



# Market Impacts from BC's Mountain Pine Beetle Epidemic Current and Future



Devil's Thumb

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WFE 2007  
Welches, Oregon



Eutsuk Peak Plot



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# Outline

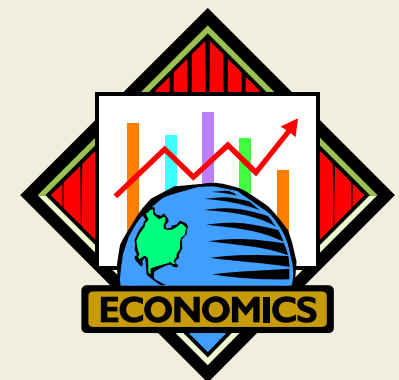
- Price Theory
- Current Situation
- Future Situation
- Final Remarks





# Price Theory

- For given aggregate demand, increased (decreased) aggregate supply will decrease (increase) market prices and increase (decrease) consumption/production



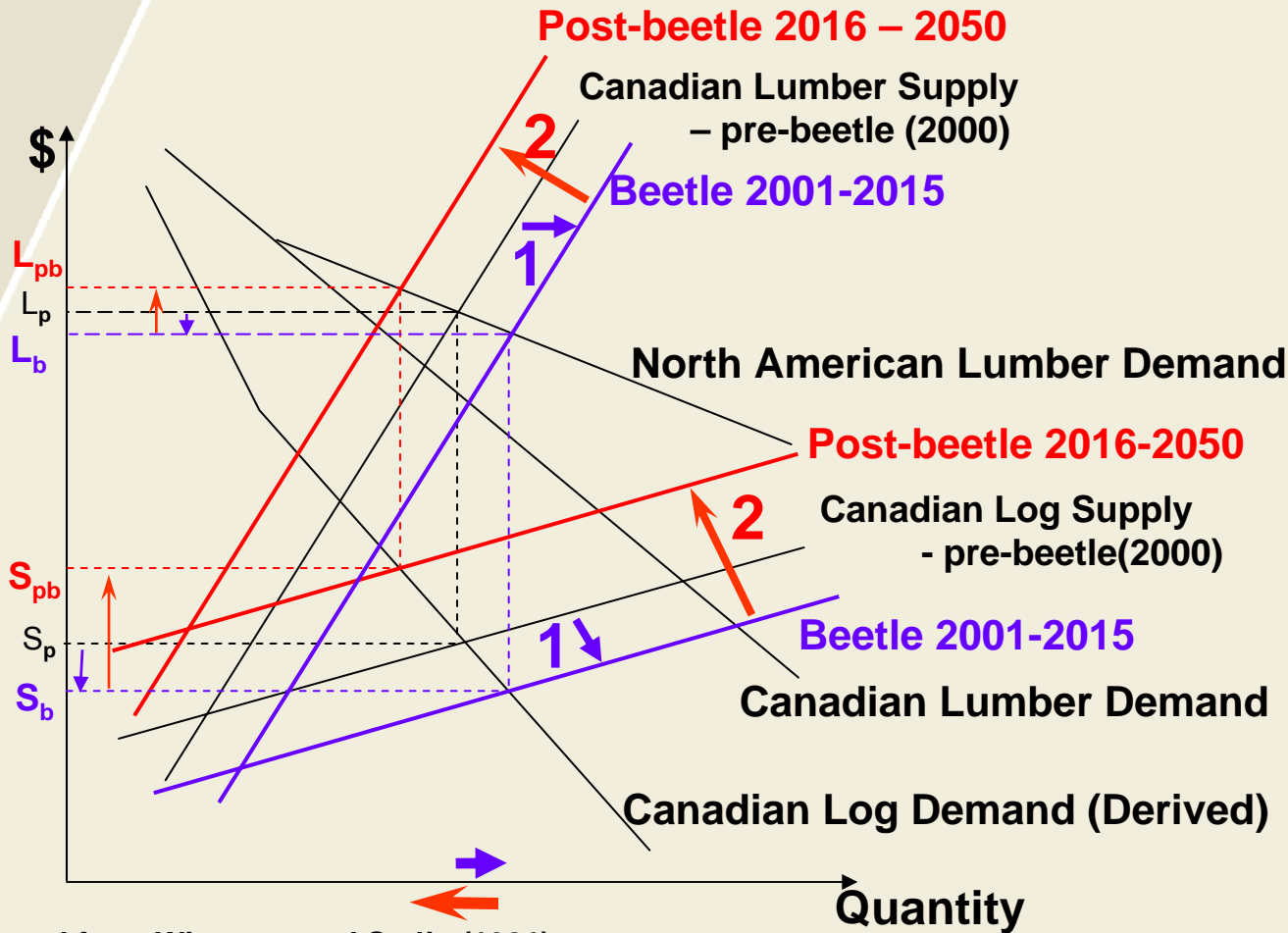
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# Beetle's Market Impacts



Adapted from Wiseman and Sedjo (1981)

## PHASE 1

- Lumber Cons. ↑
- Lumber Price ↓
- Lumber Imports ↑
- Log Price ↓
- Log Cons. ↑

## PHASE 2

- Lumber Cons. ↓
- Lumber Price ↑
- Lumber Imports ↓
- Log Price ↑
- Log Cons. ↓



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## Current Situation

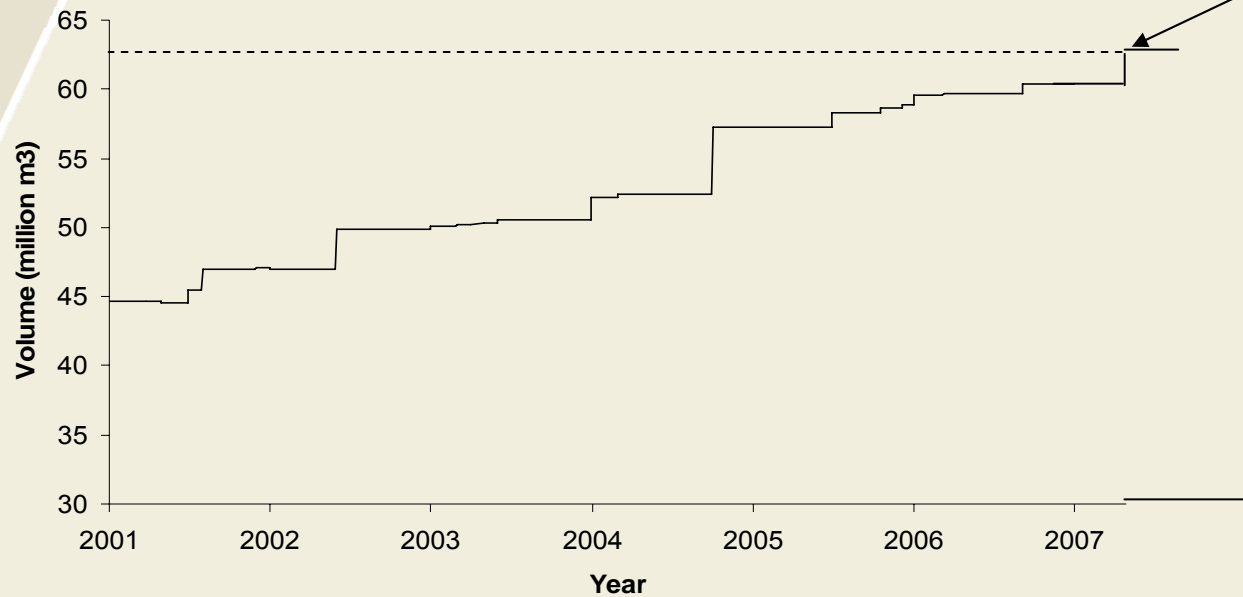
- BC Interior AAC and harvests UP
- BC Interior lumber and panel production UP





# AAC Up in Interior of BC

Williams Lake TSA ↑ 2 million m<sup>3</sup> – April 2007



↑ 18 million m<sup>3</sup>  
or  
12% of Canadian  
Softwood AAC  
(2004)



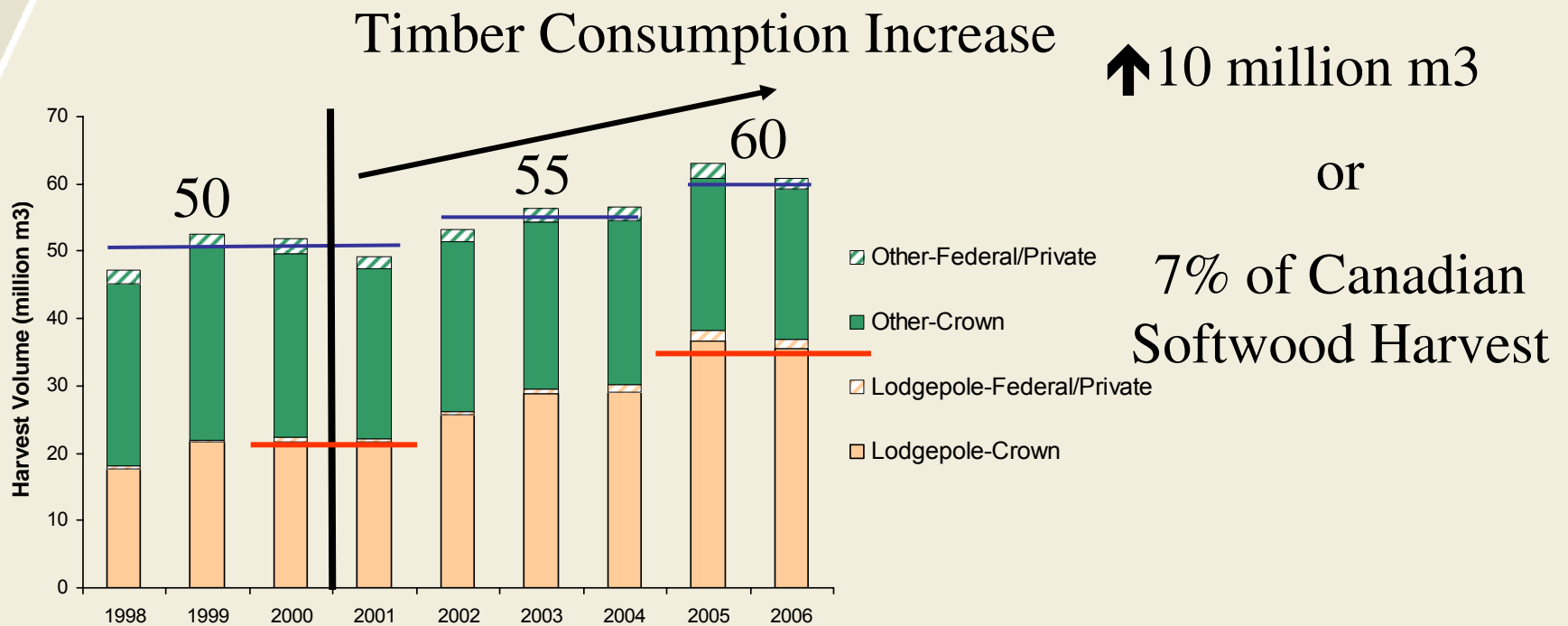
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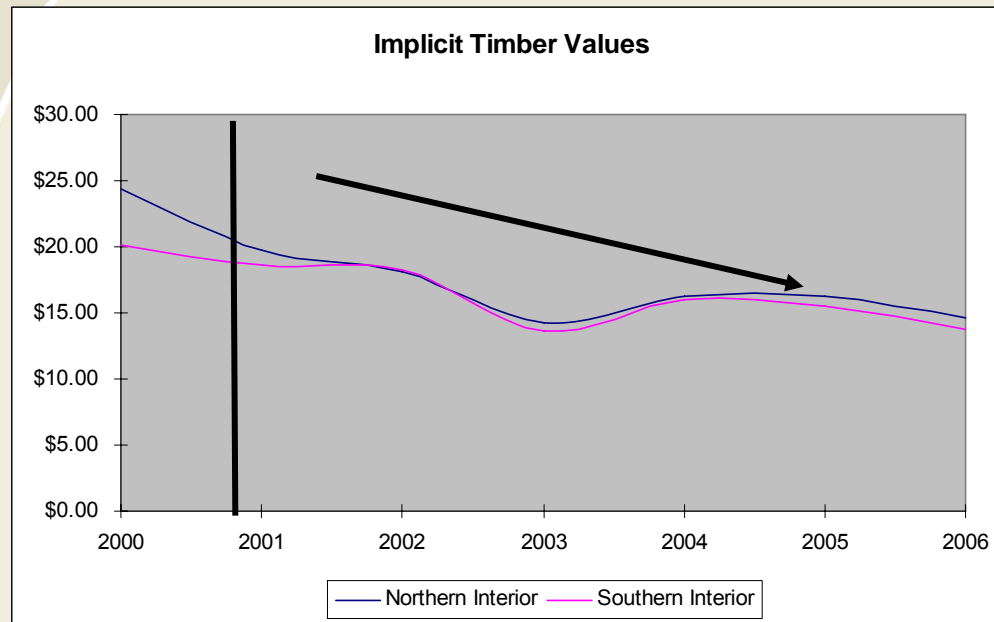


# Actual Harvest Levels in Interior BC





# Regional Timber Values



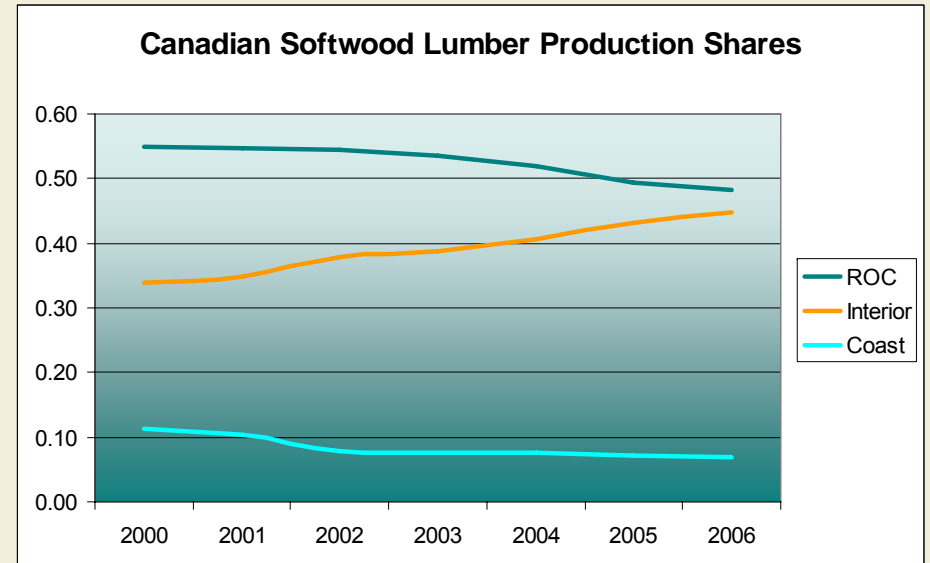
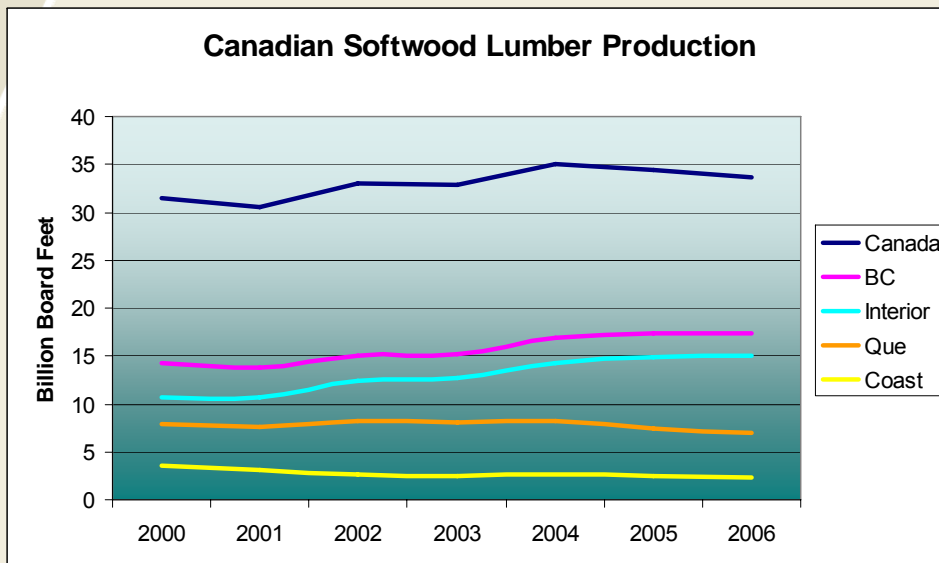
- Factors
  - Product Markets
  - Policy Changes
  - Trade restrictions
  - Industry structure
  - **Timber Supply**







# BC Interior's share of lumber production increasing



Source: Statistics Canada



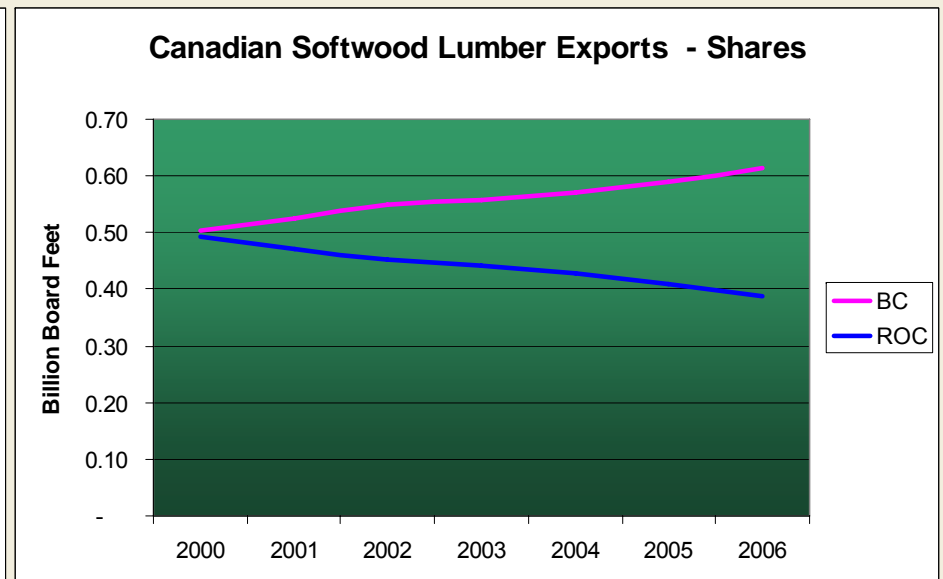
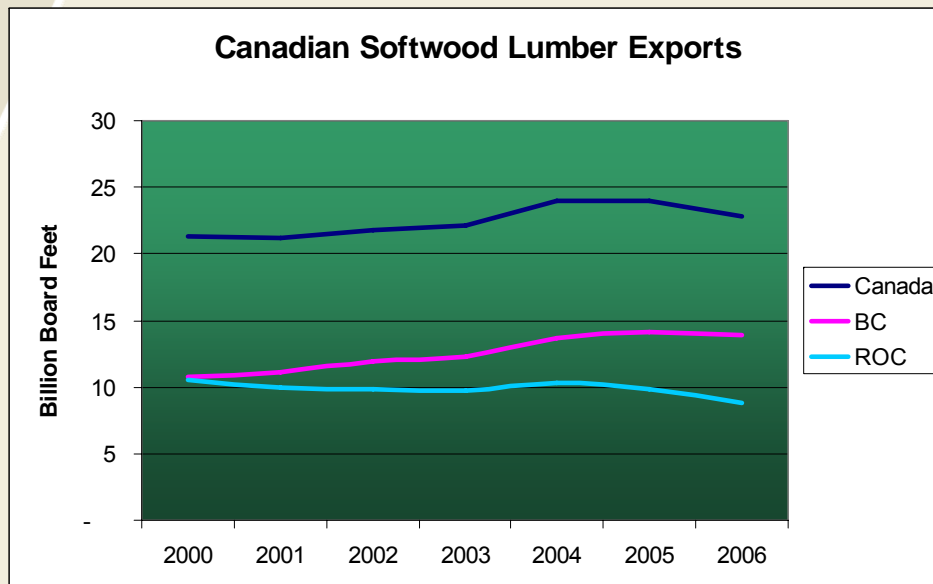
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# BC Share of Canadian Lumber Exports Increasing.....



Source: Statistics Canada



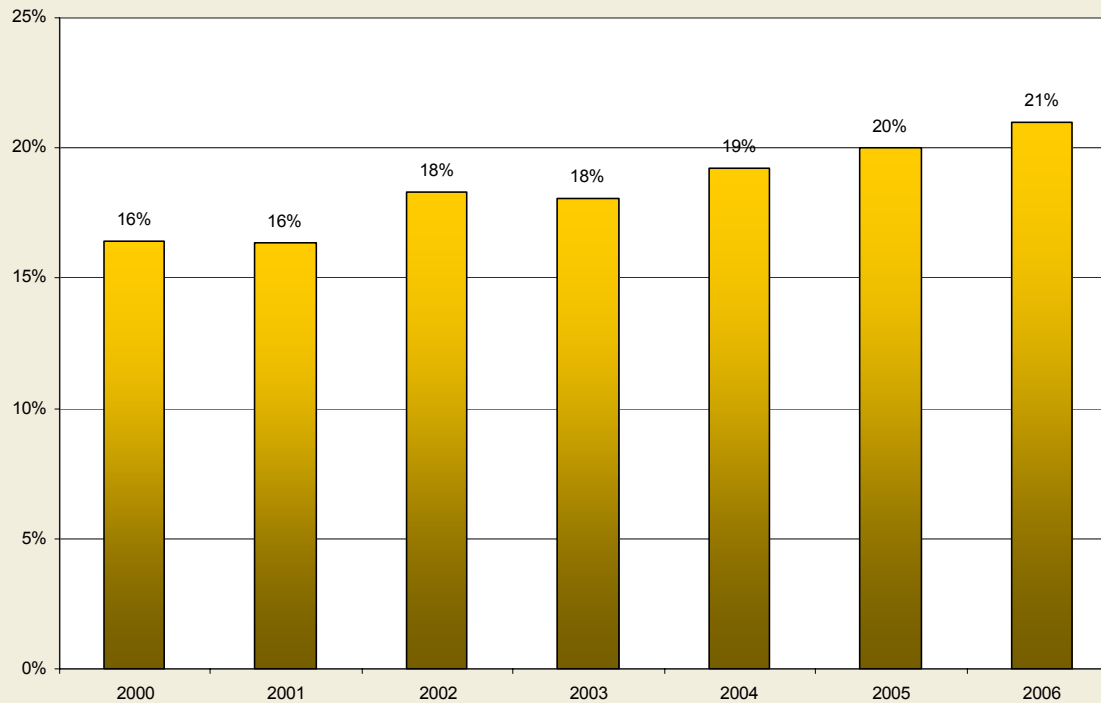
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## BC Interior's share of NA lumber production increasing.....



Sources: StatsCan, Spelter (2005), WWPA



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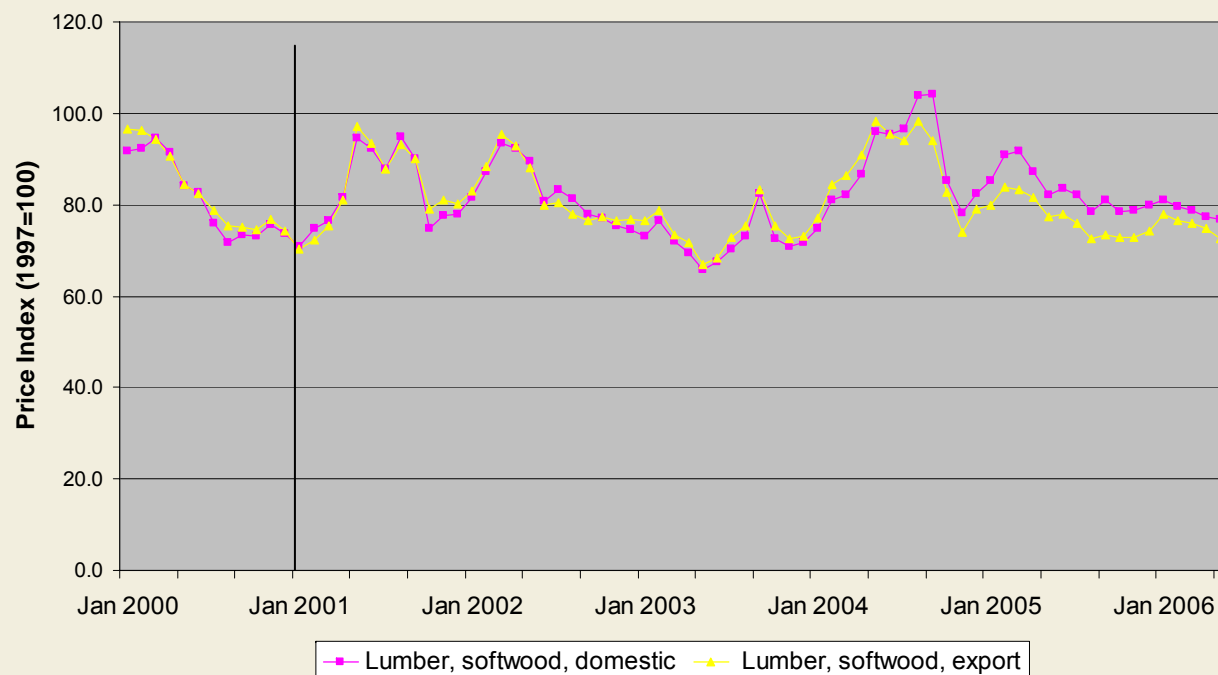
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## What's the impact on product prices?

- Lots of factors....barring measuring it directly, how about back-of-the-envelope estimates using elasticity measures ?





# Elasticity Coefficients

- However this relate to changes in prices on equilibrium quantities..... Question is how do prices respond to changes in quantities....

	Measure	Low	High
Price	Total US Demand for Lumber	-0.07	-0.38
<b>Price</b>	<b>US Import Demand for Canadian Lumber</b>	<b>-0.63</b>	<b>-1.99</b>

Based on published estimates 1990 to 2006





## Price Flexibility Coefficient “Estimates”

- Problem suggests estimates of flexibility coefficients... but few studies have estimated flexibility coefficients...
- Taking a leap of faith..... can use inverse of estimates as an estimate .....

$Q_{\text{lumber}} \uparrow 6\% \rightarrow P_{\text{lumber}} \downarrow 3\% \text{ to } 10\%$

	Measure	Low	High
Quantity of US Lumber	Price	-2.63	-14.29
<b>Quantity of Canadian Lumber</b>	<b>Price</b>	<b>-0.50</b>	<b>-1.59</b>





# Future Situation..... What to expect in 10 - 15 years.....



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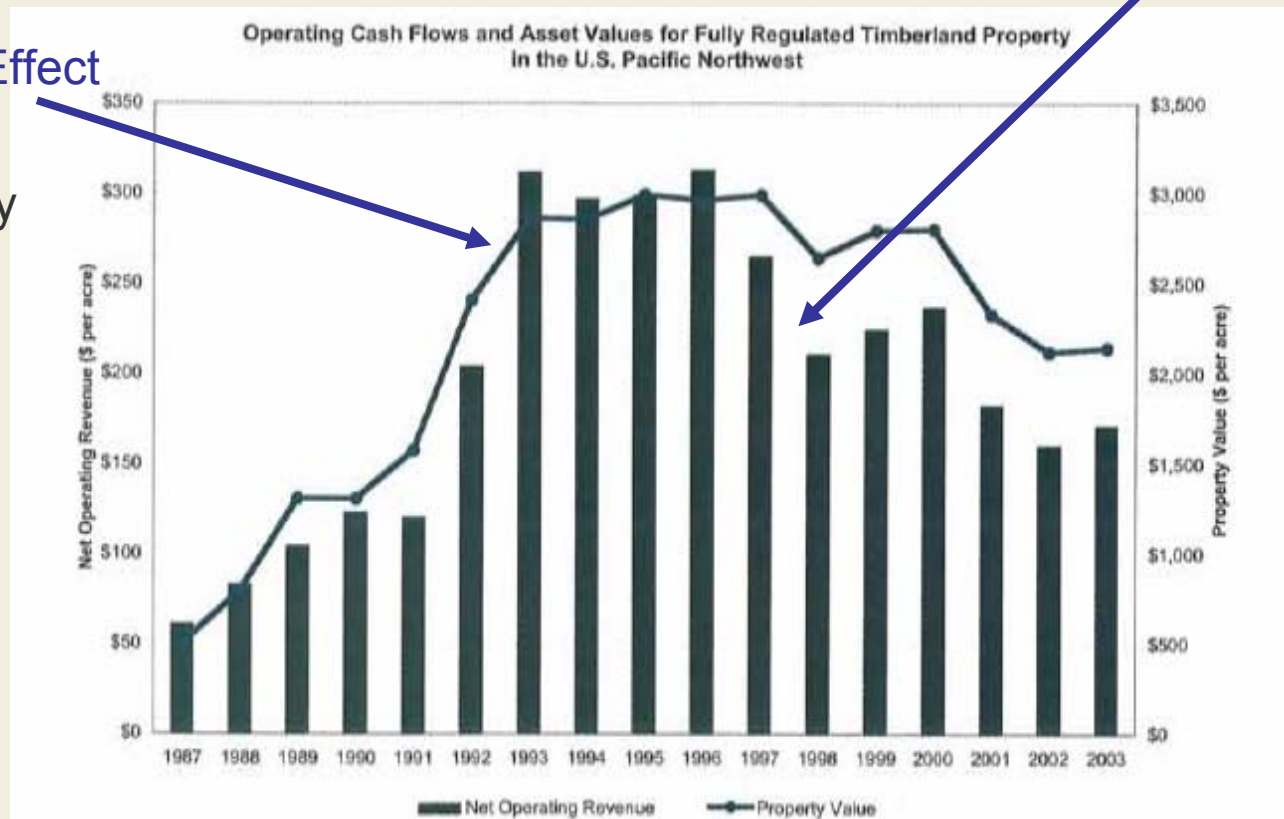
# Historical Impacts on Timberland Values.....

Spotted Owl Effect

Asian Crisis

- Spotted Owl Supply shock
- Asian Crisis Demand Shock

However other factors involved....what to expect in 10-15 years??



Source: Aronow, Binkley and Washburn 2004 J. Forestry



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## Using Price Flexibility Coefficient “Estimates” .....

Again taking a leap of faith.... can use inverse of demand elasticity estimates as a guide .....

$Q_{\text{lumber}} \downarrow 12.5\% \rightarrow P_{\text{lumber}} \uparrow 6\% \text{ to } 20\%$

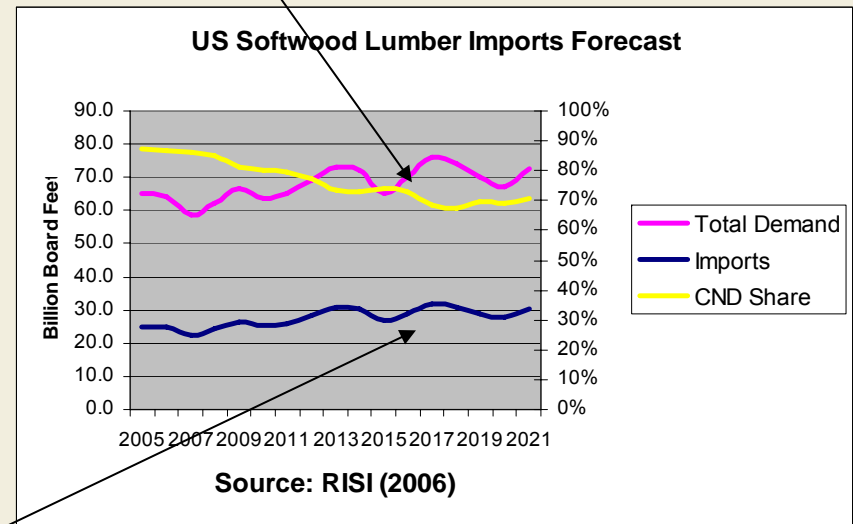
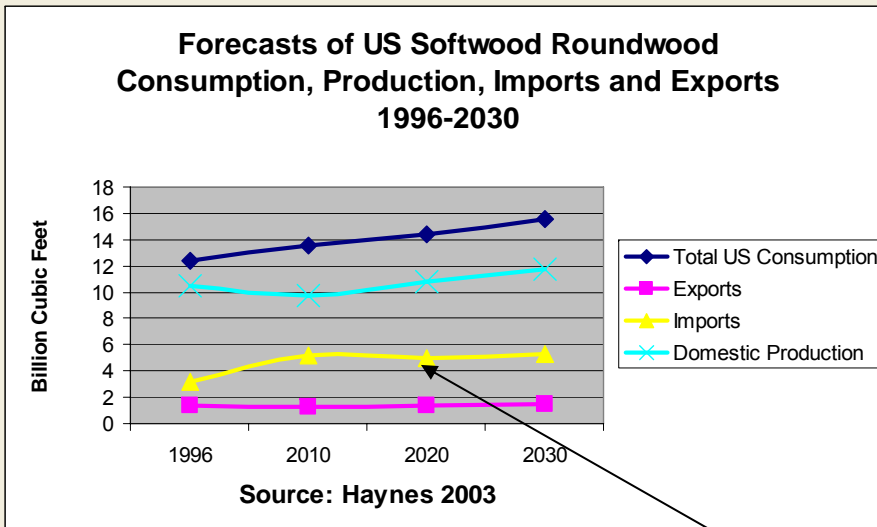
Measure	Low	High
Quantity of Canadian Lumber	-0.50	-1.59
Price		





# Published Studies...demand outlooks similar .... require Canadian imports...

Expected Lumber demand around 70 billion bf in 2020



Imports needed to fill gap – majority from Canada



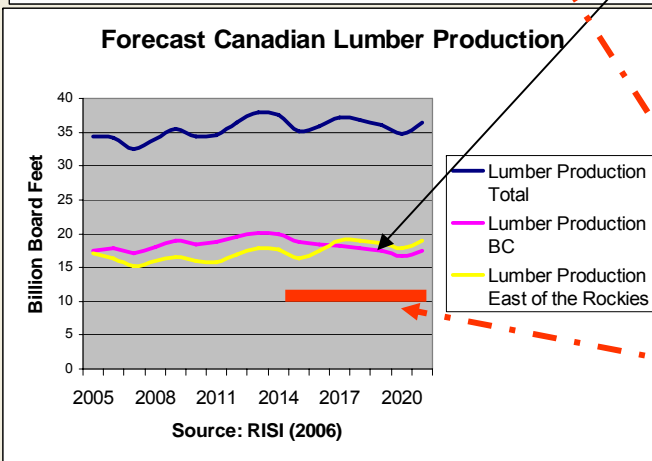
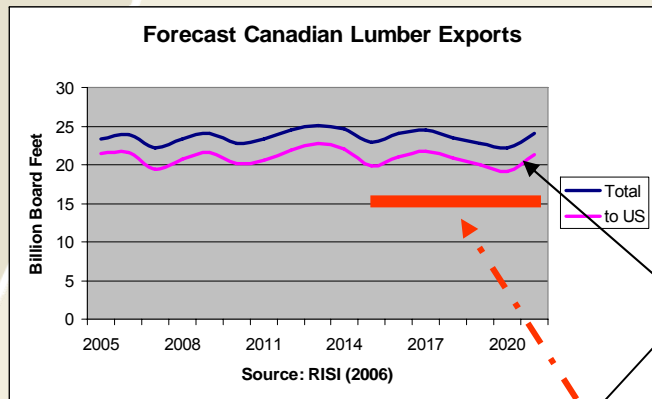
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# Price Expectations.....Dependent on Production Expectations.....



Nominal Price

↑28%-35%

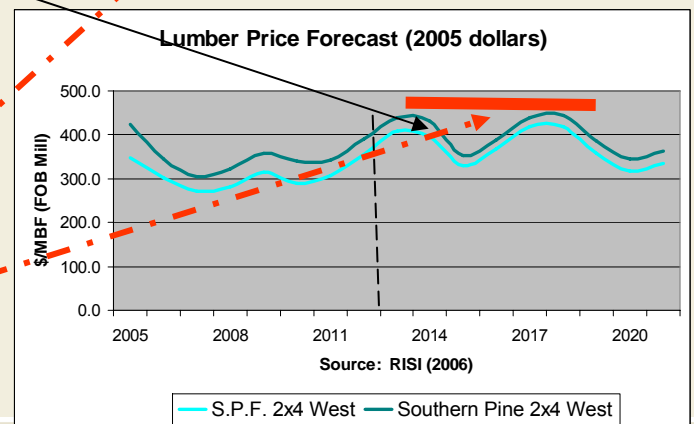
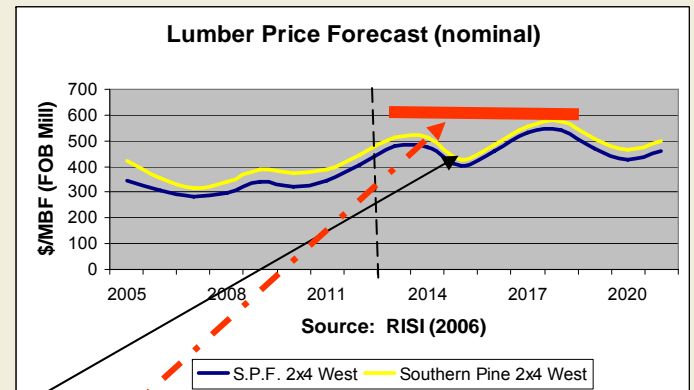
Too High?

Too Low?

Real Price

↑8%-15%

With MPB Impact



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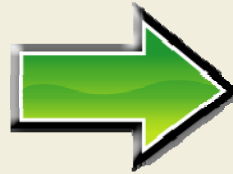
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## Alternative Future.....

- Haynes (2003)
  - 20% reduction in Canadian sawnwood harvest between 2010-2020 (policy driven)
- Expected BC interior reduction equal to a 13% reduction below Haynes baseline (beetle driven)



### Price in 2020

- ↑ 16.4% lumber price
- ↑ 11.7% PNW sawntimber price
- ↑ US south sawntimber + pulpwood prices
- ↑ Expect about 2/3 of forecast price increases

**NB: Baseline predicts flat real stumpage prices in PNW at \$300 post-2020 (1982\$)**



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## Concluding Remarks

- Current BC harvest levels have reduced product prices and underlying timber values - lumber prices may be reduced 3% to 10%
- Future decreased harvest levels expected to increase product prices and underlying timber values – may increase lumber prices 5% to 20% more than current projected future prices
- Question: Where will the supply come from to fulfill US demand?





# Which forecast is closer to the truth?

A “true model” is an oxymoron if there ever was one.

D. Poirier

(As quoted by GC Davis)



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# Thank you!



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