



**Arrow TSA**  
**A G&Y Perspective on Timber Supply**

Primary Sources:  
 Timber Supply Area Analysis Report, April, 2000  
 AAC Rationale, January, 2001

**Short Summary:** Largely ICH with fir/larch and pine along with some ESSF. Lots of social and environmental pressures compounding a tight timber supply. Next determination for IFPA.

Characteristic or sensitivity	Short-term	Mid-term	Long-term	Implications
Final AAC and base case harvest flows	Final AAC 0.55M down 11% from previous; initial base case 0.69M	Fall begins yr 10, dips below LTHL	Initial base case LTHL 0.56M, revised 0.47M	Final AAC and revised LTHL recognize many +/- pressures and uncertainties, a few are G&Y related
Age-class distribution under base case	Fairly good distribution with 62% above MHA; shortage of old seral	Old seral reserves build outside THLB	Old seral reserves mostly in non-THLB	THLB 50% of crownland and 27% total TSA area, non-THLB buffers some constraints
Alternate harvest flows	1) maintain 0.69M for 40 yrs; 2) non-declining flow 0.51M; 3) immediate 10% reduction	1) extends deepest dip below LTHL; 2&3) same as base case	LTHL's all same as base case	Little short- or mid-term flexibility under base case assumptions
Sensitivity to site index of managed stands (OGSI)	Base case maintained	No affect on mid-term dip below LTHL	7% higher LHTL is reached 60 yrs earlier	Largest potential in pine, test to confirm mid-term insensitivity; note revised LTHL includes OGSI for spruce and pine
Sensitivity to green-up ages	Base case maintained	Decreasing by 5 yrs has little effect on mid- or long-term	Increasing by 5 yrs decreases mid- and long-term by 13%	Rare that green-up ages are underestimated (would need to be increased)
Sensitivity to managed stand yields	Base case maintained	No affect on mid-term dip below LTHL	Direct and proportional effect on LTHL	Along with site index, improving PHR yields (yield tables, OAFs, etc) mainly effects LTHL
Sensitivity to existing stand yields	+10% volume extends base case harvest to 50 yrs; -10% lowers harvest 10%	+10% nearly eliminates dip below LTHL; -10% lowers mid-term dip by 10%	No affects on LTHL	Although the inventory audit appears OK, age of the inventory is a concern (species comp issues, etc)

Other issues	<ul style="list-style-type: none"> <li>• Root Rot identified as a major unquantified G&amp;Y issue – recent CFS info indicates chronic growth-loss may have greater impact than mortality; other significant health issues include spruce weevil and bark beetle.</li> <li>• Prevalence of multi-species ICH and growing use of variable retention systems indicate the need to support improved modelling of complex stands (e.g., PrognosisBC and TASS).</li> </ul>
Standard caveats	<ul style="list-style-type: none"> <li>• A long-term G&amp;Y data and model building strategy is needed to continually check and improve G&amp;Y predictions. This includes a rationalized data strategy incorporating PSP's, EP's and Monitoring Plots. G&amp;Y co-ops help coordinate these strategies across management units to gain cost and logistic efficiencies.</li> <li>• 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.</li> <li>• Regardless of AAC effects, G&amp;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&amp;Y and AAC. For PHR yields, this means moderating potential growth with realistic management expectations through appropriate application of site index, models and OAFs.</li> <li>• 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.</li> </ul>

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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