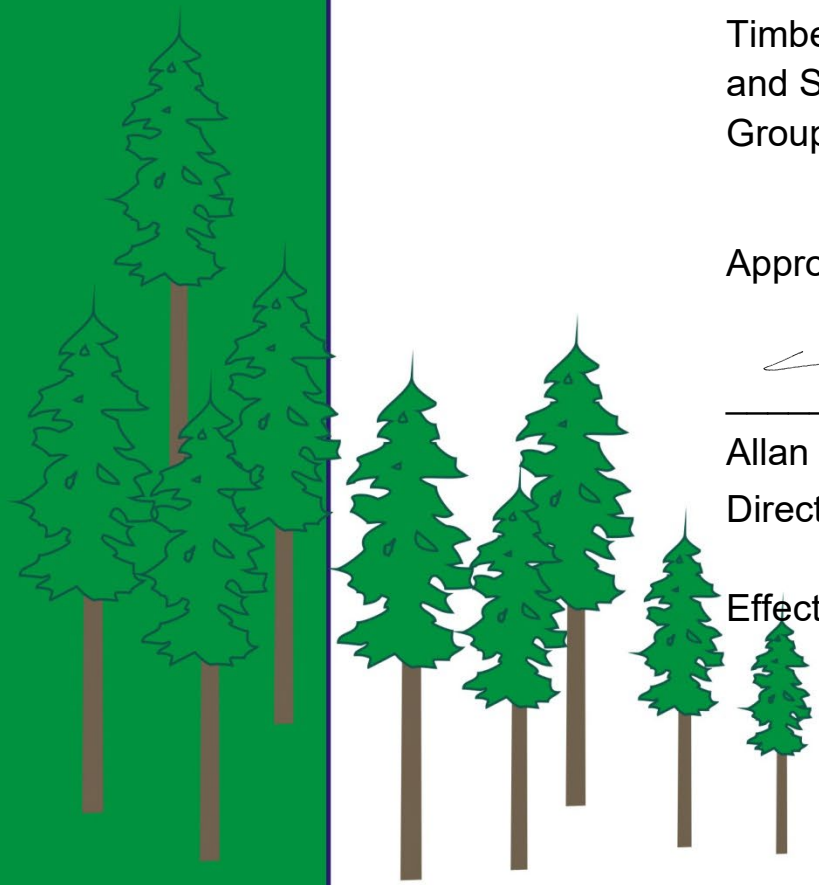
INTERIOR COMPARATIVE CRUISE (over 5,000 m^3) POLICY

TIMBER PRICING BRANCH MINISTRY OF FORESTS

Prepared By:

Timber Pricing Branch, North and South Area Working Groups

Approved By:



Allan W. Bennett, RPF
Director Timber Pricing Branch

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This document (Version 2024-08-15) replaces all previous versions and does not supersede section 105 of the *Forest Act,* the *Interior Appraisal Manual*, and the *Provincial Cruising Manual.*

Contents

Purpose:

To assist forest professionals in the preparation of a comparative cruise submission.

Comparative Cruising:

If there is time to perform a full cruise, the timber will be cruised.

Section 1.5.1.1 of the Interior Appraisal Manual (IAM) outlines criteria when comparative cruise data may be considered. These conditions consist of, but are not limited to, the following:

- The requirement to perform a full operational cruise will delay expeditious harvesting and result in further damage.
- Comparative cruise data may not be used where the submitting licensee has submitted appraisals for previous cutting authorities that utilized comparative cruise data in the appraisal and has not harvested these cutting authorities in a timely manner.

Comparative cruise applications are reviewed on a case-by-case basis. The professional will consider all available existing cutting authorities to rationalize the most comparable parent dataset.

The *Interior Appraisal Manual* (IAM) Section 1.1 (Definitions) states:

> "**Comparative Cruise**" means cruise data that is used for a new cutting authority area being appraised, that has similar stand and terrain characteristics as the cutting authority area and is a cruise submitted to the district that meets the standards of the Cruising Manual.

Unsafe to Cruise in Fire-Affected Stands:

Although cruising in fire-affected stands may have additional safety concerns, Section 1.5.1.1 of IAM does not state comparative cruises can be used to address safety hazards. The Cruise Manual, Section 2.5.2 Unsafe to Cruise, details how to address areas unsafe to cruise.

Submission Process:

Request for comparative cruise must occur prior to Electronic Commerce Appraisal System (ECAS) submission and can occur prior to cruising.

The request, with contents described below, should be submitted via email to District and appropriate Area contacts.

South Area	North Area
South.Area.Cruising@gov.bc.ca	Jeffery.Ernst@gov.bc.ca
Appropriate district cruise contact email	Appropriate district office email

- Please use the following format in the subject line of the email to submit your request: "Comparative Cruise Request; Relevant District; Licence 123 CPXX; Estimated Volume [in m^3]"
- If more than one email is required to submit all the attachments, please label request emails 1 of 2 and 2 of 2, as needed.

Comparative Cruise Request Content Requirements:

The request must contain the professional rationale and supporting attachments described below. It is important that the professional rationale is complete and accurate and includes supporting field documents as per Bylaw 9, Schedule A, Code of Ethical & Professional Conduct - Appendix 4. Guidance for Professional Quality Field Work - March 2021 available at https://www.fpbc.ca/practice-resources/standards-practice-guidelines/standards-of-ethical-professional-conduct/..

1. Professional Rationale:

- A **professional rationale** requesting use of comparative cruise includes:
  - A statement requesting the use of comparative cruise for the new CP.
  - The reasons the cruise should be expedited.
  - The proposed harvesting timelines including harvest commencement and end dates.
  - The licence, CP, block(s), and type(s) that will be used as parent data in the new permit's timber types.
  - A comparative data analysis summary of the new permit attributes with parent data outlining how they are or are not comparable. The data analysis spreadsheet that must accompany the submission is provided in the Appendix at the end of this document.

- A confirmation that the parent data came from a type or block that was fully operationally cruised, that met the requirements of the Cruising Manual and was accepted by the District for appraisal purposes. (See section below Compilation Process for Comparative Cruises.)

- Burn Code Data Table that includes a description of the process the professional used to collect the field-verified data and how it was used to derive this table.

- Any additional factors that were considered when compiling the parent data.
  - Describes how the professional collected the field verified data.
  - Explains how the data was used to calculate these additional factors.
  - A list of attachments (e.g.: photos, field notes, field data, tally cards, field maps, resweep tally cards, and/or other supporting documentation).

- The professional's name, signature, designation, number, and date.

- A statement similar to one of the following, that demonstrates professional accountability:
    - I personally completed the work described herein.
    - I certify that the work described herein fulfils standards expected of a member of the Forest Professionals of British Columbia, and that I did personally supervise the work.
    - I certify that I have reviewed this document and, while I did not personally supervise the work described, I have determined that this work has been done to the standards expected of a member of the Forest Professionals of British Columbia.

2. Required Attachments:

- Dat file(s) and pdf report(s) of the parent data's original full cruise compilation.

- Dat file(s) and pdf report(s) of the new permit data's full cruise compilation.

- Map(s) of parent blocks with forest cover/ maturity class labels and coordinate grid.

- Map(s) of proposed block, timber types, forest cover/ maturity class labels, GPS coordinates, GPS projection, map legend, cut block identification, merchantable area, map creator's name and date created, and map scale.

- Overview map of the proposed block(s) with title, roads, landmarks, GPS coordinates, GPS grid, map legend, block name, map creator's name and title, and map scale.

- Burn severity block maps for the parent and new permit from the BC Data Catalogue '**BURN SEVERITY MAPPING (SAME YEAR CLASSIFICATION)'** (if available), with the fire number, and a table detailing the merchantable area of the burn severity types that will appear in the compilation.
    - If the BC Data Catalogue '**BURN SEVERITY MAPPING (SAME YEAR CLASSIFICATION)'** is available and the professional chooses to use their equivalent mapping, then both will be provided with an analysis and rationale for why provincial data were not used.
    - If the BC Data Catalogue '**BURN SEVERITY MAPPING (SAME YEAR CLASSIFICATION)'** is not available, then an equivalent burn severity mapping may be used.

- Documentation on how slopes were determined. Comparative slopes can be determined by the following methods:
    - Field-verified data collected for slopes, or
    - Adjacent comparative terrain cruise plot information, or
    - LIDAR digital elevation model average slope (minimum pixel size 15m. If high resolution LIDAR, then 1m pixel size), or
    - TRIM digital elevation model contour slope.

- Field verification data: maps, GPS data, prism sweep information (location, specific damage information, photos, field notes, and tally cards).

- Please note that other files may be required upon request including .kml .kmz .tiff .shp.

Considerations for Preparing the Comparative Cruise Request:

1. Choosing Parent Datasets:

The parent dataset must accurately match the new cutting permits attributes prior to the burn.

Consider the cruise cards and the resulting variables that are input into the estimated winning bid calculation (*EWB*). (See the IAM for more details.) The EWB key variables below are the most critical considerations when choosing a comparative dataset:

- Tree Species – special consideration for CE, HE, BA, PL w MPB, FI in DRYBELT, LA, YE.
- Decay – maturity class and risk group.
- Damage codes – previously-cruised data of blowdown and insect damage codes.
- Slope – slope percent.
- Volume – volumes in cubic meters, by species.
- Volume per Tree – piece size (m^3/conifer tree).

Parent data sets should be selected with similar stand and terrain characteristics. A dataset can either be an entire permit, an entire block, or an entire timber type. Merging multiple parent datasets into one type is not acceptable due to potential for disproportional weighting. Parent datasets that reasonably match and are geographically adjacent to the new permit should be considered first. If adjacent datasets are not chosen, be sure to describe why these datasets are unsuitable in the data analysis spreadsheet.

> **For example**, if there is an adjacent cut block that appears identical to the permit that is the subject of the comparative cruise request, but was not used and no rationale was presented, the request may be rejected. However, if the adjacent block is unsuitable because of significantly different blowdown percentages, it may be reasonable to use different comparative data. This should be described in the data analysis spreadsheet.

2. Applying Burn:

Parent data that comes from stands cruised after a wildfire must reasonably match the burn severity, blowdown, damage codes, live to dead ratios, and other characteristics of the new permit.

Parent data that comes from types that were cruised before the wildfire will have the fire damage codes applied. Damage is applied as per the burn code data table in the professional rationale. (A sample burn code table has been provided in the Appendix.) Damage codes applied must be supported with field-verified data collected from the merchantable area of the requested comparative blocks.

- Burn severity layers must be used for timber typing where each burn severity will represent a type (i.e., Unburned, Low, Medium, and High).

- Field verification is required to calibrate the burn code percentages:
  - Field verification includes collecting prism sweep data.
  - Prism sweep locations are established to collect tree tally information in each type and the data are used to calculate percentages that will be applied to the parent data.
- The professional will document their process and provide their data.

- Field verification data includes maps, GPS data, plot and/or prism sweep data (location, specific damage information, photos, field notes, and tally cards). Prism sweep data will include GPS locations for auditing.

Considerations that change live tree classes to dead potential (DP) will be field verified. For example: High severity burn will have a percent of living trees compiled as DP; medium severity burn areas will have a lower percent of living trees compiled as DP; and Low severity areas no living trees are compiled as DP.

Considerations that change dead and down trees to dead useless tree classes will be field verified. Dead and down timber found to be ≥50% sound will remain dead potential.

3. Unburned Areas:

Areas classified as 'unburned' will not be considered as part of a comparative cruise request unless operationally necessary to harvest unburned timber that would otherwise be isolated.

- No burn codes will be applied to types classified as 'unburned'.
- Unburned areas not cruised need to be addressed in the professional rationale with an explanation as to why these areas were not cruised.
- Unburned areas external to the wildfire perimeter must be operationally necessary to harvest. An example of operationally necessary is area to deck the wildfire-damaged timber.

4. Burn Code Data Table:

The field-verified data are collected and analysed. Data are segregated into burn severities and split further into each species. Damage code percentages by species must be entered into the table below. See Appendix for an example.

By species, the following table is to be completed for burn severities:

Burn Severity Type	% Fire Code A	% Fire Code B	% Fire Code C
High	**_%**	**_%**	**_%**
Medium	**_%**	**_%**	**_%**
Low	**_%**	**_%**	**_%**

5. Blowdown:

The professional rationale must include field verification of blowdown codes (codes E and G) when applying additional blowdown damage codes. Quantitative data showing blowdown damage percentages by timber type is to be provided in the submission. The verification of blowdown codes will be used to support the applied percentages of blowdown codes. These blowdown areas must be indicated on maps.

6. Compilation Process for Comparative Cruises:

- Parent blocks/types will consist of plots that are comparative of the new permit merchantable area. Small types with few plots should be avoided as parent data.

- The parent dataset at minimum must have:
  - met the requirements of the current provincial Cruising Manual
  - been part of an existing cutting authority or
  - been submitted to the District for check cruise and been approved
  - not been already based on a comparative dataset.

- When placing the parent dataset into a timber type, all the plots in the dataset will be used.

- Each new block will have burned and unburned areas typed out as Unburned, Low, Medium, and High. The typing is by analysis of burn severity classifications in the Fire Burn Severity - Same Year - Datasets - Data Catalogue (gov.bc.ca). If the catalogue is not available, then an equivalent or better dataset will be used. High resolution post-fire imagery of most fires greater than 100 ha is available upon request to Forest Analysis and Inventory Branch. Send these requests with the fire number and fire year to Marc.Rousseau@gov.bc.ca

- The entire parent dataset will be placed into the different severity types.

- All the plots in the parent dataset must be used in each timber type.

- Apply damage codes to the type as per the percentages in the rationale in the following order:
  - Dead potential tree class is changed to dead useless.
  - Live tree class is changed to dead tree classes, and
  - Damage codes are applied.

- Compile full volume reports; in both pdf and .dat formats.

Ministry Review

Once the submission is received, it will be reviewed. Clarification or additional information, data and/or supporting documentation may be requested. (Ensure all contact information is provided.) All submissions will be entered into a queue for processing. If a submission is returned for any reason, when the professional resubmits, then it will be placed at the end of the queue.

All submissions that do not meet the submission criteria above are subject to rejection. Ministry staff may conduct a field audit of the data in the submission.

Once approved, the professional will be notified with an approval email. This approval email must be attached in the new permit's appraisal/ECAS submission.

(The appraisal is submitted into ECAS with the comparative cruise button on the "*Reference Info*" page set to 'yes.')

The approval email and ECAS submission details are then included as part of a CP application or CP amendment application to the District. District will not approve the amendment without a review and approval of the updated ECAS submission.

If you have questions about comparative cruising, contact the following staff:

South Area - Cruising Specialist South.area.cruising@gov.bc.ca

North Area – District you are working in or for general questions or the North Area Timber Cruising and Waste Specialist - Jeffery.Ernst@gov.bc.ca

Reappraised Comparative Cruises:

In situations where changes to harvest / reserve areas or leave tree characteristics have caused the parent dataset to no longer be comparable to the cutting authority area, the submitting professional must notify Area Timber Pricing staff and provide a professional rationale addressing these changes as outlined in the IAM during post-harvest changed circumstance reappraisal.

Appendix

<table>
<tr><td>Data Analysis spreadsheet</td><td>Download from:
https://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/timber-cruising</td></tr>
<tr><td>Example of a Burn Code Data Table</td><td>(Examples only)</td></tr>
<tr><td>Douglas fir and Western Larch</td><td>
<table>
<tr><th>Burn Severity Type</th><th>% Fire Code A</th><th>% Fire Code B</th><th>% Fire Code C</th></tr>
<tr><td>High</td><td>90%</td><td>0%</td><td>10%</td></tr>
<tr><td>Medium</td><td>100%</td><td>0%</td><td>0%</td></tr>
<tr><td>Low</td><td>100%</td><td>0%</td><td>0%</td></tr>
</table>
</td></tr>
<tr><td>Lodgepole pine and Spruce</td><td>
<table>
<tr><th>Burn Severity Type</th><th>% Fire Code A</th><th>% Fire Code B</th><th>% Fire Code C</th></tr>
<tr><td>High</td><td>80%</td><td>10%</td><td>10%</td></tr>
<tr><td>Medium</td><td>90%</td><td>5%</td><td>5%</td></tr>
<tr><td>Low</td><td>100%</td><td>0%</td><td>0%</td></tr>
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