Invermere TSA

A G&Y Perspective on Timber Supply

Primary Sources:
Timber Supply Area Analysis Report, October, 2000
AAC Rationale, August, 2001

Short Summary: Dominated by doug-fir/larch (45%) and pine (39%); the TSA is looking at a 26-33% harvest decline over the few decades. Similar to Golden.

Characteristic or sensitivity	Short-term	Mid-term	Long-term	Implications
Final AAC and base case harvest flow	Final AAC and base case 0.58M	Declines 26-33% over next 20-50 yrs (below LTHL)	0.42M LTHL	Proportionally a huge decline; mitigation options include site index work
Age-class distribution under base case	45% of THLB above MHA with few stands >250 yrs old	Non-THLB ages and provides more old seral	Old seral reserves mostly in the non-THLB	THLB 22% of total TSA and 50% of productive forest, non-THLB buffers some constraints.
Alternate harvest flows	1) 0.43M max even flow; 2) hold AAC for 20 yrs; 3) immediate 10% reduction	2) dips 0.5% below LTHL from 50-90 yrs; 3) drops at 30yrs but not below LTHL	All same base case LTHL	Little short-term flexibility with current data and assumptions
Sensitivity to site index of managed stands (OGSI)	Base case maintained	Dips below new LTHL but still above old LTHL	New LHTL 0.51M beginning at 40 yrs, 12% below current AAC	Improving site index estimates shows promise, best opportunity in pine
Sensitivity to green-up ages	-2/+5yrs no effect in IRM zone	No effect	No effect	Appears site index will affect PHR yields but not adjacency constraints
Sensitivity to managed stand yields	+/- 10% no effect on short term	+10% creates a midterm dip by increasing LTHL	Direct and proportional effect on LTHL at 70-90yrs	Improving PHR yields (site index, select seed, yield tables, OAFs, etc) mostly effects LTHL
Sensitivity to existing stand yields	+10% no effect; -10% lowers cut 10%	+10% postpones drop to 40 yrs; -10% dips below LTHL at 30 yrs	+10% reaches base case at 60 yrs; -10% at 80 yrs	Audit indicated inventory estimates are OK
Other issues	• An unusually high level of partial cutting (46% of harvest area) indicates the need to support improved modelling of complex stands (e.g., PrognosisBC and TASS). • Root Rot effects need better understanding – recent CFS info indicates chronic growth-loss may have greater impact than mortality.			

Standard caveats	• 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.

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; **OGSI**, 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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