

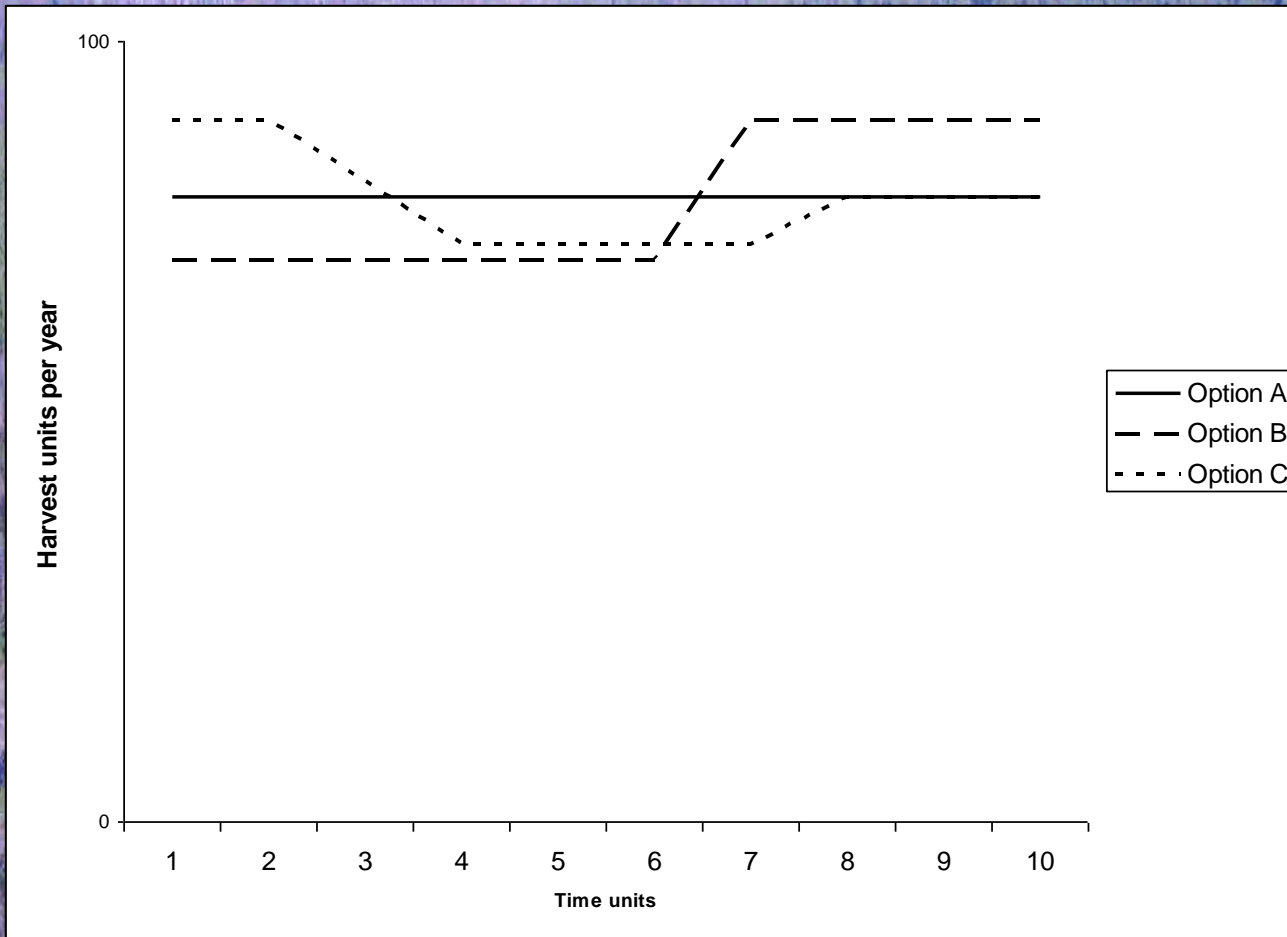
# Examining the length of the planning horizon in the midst of catastrophic natural disturbance and uncertainty



Presented by  
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Forest Analysis and  
Inventory Branch

**Decisions for Sustainability: Forest Estate Models for the Future**  
**June 12, 2007**

# Traditional harvest forecast





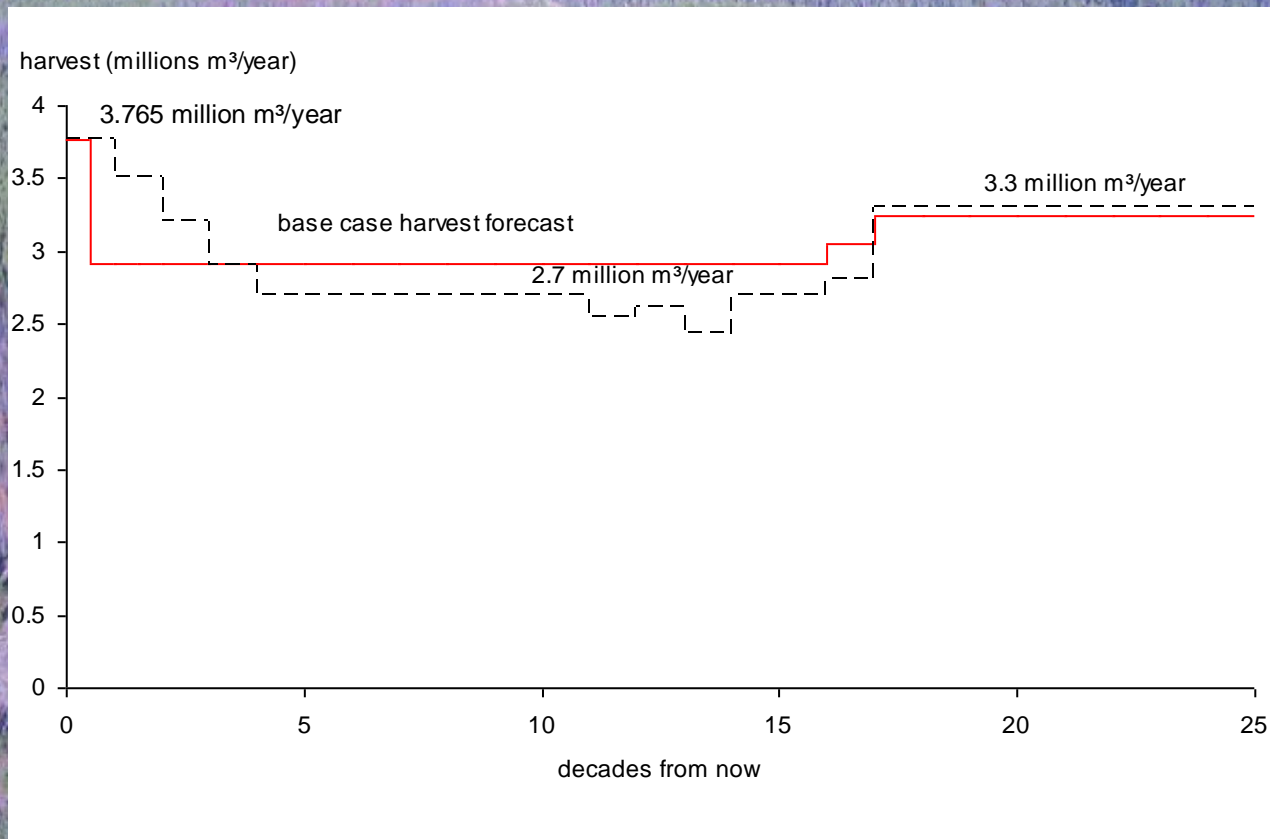
# Forest Manager's response to catastrophic natural disturbance

- Scale of the event
- Timeframe
- Agent of implementation
- Management objective (short term outcome vs long term outcome)

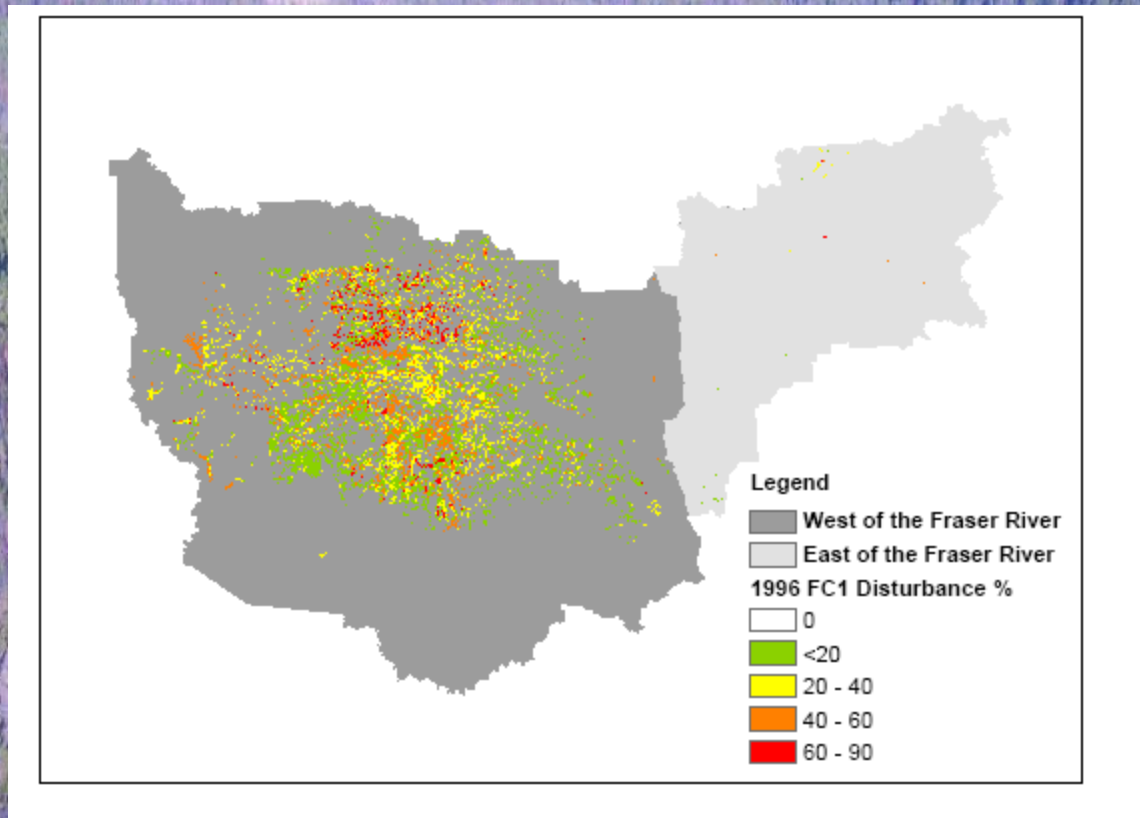
# BC Chief Forester – AAC determination

- Sets a strategic harvest level at least every 5 years
- Subject to consider legal requirements in Section 8 of the Forest Act
- MPB action plan  
(dead, susceptible, regenerate)
- Williams Lake TSA case study

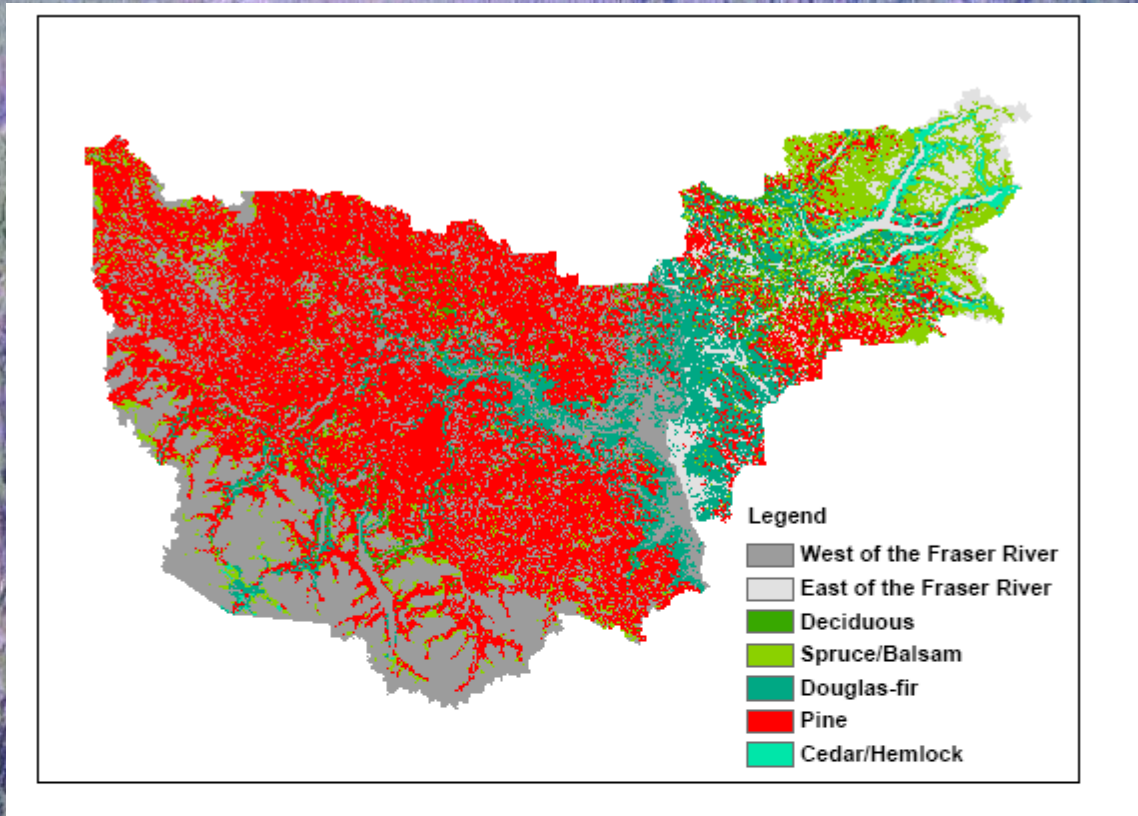
# AAC in 2006 / previous forecast



# 1980's MPB outbreak



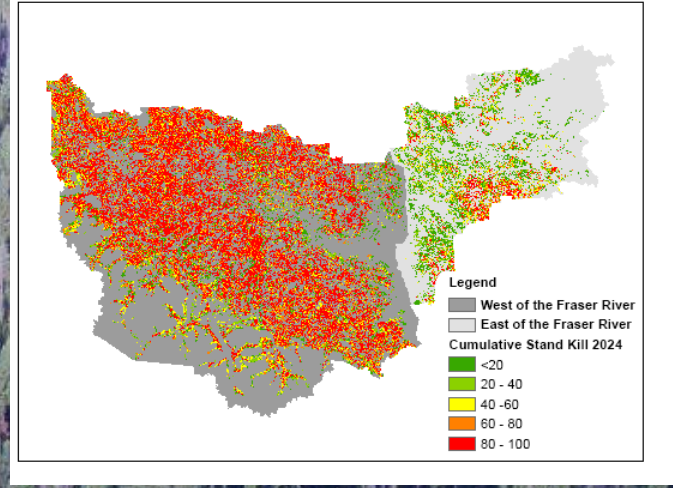
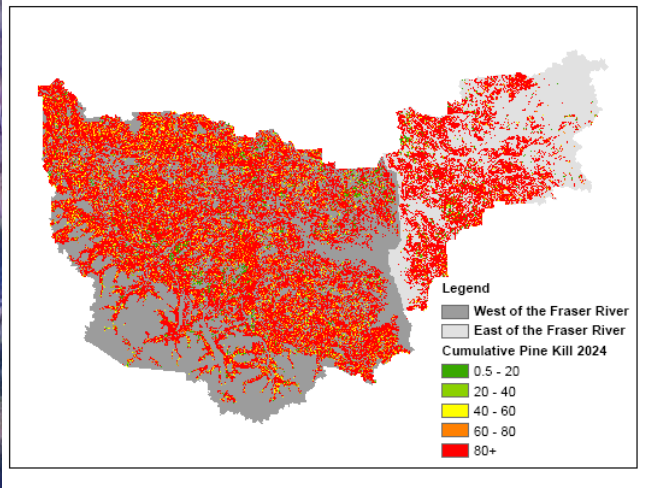
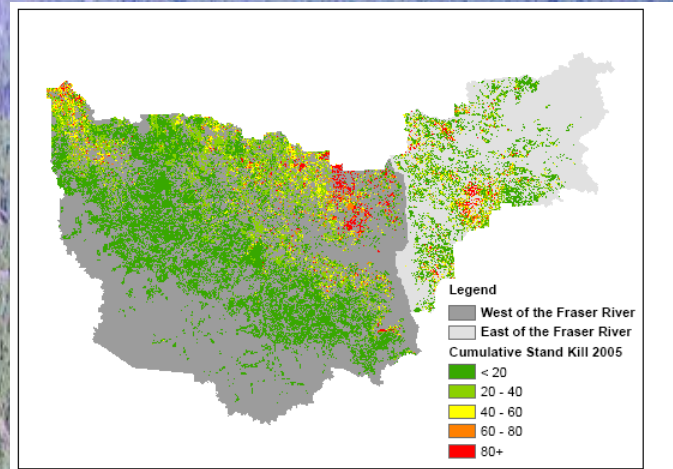
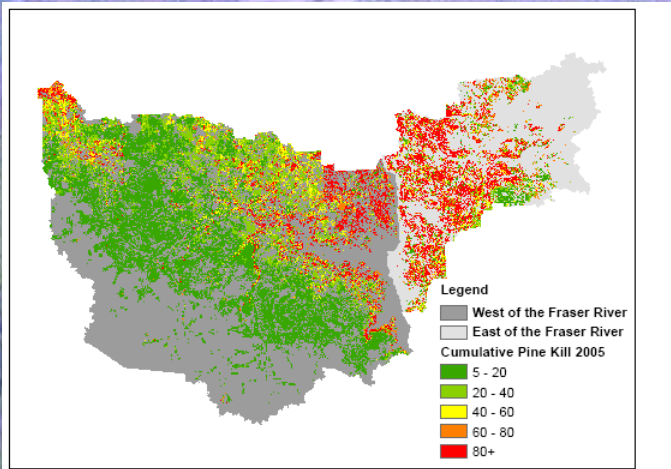
# Leading species distribution



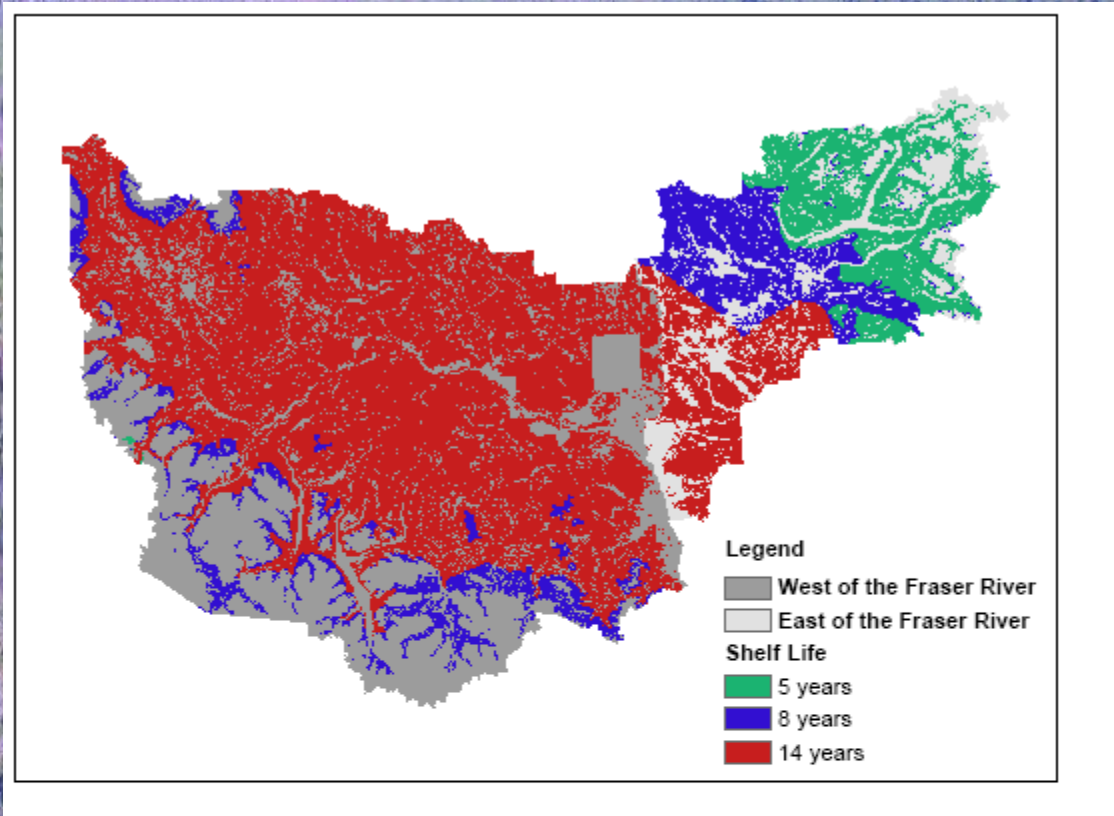
# Beetle epidemic

Location	% pine	Volume on the timber harvesting land base (millions of m <sup>3</sup> )	Volume of pine (millions of m <sup>3</sup> )	Pine volume projected to be killed by MPB (millions of m <sup>3</sup> )	Green volume in MPB impacted stands (millions of m <sup>3</sup> )
West of the Fraser River	>= 70%	97	94	73	15
	< 70%	22	5	4	13
East of the Fraser River	>= 70%	18	16	13	4
	< 70%	66	9	7	29
Williams Lake TSA		203	124	97	61

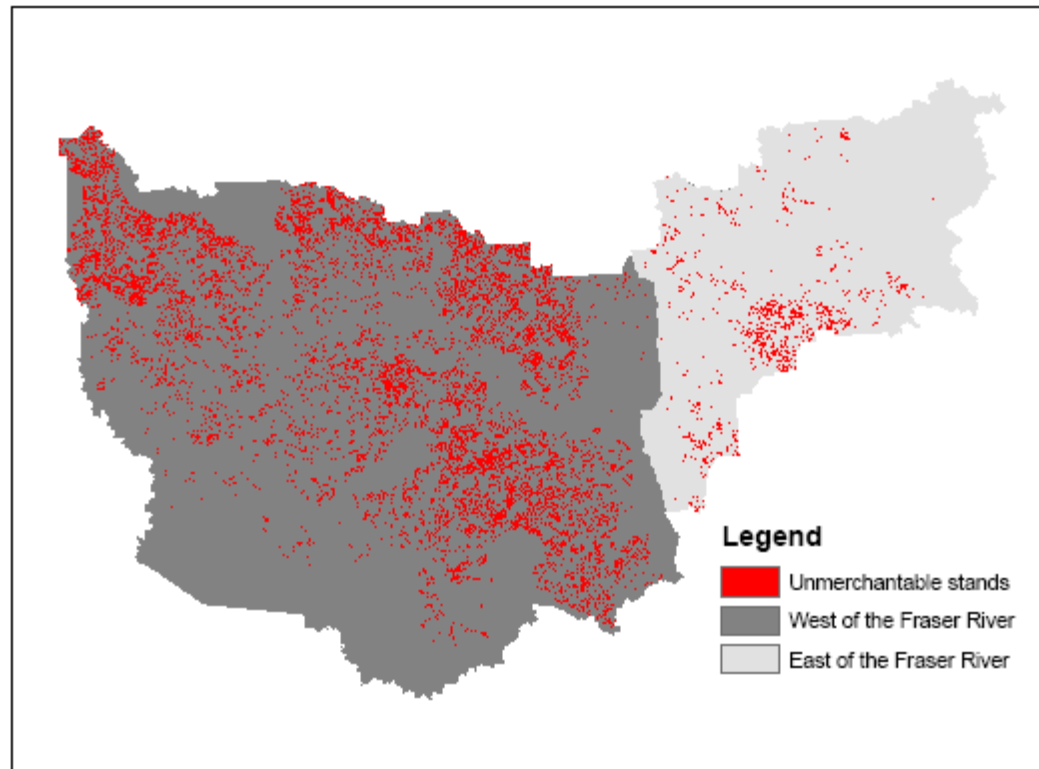
# Pine damage versus stand damage



# Sawlog Shelf Life



# Risk to merchantability



# Analysis scenarios

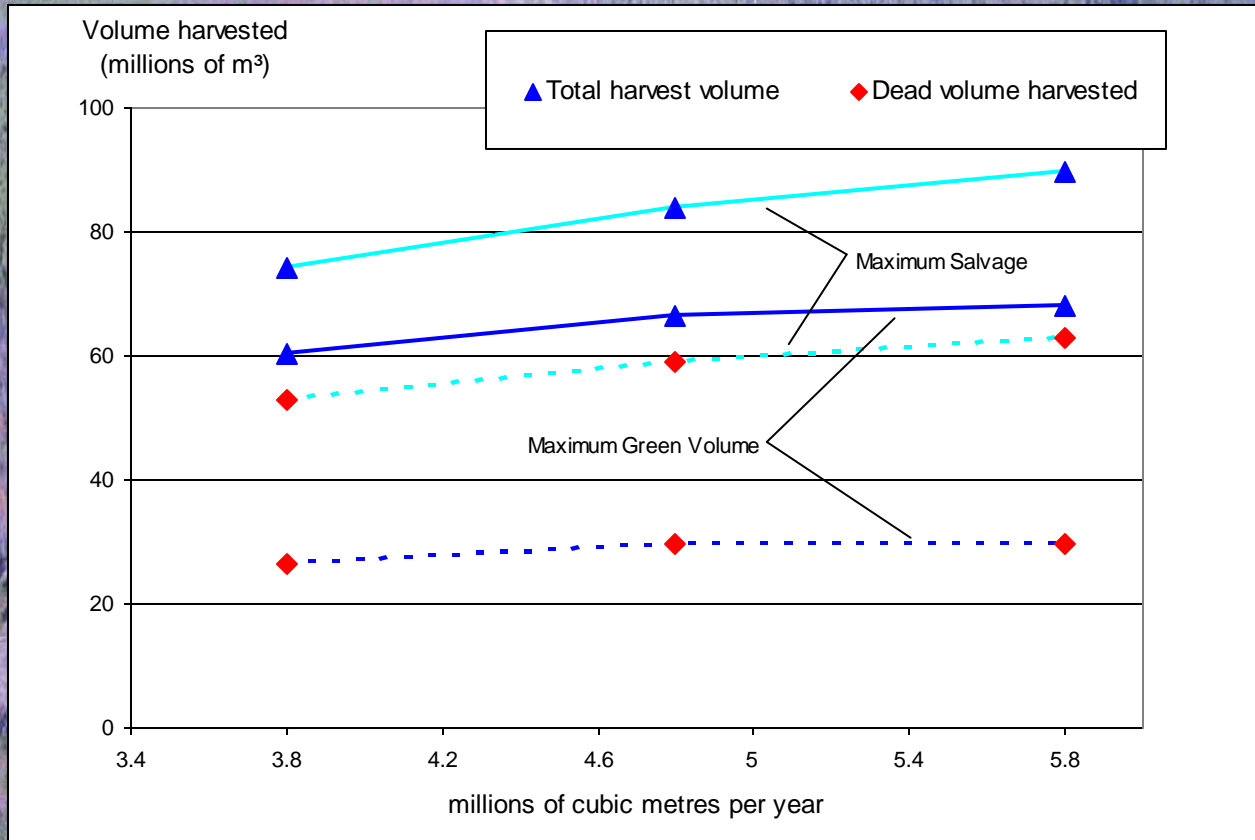
## *Harvest considerations for stands*

- Maximum green volume
- Maximum salvage
- Minimize non-recovered loss

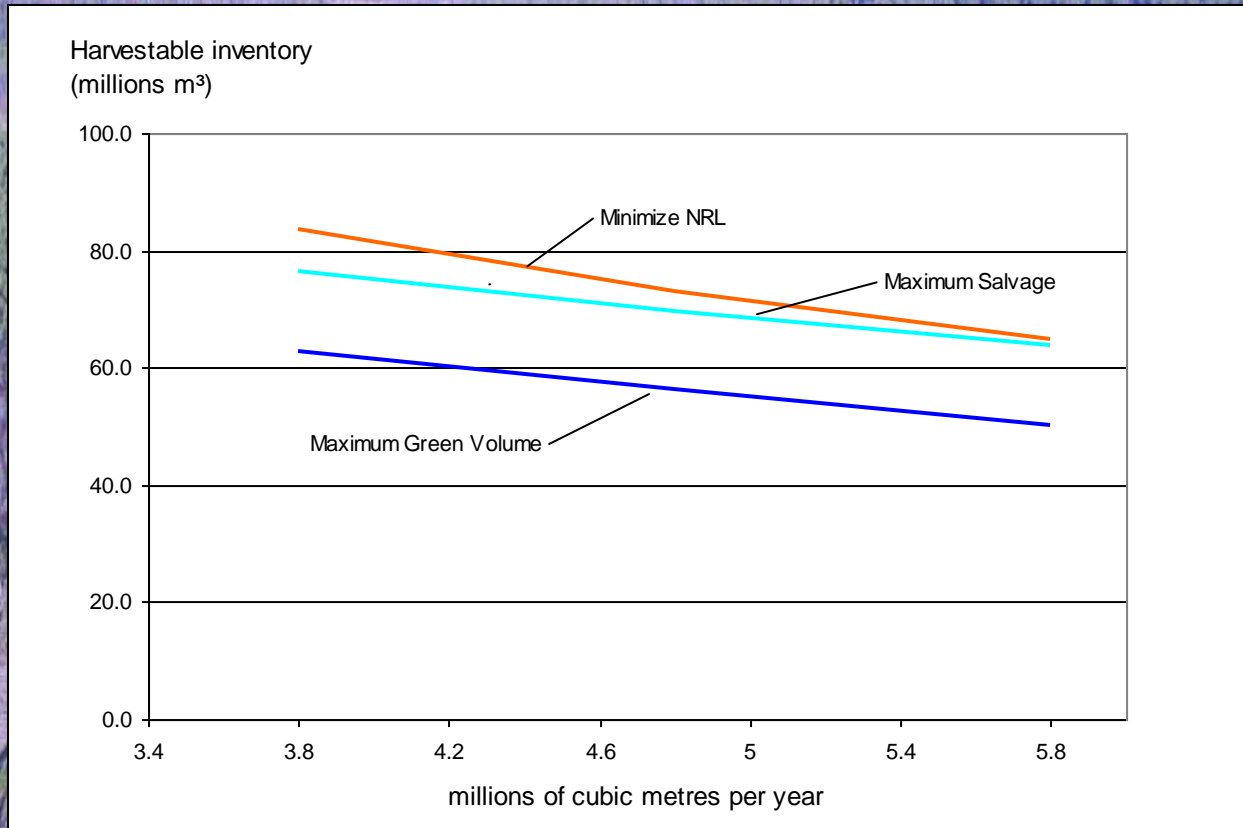
## *Harvest requests*

- 3.8 million m<sup>3</sup>/yr
- 4.8 million m<sup>3</sup>/yr
- 5.8 million m<sup>3</sup>/yr

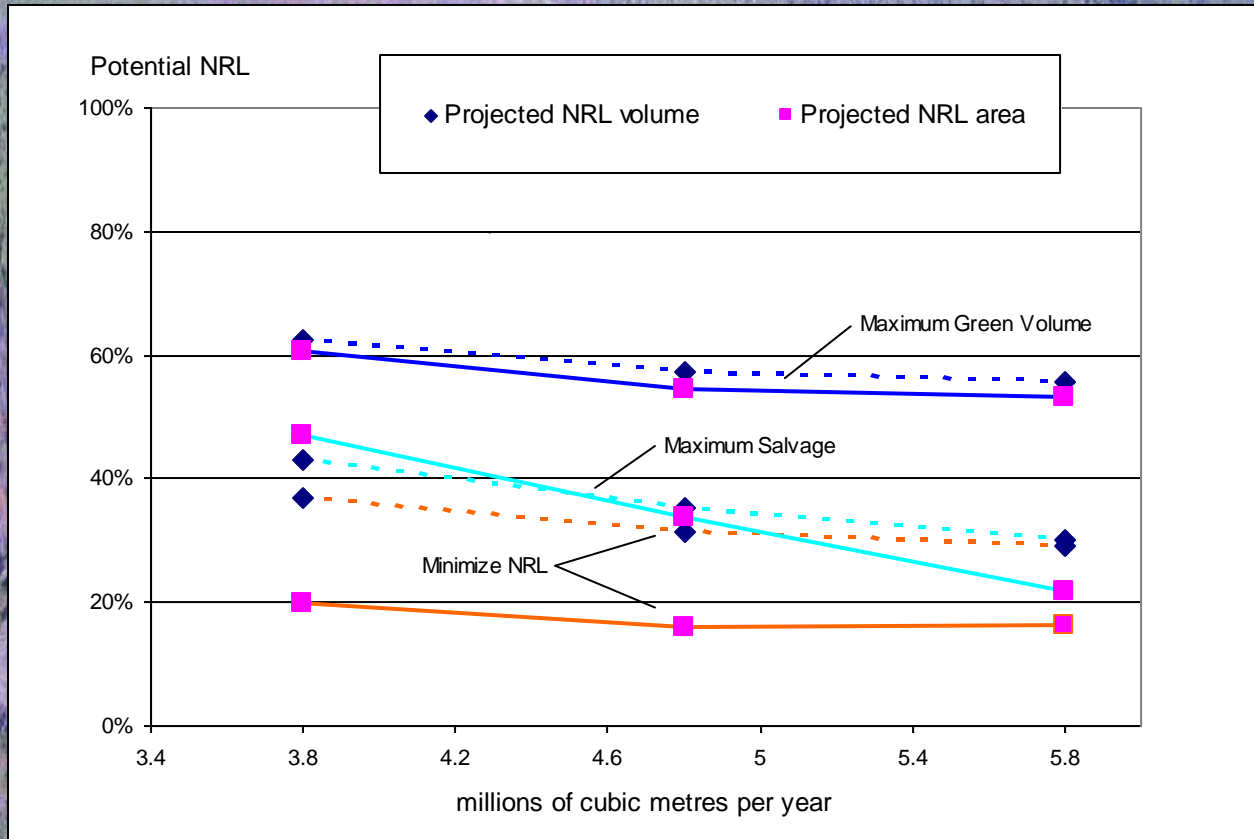
# Harvest outcomes



# Volume remaining in 20 years time



# Non-recoverable Losses



# Case study conclusions

- Harvest in stands with at least 70 per cent pine
- Harvest west of the Fraser River
- The higher the harvest level, the shorter the duration of an uplift and the less volume is available in 20 years time
- How stands are scheduled for harvest will affect the growing stock after uplift so be prudent.

# Keep the focus

- Simplify the problem construct to the decision scale (don't clutter the problem)
- Model the key driving uncertainties that affect the decision and its outcome
- Encapsulate the time of the natural process and the salvage opportunity
- Guide the implementation to influence the best outcome

# The decision from the case study

- <http://www.for.gov.bc.ca/hts/tsa/tsa29/tsr3/29ts07ra.pdf>

