2018 Updated Financial Analysis
A report to the Board of Natural Resources

presented by

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Today’s Outline

• Purpose
• Analysis Area
• Metrics analyzed
• Updates since 2017
• Comparison of the Alternatives
• Next Steps
Purpose of the Financial Analysis

To provide financial projections to help the board understand how each scenario affects DNR’s ability to meet its trust management obligations, including:

• The generation of revenue for trust beneficiaries
• The ability to generate revenue in perpetuity
• Impartiality with respect to current and future beneficiaries
• Maintaining the corpus of the trust
Financial Analysis

Combinations of 3 Key Policy Decisions:

• Marbled murrelet alternatives
• Arrearage harvest
• Riparian thinning
Analysis area

- All DNR-managed lands in Western Washington within 55 miles of marine waters
- ~1.4 million acres
- Includes lands in the following HCP planning units:
  - Columbia
  - North Puget
  - OESF
  - South Coast
  - South Puget
  - Straits
### Metrics Analyzed

| **10 - Decade Net Present Value (NPV)** | is used in investment planning to analyze the profitability of a project and allows the scenarios to be compared |
| **Harvest Volume**                  | allows comparison of the planning decade and the long-term harvest volume in terms of million board feet (MMBF) |
| **Long Term Forest Cover (LTFC) Area** | existing and marbled murrelet conservation |
Updated Data and Assumptions

- **Updated Forest Inventory Data** – land transactions, harvest activities, local knowledge database
- **Timber Price Data** – includes prices 2011-2018, and three cover types
- **Management cost data** – management costs 2012-2018
- **Northern Spotted Owl habitat management** – model better reflects the HCP conservation strategy
- **Timber Yields** – better matches actual growth and forest inventory
- **Discount rate** – from 2% to 3% after analysis of Common School Permanent Fund
- **OESF management** – removed outdated data that no longer affects harvest level
New Alternatives and Options Added

New Marbled Murrelet Alternatives — Alternatives G and H

New Riparian Thinning Option — thinning in riparian areas is not counted towards the sustainable harvest level

New Arrearage Option — harvest 382 MMBF from those sustainable harvest units with deficits, over 10 years
Scenarios in 2018 Financial Analysis

• The **36 original combinations** with updated data

• The **2 new combinations:**
  
  • Marbled Murrelet Alt. G  | No Riparian Thinning  | Arrearage of harvest of 382 MMBF
  
  • Marbled Murrelet Alt. H  | No Riparian Thinning  | Arrearage of harvest of 382 MMBF

  (*represents the Board’s Preferred Alternative*)
Harvest Volume over Time

10-decade harvest level under all scenarios
(Scenarios with the maximum, median, and minimum 10-decade NPVs are shown in color*)

*Other scenarios are shown in gray
How data are presented:

Color gradient corresponds to relative relationship between cells

Less than average \hspace{1cm} \text{Average} \hspace{1cm} \text{Greater than average}

Example:

<table>
<thead>
<tr>
<th></th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor A</td>
<td>1</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Factor B</td>
<td>2</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Factor C</td>
<td>9</td>
<td>7</td>
<td>3</td>
</tr>
</tbody>
</table>

*Cells with the same color = same value*
## 10-Decade NPV

(Reported in $ billions)

### Updated Scenario Results

<table>
<thead>
<tr>
<th>MARBLED MURRELET STRATEGY</th>
<th>ARREARAGE VOLUME</th>
<th>RIPARIAN THINNING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>702 MMBF</td>
<td>462 MMBF</td>
</tr>
<tr>
<td><strong>ALTERNATIVE</strong></td>
<td>10%</td>
<td>1%</td>
</tr>
<tr>
<td>Alt. A</td>
<td>3.74</td>
<td>3.64</td>
</tr>
<tr>
<td>Alt. B</td>
<td>3.89</td>
<td>3.79</td>
</tr>
<tr>
<td>Alt. C</td>
<td>3.69</td>
<td>3.60</td>
</tr>
<tr>
<td>Alt. D</td>
<td>3.69</td>
<td>3.59</td>
</tr>
<tr>
<td>Alt. E</td>
<td>3.67</td>
<td>3.57</td>
</tr>
<tr>
<td>Alt. F</td>
<td>3.18</td>
<td>3.09</td>
</tr>
</tbody>
</table>

### New Scenario results

<table>
<thead>
<tr>
<th><strong>ALTERNATIVE</strong></th>
<th><strong>382 MMBF Arrearage Volume</strong></th>
<th><strong>Riparian not included</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Alt. G</td>
<td>382 MMBF Arrearage Volume</td>
<td>Riparian not included</td>
</tr>
<tr>
<td>Alt. H</td>
<td>382 MMBF Arrearage Volume</td>
<td>Riparian not included</td>
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</table>
Each circle represents one combination of murrelet, arrearage, and riparian options.

Blue dots represent marbled murrelet strategy alternatives A-G

Red dots represent alternatives analyzed in the SHC DEIS

Orange dot (H) indicates the Board’s preferred alternative

Effect of LTFC on 10-Decade NPV

Net Present Value ($ billions)

Acres of long-term forest cover

3.00 3.25 3.50 3.75 4.00

550,000 575,000 600,000 625,000 650,000 675,000 700,000 725,000 750,000
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<td></td>
<td>702 MMBF</td>
<td>462 MMBF</td>
</tr>
<tr>
<td></td>
<td>10%</td>
<td>1%</td>
</tr>
<tr>
<td><strong>RIPARIAN THINNING</strong></td>
<td>5,048</td>
<td>4,879</td>
</tr>
<tr>
<td>Alt. A</td>
<td>5,430</td>
<td>5,247</td>
</tr>
<tr>
<td>Alt. B</td>
<td>5,029</td>
<td>4,866</td>
</tr>
<tr>
<td>Alt. C</td>
<td>5,067</td>
<td>4,900</td>
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<tr>
<td>Alt. D</td>
<td>4,986</td>
<td>4,822</td>
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<tr>
<td>Alt. E</td>
<td>4,198</td>
<td>4,077</td>
</tr>
<tr>
<td>Alt. F</td>
<td>382 MMBF Arrearage Volume</td>
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Orange dot is the Board’s preferred Alternative

**Effect of LTFC on Planning decade harvest volume**

![Graph showing the effect of LTFC on planning decade harvest volume](image)

Harvest Volume (MMBF)

Acres of long-term forest cover

- Blue Dots: Marbled murrelet strategy alternatives A – G
- Red Dots: Alternatives analyzed in the SHC DEIS
- Orange dot: Board’s preferred Alternative
Summary

• Marbled murrelet Impacts
  • Potentially $560 million choice in NPV
    • 10-decade NPV: 15% difference between Alt. A and Alt. F
    • 1st decade harvest level: 17% difference between Alt. A and Alt. F

• Riparian impacts
  • Potentially $100 million choice in NPV
    • 10-decade NPV: 3% difference between comparable scenarios
    • 1st decade harvest level: 3% difference between comparable scenarios

• Arrearage impacts
  • Potentially $200 thousand choice in NPV
    • 10-decade NPV: >1% difference between comparable scenarios
    • 1st decade harvest level: 2.5 - 5% difference between comparable scenarios
Next Steps

- **September:** Released the MMLTCS RDEIS - beginning of public comment period
- **October:** Public Meetings and updated Financial Analysis
- **December:** End of MMLTCS public comment period
- **Summer 2019:** Release the MMLTCS FEIS and SHC FEIS, including responses to comments for both projects
- **Fall 2019:** USFWS ROD, Section 10 Findings, ITP issuance