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To: Regional Managers - Coast

From: The Honourable Michael de Jong
Minister of Forests

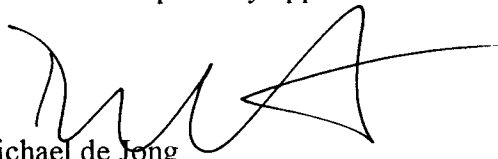
Re: Amendment No. 3 to the *Coast Appraisal Manual*

I hereby approve Amendment No. 3 to the *Coast Appraisal Manual* and attach a copy for your use. The following sections have been amended.

Section 1.8	MPS stumpage adjustments
Section 2.3.1(c)	Housekeeping
Section 4.6.3.1	'Isolated' has been clarified for helicopter operations.
Section 7.3.1	Housekeeping
Section 7.3.9.1.2 (c)	Housekeeping
Appendix V	Has been rescinded



This amendment will come into force on December 1, 2002. Further amendments or revisions to this manual require my approval.



Michael de Jong
Minister of Forests

Attachment

pc: Bill Howard, Director, Revenue Branch

All Subscribers, *Coast Appraisal Manual*



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MANUAL TITLE

Coast Appraisal Manual

REVISION No.

Amendment No. 3

ISSUE DATE

December 1, 2002

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
REMOVE	Table of Contents	i - iv	After Table of Contents Tab
INSERT	Table of Contents	i - iv	After Table of Contents Tab
REMOVE	Chapter 1	9 - 10	After Chapter 1 Tab
INSERT	Chapter 1	9 - 10	After Chapter 1 Tab
REMOVE	Chapter 2	5 - 6	After Chapter 2 Tab
INSERT	Chapter 2	5 - 6	After Chapter 2 Tab
REMOVE	Chapter 4	35 - 36	After Chapter 7 Tab
INSERT	Chapter 4	35 - 36	After Chapter 7 Tab
REMOVE	Chapter 7	5 - 8	After Chapter 7 Tab
INSERT	Chapter 7	5 - 8	After Chapter 7 Tab
INSERT	Appendices	7 - 30	After Index Tab
REMOVE	Appendices	7 - 20	After Index Tab
INSERT	Index	1 - 4	After Index Tab
REMOVE	Index	1 - 4	After Index Tab
INSERT	Minister's Letter and Manual Transmittal		After Amendments Tab

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1.8 Stumpage Adjustments (MPS)

1. Unless a cutting authority or the application and tender for a timber sale licence specifies that stumpage rates are fixed for a specified period or for the full term of the cutting authority, stumpage rates are adjusted quarterly on January 1, April 1, July 1, and October 1 of each year.
2. At the time of the quarterly adjustment, the upset rate will be recalculated based on the equations applicable for the appraisal effective date and the cutting authority area specific data. The monthly parameters (log selling prices and CPI) effective for the month of the adjustment will be used in the calculation instead of the original values. All other data (including the estimated number of bidders) remain unchanged.

This process is repeated quarterly until the cutting authority area is reappraised.

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2.3 Reappraisals

1. A reappraisal is a process used to redetermine a stumpage rate for a cutting authority area using the *Coast Appraisal Manual* in effect on the effective date of the reappraisal.
2. A reappraisal is based on a complete reassessment of the cutting authority area at the time of the reappraisal, as if the area has been returned to the condition it was in prior to development or harvesting.
3. At the time of a reappraisal, initial detailed engineering cost estimates may be re-estimated once after construction utilizing information as specified in section 4.3.3. However, development costs originally estimated using ministry approved competitive bids, are not re-estimated in a reappraisal.

2.3.1 Changed Circumstances

1. A cutting authority shall be reappraised if the licensee submits to the district manager a request for a reappraisal stating in the reappraisal submission that a changed circumstance has occurred or the district manager notifies the licensee in writing that a reappraisal is required because a changed circumstance has occurred, and in either instance the regional manager is satisfied that any of the following changed circumstances has occurred:
 - a.
 - (i) The licensee plans to use a method of harvest to harvest at least twenty-five percent of the volume of timber in the cutting authority area that is different from the method planned to be used for that timber prior to the appraisal of the cutting authority area, and
 - (ii) where the method of harvesting that will produce the appraisal least total operating cost estimate in the reappraisal is different from the method of harvesting that was used to produce the appraisal least total operating cost estimate in the appraisal, or
 - b. there will be at least a twenty-five percent change in the total appraised development cost estimate upon reappraisal, or
 - c. accumulated amendments (either additions or deletions of area containing merchantable timber) have been made to the cutting authority area since the most recent cruise compilation or recompilation was used for an appraisal or reappraisal that
 - (i) exceed twenty-five hectares or

- (ii) exceeds twenty-five percent of the area of the cutting authority area as it was prior to the amendment containing merchantable timber,
 - whichever is less, or
 - d. at least twenty-five percent of the volume of the appraised timber in a cutting authority area has been suddenly and severely damaged, unless the timber was damaged by a fire for which the licensee was responsible and the licensee failed to comply with any of sections 75 through 95 of the *Forest Practices Code of British Columbia Act* or the *Forest Fire Prevention and Suppression Regulation*. Despite subsection 2.3(2) where the cutting authority area is reappraised because of sudden and severe damage the redetermined stumpage rate is based upon the remaining timber only. The reappraisal cost estimate for development takes into account volume of timber already removed from the cutting authority area. This subsection is applicable to cutting authorities with either a fixed stumpage rate or a stumpage rate that is adjusted quarterly.
2. Where a cutting authority is reappraised under this section, any existing bonus bid remains in effect despite a redetermination of the upset rate.

2.3.2 Minister's Direction

1. The Minister of Forests may direct that a reappraisal be made at any time and that the redetermined stumpage rate be effective on any future date, and may specify criteria and procedures for the reappraisal.
2. A reappraisal directed by the Minister of Forests, may be a re-estimation of operating cost, log grade percentages, or selling price, or any combination of them, as may be directed by the Minister of Forests.
3. The Minister of Forests may direct that a reappraisal be made using the market pricing system.

4.6.2 Crew Transportation (Labour)

Crew transportation refers to the labour costs associated with moving logging crews by vehicles from the appraisal marshalling area to the centre of the work area in the cutting authority being appraised, and return.

The appraisal marshalling area is defined as follows:

1. In situations where the cutting authority area being appraised is accessible (as determined in section 4.6.3), the licensees' contractually binding designated marshalling area, or in the absence of one, the nearest of (a) a contractually binding designated marshalling area, (b) the camp, (c) the crew vehicle storage area, or (d) centre of the nearest community.
2. In a situation where the cutting authority area being appraised is isolated (as determined in section 4.6.3), the licensees' contractually binding designated marshalling area, or in the absence of one, the nearest of (a) a contractually binding designated marshalling area, (b) the camp or (c) the vehicle storage area.

The appraisal marshalling area need not be the location actually used by a given licensee.

Where more than one appraisal marshalling area or route is reasonable, the area or route chosen for appraisal purposes will be the one that yields the least total operating cost estimate according to this manual.

For the purposes of this section, a "vehicle" may be a motor vehicle or a boat. When "vehicle" is taken to mean boat, the "vehicle storage area" may be a boat dock or wharf where the crew can embark and disembark.

The formula for crew transportation is:

$$$/m^3 = 1.665 + 0.0546 (D)$$

Where: D is the weighted average one way distance in kilometres (rounded to the nearest 0.1 km) from the centre of the appraisal marshalling area to the centre of the work area in the cutting authority area being appraised. In situations where the appraisal marshalling area is a community, D will be measured from the post office of that community.

Where: D=0, the crew transportation cost estimate is equal to zero.

The crew transportation cost estimate includes both crew travel time costs and crew vehicle operator time costs.

The cost of vehicle ownership, lease, rental, maintenance and operations are included in section 4.6.3, camp overhead.

4.6.3 Camp Operations and Overhead

4.6.3.1 General Camp Overhead

The general camp overhead phase cost estimate recognizes two types of logging operations according to the mode of access for logging crews to the highway system:

1. Accessible Cutting Authority

An accessible cutting authority area is one which is connected, or the service landing used to support the yarding of timber from a cutting authority area by helicopter is connected, by a road suitable for crew buses to the centre of the nearest community. The nearest community must be a city, district municipality, town or village and must have retail food and gasoline services located nearby. This includes all communities serviced by public ferry.

The cost estimate covers the depreciation, maintenance and operating costs of camp and crew marshalling area facilities non-recoverable costs for cookhouses, freight by air or water, shop and office and other pertinent buildings; and provides for daily and/or periodical commuting costs.

The cost estimate for accessible cutting authorities is: $\$9.57/\text{m}^3$

2. Isolated Cutting Authority

An isolated cutting authority area is one which is not 'accessible'.

The cost estimate covers the depreciation, maintenance and operating costs of camp and marshalling area facilities; the non-recoverable costs incurred for cookhouses, bunkhouse, shop and office and other pertinent buildings; daily and/or periodical commuting cost from the camp to residential facilities; and camp and equipment moves of less than 10 km by water.

The cost estimate for isolated cutting authorities is: $\$15.55/\text{m}^3$

4.6.4 Low Volume Cost Estimate Additive

All fully appraised cutting authorities may be eligible for a low volume cost estimate additive.

The cost estimate additive is: $\$/\text{m}^3 = 7.38 - [0.00246 (V - 2\ 000)]$

Where:

- V is the lesser of the cutting authority net cruise volume or the licence's allowable annual cut of Crown timber (if applicable),

- ISOLATED**
- (1) ISOLATED = 1, where:
 - a. fifty percent or greater of the total net cruise volume (which includes deciduous volume) of the cutting authority area is accessible by air or water only except where the service landing used to support the yarding of timber by helicopter is accessible by road, or
 - b. the cutting authority area is located in the Queen Charlotte Islands forest district.
 - (2) In all other circumstances ISOLATED = 0.
- BARGEDUM**
- (1) BARGEDUM = 1, where the point of origin required to be used in the appraisal of the cutting authority area is listed in table 4-9.
 - (2) In all other circumstances BARGEDUM = 0.
- BARGEDIST**
- (1) BARGEDIST is the barging distance listed in Table 4-9 for the point of origin required to be used in the appraisal of the cutting authority area.
- SECOND GROWTH**
- (1) SECOND GROWTH = 1, where eighty percent or greater of the total net coniferous volume of the cutting authority area is second growth coniferous timber.
 - (2) In all other circumstances SECOND GROWTH = 0.

7.3.2 Preliminary Market Stumpage Value

1. The following equation shall be used to calculate the preliminary market stumpage value.
2. Preliminary Market Stumpage Value (PMSV) =

$$[-28.60 + 0.7916 (\text{ALP/CPIF}) - 10.0689 (\text{HEMBAL}) - 0.1043 (\text{SLOPE}) - 0.5658 (\text{SOR/CPIF}) - 33.1665 (\text{HELI}) + 18.4796 (\text{VPH}/1000) + 8.7658 (\ln (5.9)) - 0.0532 (\text{HD}) - (4.6244)(0.2491)(\text{BARGEDUM}) - (4.6244)(0.001595)(\text{BARGEDIST}) - 3.0145 (\text{ISOLATED})] \text{ CPIF}$$
3. Where the calculated PMSV is less than \$0.25, then the PMSV shall be \$0.25.

7.3.3 Preliminary Estimate of Number of Bidders That Would Compete for the Cutting Authority (PENB)

1. The following equation shall be used to calculate the (PENB).

2. $PENB = 2.0923 + 0.0623 (PMSV/CPIF) + 0.0906 (VOL/1000) - 0.000630 (VOL/1000)^2 - 1.2730 (HELI) - 1.9777 (CABLE) + 2.5332 (SECOND\ GROWTH)$
3. If VOL is greater than 60 000, then VOL shall be 60 000.
4. The PENB shall be rounded to one decimal place.
5. Where the calculated PENB is less than 1, the PENB shall be 1.

7.3.4 Interim Market Stumpage Value (IMSV)

The IMSV shall be calculated using the equation below.

$$\begin{aligned}
 \text{IMSV} = & [-28.60 + 0.7916 (ALP/CPIF) - 10.0689 (HEMBAL) \\
 & - 0.1043 (SLOPE) - 0.5658 (SOR/CPIF) - 33.1665 (HELI) + 18.4796 \\
 & (VPH/1000) + 8.7658 (\ln (PENB) \\
 & - 0.0532 (HD) - (4.6244)(0.2491)(BARGEDUM) \\
 & - (4.6244)(0.001595)(BARGEDIST) - 3.0145 (ISOLATED)] CPIF
 \end{aligned}$$

7.3.5 Repeat PENB Calculation

The PENB calculation in section 7.3.3 shall be repeated substituting in that equation the IMSV calculated under section 7.3.4 in place of the PMSV.

7.3.6 Repeat IMSV Calculation

The IMSV calculation in section 7.3.4 shall then be repeated substituting the new PENB calculated under section 7.3.5.

7.3.7 Test for Further Iteration and Final Market Stumpage Value (FMSV)

The IMSV calculated under section 7.3.6 shall be compared with the IMSV calculated under section 7.3.4. If the two values when each is rounded to the nearest \$0.01/m³ are equal then that value is the FMSV. If the two values are not equal, then the procedure required under sections 7.3.5 and 7.3.6 shall be repeated until the two values when each is rounded to the nearest \$0.01/m³ are equal. When those values are equal, the value is the FMSV.

7.3.8 Total Obligation Adjustment

This section does not apply to cutting authority areas under timber sale licences under sections 20 or 21 of the *Forest Act*. The total obligation adjustment for those cutting authority areas is zero (\$0.00m³).

The total obligation adjustment (\$/m³) is the sum of the following:

- Overhead; the total corporate and forestry overhead cost estimate, from section 4.6.1,
- road construction; the development cost estimate, calculated from section 4.3,
- market logger road cost; - \$2.03/m³,
- road maintenance; the routine maintenance and deactivation cost estimate, from section 4.5.3,
- road use charges; the road use charges estimate, from section 4.5.4,
- silviculture; the basic silviculture cost estimate, from section 4.8
- camp costs; dump, sort and boom: \$6.42/m³, and
- logger overhead: - \$4.00/m³.

These adjustments are untrended and updated only at reappraisal based upon the *Coast Appraisal Manual* in effect at the time.

7.3.9 Discount Factor (DF)

Except as provided in section 7.3.9.1 the discount factor (DF) is:

- a. 0.0, where the harvesting of the cutting authority area is authorized under an agreement other than a timber sale licence entered into under either section 20 or 21 of the *Forest Act*, or
- b. 0.3, where the harvesting of the cutting authority area is under a timber sale licence entered into under either section 20 or 21 of the *Forest Act*.

7.3.9.1 High Development Cost Discount Factor

1. In this section:

- a. DC is the development cost (\$/m³) borne by the agreement holder calculated using the procedures in section 4.3, and

- b. FMSV is the final market stumpage value calculated under section 7.3.7 or \$0.25/m³, whichever is greater.
2. Where:
- a. the harvesting of the cutting authority area is authorized under an agreement under either section 20 or section 21 of the *Forest Act*,
 - b. some or all of the development cost is the responsibility of the agreement holder, and
 - c. $(DC - 2.03)/FMSV$ is greater than 0.3, then the DF shall be $(DC - 2.03)/FMSV$.

7.3.10 Indicated Stumpage Rate

The indicated stumpage rate is calculated using the following equation:

$$IR = [FMSV (1 - DF)] - TOA$$

Where:

IR	=	Indicated stumpage rate
FMSV	=	Final market stumpage value (as calculated in section 7.3.7)
TOA	=	Total obligation adjustment (as calculated in section 7.3.8)
DF	=	Discount factor (as calculated in section 7.3.9)

7.3.11 Prescribed Minimum Stumpage Rate

The minimum stumpage rate is prescribed by the *Minimum Stumpage Rate Regulation* (B.C. Reg. 354/87).

7.3.12 Reserve Stumpage Rate

For each timber mark in a cutting authority area, the reserve stumpage rate is the greater of:

- a. the indicated stumpage rate, or
- b. the prescribed minimum stumpage rate.

Surface Hardness	Average Block Diameter				
	0 to 3"	3" to 6"	6" to 1'	1' to 4'	4'+
R2	RMC1	RMC2	RMC2	RMC2	RMC2
R3	RMC2	RMC2	RMC3	RMC3	RMC3
R4	RMC2	RMC3	RMC4	RMC4	RMC4
R5	RMC3	RMC4	RMC5	RMC5	RMC5

Description of RMC Values:

- RMC1** Rock crumbles under firm blows with the point of a geological pick and can be peeled by a pocket knife (R1). The average block diameter is not important. The rock may be harder (R2) but must have an average block diameter of less than 3 inches. This rock can be excavated by free digging or ripping.
- RMC2** Rock can be scraped and peeled by a pocket knife with difficulty and shallow indentations (i.e., 1/16 inch to 1/8 inch) can be made by a firm blow of a geological pick (R2) and has an average block diameter greater than 3 inches. The rock may be somewhat harder (R3) but must have an average block diameter less than 6 inches or hard (R4) and have an average block diameter less than 3 inches. The rock is usually rippable.
- RMC3** Rock cannot be scraped or peeled with a pocket knife. Hand-held specimen can be fractured with a single firm blow of the hammer end of a geological pick (R3) and has an average block diameter greater than 6 inches. Rock may be harder (R4) but must have an average block diameter of 3 to 6 inches or very hard (R5) and have an average block diameter of less than 3 inches. The rock is usually not rippable.
- RMC4** Hand-held specimen requires more than one blow with hammer end of geological pick to fracture (R4) and has an average block diameter greater than 6 inches. Rock may be very hard (R5) but must have an average block diameter of 3 to 6 inches. The rock must be blasted.
- RMC5** Hand-held specimen is very hard and requires many blows of the hammer end of a geological pick to fracture it (R5) and has an average block diameter greater than 6 inches. The rock must be blasted.

Appendix V Specifications: Calculating Stumpage Rates for Coast Appraisals Using the Comparative Value Pricing System

Calculation Conventions Used Throughout this Document

Use only single-operation calculations, except in compound additions and subtractions where all operands have the same number of decimal places.

Multiplication:

Compute each product to a number of decimal places equal to the sum of the number of decimal places specified for the two operands, then round to the number of decimal places specified for the product. For example, the calculation to compute the product, to two decimal places, of two numbers, one with no decimal places, and the other with three decimal places, would be done as follows:

$$\begin{aligned}\text{e.g., } 262 * 0.234 &= 61.308 \\ &= 61.31 \text{ rounded to 2 decimal places}\end{aligned}$$

Division:

Compute each quotient to a number of decimal places equal to the number of decimal places specified for the quotient plus one, then round to the number of decimal places specified for the quotient. For example, the calculation to compute the quotient, to two decimal places, of two numbers each with zero decimal places, would be done as follows:

$$\begin{aligned}\text{e.g., } 234209 / 4671518 &= 62.616 \\ &= 62.62 \text{ rounded to 2 decimal places}\end{aligned}$$

Addition:

Compute each sum to a number of decimal places equal to the larger of the number of decimal places specified for the two operands, then round to the number of decimal places specified for the sum. For example, the calculation to compute the sum, to two decimal places, of two numbers, each with four decimal places would be done as follows:

$$\begin{aligned}\text{e.g., } 13.5837 + 11.6489 &= 25.2326 \\ &= 25.23 \text{ rounded to 2 decimal places}\end{aligned}$$

Subtraction:

Compute each difference to a number of decimal places equal to the larger of the number of decimal places specified for the two operands, then round to the number of decimal places specified for the difference. For example, the calculation to compute the difference, to two decimal places, of two numbers, one with five decimal places, and the other with three decimal places, would be done as follows:

$$\begin{aligned}\text{e.g., } 12.69999 - 9.375 &= 3.32499 \\ &= 3.32 \text{ rounded to 2 decimal places}\end{aligned}$$

Rounding:

Determine the rightmost digit to be retained (e.g., 12.3449).

Determine the leftmost digit to be dropped (e.g., 12.3449).

If the left most digit to be dropped is less than five, then the rightmost digit retained is unchanged (e.g., 12.3449 rounded to 2 decimal places is 12.34).

If the leftmost digit to be dropped is five or greater, then the rightmost digit retained is incremented by one (e.g., 12.3450) rounded to 2 decimal places is 12.35).

General appraisal systems (GAS) table naming conventions used throughout this document are:

T Log AMV	=	coast log selling prices by species and grade
T Trend	=	cost trend factors
T Quarterly	=	quarterly parameters
T Default	=	region or district default values

Legend:

In 'Source' column: 'Tnn' refers to GAS table identity - full descriptions are shown on Page A-19.
 'Snn' refers to the step number within this example.
 'mark' refers to values on the corporate data base for each mark.

Bullet (●) indicates variables to be displayed on output.

	Compute Species Selling Price	Units	Decimal	Maximum Value	Source	Example	Rounded
1.	Grade fraction ● = species grade percent/100	n/a n/a	2 0	1.00 100	Mark	.07 07	
2.	Grade fraction price = grade AMV ● * grade fraction	\$/m ³ \$/m ³ n/a	4 2 2	999.9999 999.99 1.00	T Log AMV S01	4.5661 65.23 .07	
3.	Grade fraction price sum = sum of grade fraction prices (all grades)	\$/m ³ \$/m ³	4 4	999.9999 999.9999	S02	45.4074 4.5661	
4.	Species selling price ● = grade fraction price sum	\$/m ³ \$/m ³	2 4	999.99 999.9999	S03	45.41 45.4074	yes
Compute Operating Costs							
5.	Trended logging cost ● = untrended logging cost ● * logging trend factor ●	\$/m ³ \$/m ³ n/a	2 2 3	999.99 999.99 9.999	mark T Trend	44.36 43.07 1.030	yes
6.	Trended silviculture cost ● = untrended silviculture cost ● * silviculture trend factor ●	\$/m ³ \$/m ³ n/a	2 2 3	99.99 99.99 9.999	mark T Trend	1.27 1.23 1.030	yes
Compute Species Selling Price							
7.	Species operating cost ● = trended logging cost ● + trended silviculture cost ●	\$/m ³ \$/m ³ \$/m ³	2 2 2	999.99 999.99 999.99	S05 S06	45.63 44.36 1.27	

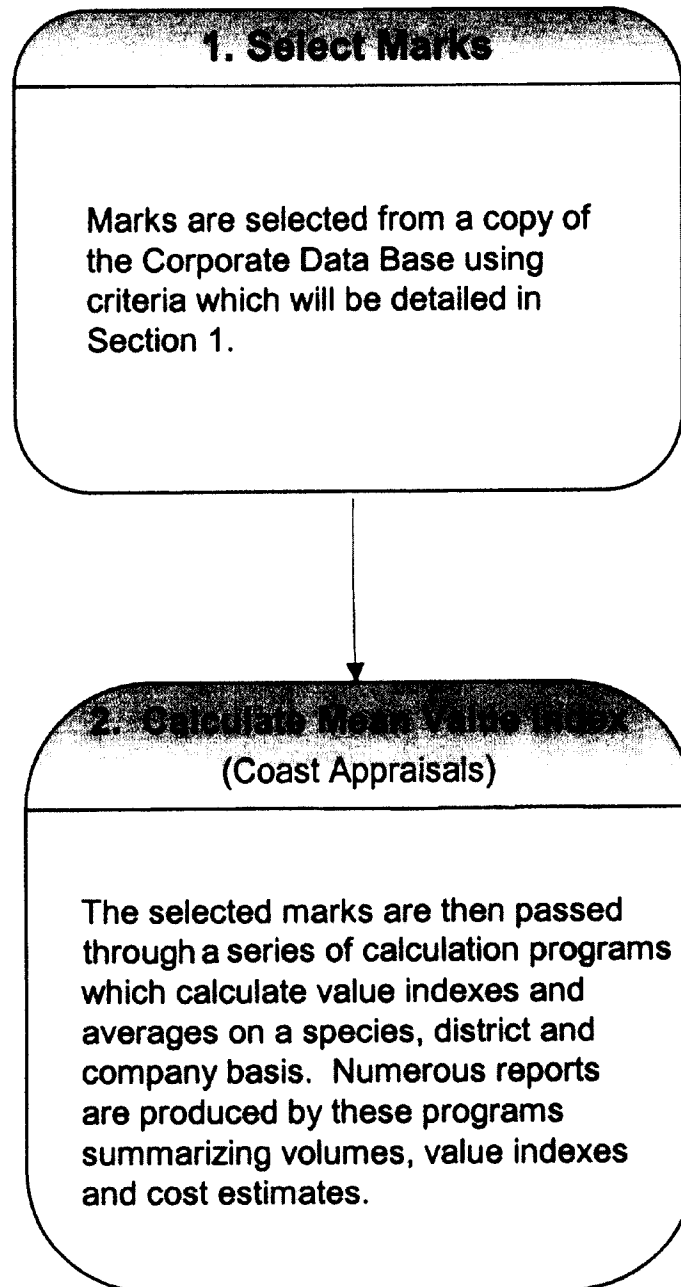
Compute Species Selling Price (continued)

8.	Species value ●	\$	0	99999999		3231285	yes
	= species selling price	\$/m ³	2	999.99	S04	45.41	
	* species cruise volume ●	m ³	0	1000000	mark	71158	
9.	Species cost ●	\$	0	99999999		3246940	yes
	= species operating cost	\$/m ³	2	999.99	S07	45.63	
	* species cruise volume ●	m ³	0	1000000	mark	71158	
10.	Stand value ●	\$	0	999999999		14671518	
	= sum of species values (all species)	\$	0	99999999	S08	3231285	
11.	Stand cost ●	\$	0	999999999		10691520	
	= sum of species costs (all species)	\$	0	99999999	S09	3246940	
12.	Stand volume ●	m ³	0	9000000		234309	
	= sum of cruise volumes (all species)	m ³	0	1000000	mark	71158	

Compute Stand Value Index

13.	Weighted selling price ●	\$/m ³	2	999.99		62.62	yes
	= stand value	\$	0	999999999	S10	14671518	
	/ stand volume	m ³	0	9000000	S11	234309	
14.	Weighted operating cost ●	\$/m ³	2	999.99		45.63	yes
	= stand cost	\$	0	999999999	S11	10691520	
	/ stand volume	m ³	0	9000000	S12	234309	
15.	Stand value index ●	\$/m ³	2	999.99		16.99	
	= weighted selling price	\$/m ³	2	999.99	S13	62.62	
	- weighted operating cost	\$/m ³	2	999.99	S14	45.63	

Overview Flowchart



Calculating Coast Mean Value Index (CMVI)

1. Select Marks

The selection of coast marks is done from the snapshot of the SQLP1 database. Then, the species records for the mark are extracted to ensure only species subject to comparative value pricing, including the deciduous species alder and cottonwood, are used. Volumes billed for all coniferous species over the period (fourteen months prior to stumpage adjustment date to two months before the stumpage adjustment date) are then totalled into two groups; lo-grade sawlogs and hi-grade sawlogs. In subsequent coast base rate calculations, any sawlogs billed at minimum rates will be made revenue neutral. Finally, the mean value index eligible flag that was set by the regional appraisal officers is checked to determine whether a mark can be included in CMVI calculations.

Select Marks Which Meet the Following Criteria:

1. Mark is a stumpage mark.
2. Mark is appraised by the coast method.
3. Mark is not part of the SBFEP.
4. Mark is one of the following tenures:
 - a. Forest licence,
 - b. Tree farm licence,
 - c. Timber sale licence with allowable annual cut exceeding 10 000 m³,
 - d. Other tenures with allowable annual cut exceeding 10 000 m³, or
 - e. Timber licence
5. Mark has valid appraisal data permitting the calculation of a value index.
6. Mark has a total cruise volume of 100 cubic metres or more.
7. Mark has a confirmed worksheet with an appraisal effective date more recent than twenty-two months ago (from the stumpage adjustment date), that has not expired as of the stumpage adjustment date.
8. Mark has information for at least one of the following species: balsam, cedar, fir, cypress, hemlock, lodgepole pine, spruce, white pine, alder or cottonwood.

Calculate the Lo-Grade and Hi-Grade Volume Billed for All Coniferous Sawlog Species

9. Include the volume billed for the coniferous species shown above and the following species: white bark pine (WB), yellow pine and larch. Do not include the volumes of any deciduous species, including alder and cottonwood. Do not include volumes of special forest products. Only normal and cruise-based billings are included. Lo-grade volumes and values are based on the species and grades shown in the species lo-grade sawlog factors table for the applicable date. Hi-grade volumes are based on all volumes except Grade Z and lo-grade volumes.
10. Calculate the total volume billed for each mark by adding the individual species lo-grade and hi-grade volumes.
11. Exclude any mark where the total volume billed is less than 1 000 cubic metres.

Check the MVI Flag Coded by Regional Appraisal Officers

12. Check the mean value index flag set by the regional appraisal officers. Report any conflicts on the rejected marks report:
 - a. the flag indicates rejection but the above criteria indicate acceptance, or
 - b. the flag indicates eligibility but the above criteria indicate rejection.
13. Only selected marks, where the flag indicated eligibility and the above criteria indicate acceptance, are used in subsequent calculations.

2. Calculate Coast Mean Value Index

Legend:

In 'Source' column: 'SVI-Snn' refers to the step number from the STAND VALUE INDEX specification earlier in the document.
'Snn' refers to the step number within this specification.
'HH' refers to the sum of volumes from the specified twelve months of harvest history.

In 'Max. Value' column: 9(8) means 99999999.

Bullet (●) indicates variables to be displayed on output.

Calculate Stand Value Index for (Coast) Appraisal (for reference see page A21)

Compute Mean Value Index		Units	Decimal	Maximum Value	Source	Example	Rounded
1.	Stand value cross product ● = stand value index * stand billed volume	\$ \$/m ³ m ³	0 2 0	9(9) 999.99 9(8)	SVI-S15 HH	6015 12.03 500	yes
2.	Cross product total value ● = sum of stand value cross products (all marks)	\$ \$	0 0	9(12) 9(11)	S1	6015	
3.	Total coast billed volume ● = sum of stand billed volumes (all marks)	m ³ m ³	0 0	9(11) 9(10)	HH	500	
4.	Coast mean value index ● = cross product total value / total coast billed volume	\$/m ³ \$ m ³	2 0 0	999.99 9(12) 9(11)	S2 S3	6015 500	

Calculating Base Rate for (Interior and Coast) Appraisals**Legend:**

In 'Source' column: 'Tnn' refers to the GAS table identity - full descriptions are shown on page A-19.
'Snn' refers to the step number within this example.
'MVI' refers to the value from the mark VI data file produced in the coast mean value index calculation.

Bullet (●) indicates variables to be displayed on output.

Initialize Trial Base Rate

1. Initialize trial base rate = target rate.

Compute Trial Average Rate

2. Compute trial average rate (steps 2.1 to 2.17 shown on the following pages).
3. Compute new trial base rate = trial base rate + target rate - trial average rate. Repeat steps 2 and 3 until trial average rate = target rate or until number of iterations exceed maximum permitted.

Base Rate Static

4. Final base rate ● = new trial base rate ●.

To Find Other Base Rates that Yield the Same Trial Average Rate

5. Initial value for trial base rate ● + or - \$0.01 depending on whether the base rate exceeds or is less than the target rate.
6. Compute trial average rate (steps 2.1 to 2.17).
7. Compute new trial base rate = trial base rate - 0.01. Repeat steps 6 and 7 until trial average rate is 1 cent less than or greater than target, or until number of iterations exceeds maximum.

Maximum Iterations Reached

8. If number of iterations exceeds ● maximum iterations then print an appropriate message.

Compute Trial Average Rate

	Compute Trial Stand Value for Each Mark	Units	Decimal	Maximum Value	Source
2.1	Relative value index ● = stand value index ● - mean value index ●	\$/m ³ \$/m ³ \$/m ³	2 2 2	999.99 999.99 999.99	MVI T Quarterly
2.2	Trial indicated rate ● = trial base rate ● + adjusted relative value index	\$/m ³ \$/m ³ \$/m ³	2 2 2	999.99 999.99 999.99	S1 S2.2

		Units	Decimal	Maximum Value	Source
2.3	Trial reserve rate ● = maximum of trial indicated rate or minimum rate ●	\$/m ³ \$/m ³ \$/m ³	2 2 2	999.99 999.99 999.99	S2.3 T Quarterly
2.4	Trial rate trigger excess = trial reserve rate - rate reduction trigger	\$/m ³ \$/m ³ \$/m ³	2 2 2	999.99 999.99 999.99	S2.3 T Quarterly
2.5	Trial rate reduction = trial rate trigger excess * rate reduction ratio ●	\$/m ³ \$/m ³ none	2 2 2	999.99 999.99 1.00	S2.5 T Quarterly
2.6	If trial rate reduction L. T. zero then trial rate reduction = zero	\$/m ³	2	999.99	
2.7	Trial reduced reserve rate ● = trial reserve rate - trial rate reduction	\$/m ³ \$/m ³ \$/m ³	2 2 2	999.99 999.99 999.99	S2.4 S2.6 or S2.7

If Mark District is NOT Subject to Special Default Rates

2.8	Trial hi-grade rate ● = trial reduced reserve rate	\$/m ³ \$/m ³	2 2	999.99 999.99	S2.8
-----	--	--	--------	------------------	------

If Mark District is Subject to Special Default Rates

2.9	Trial hi-grade rate ● = default rate (e.g., \$1.25)	\$/m ³ \$/m ³	2 2	999.99 999.99	T Default
2.10	Stand hi-grade billed volume = stand billed volume - stand lo-grade billed volume	m ³ m ³ m ³	0 0 0	9(8) 9(8) 9(8)	MVI MVI
2.11	Stand hi-grade value ● = stand hi-grade billed volume * trial hi-grade rate	\$ m ³ \$/m ³	0 0 2	9(10) 9(8) 999.99	S2.10 S2.9
2.12	Stand lo-grade value ● = stand lo-grade billed volume * trial lo-grade rate (e.g., \$0.25)	\$ m ³ \$/m ³	0 0 2	9(10) 9(8) 999.99	MVI T Default
2.13	Trial stand value ● = stand hi-grade value + stand lo-grade value	\$ \$ \$	0 0 0	9(10) 9(10) 9(10)	S2.11 S2.12

Compute Stand Totals		Units	Decimal	Maximum Value	Source
2.14	Stand net rate ● = trial stand value / stand billed volume	\$/m ³ \$ m ³	2 0 0	999.99 9(10) 9(8)	S2.13 MVI
2.15	Total trial value ● = sum of trial stand values (all marks)	\$ \$	0 0	9(12) 9(10)	S2.13
2.16	Total billed volume ● = sum of stand billed volumes (all marks)	m ³ m ³	0 0	9(10) 9(8)	MVI
Compute Trial Average Rate					
2.17	Trial average rate ● = total trial value / total billed volume	\$/m ³ \$ m ³	4 0 0	999.9999 9(12) 9(10)	S2.15 S2.16

Calculating Stumpage Rate for Appraisals

Legend:

In 'Source' column:

- 'Mark' refers to the values on the corporate data base for each mark.
- 'Tnn' refers to GAS table identity - full descriptions are shown on page A-19.
- 'SVI-Snn' refers to the step number from the STAND VALUE INDEX specifications earlier in this document.
- 'Snn' refers to the step number within this specification.

In 'Max. Value' column:

9(8) means 99999999.

Bullet (●) indicates variables to be displayed on output reports.

Calculate Stand Value Index for Appraisals (for reference see page A21)

Compute Final Stumpage Rate		Units	Decimal	Maximum Value	Source	Example	Rounded
1.	Relative value index = stand value index - mean value index ●	\$/m ³ \$/m ³ \$/m ³	2 2 2	999.99 999.99 999.99	SVI-S15 T Quarterly	7.01 16.99 9.98	

		Units	Decimal	Maximum Value	Source	Example	Rounded
2.	Indicated Rate ●	\$/m ³	2	999.99		16.91	
	= base rate ●	\$/m ³	2	999.99	T Quarterly	9.90	
	+ relative value index	\$/m ³	2	999.99	S1	7.01	
3.	Stumpage rate trigger excess	\$/m ³	2	999.99		16.91	
	= indicated stumpage rate	\$/m ³	2	999.99	S2	16.91	
	- stumpage rate reduction trigger	\$/m ³	2	999.99	T Quarterly	0.00	
4.	Stumpage rate reduction	\$/m ³	2	999.99		0.00	yes
	= stumpage rate trigger excess	\$/m ³	2	999.99		16.91	
	* stumpage rate reduction ratio	\$/m ³	2	1.00	T Quarterly	0.00	
5.	If stumpage rate reduction < 0 then stumpage rate reduction = 0	\$/m	2	999.99		0.00	
6.	Reserve rate ● = maximum of indicated stumpage rate - stumpage rate reduction	\$/m ³	2	999.99		16.91	
	or minimum rate ●	\$/m ³	2	999.99	S2 - S4	16.91	
		\$/m ³	2	999.99	T Quarterly	0.25	
7.	Species reserve stumpage rate ●	\$/m ³	2	999.99		1.00	
	= minimum of district species ceiling stumpage rates or reserve rate (if ceiling applies)	\$/m ³	2	999.99	T Default	1.00	
		\$/m ³	2	999.99	S3	16.91	
8.	Upset stumpage rate ●	\$/m ³	2	999.99		6.22	
	= species reserve rate	\$/m ³	2	999.99	S7	1.00	
	+ silviculture levy ●	\$/m ³	2	99.99	mark	3.90	
	+ development levy ●	\$/m ³	2	99.99	mark	1.32	
9.	Total stumpage rate ●	\$/m ³	2	999.99		7.45	
	= upset stumpage rate	\$/m ³	2	999.99	S8	6.22	
	+ bonus bid ●	\$/m ³	2	999.99	mark	1.25	

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