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Commercial Management Options for Hybrid Poplar Buffers

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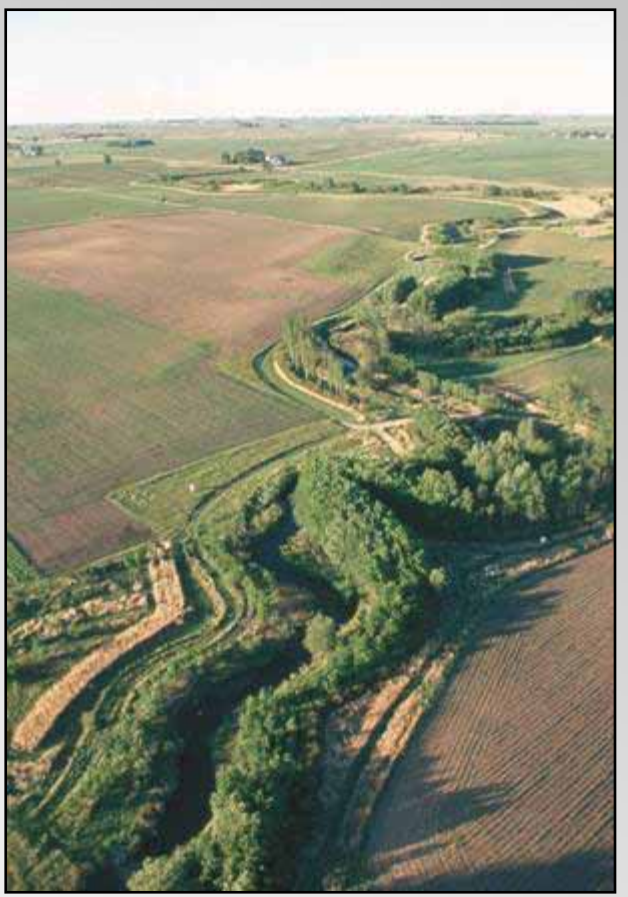
Introduction

- Buffers are a means to protect agricultural watercourses
- Buffer management is important to biological function
- Can buffer management be a profitable enterprise?



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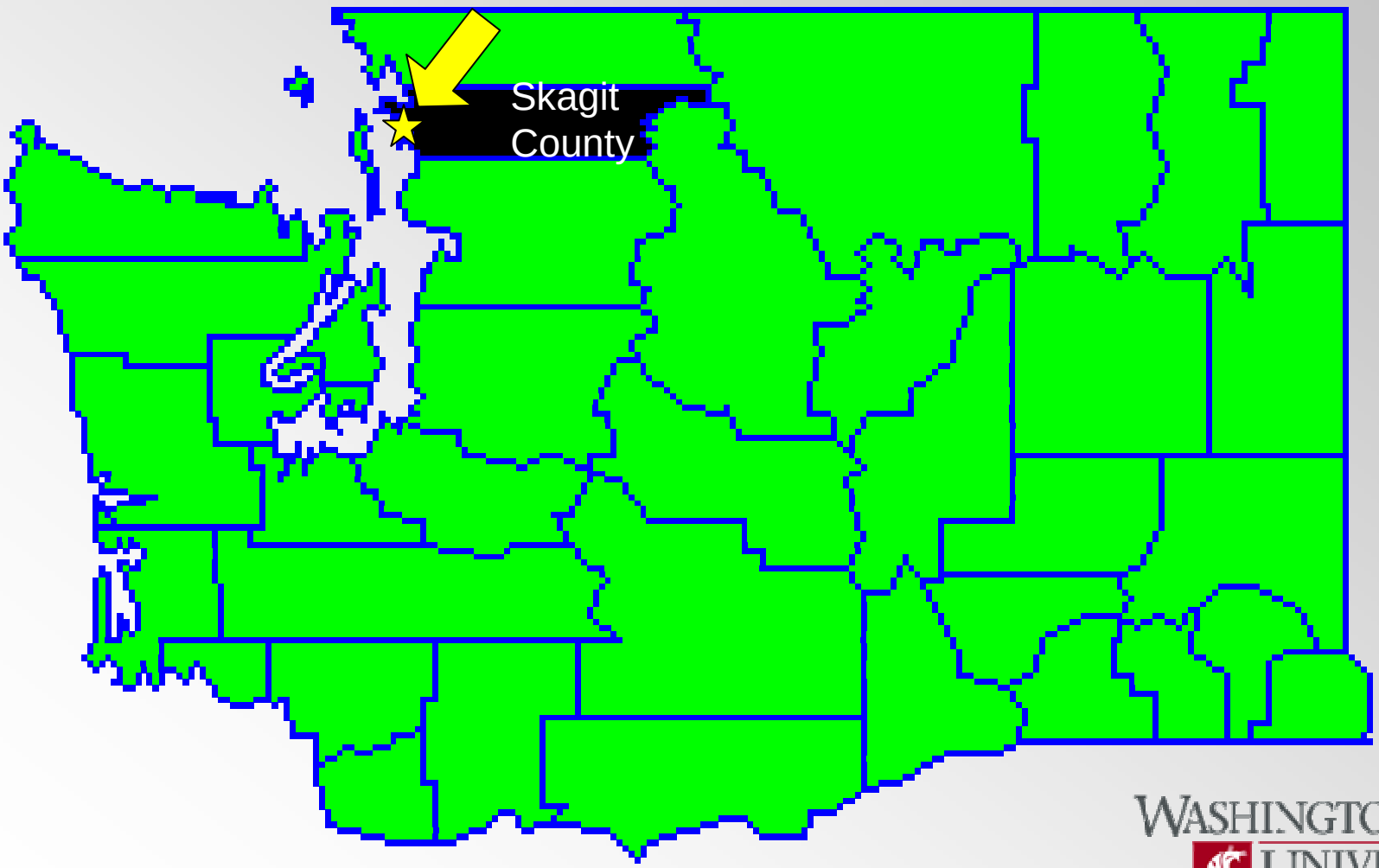
Location of Bayview Farm



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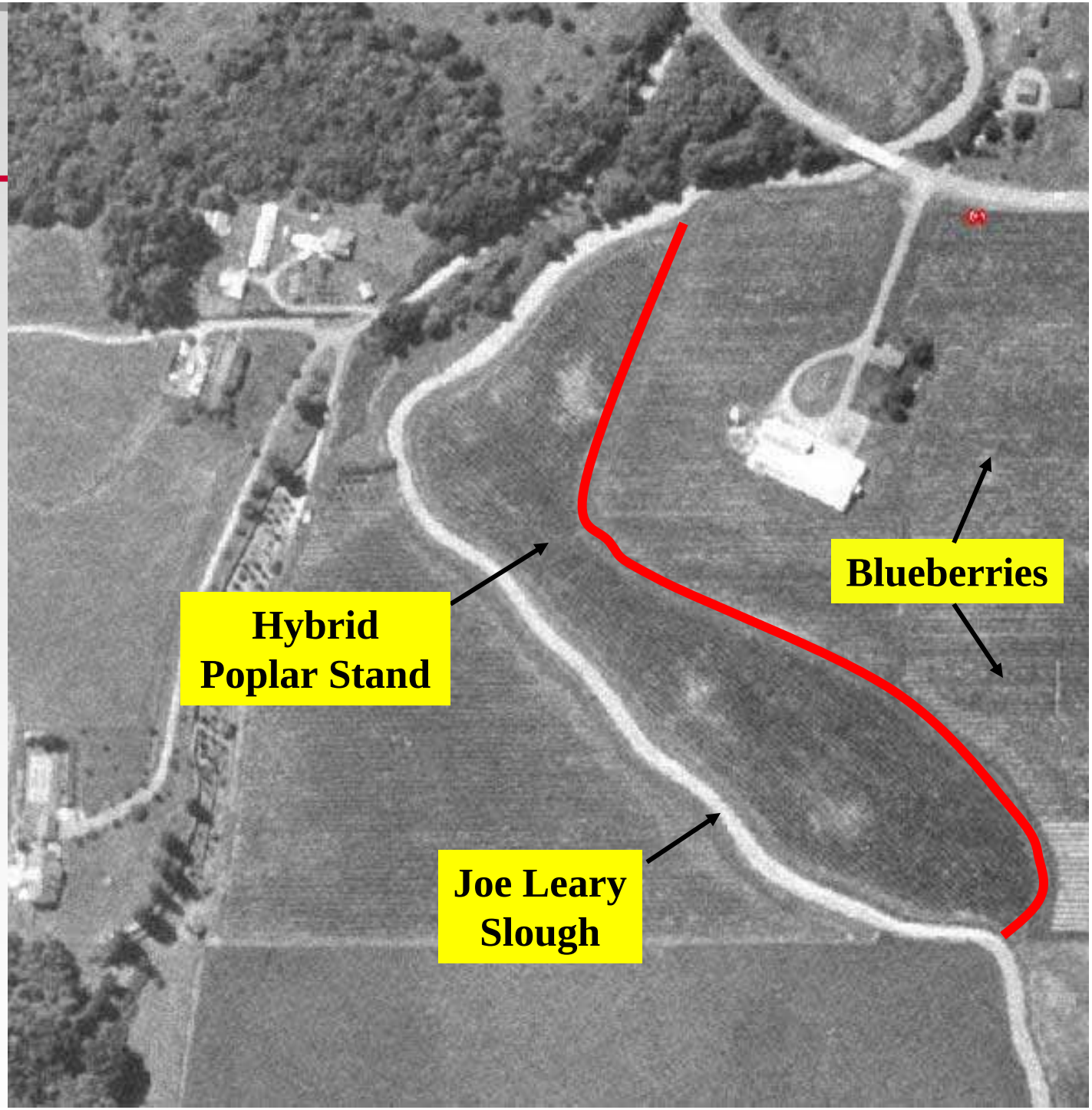
Map of Bayview Study Site



Poplars w/ Joe Leary Slough and Bayview Ridge

Methods

- Buffer establishment and management
- Inventory
- Growth and Yield analysis

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Economic Analysis Methods

- Evaluation of the poplar enterprise
  - NPV, SEV, and IRR
- Break-even Analysis
  - Acreage, volume/quality, and prices
- Comparison of poplar economics with other Skagit Valley crops
  - NPVs
- Price Assumptions:
  - $20.00/ton pulp logs
  - $300/MBF peeler logs

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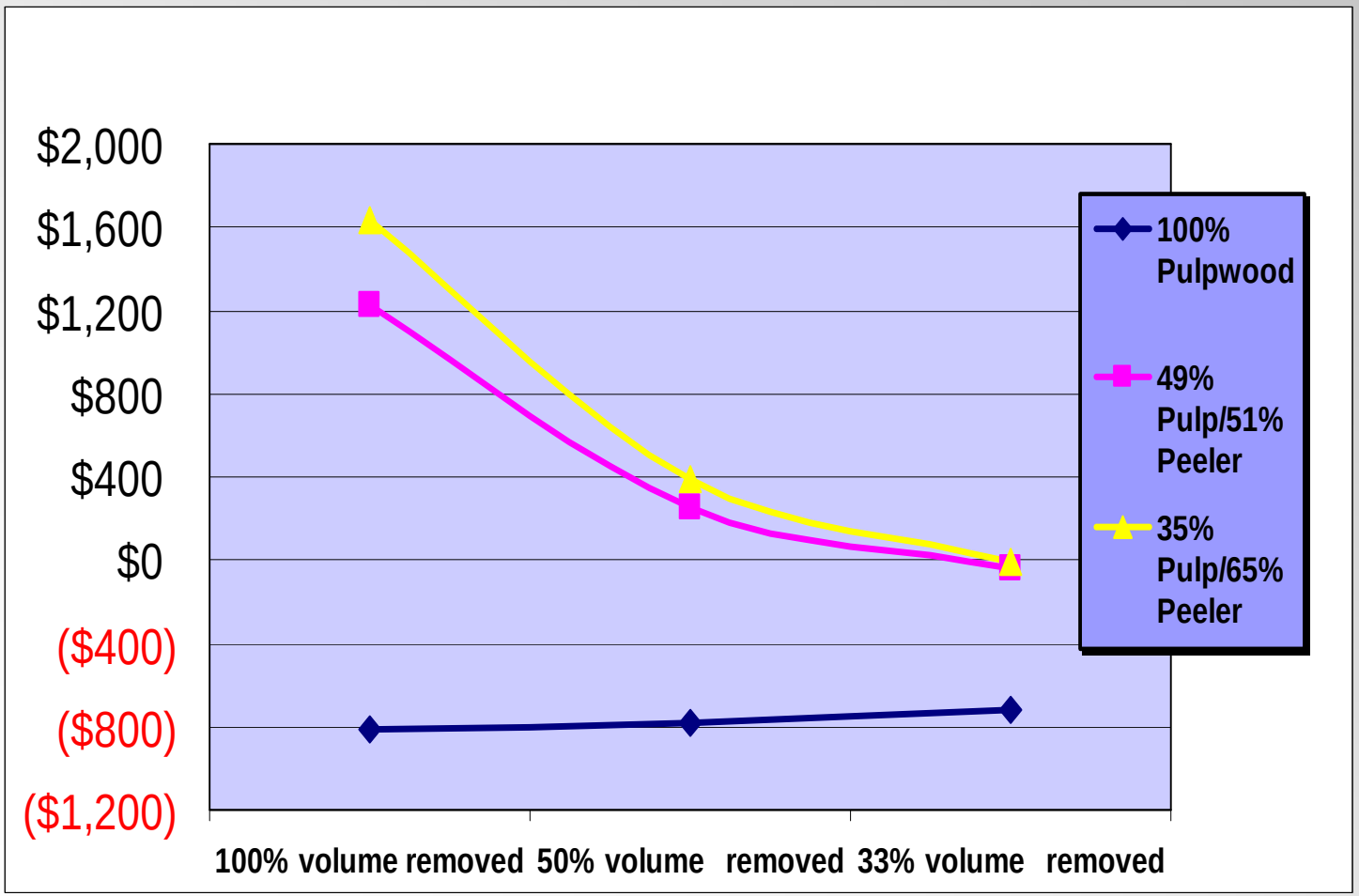
Evaluation of Harvest Levels and Product Mixes

100% Volume Removed	50% Volume Removed	33% Volume Removed
100% Pulpwood	100% Pulpwood	100% Pulpwood
50% Pulp 50% Peeler	50% Pulp 50% Peeler	50% Pulp 50% Peeler
35% Pulp 65% Peeler	35% Pulp 65% Peeler	35% Pulp 65% Peeler

Results: Net Present Values (NPV) per acre of managed hybrid poplar buffer



Results: Internal Rates of Return

	100% Pulpwood	49% Pulp/51% Peeler	35% Pulp/65% Peeler
100% volume removed	<0%	15%	15%
50% volume removed	<0%	8%	8%
33% volume removed	<0%	<0%	<0%

- Four positive scenarios
- No improvement in IRR when peeler volume is increased

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Results: Break-even Acreage

Minimum acreage

- No economies of scale with Skagit farm buffers
- Relevant for logging contracts

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Results: Break-even Quantity/Quality

Wood Quality and Quantity

- Must do cultural treatments early; not much can be done with an 8 year old stand
- Volumes per acre converge after 12 years, regardless of wide or narrow spacing
- Wood quality can be improved with wider spacing
- Pruning will increase quality but still not proven as cost effective
- Thinning is not biologically effective

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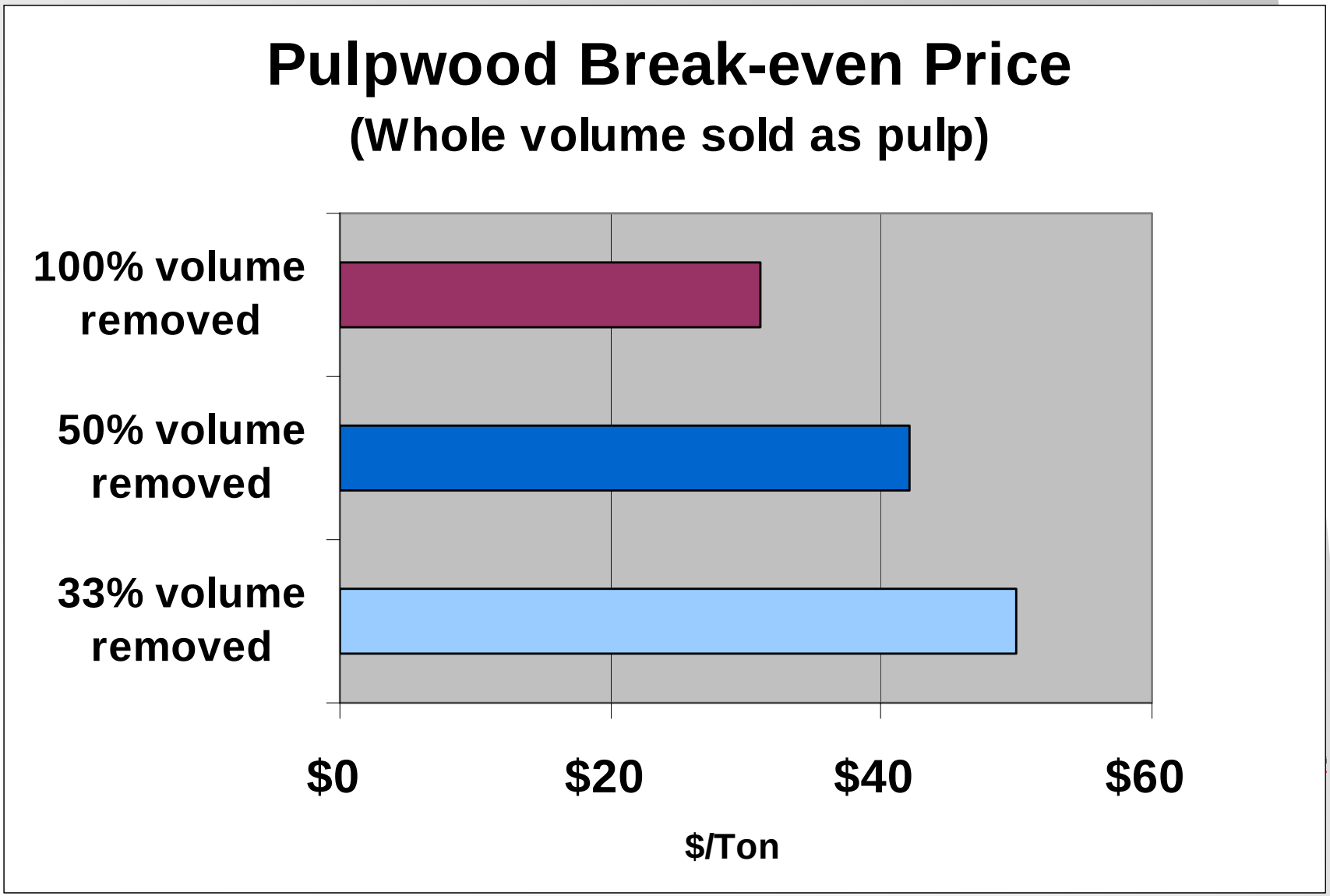
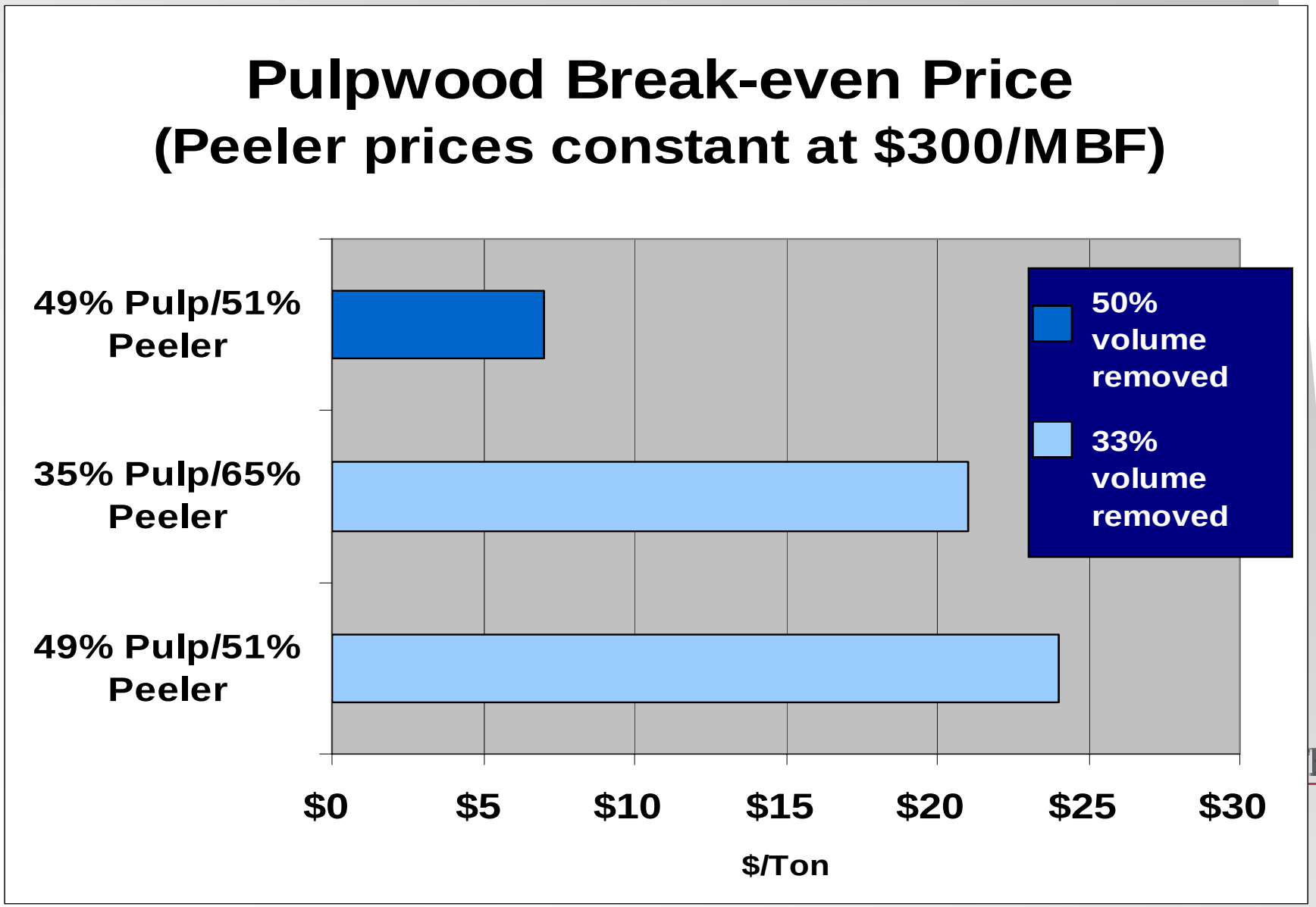
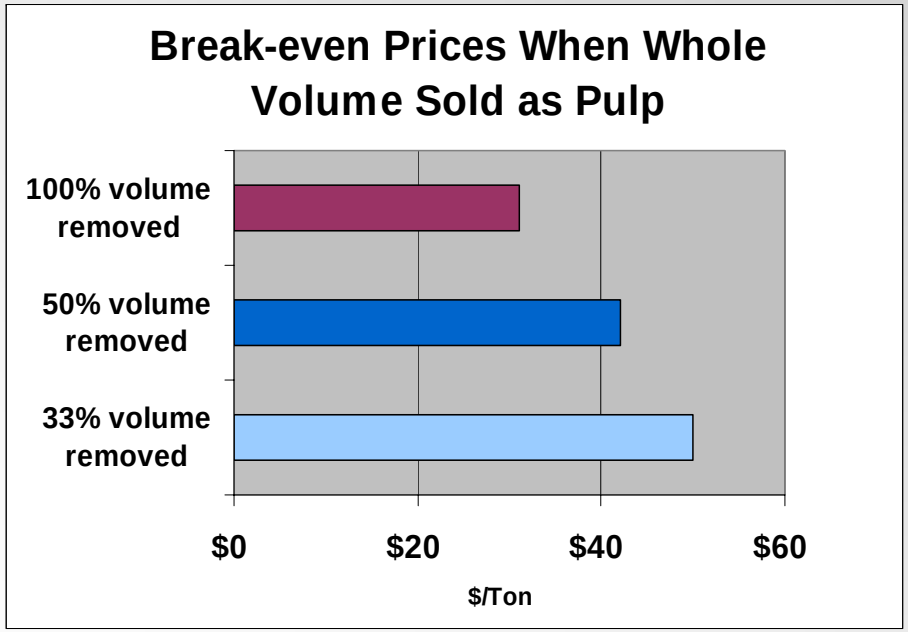
Results: Break-even Pulp Prices 1

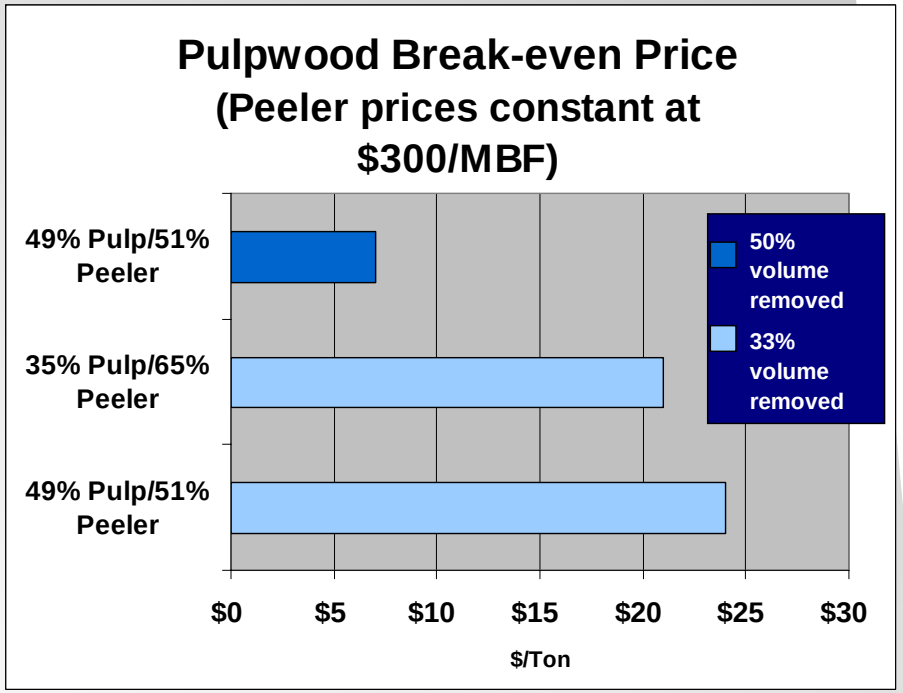


Results: Break-even Pulp Prices 2



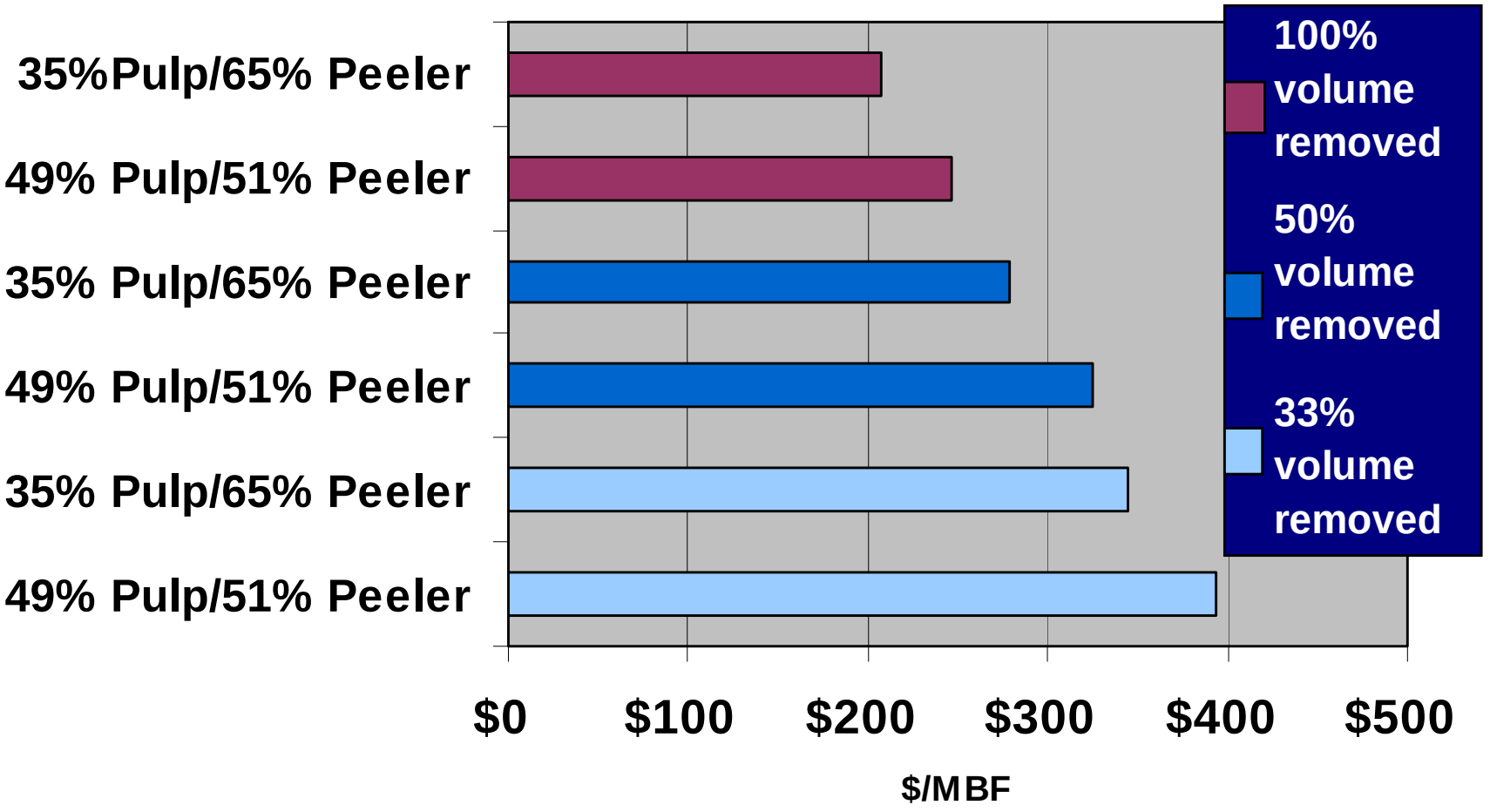
Results: Break-even Pulp Prices 1 & 2





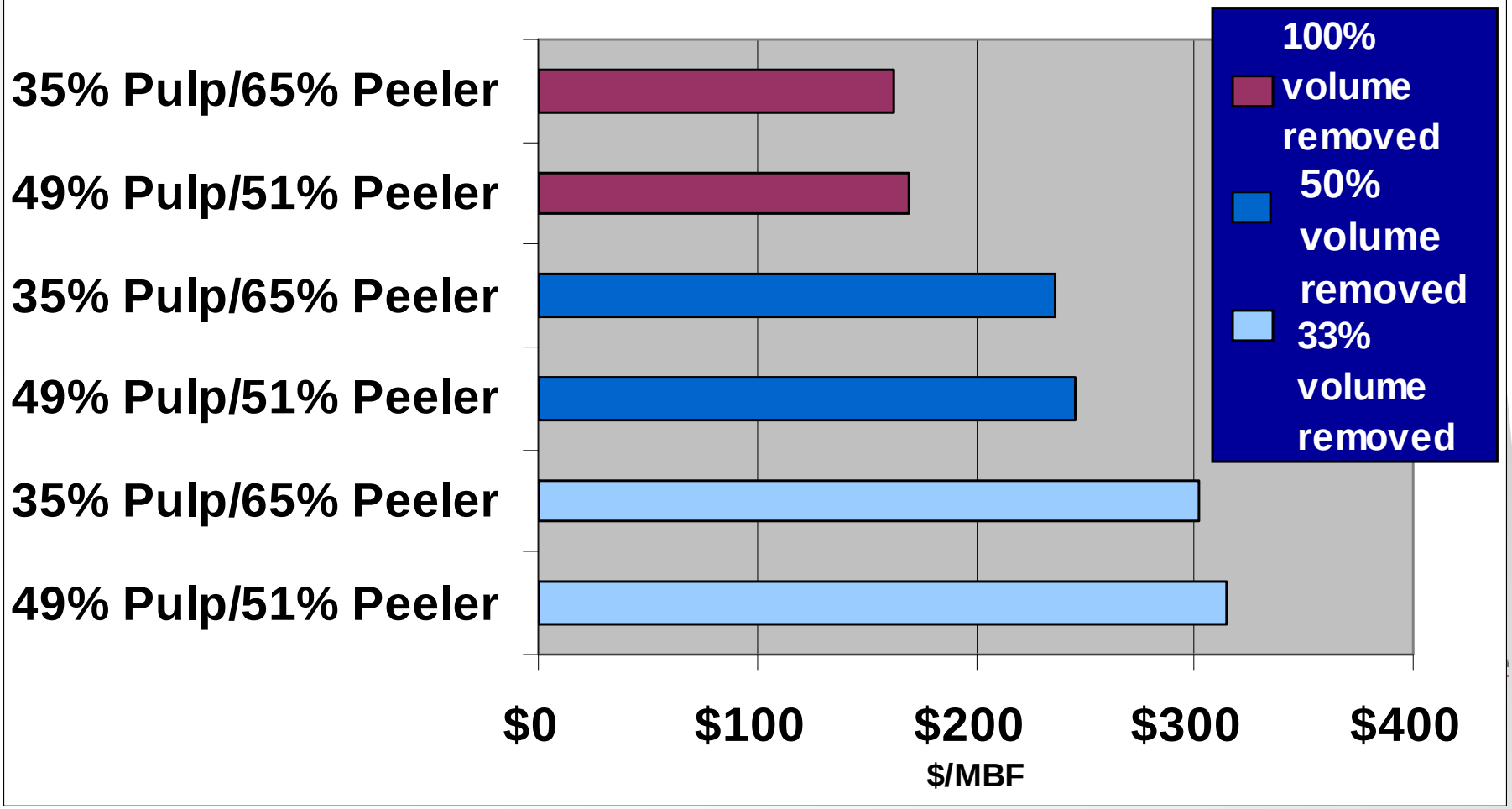
Results: Break-even Peeler Prices 1

(only peeler volume is sold)

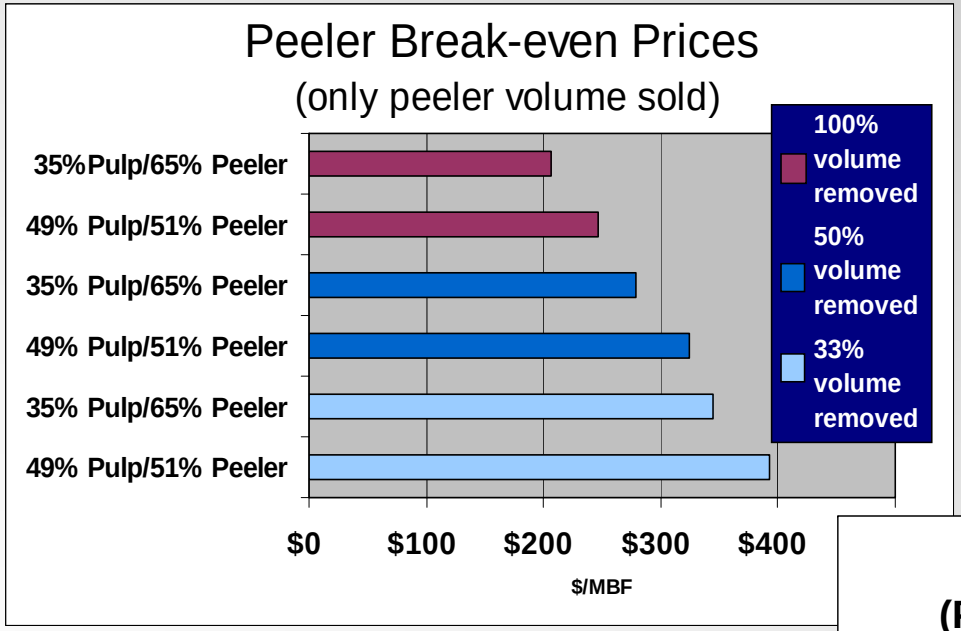


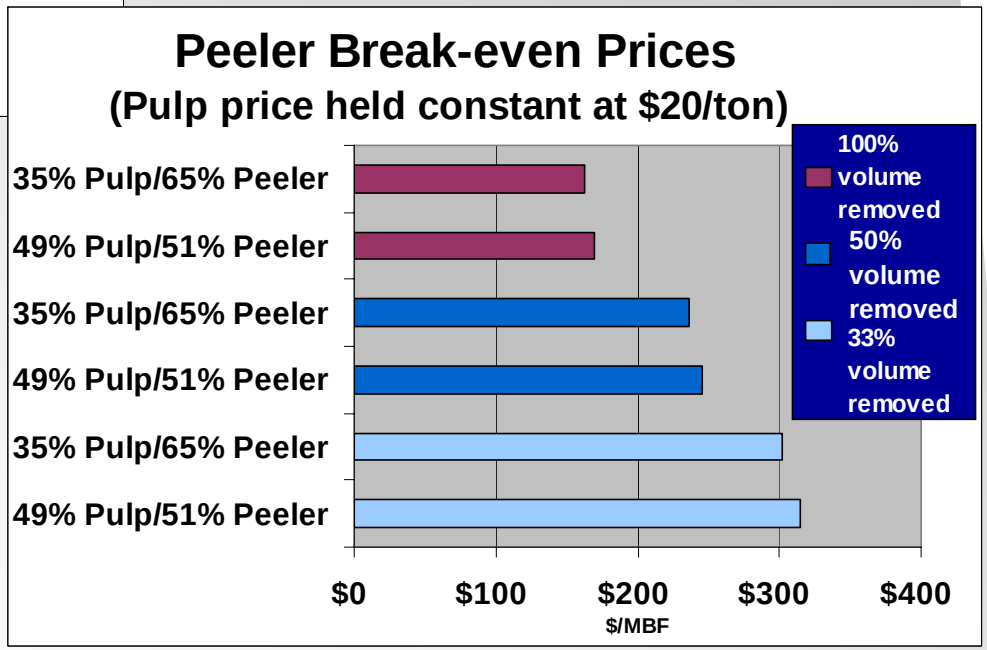
Results: Break-even Peeler Prices 2

(Pulp price held constant at $20/ton)



Results: Break-even Peeler Prices 1 & 2





Results: Poplars vs. Other Skagit Valley Crops

Crop	NPV/Acre
Blueberries	$500-$6,500
Potatoes	$1,500-$2,500
Poplars 100% volume removed, 35/65 mix	**$1,631**
Poplars 100% volume removed, 49/51 mix	**$1,218**
Cucumbers	$200-$500
Poplars 50% volume removed, 35/65 mix	**$381**
Poplars 50% volume removed, 49/51 mix	**$249**
Peas	$50-$100
Pasture	$30

Summary of Key Findings

- **Production of 100% hybrid poplar pulpwood is not profitable for any level of harvest at current market prices.**

- **In general, when less volume per acre is harvested, it becomes more difficult to remain profitable. Net Present Values are lower and break-even prices must be higher for the operation to remain viable.**

Summary of Key Findings (Cont.)

- **Diversifying product mix gives the operation greater ability to sustain decreases in product prices and still remain viable.**
- **Investments in improving wood quality have to be cost effective and produce significant results in order to make economic sense.**
- **Hybrid poplar investments can be competitive with other agricultural crops grown in the Skagit Valley, assuming there are adequate wood markets.**

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Future Directions: Potential Buffer Markets

Alternative Markets

- Non-wood products
- Carbon sequestration
- Water Quality credits

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Special Thanks To:

- Bayview Farms
- Rural Technology Initiative
- Potlatch Hybrid Poplar Program

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Further Analyses

- **Sensitivity**
  - **Interest rates**
  - **Volume and product mix at harvest age**
- **Shorter and longer rotation ages**
- **Intermediate harvest intensities**
- **Wider initial spacing**

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Questions?

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