

File: 19460-01

MAR 30 2006To: All Regional Executive Directors
All District ManagersFrom: Tim Sheldon
Assistant Deputy Minister
Operations Division**Re: Standard of Initial Timber Supply Assessment for Community Forests**

To provide a degree of consistency between the three regions, the chief forester has determined that an area-volume allotment check is sufficient to set up the initial area when establishing new probationary community forests. The initial analysis information should be adequate to formulate a management plan for the first five years of operations and be consistent with the initial allowable annual cut offered.



This will allow the proponent to become familiarized with the area and gain some operational experience before embarking on the expense of preparing a comprehensive management plan. If required, a new management plan can be requested by the regional executive director or district manager at anytime during the term of the agreement. A detailed timber supply analysis will be required within five years after entering into a probationary agreement.

There are numerous ways of doing an area-volume allotment check (sample methodology attached) and I encourage you to work with your regional timber supply analysts to determine what method is appropriate in your circumstance.

If you require further information or clarification, please call Ron Greschner, Senior Timber Tenures Forester, Resource Tenures and Engineering Branch at (250) 387-8955.

A handwritten signature in black ink, appearing to read "Tim Sheldon".Tim Sheldon
Assistant Deputy Minister
Operations Division

Attachment(s): Sample Area-Volume Allotment Methodology

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**All Regional Executive Directors
All District Managers**

**Gary Townsend, Executive Director, Operations Division
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Sample Area-Volume Allotment Methodology for Determining an Initial Community Forest Area Boundary

This process is based on the assumption that the distribution of forest types (species and productivity) and ages in the community forest area (CFA) will be similar to that of the Timber Supply Areas (TSA) as a whole.

1. **Proponent/District** define an initial CFA area (hectares only not spatially) by multiplying the total THLB by the ratio of the AAC allocated to the CFA to the initial harvest level for the entire TSA.
(The objective is to determine how much area would be required to support a specified AAC, and the timber supply analysis indicates the relationship between potential harvest level and THLB.)
2. **Proponent/District** proposes options (spatially) for the CFA using the initial area (hectares) estimated in Step 1, and perhaps one smaller and one bigger than the initial THLB.
3. **District/Region** using an acceptable model (e.g. Woodstock Stanley), enter the attributes from the area proposed in Step 2 into the model and mimic (as best as the model allows) the assumptions/net downs used in the most recent TSR for the TSA, to confirm that the area chosen can support the volume offered (plus or minus ten percent or whatever is acceptable to the DM). Add or subtract area until it falls within DM's acceptable tolerance.
4. **Region/District** offer boundary to the Proponent.
5. **Proponent** Accept the proposed area defined in Step 4, but set the initial AAC for the CFA at the offered volume. If not accepted then proponent completes full timber supply analysis.
6. **District** approves boundary.
7. **Proponent** completes and submits Management Plan with AAC set at the volume being offered. Required are links with the ministry analysis that commit to all the management assumptions made in the analysis based on recent TSR and higher level plan constraints.

The assumption would be that a full timber supply analysis would be done by the proponent within five years prior to issuing of a long-term licence to confirm/verify the area and/or AAC. If a proponent wishes to deviate from analysis assumptions, or wish to propose adjustments to the AAC, they will be required to provide a full Timber Supply Analysis to support a new AAC proposal.

It should be noted that if there are significant differences between the proposed CFA area and the entire TSA in terms of age class or species distribution and applicable management objectives, there is a risk of disproportionately affecting licensees.

A draft business process is included as an attachment to this guidance.

Background Information on Area Volume Allotment Check

This is a very simplified description. Implementation requires understanding of and experience in timber supply analysis.

Generic steps in A-V allotment:

1. Gather information on forest stands, including: area, site quality, age and other variables used to determine stand volume, plus whether or not the stand is expected to contribute to harvests (i.e. is within the timber harvesting land base).
2. Determine the time over which the harvest must come from currently mature or soon-to-be-mature stands while second-growth forests grow to a merchantable condition. This could be viewed as the average rotation length.
3. Identify and prioritize parcels of land. This will allow parcels to be added or removed during the trial and error process in the next step. Note that if the parcels differ significantly in characteristics that affect the time to harvest (i.e. growth and yield or non-timber management requirements), the specified rotation may need to be redefined).
4. **Area Volume Allotment Check**
Adjust the area of the management unit upward or downward by trial and error until the time taken to harvest all age classes in the management unit once is within a specified percentage of the specified rotation.
 - Arrange stands in order of harvest priority (e.g. oldest first, oldest relative to minimum harvestable age, closest to mill, etc.)
 - Determine the yield at estimated time of harvest for each age class or stand type.
 - Determine the number of years taken to harvest all stands given the harvest rate defined in Step 2 above, and compare to the indicated average rotation. Note that harvests may need to be limited in some stand types to account for forest cover requirements (see appended notes).
 - If the time to harvest all stands is shorter than the specified rotation, add area and start again. Alternatively, decrease the area if the time to harvest all stands is longer than the specified rotation.

The more the description of the forest can be simplified the easier the process will be. For instance, all types of stands could be combined, and timber yields estimated from an average yield table.

Accounting for several different tree species under different management regimes, will increase the complexity of calculations, in which case it may be easiest to use a computer model to project harvests.

Some Notes on Area Volume Allotment

In a general way an area volume (A-V) allotment check is a way of ensuring that the harvest determined using a volume-based calculation can actually be achieved, given the fact that assumptions in the calculation may not be met in reality. For example, a common assumption in AAC calculations, such as the Hanzlik formula, is that stands will be harvested at the culmination of mean annual increment. However, in many cases harvests are not scheduled to coincide with CMAI.

An A-V allotment has also been used to determine if the volume harvest is sustainable, that is, that sufficient growing stock remains after the last period examined to produce timber for harvest in the subsequent period.

There is no single method or formula for A-V allotment. Davis and Johnson (1987, p. 569)¹ state:

[Area and volume allotment] provides no particular formulas and is not a specific procedure. Rather it is a framework in which the many facets involved in managing a forest property can be appraised and a decision reached.

The procedure outlined in the first pages of this paper is based on steps described in Davis and Johnson (1987) and Appendix D of the 1976 Royal Commission on Forest Resources².

The traditional A-V allotment methods do not account for forest cover requirements. However, non-timber values could be addressed through land base deductions (net downs), extended rotations, or application of maximum periodic area harvests in specified management zones. For example, a forest cover requirement applicable to a wildlife habitat zone could be represented by: (1) excluding some portion of the area (say 10 percent) from harvest for the analysis period, (2) specifying an extended harvest age determined by translating the forest cover requirement into an effective rotation (e.g. a requirement that a minimum of 10 percent of the area must be over 140 year translates to a rotation of 140/90 percent or 156 years), or (3) specifying that a maximum of 6.5 percent of the wildlife zone could be harvested in a ten-year period (6.5 percent harvested every ten years would mean the entire area is harvested in 154 years, approximately equal to the extended rotation). An area exclusion would simplify the calculation. To employ the extended rotation or maximum periodic harvest, the area within the management zone would need to be tracked separately.

¹ Davis, L.S. and K.N. Johnson. 1987. Forest Management, Third Edition.

² Pearse, P.H. 1976. Timber Rights and Forest Policy in British Columbia. Report of the Royal Commission on Forest Resources. Victoria. Available at: www.for.gov.bc.ca/hfd/pubs/Mr.htm

Direct Invitation Package
Step 6 expanded
Based on BN #92699 dated January 16, 2006

