Proposal for an Elliott State Research Forest

College of Forestry
Elliott State Research Forest (ESRF)

In early 2019, OSU and DSL initiated a collaborative process to develop a proposal for a research forest. The ESRF proposal was developed and refined through copious input from a diverse array of research scientists, stakeholders, and members of the public.

Input on the proposal was gathered through meetings with:

- Local community members (listening sessions held in 2019)
- Local tribal nations
- Stakeholders (recreation, timber, conservation, education)
- DSL Advisory Committee Members
- Science Advisory Panel Members
- OSU Exploratory Committee Members
- OSU Leadership (OSU president, provost, legal counsel, Board of Trustees)
- A variety of experts from inside and outside of the University
Elliott State Research Forest

Through this collaborative process, OSU has developed a proposal that is consistent with the Land Board’s vision for the future of the Elliott State Forest.

Land Board Vision:
• Public ownership and access
• Complete decoupling from the Common School Fund
• Continued habitat conservation planning
• A working forest for local and community benefit

Why was OSU interested? Importance of science in decision-making and in our collective futures.
Guiding Principles

As part of the OSU proposal development process, and to meet Land Board’s vision, the Department of State Lands Elliott State Research Forest Advisory Committee and Oregon State University created guiding principles for the following public values:

- Forest Governance
- Conservation
- Recreation
- Educational Partnerships
- Local and Regional Economies
- Tribal Partnerships
Sampling of College of Forestry Commitments to Public Values:

OSU’s commitments express our desire to own and manage the ESRF for the good of science, the land, and the people it sustains. A few of those commitments include:

• Owning and managing the ESRF as a public forest and guaranteeing public access for recreation, education, and foraging in ways consistent with research objectives and activities.

• **Transparency and accountability** in the management and use of the ESRF.

• Providing and enhancing educational access and use of the Elliott.
Sampling of College of Forestry Commitments to Public Values cont:

• **Providing local jobs and other economic values** associated with activities on the ESRF. We commit to having a **local working office of professional and technical staff**.

• **Conserving, enhancing, and sustaining high-quality habitats** for endangered species and other wildlife through approaches such as placing ~60% of the ESRF into reserves where habitat restoration and protection would be the primary focus.

• **Continued involvement of Tribes** is essential to management of an Elliott State Research Forest.
Vision for an Elliott State Research Forest

In seeking to create an Elliott State Research Forest, we are reflecting on the immense capacity that exists for forests of Oregon, and beyond, to provide the values we need to sustain ecosystems and economies.

Research on the Elliott will help landowners/managers:

• Learn how to better manage forests for multiple objectives (timber, conservation, recreation etc)
• Protect and restore ecosystems and endangered species
• Support sustainable economic growth
• Understand the role of forestry in mitigating climate change
Research Possibilities at the Elliott State Research Forest

The landscape level research design we are proposing allows us to INTEGRATE and nest a wide range of questions and answer a wide range of theories and attempt to answer questions related to forest management including, but not limited to:

- Biodiversity and at-risk species (Marbled Murrelet, Spotted Owl, Coho)
- Carbon & climate change adaptation
- Natural and human-caused disturbances
- Riparian and aquatic ecosystems
- Water and air quality
- Socioeconomic aspects, recreation, and forest policy
- Forest stand structure (early successional and old growth)
Research Design

The Northwestern ~34,000 acres of the ESRF (CRW) will be put into a “reserve” status (shown in green).

There will be no harvests in this area. There will be minimal conservation-oriented thinning to former plantations (stands less than 65 years old).
Creation of a New Reserve Network

The ESRF’s ~34,000 acre conservation research watershed and the recently established Devil’s Staircase Wilderness Area are nearly adjacent and together, would create a ~66,000 acre reserve, the largest in the Oregon Coast Range.

Left: Size of the four largest wilderness areas in the Oregon Coast as compared to the Conservation Research Watershed.
Research Design

The Southeastern ~45,000 acres of the ESRF (MRW) will be divided into sub watersheds.

The proposed research design utilizes the size of the ESF to integrate a spectrum of forest management practices across the landscape in varying spatial proportions and arrangements.
Research Design

The harvests conducted on the sub watersheds in the MRW as a part of the research design will be relatively small.

~1% or 735 acres* of the ESRF will be harvested per year.

This includes conservation-oriented thinning conducted in former plantations in the first 20 years. After thinning is complete, less than 1% of the forest will be harvested annually as a part of the research design.

* Annualized over a fifty-year period, assumed sustained or even flow harvest acreage
Why Triad?

• Triad provides a coordinated approach to measuring a variety of responses to a spectrum of land management practices at the landscape scale over long periods of time.

  • The Triad design is the house containing many experiments on issues like climate, carbon, recreation, biodiversity (to name a few) - these are the furniture and fixtures. We need both.

• Triad will rigorously explore critical knowledge gaps in ecologically sustainable forest management and measure responses to extensive or ecological types of forestry.

• Triad allows us to test strategies to make the landscape more resilient and resistant to global changes and climate uncertainty.

• The Triad design helps address the most pressing problems facing humanity: how to provide for the carbon, timber, ecosystem services needs of a global population of 7 billion people without compromising the conservation of biological diversity.
Elliott State Research Forest

Our society is at a crossroads. The realities of climate change, loss of biodiversity, and increasing worldwide demand for wood products are intersecting and driving debates over public and private forest land management practices.

The ESRF will allow us to use science to answer questions regarding sustainability:

- What is forestry’s role in mitigating climate change?
- What is the best way to protect and restore endangered species?
- How can we sustainably meet society’s demand for forest products?
Marbled Murrelet Habitat Model

The occupancy data from Betts et al, Kim Nelson and ODF was used to model habitat suitability on the Elliott.

This model illustrates how OSU can use more spatially limited occupancy data to determine where to monitor for the presence of MAMU throughout the ESRF.

Note the substantial proportion of predicted occupied stands in the Conservation Research Watershed (CRW).
Percentage of ESRF allocated to each stand level research treatment

![Bar chart showing the percentage of ESRF allocated to each stand level research treatment]

- **Reserve**: 70% of the Elliott State Forest
- **Intensive** and **Extensive**: 10% each
Creating Older Forest Stands

- Future age class distribution on the Elliott State Research Forest under a draft research design starting in 2020.

- In 50 years, ~60,000 acres (73%) of the forest will be older than 100 years, an almost 50% increase in the amount of older forests relative to today.
Key takeaways

The proposed ESRF research framework allows future generations to ask and answer what, in times of rapid change, are the most effective means of ensuring and sustaining biodiversity, ecosystem processes, and ecosystem services while achieving a sustainable wood supply?

The Research Design:

• Creates one of the largest reserve areas on the Oregon Coast.

• Promote growth of early successional and older forests.

• Allows for public access, continued recreation, educational partnerships, and local economic benefit.
Governance Structure

Proposed structure:

• Maintains autonomy for OSU to manage and operate the research forest

• Engages the public through transparency, accountability, and an enforceability mechanism

• Designates and supports advisory committees for stakeholders, research and others

• Potential for private protocol in CARB, but public protocol is likely
Governance Structure for the Elliott State Research Forest
Financial Info
Financing Management and Operations of an ESRF

Financing the management and research programs on the ESRF will accomplished through a combination of revenue generate from harvests in experimental treatment areas and potential revenue generated through the sale of carbon credits*.

Gifts, grants, and contracts will also help to sustain the research projects on the ESRF.
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<thead>
<tr>
<th>Category</th>
<th>Estimate</th>
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<tbody>
<tr>
<td>Total Harvest Revenue (MMBF Harvested)</td>
<td>$5.7M (16.6 MMBF)</td>
</tr>
<tr>
<td>Forest Management and Operations Costs</td>
<td>-$2.3M</td>
</tr>
<tr>
<td>Net Harvest Revenue</td>
<td>$3.4M</td>
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<tr>
<td>Research Management and Operations Costs</td>
<td>-$5.5M</td>
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<tr>
<td>Subtotal</td>
<td>-$2.1M</td>
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<td>Carbon Revenue</td>
<td>$2.0M</td>
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<td>Balance</td>
<td>-$0.1</td>
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**Average Annual Harvest Volumes and Acreage**

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<thead>
<tr>
<th>Category</th>
<th>Intensive</th>
<th>Extensive</th>
<th>Reserve</th>
<th>Total</th>
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<tr>
<td></td>
<td>Regen</td>
<td>Thin</td>
<td>Regen</td>
<td>Thin</td>
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<tr>
<td>Average Annual Harvest (MMBF)</td>
<td></td>
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<td></td>
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<tr>
<td>Range Over First 50-years (Annual MMBF)</td>
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<tr>
<td>Average Annual Harvest (Acres)</td>
<td></td>
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<tr>
<td>Range Over First 50 Years (Annual Acres)</td>
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<tr>
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<tr>
<td></td>
<td>Regen</td>
<td>Thin</td>
<td>Regen</td>
<td>Thin</td>
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<tr>
<td>Average Annual Harvest (MMBF)</td>
<td>8.71</td>
<td>1.92</td>
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<td>3.92</td>
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<td>Range Over First 50-years (Annual MMBF)</td>
<td>1.3-13.1</td>
<td>0.1-3.9</td>
<td>0</td>
<td>0-10.8</td>
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<td>Average Annual Harvest (Acres)</td>
<td>226</td>
<td>123</td>
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<td>216</td>
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<td>Range Over First 50 Years (Annual Acres)</td>
<td>56-336</td>
<td>8-262</td>
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<td>0-747</td>
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<td>Category</td>
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<tr>
<td>Infrastructure/Research Station</td>
<td>$17.0M</td>
<td>Research facility that includes labs, bunkhouses, classrooms, shop, climate-controlled storage, event center</td>
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<tr>
<td>Vehicles &amp; Accessories</td>
<td>$0.5M</td>
<td>Estimated 15 vehicles at $34,000 ea. for vehicle and accessories</td>
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<tr>
<td>Research Plots &amp; Inventory</td>
<td>$3.0M</td>
<td>Aerial and ground based LiDAR, aerial photography and permanent or temporary plot installation</td>
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<tr>
<td>Carbon/Climate Monitoring Equipment</td>
<td>$1.5M</td>
<td>Carbon soil pits, lab equipment for analysis, climate/weather stations</td>
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<tr>
<td>Aquatic/Riparian Monitoring Equipment</td>
<td>$1.3M</td>
<td>Fish surveys, stream morphology, sensors for temperature, discharge, suspended sediment, stream and air temperature</td>
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<tr>
<td>Wildlife Monitoring Equipment</td>
<td>$1.0M</td>
<td>Vegetation plots, bioacoustics, wildlife surveys, cameras, eDNA sampling and analysis</td>
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<tr>
<td>Social Science / Recreation Monitoring Equipment</td>
<td>$0.5M</td>
<td>Infrared trail counters, recreation cameras, traffic counters, community surveys and assessments, photo plots</td>
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<tr>
<td><strong>Total Start Up Expenses</strong></td>
<td><strong>$24.8M</strong></td>
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Thank You