

Audit of Operational Planning

**Ministry of Forests
Lakes Forest District
Small Business Forest
Enterprise Program**



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FPB/ARC/04

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A. Report from the Board

One of the principal roles of the Forest Practices Board is to conduct periodic, independent audits of forest practices in British Columbia and provide the findings of those audits to the public and three ministers. The *Forest Practices Code of British Columbia Act* (the Act) requires the Board to undertake two types of audits:

- audits of compliance with the forest practices requirements of the Act and related Regulations (the Code) - referred to as forest practices audits; and
- audits of the appropriateness of government enforcement of the Code - referred to as enforcement audits.

Independent auditing and reporting of forest planning and practices is a relatively new undertaking and has attracted considerable attention from government, agreement holders, environmental groups, forest worker organizations, and the public. Few jurisdictions in the world provide for a similar independent authority to undertake audits of compliance with forest practices legislation.

The uniqueness of the responsibility and the requirement to report findings publicly has necessitated the development of a structured set of standards and procedures, as set out in the Board's audit reference manual "Reference Manual - Compliance Audits, Version 1, September 1996". These were developed by the Board in 1995 and 1996 and field tested in the first half of 1996.

In the fall of 1996, the Board conducted four limited scope¹ compliance audits: two of roads and harvesting practices, one of silvicultural activities, and one of operational planning.

This report presents the findings of one of those - an audit of operational planning for forest management activities in the Ministry of Forests Small Business Forest Enterprise Program (SBFEP), in the Lakes Forest District. It is the last of the Board's 1996 limited scope audits to be released. Operational planning includes forest development plans, silviculture prescriptions and logging plans as described in Part 3 of the Act.

This final report of the Board's audit is in three parts:

- Part A - a report from the Board;
- Part B - a description of the process used by the Board to audit compliance with the Code; and
- Part C - a report from the auditor.

¹ The Board decided that by having each of these initial audits focus on certain areas of forestry practices only, it would allow easier implementation of its audit program.

Background

The operating area of the Lakes District SBFEP lies within the Lakes Timber Supply Area (TSA), the easternmost TSA in the Prince Rupert Forest Region. The major community within the TSA is Burns Lake, from which the Ministry of Forests district office administers the SBFEP program. A Land and Resource Management Plan (LRMP) was recently concluded for the area.

The operating area for the Lakes District SBFEP extends over the entire district from Babine Lake in the north to the northern boundary of Tweedsmuir Park in the south. The apportionment for the SBFEP is 438,000 cubic metres which is approximately 29 percent of the allowable annual cut for the Lakes TSA. It is the fourth largest SBFEP apportionment in the province.

The Lakes District SBFEP was selected randomly from the set of 43 SBFEPs in the province, and not on the basis of location or level of past performance. The objective of the audit was to determine if operational plans for the SBFEP in the Lakes District, approved between January 1, 1996, and October 7, 1996, complied with the requirements of the Code, including the transitional provisions. The standards and procedures that were used to select and audit the operational plans are set out in the Board's audit reference manual.

This audit included the examination of the following:

- the 1996-2000 Forest Development Plan for the Lakes District SBFEP;
- 43 silviculture prescriptions;
- 27 cutting authorizations exempted from silviculture prescriptions; and
- 31 logging plans.

Many of the plans were checked in the field during the audit to assess whether they accurately described field conditions.

Under the provisions of the Code, the district manager of the Ministry of Forests is responsible for the preparation of forest development plans and silviculture prescriptions, and for approving logging plans, under which harvesting and road construction operations in the SBFEP are conducted. There were no 5-year silviculture plans, stand management prescriptions, or access management plans in effect at the time of the audit. Range use plans were not audited.

The operational planning examined in this audit was carried out during a period of "substantial compliance" in the transition to full Code compliance, during which there was uncertainty about interpretation of some Code requirements. In this audit, "substantial compliance" was interpreted as meeting the essential requirements of the Act and Regulations critical to the management and conservation of the forest and range resources. The rationale set out in the District Manager's

letter of October 4, 1996, approving² the 1996-2000 Lakes District SBFEP Forest Development Plan includes the same interpretation.

The audit focused only on compliance with the operational planning requirements of the Code - it has not examined statutory decisions made by government officials. It examined whether or not the Ministry of Forests in the Lakes District SBFEP adequately and appropriately planned its forest operations in accordance with the requirements of the Code, and consistent with the above interpretation of substantial compliance.

The Board recognizes that mountain pine beetle attacks have influenced the planning of forestry operations in the Lakes District SBFEP. Flexibility is required to allow plans to be developed quickly to respond to identified areas of mountain pine beetle attack. The Board is also aware that the Lakes District was one of seven districts in the province selected to participate in a newly developed provincial program for small scale salvage. The need to identify salvage areas under this program also influenced planning in the Lakes District SBFEP.

Conclusions

In reaching these conclusions, the Board completed the following steps:

- considered the Report from the Auditor (Part C);
- reviewed the audit findings in detail with the auditor;
- prepared a draft report;
- provided a copy of the draft report to the parties potentially adversely affected by the report, and invited representations, as required by Section 182 of the Act; and
- considered oral and written submissions and a variety of operational plans and maps provided by the potentially adversely affected parties and the auditors during the representation process.

The Board's conclusions on the results of the audit are:

1. 1996-2000 Forest Development Plan

The 1996-2000 Forest Development Plan for the Lakes District SBFEP was in compliance with the operational planning requirements of the Code, in all significant respects other than two situations of significant non-compliance. This is a "qualified" audit opinion, indicating that the significant non-compliance situations identified were neither pervasive nor of sufficient magnitude to warrant an overall "adverse" opinion.

² Under Section 40 of the Act, the district manager "gives effect to" operational plans for the SBFEP. This is commonly referred to as approving plans.

A number of not significant non-compliance³ situations were also identified by the auditor. These were determined to be not significant because the potential for harm to persons or the environment as a result of these situations was low.

The two situations of significant non-compliance were:

- a) The 1996-2000 Forest Development Plan of the Lakes District SBFEP does not contain the riparian classification for streams that will be affected by road construction activities outside proposed cutblocks, as required under Section 28 of the Operational Planning Regulation. Therefore, the planned construction activities and timing of operations could not adequately address the risks of damage to fish, fish habitat, riparian areas, and other stream values.

Riparian classification of these types of streams was one of the “five key standards” for the Cutblock and Road Review Regulation when the Code was implemented in June 1995. It is the Board’s view that riparian classification should have been considered an “essential requirement” in October 1996 when the audit was conducted. At a minimum, the plan should have included the default classifications for these areas as provided for by the Code.⁴

The District Manager has advised the Board that an extensive program of stream assessments is underway to improve riparian classification in future operational plans.

- b) While the 1996-2000 Forest Development Plan of the Lakes District SBFEP includes a plan to harvest and salvage timber attacked by mountain pine beetle, it does not propose management strategies to adequately reduce the risk to forest resources from mountain pine beetle attack. The evaluation of pest management factors in the 1996-2000 Forest Development Plan stated that mountain pine beetle had increased significantly in recent years. The Board concludes that this presented a significant risk to forest resources in the district and required development of strategies, as required under Section 29(1)(c) of the Operational Planning Regulation, to reduce those risks.

The Board acknowledges the actions the District advises it has taken recently on mountain pine beetle issues. However, as mountain pine beetle attacks appear to be on the increase, it is the Board’s opinion that a more comprehensive strategy is required to reduce the risk to forest resources.

³ Not significant non-compliance is described in Part B of this document, “Forest Practices Board compliance audit process.”

⁴ The default classifications are provided under the definition of “fish stream” in Section 1 of the Operational Planning Regulation.

2. Silviculture prescriptions

Silviculture prescriptions were in compliance, in all significant respects, with the operational planning requirements of the Code, with the exception of five silviculture prescriptions that were in significant non-compliance. This is a “qualified” audit opinion, indicating that the significant non-compliance situations identified were neither pervasive nor of sufficient magnitude to warrant an overall “adverse” opinion.

Minor instances of not significant non-compliance were also identified in a number of the silviculture prescriptions. These were determined to be not significant, because the potential for harm to persons or the environment as a result of these situations was low.

Each of the five significant non-compliance situations involved the salvage of trees attacked by mountain pine beetle. These were:

- three situations that involved failure to prepare the silviculture prescriptions required under Section 22(1) of the Act;
- one situation that involved an exemption from the requirement to prepare a silviculture prescription issued under Section 30 of the Act; and
- one situation that involved an emergency silviculture prescription issued under Section 39 of the Operational Planning Regulation.

The Board’s opinion that the first four situations were in non-compliance with the requirements of the Code is based on the Board’s interpretation of Section 22(1) and 30(1)(c) and 30(2) of the Act. In the Board’s opinion, these sections require silviculture prescriptions and only allow an exemption from the requirements if the volume harvested from each area under a timber sale licence does not exceed 500 cubic metres and there are no clearcuts larger than one hectare.

In these four timber sales, the operations resulted in the harvest of 13,355 cubic metres, 5,891 cubic metres, 4,575 cubic metres, and 2,015 cubic metres of timber respectively - much more than the 500 cubic metres permitted for each area within the timber sale licences. In addition, all four were advertised with substantially lower volumes of timber. In two of these sales, a small number of clearcut areas in excess of one hectare were created, with the largest area being approximately 11 hectares.

The Board is of the opinion that the removal of this volume of timber and creation of this size of clearcut openings without planning and preparation of silviculture prescriptions is inconsistent with the intent of the Code, which emphasizes planning as a means to protect forest resources. Lack of silviculture prescriptions in these cases created a potential risk of harm to forest resources. The Board is of the view that the requirement to prepare silviculture prescriptions, particularly under the emergency provisions of the Code, is not inconsistent with the need to act quickly to address the mountain pine beetle attacks.

The Board recognizes that alternative interpretations of Section 30 are possible and that Lakes District staff believed that the exemptions from the requirement for silviculture prescriptions were consistent with Ministry of Forests interpretation of the Act and with ministry policy. District staff advised the Board that they were attempting to contain an outbreak of the mountain pine beetle and were salvaging timber that was damaged, or in imminent danger of being damaged by mountain pine beetle.

In one of the four situations, Lakes District staff indicated that an exemption was issued, but were unable to produce substantiating documentation. In any case, the Board is of the opinion that a silviculture prescription was required.

The fifth situation of significant non-compliance involved an area logged outside of an approved emergency silviculture prescription. The Board is of the opinion that this was a significant non-compliance because:

- the area logged did not agree with the boundaries shown on the emergency silviculture prescription;
- the emergency silviculture prescription was not promptly amended to reflect the actual area logged; and
- the emergency silviculture prescription did not meet a number of the content requirements under Section 39(2) of the Operational Planning Regulation.

The Board recognizes that the Lakes District was proceeding with operations in an area of mountain pine beetle attack and was attempting to salvage timber that was damaged or in imminent danger of being damaged. However, the Board concludes that operations proceeded in an area of high forest resource values without adequate operational planning required by the Code.

3. Logging plans

Situations of non-compliance in logging plans were pervasive and of sufficient magnitude to lead the Board to conclude that, overall, logging plans were not in compliance with Code requirements. Many of the logging plans did not meet the content and specific development requirements of Sections 33 to 37 of the Operational Planning Regulation. As a result, there was a risk that Code requirements could not be met in the field. This is an adverse audit opinion.

Examples of the deficiencies noted in the logging plans include:

- Riparian information in many plans with identified streams and wetlands did not meet Code requirements.
- Approximately half of the plans had inconsistencies between silviculture prescriptions and logging plans.

- One or more essential content requirements were missing from many of the logging plans.
- The logging plan maps did not adequately locate specific cutblock features and development details, and in many cases were difficult to read.

The District has advised the Board that they have taken steps to improve the quality of their logging plans. They will now be prepared by the same professionals who prepare the silviculture prescriptions, and the District anticipates that this will improve both the quality and the consistency of the plans. In addition, the District advised the Board they have begun a program to improve riparian classification.

Recommendations

The Board has been advised by the District that a number of steps have been taken, or are in progress, that are expected to remedy the situations of non-compliance that were identified. These include:

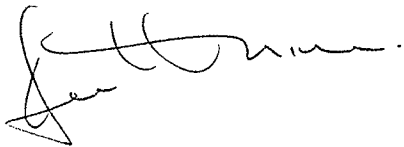
- a program to improve riparian classification;
- implementation of a forest health strategy based on early identification and containment of mountain pine beetle attacks and prompt salvage of attacked trees;
- improvements to operational harvest plans; and
- completion of an LRMP that is expected to contribute to improved operational planning.

In accordance with Section 185 of the Act, the Board recommends that:

1. The District Manager of the Lakes District complete the steps the Board has been advised are underway to assess streams and wetlands and classify riparian areas for operational planning in the future.
2. The District Manager of the Lakes District immediately begin preparation of a comprehensive mountain pine beetle management strategy which takes into account the latest scientific and technical information, and experience in other districts, and describe elements of this strategy in the 1997-2001 Forest Development Plan.
3. The District Manager of the Lakes District continue to develop approaches to improve operational plans at the harvesting stage for the SBFEP including:
 - the classification and location of streams, wetlands and riparian areas; and
 - the quality of maps and their consistency with other operational plans.
4. The government clarify the interpretation of Sections 22(1) and 30(1)(c) 30(2) and 30(3) of the Act regarding the requirement for the preparation of silviculture prescriptions and the conditions under which these requirements can be exempted, and provide policy guidance to district managers and the public on implementation of this interpretation.

In accordance with Section 186 of the Act, the Board requests that the government advise the public and the Board by October 15, 1997, of the interpretation of Sections 22 and 30 and the policy guidance provided to districts on this matter.

We would like to thank the individual auditors for their work in the field and for providing reports, plans and maps that assisted the Board in reaching our conclusions. We appreciate the cooperation shown to the auditors by the Lakes District staff. The thorough representation made to the Board by the Lakes District staff is also very much appreciated.

A handwritten signature in black ink, appearing to read 'Keith Moore', with a stylized flourish at the end.

Keith Moore
Chair

July 31, 1997

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 1, September 1996," sets out the standards and procedures for its 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, analyse, 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.

C. Report from the Auditor

1. Introduction

The Forest Practices Board selected the Small Business Forest Enterprise Program (SBFEP) of the Burns Lake Forest District for a limited scope audit of operational planning. The district's SBFEP was selected on a random basis from the population of SBFEP programs in the province, and not on the basis of the operating area or level of performance.

The Lakes SBFEP operating area lies within the Lakes Timber Supply Area (TSA). This TSA, covering 1,120,000 hectares, is the easternmost TSA in the Prince Rupert Forest Region and extends south from Babine Lake along the north-eastern boundary of Tweedsmuir Provincial Park to the Entiako River, as shown on the attached map. Approximately 10 percent of the total land base is classified as lakes. The major community within the TSA is Burns Lake, from which the local Ministry of Forests district office administers the SBFEP program.

The area of the Lakes TSA available for timber harvesting is approximately 634,000 hectares. The current Allowable Annual Cut (AAC) is 1,500,000 cubic metres per year, of which the SBFEP has an apportionment of 438,550 cubic metres or 29.2 percent.

2. Audit scope

We assessed the operational planning activities of the Lakes Forest District Small Business Forest Enterprise Program (Lakes SBFEP) for their compliance with Code requirements (including transitional provisions). The audit of operational planning examined operational plans with respect to:

- regulatory content requirements;
- guidebook requirements where specific commitments were made to follow such requirements;
- consistency between plans, e.g., consistency between the logging plan and related silviculture prescription; and
- the appropriateness of proposed practices for the site and their ability to meet the plan's stated objectives.

The scope of the audit, with the exception of the 1995 Forest Development Plan amendments, included all operational planning activities carried out by the Lakes SBFEP during the period January 1, 1996, to October 7, 1996.

The focus of this audit was to determine if the Lakes SBFEP had adequately and appropriately planned its forest operations. No assessment was made as to whether practices were carried out in accordance with the plans. The planning focus was reflected in the audit sample, which consisted of blocks with approved plans, regardless of whether they had been logged or not. All silviculture prescriptions and logging plans examined in the audit were given effect to after December 15, 1995, and were therefore required to be in full compliance with the Code.

The operational planning audit of the Lakes SBFEP included the examination of the following:

- the 1996-2000 Lakes Forest Development Plan;
- 31 logging plans (16 in the field);
- 43 silviculture prescriptions (14 in the field); and
- 27 cutting authorizations exempted from silviculture prescriptions.

The scope of our audit was restricted, as we could not carry out field assessments on 4 of the 14 cutblocks we selected from the silviculture prescriptions sample for field assessment because of snow at higher elevations. Accordingly, we were not able to determine whether any adjustments to our report might have been necessary had we been able to carry out such field assessments.

Additionally, the Code's transitional provisions do not specify a date by which a 5-Year silviculture plan must be in place. Therefore, we did not consider the lack of a 5-Year silviculture plan for the Lakes SBFEP as non-compliance for audit purposes.

Section 3 describes our audit of these activities and the results. The Board's audit reference manual, "Reference Manual - Compliance Audits, Version 1, September 1996," sets out the standards and procedures that were used for the audit.

3. Audit findings

In the operational plans audited, we identified a number of significant non-compliance situations that are described below. We determined that they do not represent significant breaches because significant harm to persons or the environment had neither occurred nor was beginning to occur.

3.1 Forest development plan

A forest development plan is an operational plan that details the logistics of timber development over a period of 5 years. It sets out the methods, schedules, and responsibilities for accessing, harvesting, renewing, and protecting the resource to enable site specific operations to proceed.

The substantial compliance provisions of the Code apply to the 1996 Lakes SBFEP Forest Development Plan. This requires the plan to meet the review and comment requirements and substantially meet the other requirements of the Act and Regulations.

For audit purposes, substantial compliance was interpreted as meeting the essential requirements of the Act and Regulations critical to the management and conservation of the forest and range resource. This interpretation is based on the rationale set out in the District Manager's letter of October 4, 1996, giving effect to the 1996 Lakes SBFEP Forest Development Plan.

Our audit of the forest development plan identified two areas that did not meet the essential requirements.

i) Proposed off-block road construction

The Operational Planning Regulation requires a forest development plan to describe, for the area under the plan, the extent of road construction or modification operations to be carried out in each year of the plan. Where road construction or modification is proposed, the riparian class for each stream, wetland, and lake in the area must be determined (Section 28 of the Operational Planning Regulation).

This information allows the development of road design and construction techniques sensitive to fish values, and allows resource agencies and the public to identify areas where fish values may be at risk.

Our examination of the forest development plan indicated that stream assessments had not been completed for the proposed road construction. Information collected with respect to stream crossings did not include stream width or any determinations of the presence or absence of fish. The information collected was limited to a measurement of the wetted perimeter to determine culvert size, which has limited value in determining riparian classification.

In the absence of fish inventory information, riparian classification defaults to fish bearing stream classifications (S1 to S4), imposing additional requirements on road construction activities, including the use of timing windows for the completion of in-stream work.

The schedule for proposed road construction does not consider local timing windows and is not prioritized to ensure that construction operations in and around streams that are most likely to contain fish are carried out within timing windows. As a result, there is an increased risk of damage to fish and fish habitat resulting from the lack of assessments for the road construction activities proposed in the forest development plan.

ii) **Forest health strategy**

The forest development plan must include an evaluation of detected forest health factors currently causing damage or which may potentially cause damage in the area under the plan. In addition, where the 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 Lakes SBFEP 1996 Forest Development Plan identifies mountain pine beetle as the key forest health concern, noting that it has increased significantly in recent years. Based on the information available, the mountain pine beetle poses a significant risk to forest resources in the TSA. However, the management strategies proposed are not adequate because of the following concerns:

- Procedures for the identification of stands affected by mountain pine beetle do not provide information early enough in the year to allow the preparation of silviculture prescriptions and logging plans to direct harvesting activities, prior to the next flight of beetles (in the following summer). Consequently, there is an increased chance of the occurrence of non-compliance events similar to those described in Section 3.2.
- Information on the location of high risk stands of lodgepole pine (based on age class) is not used in setting harvesting priorities. The management strategy for mountain pine beetle relies entirely on small scale salvage, single tree selection, and fall and burn operations. In our opinion, this strategy can only achieve containment, due to the large proportion of high risk stands in the SBFEP operating area. A reduction in the risk can only be achieved through a combination of containment strategies and the targeting of high risk stands as a harvesting priority.

3.2 Silviculture prescriptions

A silviculture prescription is a site specific operational plan that describes the forest management objectives for an area. 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.

Harvesting of timber stands infested with mountain pine beetle can take place under silviculture prescriptions or emergency silviculture prescriptions. In the case of small openings under 1 hectare and less than 500 cubic metres of volume, an exemption from the requirement for a silviculture prescription or emergency silviculture prescription (SP exemption) can be approved by the District Manager.

However, operational planning requirements still apply to larger areas infested by mountain pine beetle (or any other forest health factor). Although this creates administrative difficulties (e.g., preparing detailed operational plans within a short time frame to allow logging before the next beetle flight), the requirements ensure that other resources and values are properly identified and protected, irrespective of the reason for the logging.

The harvesting activities described below for mountain pine beetle infestations were conducted without adequate operational planning and, therefore, led to an increased risk of damage to other resources and values.

- Harvesting operations under Timber Sale A53071 were carried out in the absence of a silviculture prescription. A silviculture prescription was required, as these operations involved the harvest of 13,555 cubic metres of timber, creating at least five separate openings which totaled about 14.1 hectares.
- Harvesting operations under Timber Sale A53931 were carried out in the absence of a silviculture prescription. A silviculture prescription was required, as these operations involved the harvest of 5,891 cubic metres of timber (opening size was not determined in the field).
- Harvesting operations on Timber Sale A53996 were carried out under an SP exemption. However, a silviculture prescription was required, as these operations involved the harvest of 4,575 cubic metres of timber and created a number of openings, the largest of which has an approximate area of 4.6 hectares.
- Harvesting operations under Timber Sale A51429 were carried out under an SP exemption. However, a silviculture prescription was required, as these operations involved the harvest of 2,015 cubic metres of timber, creating at least two openings which totaled about 1.7 hectares.
- Harvesting operations under Timber Sale A52695 were carried out under an emergency silviculture prescription. The prescription did not meet a number of the regulatory content requirements, and the boundaries of the area logged were not consistent with those shown in the emergency silviculture prescription. The prescription had not been amended to remove the deficiencies and reflect the actual area logged by the time of the audit (2 months after the completion of primary logging).

3.3 Logging plans

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 the 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. The logging plan maps and text should provide sufficient detail to allow the District Manager and resource agencies to assess the plan adequately.

Our examination of SBFEP logging plans indicated that the plans do not adequately meet the content and specific development requirements under Sections 33 to 37 of the Operational Planning Regulation. In isolation, each individual finding of non-compliance was assessed as not significant non-compliance, and the associated risk to persons or the environment are low. In our opinion, however, the frequency of the non-compliance is significant. There is an increased likelihood of harm to the environment because of the inadequate quality of the logging plans.

Examples of the types of non-compliance noted within logging plans are detailed below.

- Deficient riparian information in 13 of the 17 plans with identified water bodies. The deficiencies included a lack of details in a number of the 13 plans regarding riparian classifications and the width of riparian reserve and/or management zones.
- The majority of the logging plans were missing one or more regulatory content requirements detailed below:
 - temporary and permanent access construction and rehabilitation measures; and
 - the location of bridges, culverts, and stream crossings, immature stands to be retained and harvest method boundaries.
- The logging plan maps did not adequately locate block specific features and development details such as streams, wetlands, immature stands to be retained, and culvert locations.
- Half of the logging plans examined contained information that was not consistent with the related silviculture prescription, such as the location of permanent and temporary access structures, seasonal constraints, retention requirements for existing immature stands, and harvest practices.

4. Audit opinion

Forest Development Plan

In my opinion, except for the two significant non-compliance situations described below, the 1996 Forest Development Plan for the Lakes Forest District Small Business Forest Enterprise Program (SBFEP), was in compliance, in all significant respects, with the operational planning requirements of the Code as of October 1996.

1. Fisheries assessments to determine fish presence have not been carried out for streams impacted by off-block road construction activities proposed in the 1996 Forest Development Plan for the Lakes SBFEP. Therefore, the planned construction activities and the timing of the construction do not adequately consider the risk of damage to fish and fish habitat.

2. The evaluation of forest health factors in the Lakes SBFEP 1996 Forest Development Plan identifies mountain pine beetle as presenting a key risk to forest resources in the district. The forest development plan does not propose adequate management strategies to reduce this risk.

Silviculture prescriptions

In my opinion, except for the significant non-compliance situations described below, the planning activities of the Lakes SBFEP for silviculture prescriptions approved during the period January 1, 1996, to October 7, 1996, were in compliance, in all significant respects, with the operational planning requirements of the Code as of October 1996.

As described in Section 3.2, the audit identified the following situations of significant non-compliance:

1. The harvesting operations under Timber Sale A53071 were carried out without the required silviculture prescription and involved the harvest of 13,555 cubic metres of timber, creating at least five separate openings with a combined area of about 14.1 hectares.
2. The harvesting operations under Timber Sale A53931 were carried out without the required silviculture prescription and involved the harvest of 5,891 cubic metres of timber.
3. The harvesting operations under Timber Sale A53996 were carried out without the required silviculture prescription and involved the harvest of 4,575 cubic metres of timber on a number of openings, with the largest opening estimated at 4.6 hectares.
4. The harvesting operations under Timber Sale A51429 was carried out without the required silviculture prescription and involved the harvest of 2,015 cubic metres of timber, creating at least two openings with a combined area of about 1.7 hectares.
5. The area logged on Timber Sale A52695 did not agree with the boundaries shown on the emergency silviculture prescription. The emergency silviculture prescription, which did not meet a number of the regulatory content requirements, had not been amended to remove the deficiencies and to reflect the actual area logged.

Logging plans

In my opinion, the planning activities of the Lakes SBFEP for logging plans approved during the period January 1, 1996, to October 7, 1996, were not in compliance with the operational planning requirements of the Code as of October 1996 because of the inadequate quality of the plans.

Sections 2 and 3 of this report from the auditor describe the basis of the audit work performed in reaching the above opinions. The audit was conducted in accordance with the auditing standards

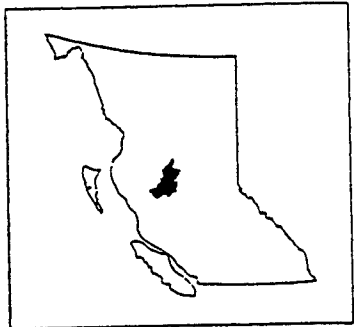
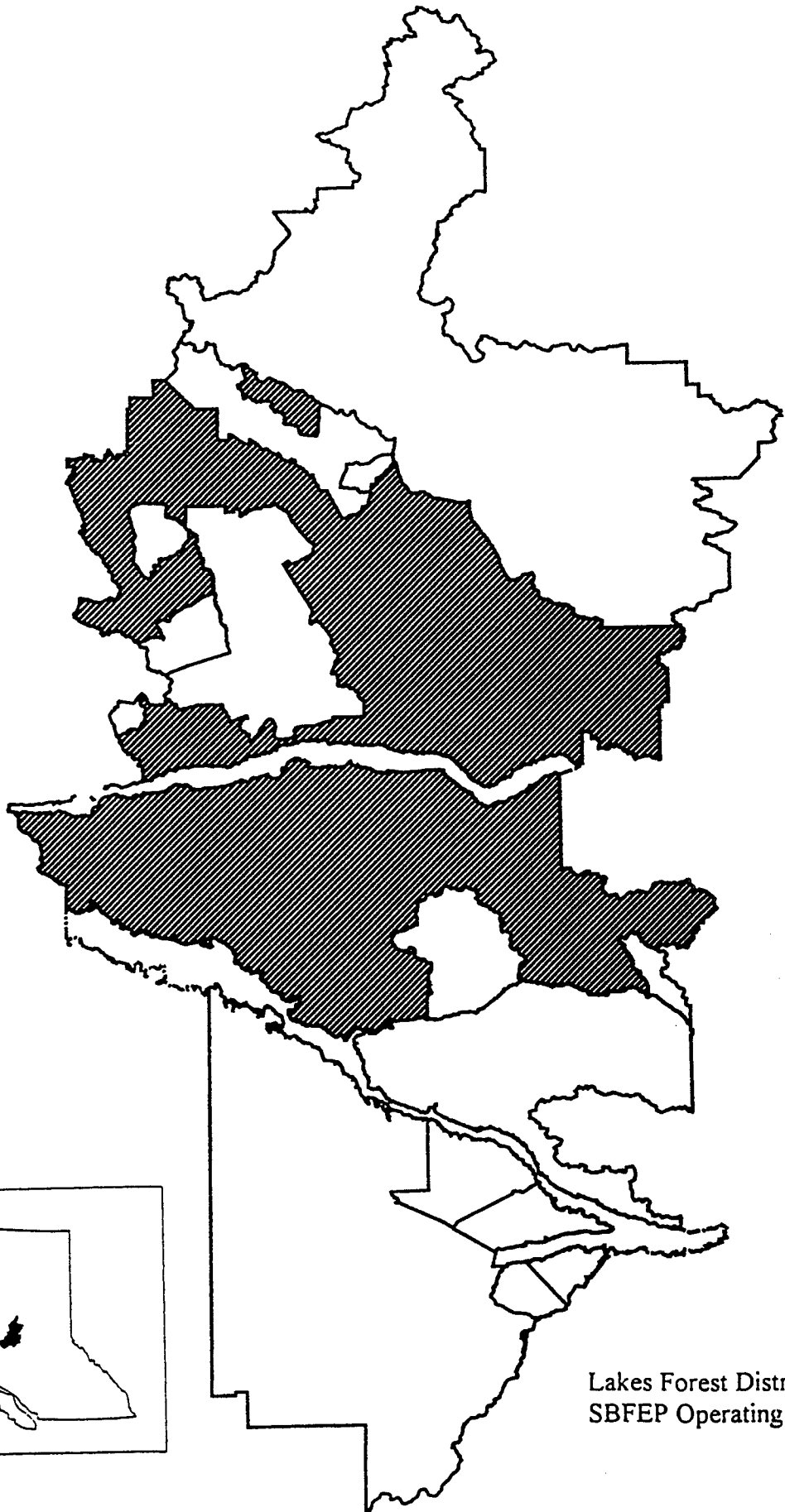
of the Forest Practices Board. Such an audit includes examining sufficient operational planning practices for each of the operational plans to support an overall evaluation of compliance with the Code.

A handwritten signature in cursive script that reads "Sucha More".

Sucha More, CA
Auditor
Forest Practices Board

Victoria, British Columbia
May 15, 1997

Lakes Forest District



Lakes Forest District
SBFEP Operating Area 