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December 5, 2002

To: Regional Managers

From: Bill Howard
Director
Revenue Branch

Re: *Cruising Manual*

The purpose of this memo is to bring to your attention an amendment to the *Cruising Manual* to permit the use of comparative cruises for the salvage of bark beetle infested timber. The amendment is effective December 5, 2002, and can be downloaded from the following Internet site:

<http://www.for.gov.bc.ca/revenue/manuals/cruising/index.htm>

Comments or questions about the manual should be referred to Maarten Prinsze, Cruising Policy Forester, Revenue Branch at 250-387-8357, or Don Rorison, Cruising Projects Specialist, Revenue Branch at 250-356-7674.

Any public or hard copy requests for the manuals or amendments should be referred to Crown Publications, 521 Fort Street, Victoria, British Columbia, V8W 1E7 (telephone 250-386-4636, facsimile 250-386-0221).

W. Howard

Bill Howard
Director
Revenue Branch

pc: Maarten Prinsze, Cruising Policy Forester, Revenue Branch
Don Rorison, Cruising Projects Specialist, Revenue Branch
Region and District Cruising Coordinators





FOR FURTHER INFORMATION CONTACT:

Maarten Prinsze
Cruising Policy Forester
Don Rorison
Cruising Projects Specialist
Revenue Branch
Ministry of Forests
PO Box 9511 Stn Prov Govt
Victoria, BC V8W 9C2
Phone: (250) 387-8357/356-7674
E-mail: Maarten.Prinsze@gems8.gov.bc.ca
Don.Rorison@gems1.gov.bc.ca
FAX: (250) 387-5670

MANUAL TITLE

Cruising Manual

AMENDMENT NO.

1

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MANUAL CO-ORDINATOR

Judy Laton
Revenue Branch

AUTHORIZATION (Name, Title)

W. Howard
Director, Revenue Branch

Please make the following changes to your copy of the above Ministry manual. Please insert the following specified pages and **file this notice** immediately after the Amendments Tab.

ACTION (Remove/Insert)	(VOL.) CHAPTER-SECTION-SUBJECT	PAGE(S)	COMMENTS
	TABLE OF CONTENTS		
REMOVE	Table of Contents	i - ii	
INSERT	Table of Contents	i - ii	
REMOVE	Chapter 2 - Cruise Design	7 - 10	
INSERT	Chapter 2 - Cruise Design	7 - 10	
REMOVE	Index	I-i - I- ii	
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2.1.2.3 Comparative Cruises

Refer to the *Interior Appraisal Manual* for situations when comparative cruise data may be used in appraisals.

1. Definitions:

- the new cutting authority is the area that will be appraised, and
- the parent cutting authority is the area from which cruise data will be borrowed.

2. Factors for determining the level of data to validate that the cruise is comparable:

Requires more data

Cutting Authority large - 100 000 m³
 Licensee cuts a small percent of beetle
 Nearby cruises not similar
 Species and size vary in area
 Type labels inaccurate
 Sufficient time to harvest
 Poor past performance

Requires less data

Cutting Authority small – 5 000 m³
 Licensee cuts a large percent of beetle
 Nearby cruises similar to each other
 Species and size uniform in area
 Type labels accurate
 Insufficient time to harvest
 Reliable past performance

The above factors must be considered by the Licensee's RPF and Ministry of Forests in determining the amount of work required to justify use of a specific comparative cruise. It is recommended that the licensee's RPF contact the Ministry to agree on the level of data required. The following matrix can be used as a guide.

Factors	Condition/Points	Condition/Points	Condition/Points
Cutting Authority size m ³	>100 000 / 5	20 000 – 100 000 / 3	<20 000 / 1
Licensee percent beetle cut	<25% / 5	25% - 75% / 3	>75% / 1
Cruise types similar	Dissimilar / 3	Similar / 2	Very Similar / 1
Species & size variability	Variable / 3	Average / 2	Uniform / 1
Type label accuracy	Inaccurate / 3	Average / 2	Accurate / 1
Sufficient time to harvest	Some / 15	Little / 5	No time / 1
Past performance	Poor / 10	Average / 5	Good / 1

< 10 points	Use inventory type labels	17 to 19 points	2 plots or more per type
11 to 13 points	Walk through by an RPF	20 to 23 points	6 plots or more per type
14 to 16 points	SP with some cruise plots	> 23 points	A full cruise

3. Requirements to ensure that the new and parent areas are comparable.

Levels of data required:

The factors in section 2) above determines the data required. The work required varies from no field work, when there is absolutely no choice but to harvest immediately, to a full cruise at 15% SE where there is time and resources available.

The levels of work required based on individual situations are:

- a. Use of the Inventory type label. This consists of comparing the Inventory labels of the new and parent cruise areas.
- b. A walk through the stand by the RPF, or designate, which may include the random location and mapping of some cruise plots for comparing timber types.
- c. Use of the Silviculture Prescription results which may include the random location and mapping of some cruise plots for comparing timber types.
- d. Specific plots such as twenty plots per cutting authority with a maximum of two plots per type.
- e. Six plots per type.
- f. A full cruise.

Other requirements:

- a. Both cruises must be in the same Biogeoclimatic subzone.
 - b. The parent cruise must not be older than five years for immature timber and ten years for mature timber.
 - c. The requirement for thirty days lead-time from cruise to harvest may be waived by the District Manager.
4. The Provincial Comparative Cruise Checklist of the Cruising Manual (Figure F.7 in the Forms Chapter) shall be used to compare the new and parent cruises where data exists.
5. Field procedures:
- a. Where plots are utilized, they must be located in an unbiased manner and be representative of the timber type areas.
 - b. Where six plots for each timber type are installed in the new cutting authority, the plots must be established using a systematic grid.
 - c. All cruise plots will be full measure variable radius plots. Plot size must be consistent throughout the type and must be chosen so that there is a minimum average of six merchantable coniferous trees (live and dead potential) per plot.
 - d. Tree heights and diameters must be measured for every tree in each plot.
 - e. There must be a minimum of two tree ages measured for every plot.
 - f. If the new cutting authority area has sufficient samples to achieve the 15.0 percent sampling error then the cruise data must be used in an appraisal.

6. Office Procedures:

The licensee must submit to the District Manager:

- a. A completed copy of the Provincial Comparative Cruise Checklist.
 - b. All field cruise cards and the cruise compilations with data listings for the parent and new cutting authorities.
 - c. The cutting permit summary page and all of the harvesting method summary pages for the parent and new cutting authorities.
 - d. Two maps; one location map that shows where the new cutting authority area is located in comparison to the parent cutting permit and one cruise plan map for the new cutting authority area.
 - e. The collected cruise data for the new cutting authority area must be compiled using the most recent version of an approved cruise compilation program.
 - f. It is acceptable to select timber types from difference parent cruises. If there is more than one type in the new cruise, the selected parent cruise(s) must be recompiled using the comparative parent type averages and the new cruise type areas.
 - g. The District will review the submitted information to ensure that the parent and new cruises meet the standards in the provincial Comparative Cruise Checklist.
7. Accountability:

The Licensee's RPF and Ministry of Forests staff will record the rationale for accepting the data they used in selecting a 'Parent Cruise'. This document will be based on their joint review and will be attached to the cutting authority file.

8. Monitoring:

Each year, as a part of Revenue Risk Planning, staff from the Region will field check a number of comparative cruises based on a risk rating assessment. They will compare the new cruise with the parent cruise, the rationale for selection of the parent, and report the results to the Regional Manager.

The time interval between the date of the cruise plan to harvesting should be monitored. Delays of more than a month should be flagged and may result in the requirement for a full cruise.

Operations will not normally be held up by field checking of comparative cruise areas.

9. Reporting:

On May 30th of every year, each District will report on the use of comparative cruising by Licensee. They will report, for the period May 1 to April 30, the percentage of beetle wood harvested of the total volume harvested, the percentage of comparative cruise volume of the beetle wood harvested, and the total volume of wood harvested, for each major Licensee tenure.

They will also report the proportion of wood scaled by species from each area compared to the proportions estimated by the cruise. This information will be compiled and circulated by Revenue Branch..

2.1.2.4 Unsafe to Cruise

When there is a high down tree component to a stand of timber or heavy fire damage has occurred and it is unsafe for cruisers to sample the stand, then apply cruise data from the adjacent cruise plots in the same timber type where it is safe to cruise. The sampling intensity will be sufficient to meet the minimum sampling requirements for the cruise. The unsafe areas will be mapped in the cruise plan, field notes and the final cruise map. If it is unsafe to sample the damaged portions of the stand to determine the damage percentages, then the damage percentages should be performed by a certified photo interpreter. A damage assessment may be performed using other procedures subject to mutual agreement by the licensee and the District Manager.

2.1.3 Cruise-Based Stumpage Assessment - Timber Sales or Cutting Permits

For cruise-based sales, sufficient samples must be established to meet the following sampling error objectives:

1. Plus or minus 8.0 percent sampling error at 2 Standard Errors (S.E.) for all stands except in 2. below. Count plots may be used provided that a plus or minus 12.0 percent sampling error at 2 S.E. is achieved with measured plots and 8.0 percent with count and measure plots combined.
2. Proposed cut areas where the stands are comparatively very valuable or patchy must be reviewed by the Regional Revenue Manager, or his designate, to determine whether the above rules should be accepted or the number of sampling points increased.
3. Refer to the *Provincial Cruise Based Policy* at the following Internet site:



<http://www.for.gov.bc.ca/tasb/manuals/policy/resmngmt/rm8-16.htm>

2.1.4 Standards for Re-cruising

A recruise is necessary if any of the following criteria are met or exceeded.

1. If the cruise is of mature timber (> 120 years) and 10 years has elapsed since the fieldwork was performed.
2. If the cruise is of immature timber (< 121 years) and 5 years has elapsed since the fieldwork was performed.
3. Catastrophic (severe damage) losses have occurred at any time after the field work was performed.
4. Any major amendments are proposed to the original cruise area. Refer to the current *Coast Appraisal Manual* or *Interior Appraisal Manual*, Section 2.3, 2.
5. As determined by the Regional Manager or their designate.

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