INTRODUCTION

A series of Best Management Practices (BMP) have been developed to guide the activities of BC Timber Sales Skeena Business Area. The goal of this BMP is to ensure Timber Sale Licence operations meet legal requirements for Coarse Woody Debris retention, and to proactively manage for CWD considering the best available information.

BACKGROUND

Coarse woody debris (CWD) is dead woody material, in various stages of decomposition, located above the soil, larger than 7.5 cm in diameter which is not self-supporting. Trees and stumps (intact in ground) are considered self-supporting, and therefore are not considered CWD (MoFR & MoE 2006). CWD is a vital component of forest ecosystems, providing important wildlife habitat and structural complexity for a variety of biological interactions and energy exchanges. The long-term management of CWD is critical to maintaining ecosystem integrity, forest productivity, and wildlife habitat.

The following table identifies the minimum CWD requirements as specified in the Forest Planning and Practices Regulation, Section 68

<table>
<thead>
<tr>
<th>Operating Area</th>
<th>#Pieces (pieces /ha)</th>
<th>Length (m)</th>
<th>Diameter (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coast (Kalum and North Coast FD):</td>
<td>4</td>
<td>5</td>
<td>30</td>
</tr>
<tr>
<td>Interior (Skeena Stikine FD):</td>
<td>4</td>
<td>2</td>
<td>7.5</td>
</tr>
</tbody>
</table>

The CWD retention amounts noted above are easily achieved in the Skeena Business Area given the high occurrence of low value and non merchantable logs in our area and the natural occurrence of CWD present prior to harvesting. 2005/2006 FREP data suggests “a general biodiversity strength for all BEC zones is the amount of CWD volume left on the cut blocks after harvesting. However, the quality (ecological value) of this CWD could be improved by leaving a higher density of long pieces (≥ 10 m long)”

The Chief Forester’s Guidance on CWD Management, May 2010
http://www.for.gov.bc.ca/ftp/HFP/external!/publish/FREP/extension/Chief%20Forester%20short%20CWD.pdf identifies a number of concerns with current CWD management in B.C. Despite the established legal requirements, the Chief Forester encourages the retention of more large pieces. He requests Licensees target a 20% increase in the median density of large CWD pieces currently being retained. The Chief Foresters May 2010 requested CWD targets are:

<table>
<thead>
<tr>
<th>Biogeoclimatic zones &amp; subzones</th>
<th>Harvest area median (big CWD pieces per hectare) increases to at least:</th>
</tr>
</thead>
<tbody>
<tr>
<td>BWBSmw</td>
<td>11</td>
</tr>
<tr>
<td>CWHds-ds-mm-ms</td>
<td>23</td>
</tr>
<tr>
<td>CWHHyh-vm-wh-ws</td>
<td>23</td>
</tr>
<tr>
<td>CWHxm</td>
<td>11</td>
</tr>
<tr>
<td>ESSF</td>
<td>18</td>
</tr>
<tr>
<td>ICH</td>
<td>19</td>
</tr>
<tr>
<td>IDF</td>
<td>4</td>
</tr>
<tr>
<td>MS</td>
<td>4</td>
</tr>
<tr>
<td>SBPSc-mc-mk</td>
<td>2</td>
</tr>
<tr>
<td>SBPSxc</td>
<td>2</td>
</tr>
<tr>
<td>SBSdh-dk-dw</td>
<td>5</td>
</tr>
<tr>
<td>SBSmc-mk-mw-vk-wk</td>
<td>6</td>
</tr>
</tbody>
</table>

Large pieces are defined as pieces ≥ 20cm in diameter at one end and ≥ 10m long. The guidance included the following ecological and other considerations:

- Larger pieces provide ecological function that differs from smaller pieces.
- A full range of CWD decay and diameter classes, and tree species are important.
- Overlapping logs that are off the ground last longer.
- Recruitment of CWD during the mid to later stages of a rotation is important.
- Variability in the amount of CWD at the site and landscape level is important.
- Large piles of CWD at roadsides and landings are of limited ecological value and any ecological functions they provided would be greatly enhanced by dispersing the same wood in many smaller aggregations across the cut block.
- Lower amounts of CWD are appropriate in areas with a high fire hazard risk and/or consequence (e.g. urban interface).
- CWD management must consider silviculture requirements.
BEST MANAGEMENT PRACTICES

Assessing Licensee conformance with regulatory requirements

BCTS has an interest and obligation to confirm Licensee conformance with CWD regulations (FPPR s. 68). To monitor Licensee’s performance BCTS should complete the following:

1. Apply a cost effective sampling process to make a reasonable assessment of the Licensee’s conformance with CWD regulations, recognizing that CWD requirements are routinely achieved. The sampling process will be risk based and may range from ocular estimates to formal surveying.

2. Provide staff training opportunities to enable the effective assessment of CWD.

3. Concurrent with logging operations, field team staff will inform the Licensee of any potential concerns with them meeting CWD requirements.

4. As part of each block’s final EMS inspection, as a minimum, an ocular assessment will be completed to confirm conformance with regulatory requirements. For guidance on completing CWD ocular estimates, refer to “TSK CWD Measurement Guide”.

5. If compliance with CWD regulatory requirements cannot be confirmed using an ocular method a formal CWD survey may be required. A CWD survey could also be used to assist staff in becoming comfortable with making ocular assessments. For guidance on completing CWD field sampling, refer to “TSK CWD Measurement Guide”.

6. If during the final EMS inspection there are potential concerns with the Licensee meeting CWD regulatory requirements, TSK will notify the Licensee and C&E staff.

Managing CWD quality and quantity (i.e. Chief Foresters guidance)

The Skeena Business Area recognizes the importance of managing for CWD to levels higher than the regulatory minimums, and that larger pieces could be under represented in some biogeoclimatic areas. TSK will manage towards meeting the Chief Foresters 2010 goal of increasing the median density of large CWD by implementing the following:

1. Develop a data base to help assess TSK’s performance with achieving the Chief Foresters 2010 large CWD targets. Subject to available resources and harvest activity, this will be accomplished by annually surveying and recording one (1) sample block within each field team’s operating area and recording the data in a local database.

2. The annual surveys should be geographically distributed so that over time all biogeoclimatic zones are being surveyed. Achievement of the Chief Foresters targets will be assessed at the biogeoclimatic level, not the block level. Individual block variances are expected.

3. Surveys will use the” line intercept” sampling method with the procedures outlined in “TSK CWD Measurement Guide”. These procedures are mainly an extract from the Field Manual For Describing Terrestrial Ecosystems, Chapter 7 Coarse Woody Debris, MOF & MELP, 1998 http://www.for.gov.bc.ca/hfd/pubs/Docs/Lmh/Lmh25/07-Cwd.pdf and adjusted to align with the Protocol for Stand -level Biodiversity Monitoring, FREP, April 2009.
4. Data analysis should distinguish between long (>10m) and short (<10m) pieces for comparison with Chief Forester’s guidance of May 2010.

5. Survey field cards, map and compilation summary should be filed on the TSL’s EMS file.

6. All TSK survey results should be tracked in one TSK database to allow for long term trend assessments by the SFMP Committee. The database should be accessible to TSK staff on the network.

7. If the post harvest median density of large CWD is below the Chief Foresters 2010 request, operational strategies and/or prescriptions may be developed and applied to future cut block planning in an effort to work towards meeting the Chief Foresters recommendations. Some options may include:

   a. Pursuing the use of TSL clauses that require Licensees to retain a minimum amount of large pieces of CWD based on site specific attributes,

   b. Developing prescriptions/plans that include retention designed for future sources of CWD, and using established TSL clauses to specify reserve tree requirements,

   c. Where fire hazard assessments and reforestation requirements permit, Licensees should be encouraged to retain CWD throughout the cut block instead of defaulting to roadside piling and burning,

   d. BCTS staff will communicate the importance of CWD management to the Licensees/Harvesting Supervisors during EMS pre-works and field inspections. These discussions may identify that:

      i. large roadside debris piles provides less ecological value than smaller piles dispersed in the block,

      ii. retaining large logs offer greater long term ecological value than smaller logs,

      iii. overlapping logs that are off the ground (jack strawed) are preferred because they last longer,

      iv. operating costs can be reduced by not yarding or skidding non merchantable logs to road side,

      v. contractual clauses may be introduced if voluntary measures aren’t effective at achieving CWD targets,

      vi. fire hazard mitigation and complying with TSL requirements are more important than managing for CWD amounts in excess of that required by regulation, and

      vii. it is not the intent to retain merchantable logs as CWD, and that CWD could be considered avoidable waste during waste and residue surveys.
Continuous Improvement

TSK’s and other CWD data/reports (e.g. FREP) will be reviewed to inform any required changes to local policy and practices. TSL clause(s) may need to be developed in the future to improve the quality of the CWD being retained. A local bioenergy industry would increase demand for all types of wood fiber and may require review/updating of this BMP’s CWD management strategies, or immediate implementation of some of the strategies.

Additional Information:


Coastal Forest Region Analysis of Stand-Level Biodiversity Sampling Results in Six Predominant Biogeoclimatic Subzones, FREP, June 2011

Course Woody Debris Backgrounder, FREP, May 2010
http://www.for.gov.bc.ca/ftp/hfp/external/frep/extension/FREP_Extension_Note_08.pdf