply with Code requirements.
2. The Board recommends that West Fraser develop a strategy to deal with the significant risk to forest resources presented by the mountain pine beetle and include this strategy in the next forest development plan to be submitted for approval in 1998.

This strategy should be compatible with the comprehensive TSA strategy and consider the guidance given in the *Forest Development Plan Guidebook* and the *Bark Beetle Management Guidebook*. It should include:

- assessments of the susceptibility and potential level of losses of forest resources within the licence operating areas and comparison with the location of current infestations;

- delineation of management areas based on the associated risks and land use objectives;  
and
- selection of appropriate of tactics (e.g. single tree cutting, small patch cutting as well as bait and cut) based on the specific characteristics of individual management areas within the licence.

The Board requests that West Fraser and the Ministry of Forests advise the Board by November 30, 1998 of the actions taken to implement these recommendations.

A handwritten signature in black ink, appearing to read "Keith Moore". The signature is fluid and cursive, with a large initial "K" and "M".

Keith Moore  
Chair

August 10, 1998

## **B. Forest Practices Board Compliance Audit Process**

### **Audit standards and criteria**

Audits by the Forest Practices Board are conducted in accordance with the auditing standards developed by the Board. These standards are consistent with generally accepted auditing standards.

The audits determine compliance with the Code based on audit criteria derived from the *Forest Practices Code of British Columbia Act* and the related regulations. The audit criteria were established for the evaluation or measurement of each practice required by the Code. These reflect judgments about the level of performance that constitutes compliance with each requirement.

The Board's audit reference manual, "Reference Manual - Compliance Audits, Version 2, May, 1997," sets out the standards and procedures for its 1997 compliance audits.

### **Audit methodology**

At the outset of an audit, an analysis of each forestry activity, such as the cutting and removal of trees from a specified forested area (harvesting of a cutblock), is used to identify the items, e.g. cutblocks harvested or roads constructed, that comprise the activity during the period subject to audit. The items comprising each forest activity are referred to as a "population."

The most efficient means of obtaining information, to conclude whether there is compliance with the Code, are chosen for each population. Because of limited resources, sampling is usually relied upon to obtain audit evidence, rather than inspecting all activities.

As individual sites and forest practices within each population have different characteristics, such as the type of terrain or the type of yarding, each population is divided into distinct sub-populations ("strata") on the basis of common characteristics (e.g., steep terrain versus flat ground). A separate sample is selected for each population, such as the cutblocks selected for auditing timber harvesting. Within each population, more audit effort (i.e., higher sampling) is allocated to the strata where the risk of non-compliance is greater.

The audit work in the field includes assessments from helicopters and intensive ground procedures such as the measurement of specific features, e.g. road width.

## **Audit conclusions**

The Board recognizes that compliance with many Code requirements is a function of degree, rather than of absolute compliance, and requires the exercise of professional judgment within the direction provided by the Board.

In performing the audit, auditors collect, analyze, interpret and document information to support the audit results. This requires the audit team, comprising of professionals and technical experts, to first determine whether forest practices are in compliance with Code requirements, and then to evaluate those practices judged not to be in compliance to assess the degree of severity of non-compliance - that is, its significance. Significance is assessed relative to the actual or potential harm to persons or the environment.

As part of the assessment process, auditors categorize their audit findings into the following levels of compliance:

**Compliance** - where the auditor assesses that practices meet Code requirements.

**Not significant non-compliance** - where the auditor, upon reaching a non-compliance conclusion, assesses that the non-compliance event or condition, or the accumulation of a number of non-compliance events or conditions and the consequences of the non-compliance, are not significant.

**Significant non-compliance** - where the auditor, upon reaching a non-compliance conclusion, assesses that the event or condition, or the accumulation of a number of non-compliance events or conditions, is significant.

Included in this category are situations where non-compliance has resulted in harm to persons or the environment, even if remedial action has already mitigated the consequences of the non-compliance to a minor level.

Significant non-compliance also includes situations where potential for harm is probable, that is, harm has not yet occurred as a result of non-compliance, but there is a strong likelihood that it will. "Harm," in Board audits is defined as an adverse change from existing conditions that affects person(s) or the environment, and is brought about as a result of non-compliance.



**Significant breach** - where the auditor, upon reaching a non-compliance conclusion, assesses that significant harm has occurred or is beginning to occur to persons or the environment as a result of the non-compliance event or condition. A significant breach can also result from the cumulative effect of a number of non-compliance events or conditions.

Identification of a possible significant breach requires the auditor to conduct tests to determine the extent of the breach. If it is determined, after conducting tests, that a significant breach has occurred, the auditor is required by the *Forest Practices Board Regulation* to immediately advise the Board, the person being audited, and the three ministers.

## **Audit opinion**

To reach an overall opinion, assessments are made at various levels. In all cases, an assessment is made of a forest practice or group of forest practices, followed by assessments at each forestry activity level (e.g. roads constructed).

If all of the forestry activities subject to audit are in compliance with the Code, in all significant respects, the overall opinion reflects this conclusion and is referred to as a “**clean opinion**”. The use of the words “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 by the audit but not worthy of inclusion in the report from the auditor.

In situations where significant non-compliance is identified, the type of overall opinion is dependent upon the magnitude and pervasiveness of the non-compliance.

A “**qualified opinion**” is appropriate when the significant non-compliance is neither pervasive nor of a sufficient magnitude to warrant an overall negative conclusion. The words “except for” are used to draw attention to the details of the significant non-compliance to “qualify” an overall opinion of compliance, in all significant respects, with Code requirements. The words “in all significant respects” recognizes that there may be instances of not significant non-compliance that either may not be detected by the audit, or that are detected by the audit but not worthy of inclusion in the report from the auditor.

An “**adverse opinion**” is an overall negative conclusion and appropriate when significant non-compliance is sufficiently pervasive or of a sufficient magnitude to warrant an overall negative conclusion. An adverse opinion would either indicate that, overall, the forest activities subject to audit were not in compliance with Code requirements or a particular forest activity subject to audit was not in compliance with Code requirements.

## **Representation process**

Following the audit, the Board reviews the Report from the Auditor and reaches preliminary conclusions and recommendations concerning the audit. These conclusions and recommendations form the basis for the Report from the Board.

Under section 182 of the *Forest Practices Code of B.C. Act*, if the Board makes a report or recommendation that may adversely affect a party or person, it must inform the party or the person of the grounds and give them an opportunity to make representations before the Board decides the matter and issues a final report to the public and the government. The representations allow the potentially adversely affected parties to present their case to the Board to ensure that the information on which the Board bases its decision is complete.

Representations may be written or oral at the discretion of the Board. Oral representations, which may also include supporting written representation, are generally provided for the potentially adversely affected party if there are significant non-compliance issues involved. After fully considering the information provided in the representation, the Board will decide whether or not it needs to amend its report. If the Board amends the report, it must then consider if there are any newly adversely affected parties, in which case, additional representations will be required.

Once the representations have been completed, the report is finalized and released: first to the auditee and then to the public and government.

## C. Report from the Auditor

### 1. Introduction

As part of the Forest Practices Board's 1997 compliance audit program, Forest Licence A20020 was selected for audit from the population of major forest licences within the Cariboo Forest Region. The licence, held by West Fraser Mills Ltd., was selected randomly and not on the basis of location or level of performance.

Forest Licence A20020 is a volume based licence in the Williams Lake Timber Supply Area, which is shown on the attached map. The area of operations for Forest Licence A20020 are between the towns of Williams Lake and Alexis Creek within the Williams Lake and Chilcotin Forest Districts.

Forest Licence A20020 has an allowable annual cut of 192,450 cubic meters. The audit period spans operations under two five-year cut control periods; the first cut control period ended in December, 1996, and the new cut control period began immediately thereafter. The actual amount cut during the period which was subject to audit was approximately 327,500 cubic meters.

### 2. Audit Scope

The audit scope included operational planning — such as forest development plans<sup>1</sup>, silviculture prescriptions<sup>2</sup> and logging plans<sup>3</sup>, timber harvesting, silviculture, fire protection, and road construction, maintenance and deactivation. These activities were assessed for compliance with the *Forest Practices Code of British Columbia Act* and related regulations (the Code), including the transitional provisions of the Code.

The period for which West Fraser Mills Ltd.'s activities were examined was September 1, 1996, to August 31, 1997. The field activities carried out during the audit period and therefore subject to audit are as follows:

- the harvesting of 134 cutblocks
- the construction of 43 road sections totaling 123 kilometres
- the maintenance of approximately 250 kilometres of road, involving such activities as surfacing, and culvert and ditch cleaning
- the deactivation of 10 road sections totaling 53 kilometres
- silviculture activities such as site preparation, planting, mistletoe eradication and regeneration surveys on 78 cutblocks.

Operational plans that were approved during the audit period included the 1996 Forest Development Plan, as well as 107 silviculture prescriptions and 135 logging plans most of which related to blocks harvested during the audit period.

Section 3 describes the results of the audit. The Board's, "Reference Manual - Compliance Audits, Version 2, May 1997" sets out the standards and procedures that were used for the audit.

### **3. Audit findings**

#### **A. Planning and practices examined**

The audit work on selected roads and cutblocks included ground-based procedures and assessments from the air using helicopters. The audit examined the following practices:

- timber harvesting practices on 34 cutblocks
- the construction of 11 road sections totaling 31 kilometres
- the maintenance of approximately 144 kilometres of roads using ground procedures and an undetermined portion of roads reviewed by helicopter;
- the deactivation of 21 kilometres of roads; and
- the silviculture activities on 25 cutblocks.

The audit also examined the 1996 forest development plan and the 1997 fire preparedness plan. The 1996 forest development plan was assessed against the substantial compliance requirements of the Code, which requires that the plan meet the "review and comment" provisions of the Code and substantially meet all other requirements.

The audit also included a review of 37 silviculture prescriptions and 36 logging plans approved during the audit period. Of these, 34 from each group were examined in the timber harvesting practices mentioned above.

#### **B. Findings**

The audit found that the forest planning and practices of West Fraser Mills Ltd. were in compliance, in all significant respects, with Code requirements in regard to timber harvesting, silviculture, fire protection, and road construction, maintenance and deactivation, and operational planning not involving forest health.

The audit identified one situation of significant non-compliance, in respect to the forest health strategy for mountain pine beetle, which presents a significant risk to forest resources.

### *Forest health strategy - mountain pine beetle*

The forest development plan must include an evaluation of detected forest health factors either currently causing damage or which may potentially cause damage in the area under the plan. If risks to forest resources are significant, the plan must propose management strategies to reduce those risks during the term of the plan (Section 29 of the Operational Planning Regulation).

The 1996-2001 Forest Development Plan for Forest Licence A20020 acknowledges the mountain pine beetle risk. However, it does not reference current infestation levels nor does it assess the potential risks from the infestation levels. The audit determined that the risk to forest resources from mountain pine beetle was significant because of the following considerations:

- The operating area of Forest Licence A20020 contains large areas of mature and over-mature lodgepole pine which are susceptible to beetle infestations
- Surveys commissioned by the Williams Lake Forest District indicate an increase in the area infested by mountain pine beetle between 1992 and 1995 (in the Mackin Creek area infestations increased from 26 hectares to 1,200 hectares)
- There is a history of catastrophic timber volume losses in the Williams Lake timber supply area as a result of mountain pine beetle infestations

Since the plan does not identify the mountain pine beetle as a significant risk, it does not present, or refer to, a management strategy for the mountain pine beetle. Therefore, there is an increased likelihood that, over the term of the plan, a reduction in the risk to forest resources from the mountain pine beetle will not be achieved. The area of the Code to which this non-compliance relates is section 29 of the Operational Planning Regulation.

Although the Forest Practices Code places responsibility for the development and application of forest health management plans with the license holder, coordination at a landscape/regional level is essential to an effective strategy for managing mountain pine beetle. This becomes more critical for the volume-based licence held by West Fraser, where operational areas are bounded and intermixed with operational areas of other licensees and the Ministry of Forests.

The Ministry of Forests did not have an overall management strategy for mountain pine beetle in the Williams Lake timber supply area. Such strategies enable landscape level considerations to be addressed within the timber supply area. Any strategy that West Fraser may have developed to reduce the mountain pine beetle risk would have been potentially limited in its effectiveness by the inability to address landscape level considerations.

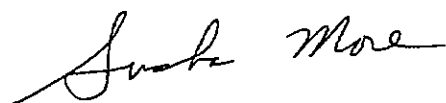
## 4. Audit Opinion

In my opinion, except for the significant non-compliance described below, the operational planning, timber harvesting, silviculture, road construction, maintenance and deactivation and fire protection activities of West Fraser Mills Ltd. on Forest Licence A20020 were in compliance, in all significant respects, with the related Code requirements as of October 1997.

The audit identified a situation of significant non-compliance with section 29 of the Operational Planning Regulation. Mountain pine beetle is a significant risk to forest resources in the district. The 1996 Forest Development Plan did not identify mountain pine beetle as a significant risk and therefore did not propose management strategies to reduce the risk to forest resources from the mountain pine beetle.

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

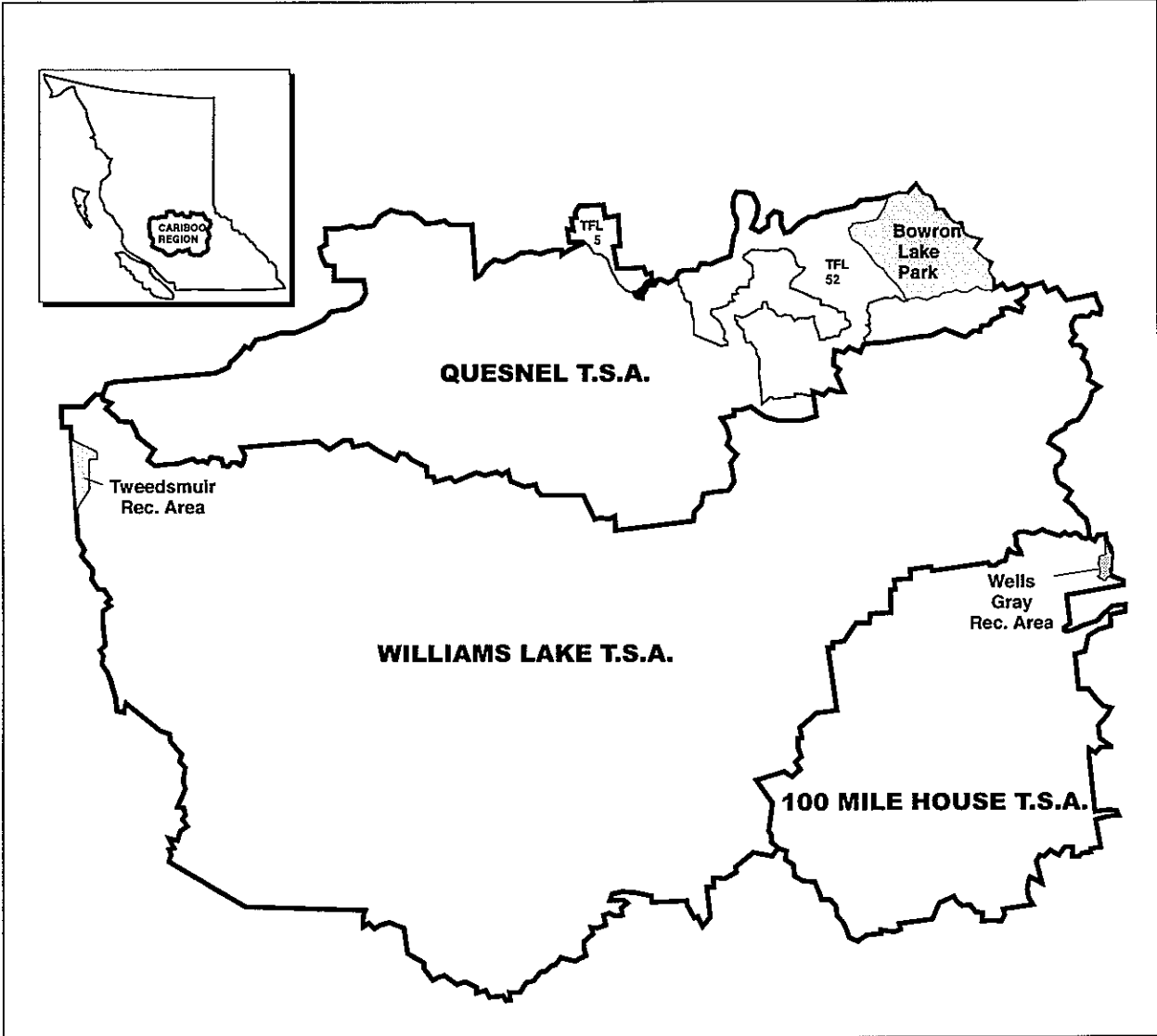
Sections 2 and 3 of this report from the auditor describe the basis of the audit work performed in reaching this qualified opinion. The audit was conducted in accordance with the auditing standards of the Forest Practices Board. Such an audit includes examining sufficient forest planning and practices to support an overall opinion of compliance with the Code.



Sucha More, CA  
Auditor  
Forest Practices Board

Victoria, British Columbia  
April 29, 1998

**Cariboo Forest Region  
West Fraser**



## Endnotes

- 1 A forest development plan is an operational plan which provides the public and government agencies with information about the location and scheduling of proposed roads and cutblocks for harvesting timber over a period of at least five years, except under special circumstances. The plan must specify measures that will be carried out to protect forest resources (including biological diversity, water, fisheries, wildlife and other forest resources). It must also illustrate and describe how objectives and strategies established in higher level plans, where they have been prepared, will be carried out. Site specific plans are required to be consistent with the forest development plan
- 2 A silviculture prescription is a site specific operational plan that describes the forest management objectives for an area (cutblock - a specific area authorized for timber harvesting). It describes the management activities proposed to maintain the inherent productivity of the site, accommodate all resource values including biological diversity, and produce a free growing stand capable of meeting stated management objectives. Silviculture prescriptions must be consistent with higher level plans that encompass the area to which the prescription applies.
- 3 A logging plan is an operational plan that details how, when, and where timber harvesting and road construction activities will take place in a cutblock in accordance with the approved silviculture prescription and forest development plan for the area. Information about other forest resource values, plus all current field information for the area, must be clearly shown in the logging plan.





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