



Cranbrook TSA
A G&Y Perspective on Timber Supply

Primary Sources: ®
 Timber Supply Area Analysis Report, December, 1999
 AAC Rationale, December, 2000

Short Summary: Dominated by fairly young pine (47%) and doug-fir/larch (31%), the TSA is looking at a mid-term dip 15% below the current AAC and LTHL.

Characteristic or sensitivity	Short-term	Mid-term	Long-term	Implications
Final AAC and base case harvest flow	Final AAC 0.87M; 0.84M base case	Dips below LTHL to 0.75M at 130 yrs	LTHL 0.88M at 190 yrs	Sensitivity analyses indicate dip is sensitive to a number of issues
Age-class distribution under base case	Fairly young distribution with only 29% above MHA	Distribution stabilizes after 150 yrs	Old seral reserves continue to age in the non-THLB	THLB 31% of total TSA and 57% of productive forest, non-THLB buffers some constraints
Alternate harvest flows	1) 0.83M max even flow; 2) increase to 1.01M for 10 yrs	2) dips below LTHL to 0.75M at 20 yrs	2) steps up to base case LTHL at 140 yrs (50 yrs earlier)	Accelerated cutting hastens the dip and the transition to managed stands (LTHL)
Sensitivity to site index of managed stands (OGSI)	Not analyzed since old pine only 2.2% of THLB			Sensitivity likely similar to managed stand yields; probably are benefits from approaches other than classical OGSI
Sensitivity to green-up ages	+/- 3 yrs has no short-term effect	+3yrs hastens dip; -3yrs reduces dip by half	Same base case LTHL	Green-up ages are rarely underestimated (i.e., would need to be increased)
Sensitivity to managed stand yields	+/- 10% no effect on short term	+10% eliminates dip; -10% hastens dip	Direct and proportional effect on LTHL at about 150 yrs	Improving PHR yields (site index, select seed, yield tables, OAFs, etc) will effect dip and LTHL
Sensitivity to existing stand yields	-5.5% no effect; +10% allows immediate even flow at LTHL	-5.5% hastens dip to 50 yrs	-5.5% accelerates managed stand harvest bringing LTHL to 150 yrs	Audit OK overall; trends indicated -4.1% on THLB >60 yrs old; -5.5% is worst case
Other issues	<ul style="list-style-type: none"> • Root rot (Armillaria) an identified issue on 6K ha of THLB – recent CFS info indicates chronic growth-loss may have greater impact than mortality. • Partial cutting and multi-species stands indicate the need to support improved modelling of complex stands (e.g., PrognosisBC and TASS). 			

Standard caveats	<ul style="list-style-type: none"> • A long-term G&Y data and model building strategy is needed to continually check and improve G&Y predictions. This includes a rationalized data strategy incorporating PSP's, EP's and Monitoring Plots. G&Y co-ops help coordinate these strategies across management units to gain cost and logistic efficiencies. • Under a given a set of data and assumptions, every unit has many possible timber supply forecasts depending on harvest policy and analyst prerogative. A base case and its associated sensitivity analyses represent only one perspective; there are many others. Before pursuing investments to improve the base case harvest flow, one should first determine what alternate forecasts are possible with the existing data and assumptions. • Regardless of AAC effects, G&Y investments should be pursued in their own right, as a matter of due diligence, in continuous pursuit of better information to support sustainable forest management. A balanced program looks at both positive and negative factors affecting G&Y and AAC. For PHR yields, this means moderating potential growth with realistic management expectations through appropriate application of site index, models and OAFs. • Ecosystem mapping is frequently justified solely as a spatial linkage for PHR site index estimates. It is also becoming an important management tool to support and document an ecosystem-based approach to sustainable forest management.
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Abbreviations used: AAC, Allowable Annual Cut; CMAI, Culmination of Mean Annual Increment; DWB, Decay, Waste and Breakage; EP, Experimental Plot; G&Y, Growth and Yield; LTHL, Long-term Harvest Level; M, million (cubic meters); MHA, Minimum Harvest Age; OAF, Operational Adjustment Factor; OGS, Old-growth Site Index, PHR, Post-harvest Regenerated (managed stands); PSP, Permanent Sample Plot; THLB, Timber Harvesting Land Base; TSA, Timber Supply Area; TSR, Timber Supply Review; VQO, Visual Quality Objective

Selected TSR terms: **Short-term**, harvest flow over the first couple decades relying solely on the current inventory of existing mature and over-mature stands; **Mid-term**, the gradual transition (fall down) to LTHL that occurs during the shift to managed PHR stands; **Long-term**, maintenance of the LTHL where harvesting has reached equilibrium with growth and other management objectives (harvest constraints).

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