



Board of Forestry

Western Oregon
State Forests HCP Update
September 7th, 2022

Michael Wilson, State Forests Division Chief

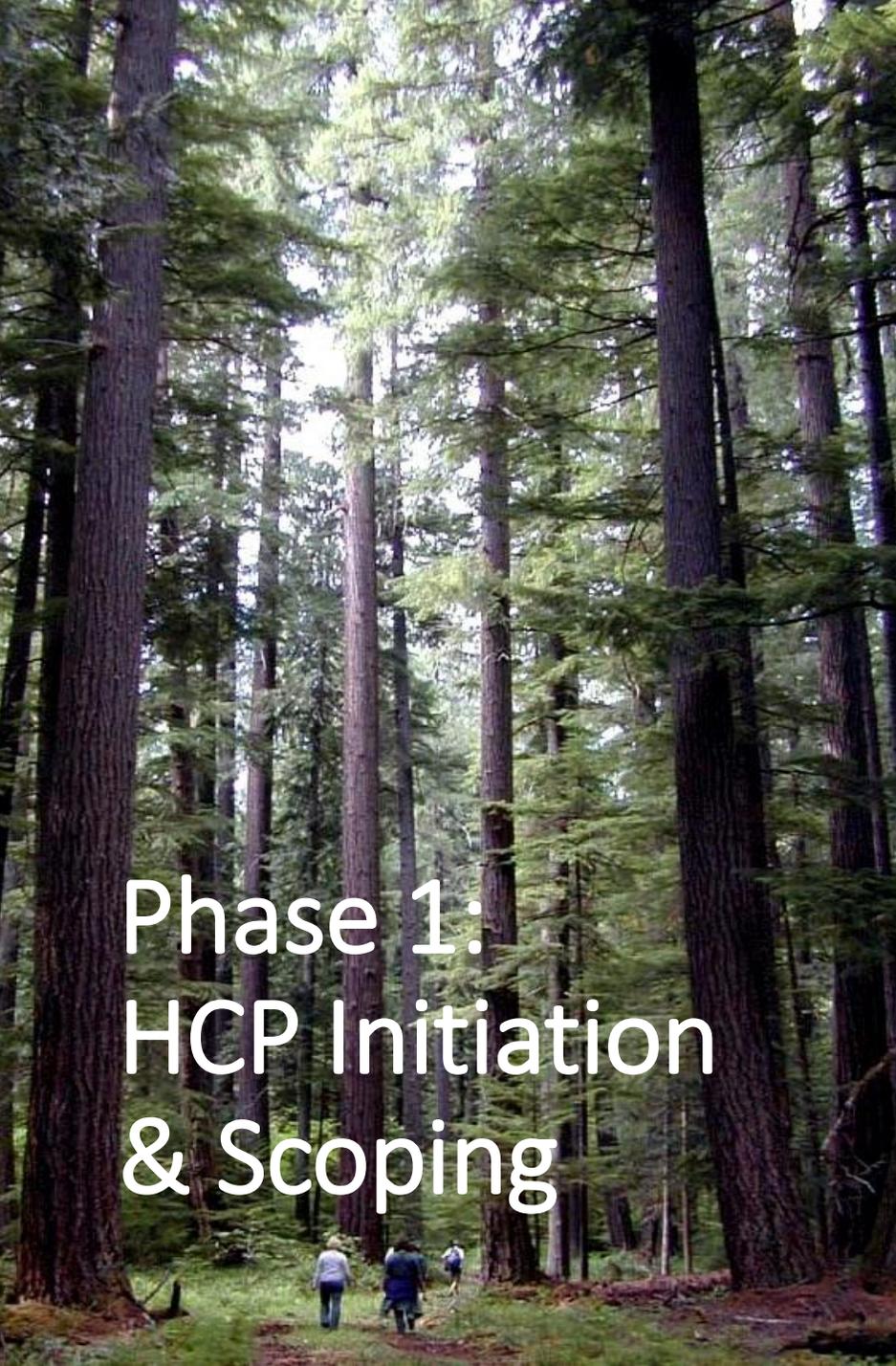
Cindy Kolomechuk, HCP Project Lead

Kim Kratz, NOAA Fisheries West Coast Assistant Regional Administrator



ESA Compliance: Incidental Take Permits

- 1995 Elliott State Forest:
 - 1st State Forests HCP in the Nation
- 1998-2008 Western Oregon HCP
- 2016 Northern Spotted Owl Safe Harbor Agreement
 - Provided certainty for 10 years
- CCAA for Pacific fisher
 - Assurances for 30 years
 - Factor in FWS decision not to list



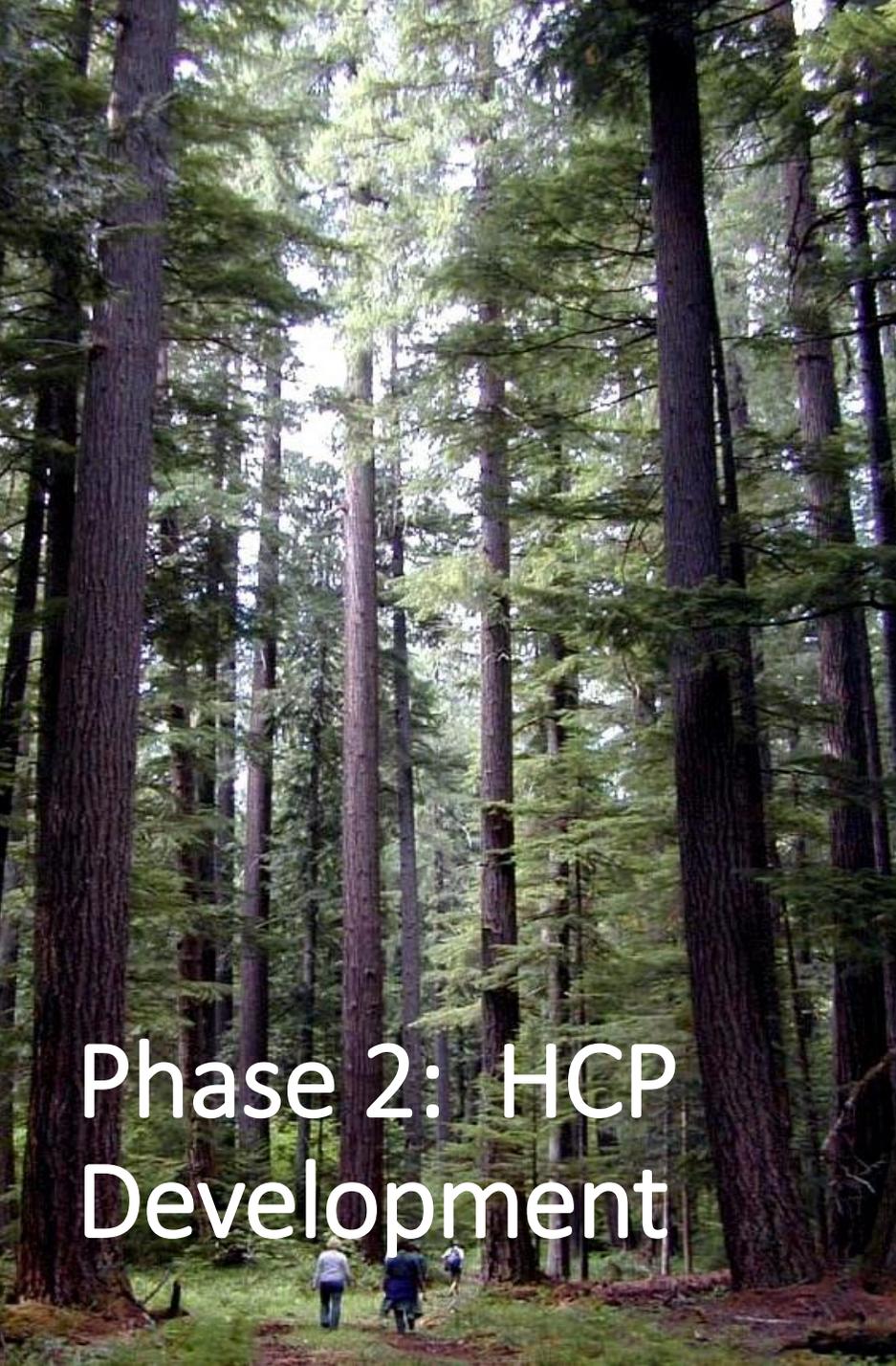
Phase 1: HCP Initiation & Scoping

Phase 1: HCP Initiation & Scoping

- Procured Technical and Facilitation Consultants (ICF, KW, OC)
- Engaged NOAA Fisheries, USFWS, DEQ, ODFW, DSL & OSU
- Considered Scope of the HCP: Permit Area & Covered Species
- Conducted a Business Case Analysis

Nov. 2018

Unanimous Board Direction to Move
Forward Phase 2: HCP Development



Phase 2: HCP Development

Phase 2: HCP Development

- Implemented robust engagement process
- Developed Conservation Strategies
- 1st Administrative Draft of the Western Oregon HCP
- Updated BCA with a Comparative Analysis

Oct. 2020

Unanimous Board Direction to Move Forward Phase 3: NEPA Analysis



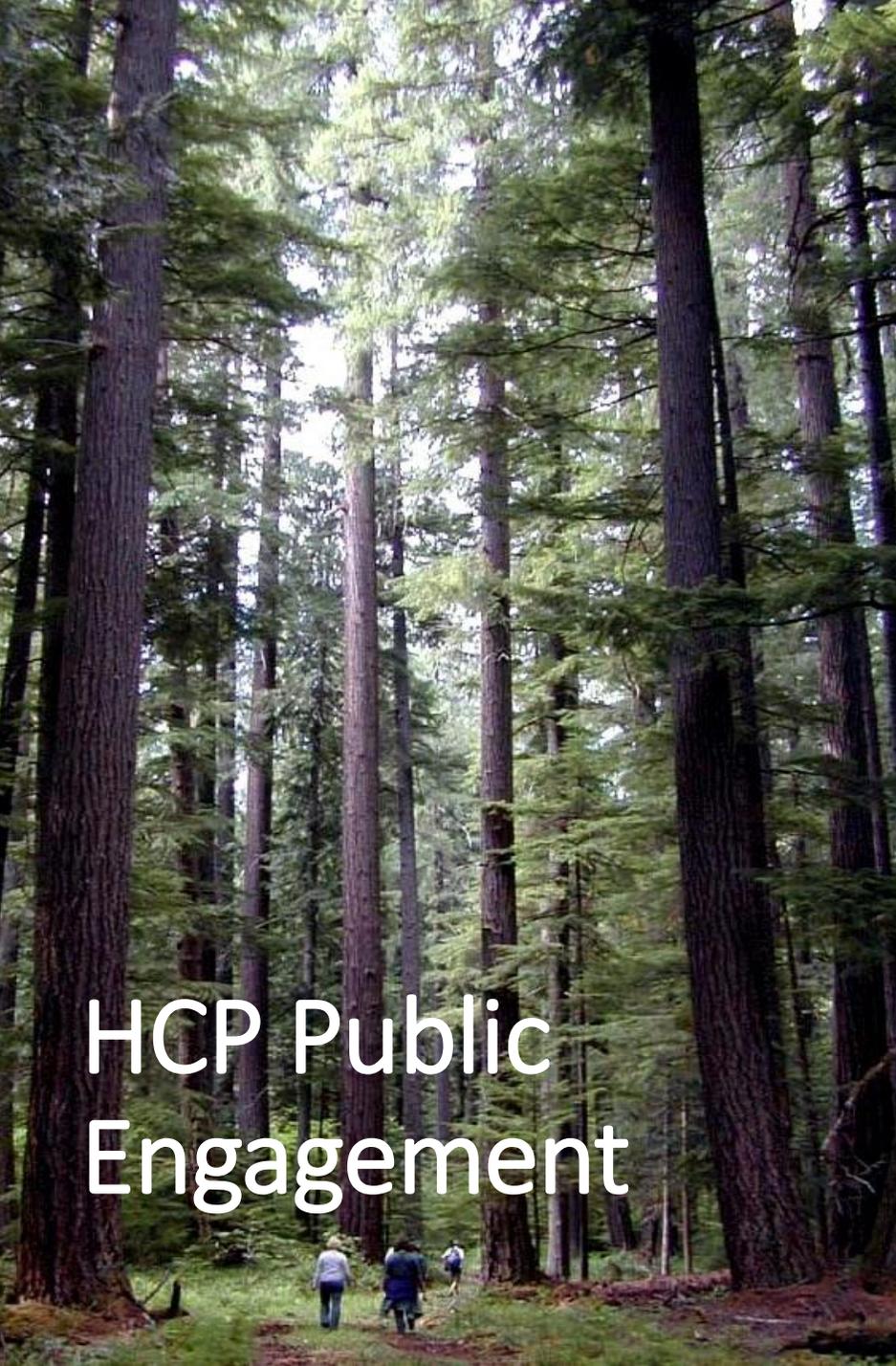
Phase 3: NEPA Analysis

Phase 3: National Environmental Policy Act Analysis

- Present Modeled Outcomes for HCP & FMP (March 2023)
- Complete Environmental Impact Statement
- Obtain Incidental Take Permits

Sept. 2023

Board Direction to Implement the HCP
and Incidental Take Permits



HCP Public Engagement

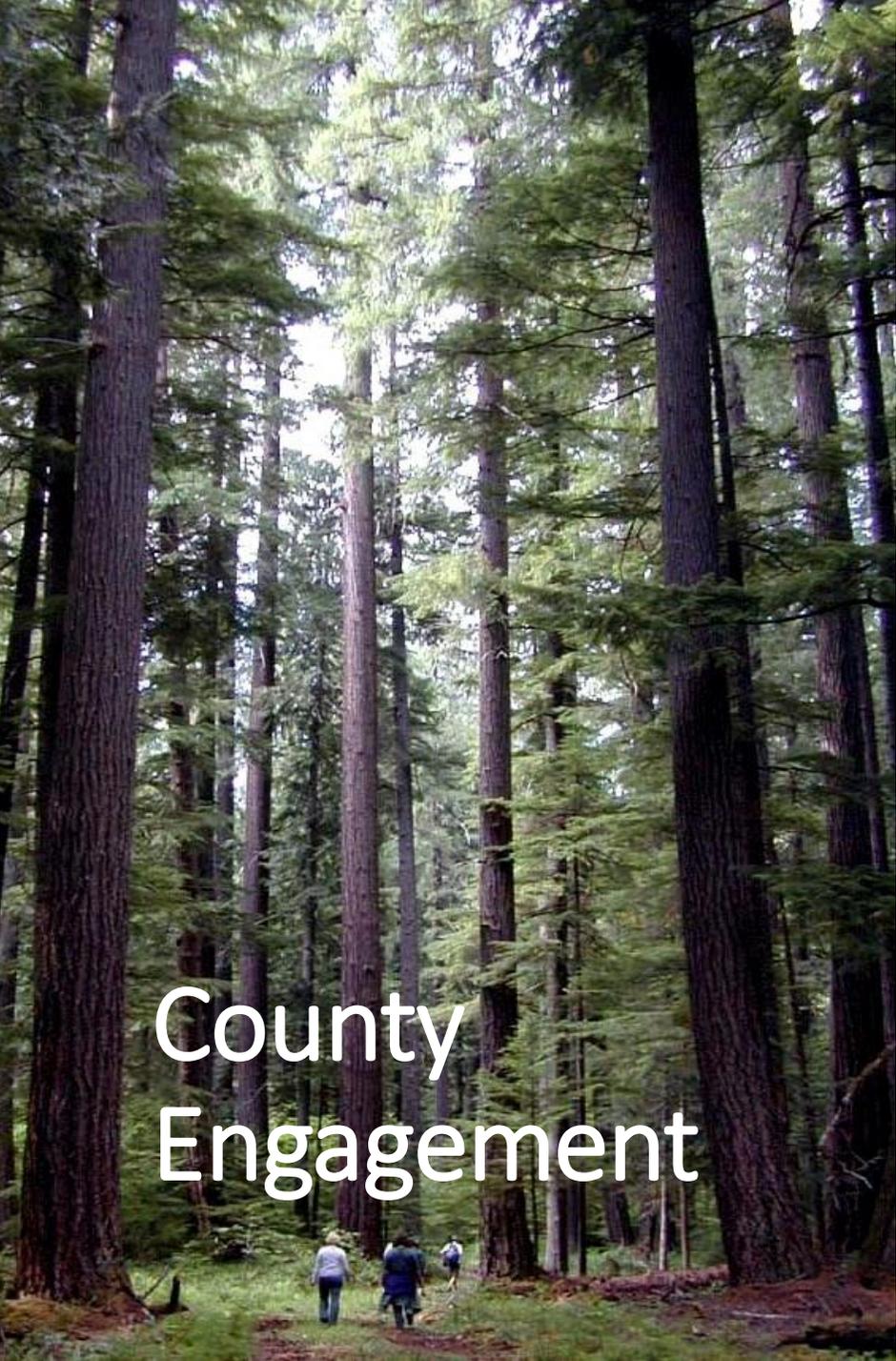
- **Tribal Engagement**
 - G2G Updates to the 9 Federally recognized Tribes of Oregon
 - Individual mtgs with Tribal Partners

- **14 Meetings Open to the Public**
 - 14 Focus Group Meetings
 - Timber Industry
 - Conservation
 - Recreation

- **Over 60 1:1 Stakeholder Meetings**

- **Committee Updates**
 - State Forests Advisory Committee
 - Industry Adhoc
 - Conservation Collaboration

- **Overall Positive Feedback on Engagement Process**



County Engagement

FTLAC Engagement

- **2018-2019** Regular FTLAC Meeting Schedule
- **Sept 2019-2020** Cancelled all but 1 FTLAC Mtg (Litigation & Pandemic)
 - *Continued County Engagement*
 - Association of Oregon Counties Meetings
 - Provided Comparative Analysis data to FTLAC consultants
 - County Commissioner Meetings
 - Council of Forest Trust Land Counties
- **Feb 2021** FTLAC Mtg Recommenced (11 Mtgs)
- **May 10th** Special Board Meeting on DEIS



Total 450 Comments

<https://www.regulations.gov>

HCP Process Comments

- Covered Species
 - Species Selection Criteria
 - Range on State Forests
 - Likelihood of Listing
 - Data Sufficient to Support Strategies

- 70- Year Permit Term
 - Duration to grow habitat to meet BGOs
 - Confidence in harvest model data outcomes

- County and Public Engagement
 - Referred readers to Public Engagement Process Appendix

HCP Public
Comment
Summary



HCP Public Comment Summary

HCP Content Comments

- Data Supporting Conservation Strategies
 - Provided greater detail
 - Clarified linkages to appendices
- Requests for Continued Operational Surveys
 - Habitat suitability models, Lidar & stand data
 - Surveys focused on species monitoring program
- Questions on Barred Owl Management & Future of Roads and Trail Networks
 - Updated HCP with greater detail



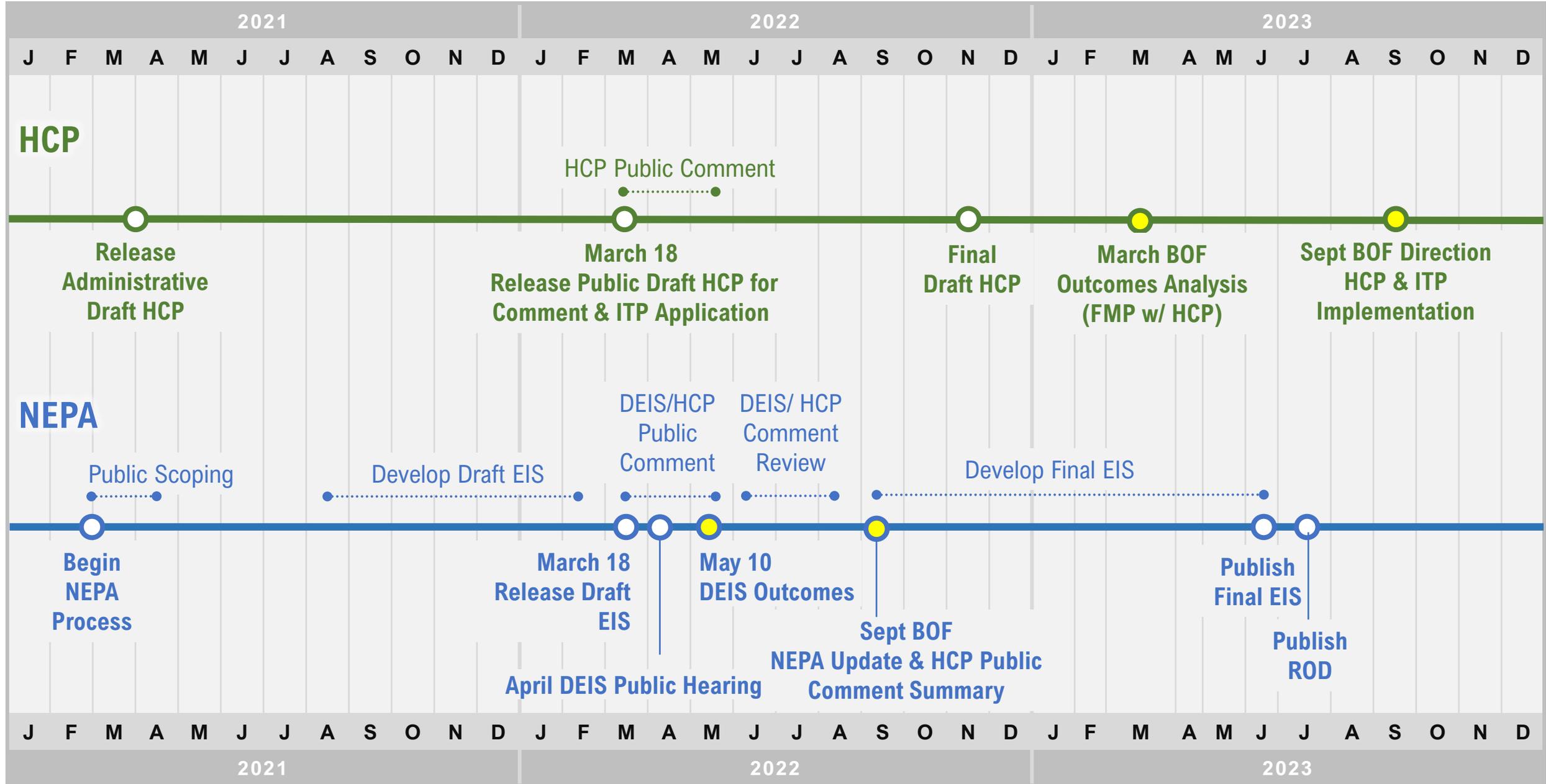
HCP Public Comment Summary

HCP Outcomes Comments

- Climate Change and Wildfire
 - Provided references to the Changed Circumstances Chapter language
- Harvest Levels & Economic Impacts
 - Estimate Annual Avg 225 MMBF over the permit term
 - Similar to current planned annual harvest objective across permit area
 - Distributed differently across the landscape

Working HCP – NEPA Timeline

● BOF Presentation / Decision





Next Steps

- **March 2023** Board Meeting: Draft FMP, Outcomes Analysis for FMP and HCP
- **May 2023** Board Meeting: Decision to move draft FMP to rulemaking
- **July 2023:** Complete NEPA Process
- **Sept 2023** Board Meeting: Decision to direct the State Forester to implement the HCP and the Incidental Take Permits

To: Board of Forestry
Submitted via email: boardofforestry@oregon.gov

7 September 2022

RE: Comments for 7 September 2022 BOF Meeting, re Habitat Conservation Plan for the Western Oregon State Forests (Agenda Item #8)

Dear Chair Kelly and Members of the Board of Forestry,

Thank you for the opportunity to comment on the draft Habitat Conservation Plan for the Western Oregon State Forests (HCP), which is an information item at the 7 September Board of Forestry meeting. We support your continued work that will lead to adoption and implementation of a robust HCP.

Oregon forests provide some of the most significant opportunities for reducing atmospheric carbon through sequestration and storage. Actions such as setting aside carbon reserves of older forests (largely encompassed by the Conservation Areas), establishing longer rotations in the production stands, and retention of large, older trees in production stands would all enhance carbon storage and sequestration with the co-benefit of protecting sensitive species' habitat. The BOF can and should use its authority to choose an HCP that will ensure protections for both the forests and the life that depends on them for the next 50 to 70 years.

In light of that, we urge the Board of Forestry (BOF) to support Alternative 3, the Conservation Alternative, with a few improvements. The Conservation Alternative is the most likely to aid in recovery of the covered species while also providing more certainty for the Oregon Department of Forestry to guide both responsible management and more sustainable logging in state forests.

We recommend that the Conservation Areas, both Habitat Conservation Areas (HCAs) and Riparian Conservation Areas (RCAs) be co-managed for the protection and recovery of threatened and endangered species and as carbon reserves. This will allow ODF to implement the Climate Change and Forest Carbon Plan (CCCP), adopted by this Board in November 2021, with the least impact to production areas of the state forests. The Conservation Areas can be managed to provide multiple benefits: threatened and endangered species protection and recovery; protection of drinking water quantity and quality by increasing summer streamflow; carbon storage and sequestration; and increased biodiversity of flora and fauna.

The broad range of undersigned climate, conservation, fishing, and other interest groups urge the BOF to request enhanced conservation practices in the Conservation Areas beyond those currently proposed in Alternative 3. For example, we propose prohibition of: 1) hardwood tree harvest in the HCAs (proposed 15,000 acres); 2) clearcut harvest or thinning solely for the promotion of harvest value within HCAs; and 3) post-fire logging in HCAs, with limited exception for safety near public use areas such as trailheads. Furthermore, timber harvest within the HCAs should be limited to plantations to promote mature forest structure. Removal of felled trees should be allowed only along existing roads, whereas felled trees distant from existing roads should be retained. We also support the improved steep slope logging protections and attention to excessive road network impacts outlined in Alternative 3, which would provide a wide array of benefits to aquatic habitat and species. The BOF can

make changes to the draft HCP that are more protective of natural resources, without additional environmental analyses.

In addition, natural forest regeneration should be required following natural disturbances within Conservation Areas—such as fire, insect infestations, or windfall. Studies have shown that post-disturbance harvests delay the recovery of mature forest structure, upon which the covered terrestrial species depend. Interplanting with diverse tree and understory species should be reserved only for areas where the possibility of natural regeneration is limited.

Finally, the draft environmental impact statement evaluated permit terms of 50 and 70 years. Given the uncertainties of increased climate change impacts to the Western Oregon state forests (and elsewhere), we urge you to adopt a permit term of 50 years, as it both ensures some future certainty while also recognizing the climate that may change more rapidly than we are expecting. A slightly shorter term would better serve both Oregians and the species covered in this HCP.

In summary, we strongly urge the Board of Forestry to move forward with the Habitat Conservation Plan Alternative 3, with modifications that better protect the Conservation Areas, and co-manage the HCAs and RCAs as carbon reserves for a 50-year permit term.

Sincerely,

Brenna Bell, JD
Forest Climate Manager
350PDX

Grace Brahler, JD
Wildlands Director
Cascadia Wildlands

Darlene Chirman, MS
Leadership Team, Cascade-Volcanoes Chapter
Great Old Broads for Wilderness

Lauren Anderson
Forest Climate Policy Coordinator
Oregon Wild

Bob Sallinger
Conservation Director
Audubon Society of Portland

Noah Greenwald, M.S.
Endangered Species Director
Center for Biological Diversity

Victoria Frankeny, JD
Riverkeeper & Staff Attorney
Tualatin Riverkeepers

Bob Van Dyk
Oregon Policy Director
Wild Salmon Center

Joseph Youren
Audubon Society of Lincoln City

David Harrison
Salem Audubon Society

Chuck Willer
Coast Range Association

Bob Rees
NW Guides and Anglers Association

Jason Wedemeyer
Executive Director
Association of Northwest Steelheaders



September 6th, 2022

Board of Forestry
Oregon Department of Forestry
Board Support Office
2600 State Street
Salem, Oregon 97310

Re: HCP/DEIS

Dear Board Members:

Washington County has been following the Board of Forestry's work on the Habitat Conservation Plan (HCP) and Draft Environmental Impact Study (DEIS). On June 2, 2022, the Washington County Board of Commissioners convened a roundtable and discussed the HCP/DEIS and its impact on the 45,514 acres managed as forest land in our county.

The Washington County Board of County Commissioners appreciates the work the Board of Forestry has done through the HCP/DEIS in balancing the many interests of our state and the need to comply with the Federal Endangers Species Act. Washington County, like the state, has consistently supported forest management to support sustainable timber harvest, ample recreation, protected wildlife and their ecosystems, and clean water.

In advance of your Sept 7th, 2022, meeting, please know I and the undersigned district commissioners **support the HCP/DEIS** as an admirable balance of varied interests and is consistent with the county's previous position as stated in county Resolution and Order 13-27 supporting the Board of Forestry's efforts to implement conservation areas and modernize forestry policy.

I and the undersigned district commissioners **encourage the Board of Forestry to adopt the proposed action of approving the HCP** which will give certainty to a sustainable timber harvest,

Board of County Commissioners
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protect habitats, preserve our forests, clear air and water resources, and give our people ample recreation opportunities here in Washington County and throughout our state.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Kathryn Harrington'.

Kathryn Harrington, Chair,
Washington County Board of Commissioners

A handwritten signature in brown ink, appearing to read 'Nafisa Fai'.

District 1 Commissioner Nafisa Fai

A handwritten signature in blue ink, appearing to read 'Pam Treece'.

District 2 Commissioner Pam Treece



September 6, 2022

To: Board of Forestry
From: Dave Wells, State Chair
Oregon Society of American Foresters

Subject: Agenda Item #1 – General Public Comments; State Lands Habitat Conservation Plan

Good morning Chair Kelly, State Forester Mukumoto and members of the Board,

The Oregon Society of American Foresters (OSAF) is the Oregon division of the National Society of American Foresters. OSAF consists of over 700 members, working for public agencies, private industry, higher education and consultants, and also includes student members and retirees. The Society of American Foresters (SAF) is the national scientific and educational organization representing the forestry profession in the US. National SAF supports the management of forests for biological diversity as discussed in our National Position Statements entitled “[Biological Diversity in Forest Ecosystems](#)” and “[Protecting Endangered Species Habitat on Private Land](#)” (which can also be applied to state lands).

OSAF thanks the Board of Forestry for your leadership on state lands issues and your consideration of environmental, social and economic benefits received by all Oregonians through their active management. Our comments on Oregon Department of Forestry’s Habitat Conservation Plan (HCP) largely address what is currently identified as the Preferred Alternative as submitted by the Department as the applicant within the Federal Services’ Draft Environmental Impact Statement. Specifically we discuss our professional views on appropriate forest management and silviculture from a scientific perspective while identifying issues of overly restrictive prescriptions and management actions as described in the currently proposed HCP.

Active Forest Management

One of the fundamental tenets of our organization is that it is beneficial and appropriate to actively practice science-based forest management in order to meet environmental, social and economic goals for our forests. This is outlined in our Position Statement entitled “[Active Management to Achieve and Maintain Healthy Forests](#)”. There are increasing threats to the health of our forests including climate change, invasive pests, and wildfire. We know that active, adaptive management is the best way to address these threats.

Forest Resiliency and Mitigation of Threats

Oregon’s forests are threatened by catastrophic wildfires, insects and disease (accentuated by climate change) and there is a pressing need for active forest management to mitigate those threats. As we all observed during the 2020 Oregon Labor Day fires, there are no distinguishable boundaries (segments) during a raging and catastrophic wildfire regardless of land ownership, riparian versus upland habitat, land allocation, current forest management plan or designation, etc. Raging and catastrophic wildfires like we have experienced over the past several years go where and when they want irrespective of what is in front of them.



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The question thus arises whether this HCP is reasonable given that ODF is already strategically addressing catastrophic wildfires risk at both the site specific as well as the landscape scale. OSAF believes that this expansive designation of HCAs and Riparian Conservation Areas (RCA) will complicate active management to reduce threats to forests, and likely lead to substantially fewer actions to mitigate those threats.

Additionally, we are concerned about the limited scope of Swiss needle cast treatment areas and use of hardwood conversion to deal with mismanaged alder. Douglas-fir forests near the Oregon Coast have experienced an unprecedented outbreak of Swiss needle cast, resulting in growth losses of up to 50% that must be fully addressed. The so called “zombie alder” must also be thoroughly dealt with in order to restore habitat and healthy forest ecosystems in these stands’ place.

Professional foresters, in collaboration with other natural resource specialists, need the flexibility to prescribe and use a broad range of proven, science-based methods for preventing and treating forest health problems. When tailored to each unique, local situation, such flexibility allows highly effective, economical and environmentally sound practices to be implemented. Active management can help ensure that Oregon’s healthy forests will be maintained and those that are currently unhealthy will be substantially improved.

Wildlife Habitat and Adaptive Management

We are concerned the Habitat Conservation Areas (HCA), as outlined in the Habitat Conservation Plan (HCP), are overly restrictive and that these areas will not fully benefit from the best and most current science and management practices. We also know that active management will accelerate the attainment of the desired future forest conditions which are needed for the recovery of designated special status species.

For example, a May 2022 publication by Tappeiner, et al. demonstrates how multi-entry thinning regimes in the Coast Range of Oregon can accelerate restoration of older forest characteristic such as tree diameter, even in mature stands. In riparian areas, stand management can be applied to not only accelerate growth, but also to improve species composition and structure.

One of the fundamental purposes of active forest management is to provide habitat for wildlife across the landscape. Because there is such a diversity of species that call Oregon home, it follows that we need a broad range of habitat types from young forests to old and everything in between. That means that land managers must focus their management to provide all ages classes of forest. Conserving older forests has the dual effect of supplanting young forest habitat as the trees grow older and potentially losing older forests to fire. We encourage a close look at the monitoring and adaptive management plan for the covered species. Measuring habitat for the covered species is important, but does not tell the entire story. Adaptive management is needed to determine if the covered species in the HCP are reacting to the management prescriptions.



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Riparian Conservation Areas

In our position statement entitled, "[Managing Riparian Forests](#)," we point out the necessity to manage riparian forests. OSAF believes that active management of riparian areas on public and private forestlands should be a key part of contemporary strategies and policies to maintain and improve water resources along with fish and wildlife habitat. Highly cautious decisions have contributed to very limited management and inconsistent results in many riparian forests in Oregon, even where some active management is allowed. We are concerned that, lacking management, many of these unique and ever-changing forests now have or will develop conditions that are less than ideal for habitat and water quality, including reduced biodiversity and substantially increased risks of damaging wildfires.

The forest health benefits that ODF and the Board expect to attain through upland thinning treatments in the HCP outside of HCAs and RCAs can also be achieved in RCAs with similar active management prescriptions and we urge the Department to critically consider the silvicultural effects of having such expansive RCAs that are restrictive in management availability.

It has been well documented that thinning in dense, uniform forest stands accelerates the stand's trajectory to produce large conifer trees, vertical diversity, and tree-species diversity (Garman, Steven L.; Cissel, John H.; Mayo, James H. 2003.); all characteristics that we assume are desirable in RCAs as much as they are desirable in the uplands.

The tradeoffs that ODF are likely be considering through the refinement and finalization of the HCP will be between achieving these forest health benefits and potentially having adverse impacts to streams. These impacts to streams typically include stream temperature, wood recruitment, and sedimentation associated with active management.

We would like ODF and the Board to consider that research suggests that the amount of canopy cover retained in the riparian buffer is not a strong explanatory variable to stream temperature and that very small headwater streams may be fundamentally different than many larger streams because factors other than shade from the overstory tree canopy can have sufficient influence on stream temperature (Janisch, et al. 2012). To further explain this point, Anderson and Larson in their 2007 paper titled, "*Riparian Buffer and Density Management Influences on Microclimate of Young Headwater Forests of Western Oregon*" found that with no-harvest buffers of 15 meters (49 feet), maximum air temperature above stream centers was less than one-degree Celsius greater than for un-thinned stands meaning that some management of riparian areas has little to no effect on temperature.

Wood recruitment, as pursued with biological objective 1.1, can also be higher in riparian reaches with management. Wood volume in early stages of decay was higher in stream reaches with a narrow 6-meter buffer than in stream reaches with larger 15- and 70-meter buffers and in un-thinned reference units according to a 2016 study by Burton, Olson and Puettmann. The HCP states, ". Field research and modeling demonstrate that approximately 95% of the total instream wood inputs from adjacent riparian areas to fish-bearing streams come from distances of 82 to 148 feet (slope distance) from the edge of the stream channel." Yet, in the 2016 study by Burton, Olson and Puettmann, it was found that 82% of



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sourced wood in early stages of decay originated from within 15 meters of streams. To add to this research, it has been found that 10-meter no-cut buffers maintained 93% of the in-stream wood in comparison to no treatment according to a 2015 paper by Benda, Litschert, Reeves and Pabst.

Collectively, we believe that this literature suggests that there exists a declining rate of returns for “protective” measures, such as no-cut buffers, beyond 30-40 feet. Resource values such as thermal regulation and coarse wood recruitment begin to diminish in scale as no-cut buffers become much larger. We believe that the benefits in forest health achieved through density management will greatly outweigh the potential minor tradeoffs in stream temperature and wood recruitment, based on this scientific literature.

We urge ODF and the Board to reconsider its quantity of RCAs and the management prohibition within them.

Carbon and Climate Change

OSAF supports science-based policy efforts to recognize the role that Oregon’s forests and forest management play in mitigating greenhouse gas emissions through the sequestration of carbon in forests and wood products, the substitutions of biomass-derived products for fossil fuels, and avoided emissions associated with management practices that increase forest resistance and resilience to wildfire, droughts, insects, and other disturbances.

OSAF would support the addition of language to the HCP that explicitly recognizes the contributions of carbon stored in harvested wood products, emissions avoided by the substitution of harvested wood products for higher greenhouse gas producing materials, and the effects of market leakage associated with changes in timber harvest levels and is worked into the analysis of the environmental and social impacts of the Alternatives. Carbon stored in harvested wood products has the potential to offset a significant amount of carbon emissions from industrial processes in timber producing areas (Johnston and Radeloff 2019), and life cycle analyses indicate that the substitution of wood products for building materials such as steel, concrete, brick, and vinyl promotes increased carbon storage and reduce greenhouse gas emissions (Lippke et al. 2004, Malmshemer et al. 2011). Additionally, the failure to account for market leakage in carbon inventories can result in dramatic overestimates of carbon sequestration associated with forest carbon projects that reduce harvest levels (Murray et al. 2004).

We suggest not simply using inventories and methods such as, the United States Environmental Protection Agency’s Inventory of U.S. Greenhouse Gas Emissions and Sinks for developing inventories and analysis because they do not explicitly account for changes in carbon storage within the harvested wood products pool over time, for avoided emissions as a result of wood product substitution for higher greenhouse gas emitting materials, or for the impacts of market leakage associated with any reductions in Oregon’s timber harvest levels.



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OSAF would support additional text in the HCP to specify that these important contributions to net carbon sequestration in Oregon's forestlands are being incorporated into decision making related to management practices on Board of Forestry Lands.

Furthermore, OSAF supports the addition of new or expanded language that calls for estimates of avoided emissions associated with forest management practices that reduce forests' vulnerabilities to wildfire, insects, and drought to be included in the HCP and Federal Services' analysis. We would like to see these documents explicitly acknowledge the importance of practices that increase the resistance of forest carbon stocks to disturbance (i.e, practices that reduce losses in forest carbon).

Post-Disturbance Recovery and Salvage

We are also concerned about the salvage logging provisions of the HCP. For all intents and purposes, the HCP prohibits salvage logging after catastrophic events. As outlined in our Position Statement entitled "*Salvage Harvesting on Public Forestland in Oregon*" and in our "[Important Forestry Issues in Oregon](#)" policy booklet, OSAF supports salvage in appropriate areas after wildfire, drought and insect caused mortality, and other major disturbances, a view that is consistent with a survey of Oregonians.

Appropriate areas would include those subjected to high severity fires such as the 2020 Labor Day Fires. Those severely burned forests contribute little to suitable habitat for threatened and endangered species. Additionally, they are now considerable net carbon emitters, and become areas resistant to future fire control and dangerous for fire fighters. Salvaging of dead material reduces the build-up of heavy fuels in planted or naturally regenerated forests following disturbance and the carbon is locked in forest products rather than being emitted over time through decay. Salvaging can be done in a way that provides for social, economic, and environmental benefits. In conclusion, OSAF believes that the "one and done" or "hands-off" strategy for management of the HCA is an inferior approach as compared with an active adaptive management approach. We also believe salvage logging in severely burned forests is appropriate.

Conclusion

OSAF believes a healthy forest is a resilient forest. Science-based active management enhances forest ecosystem resilience, ecosystem services and produces forest products to create a high-quality of life for all Oregonians. We support active forest management prescribed by professional foresters to achieve and maintain healthy public and private forests, consistent with land management objectives.

We would like to see additional consideration in the HCP for:

- Creation of diverse habitat types throughout the planning area;
- A wholistic effort to address Swiss needle cast and "zombie alder";
- A more well-rounded adaptive management plan that addressed changes in management availability if species are recovering;
- Management in RCAs based on the best available science, resiliency goals and the achievement of desired future conditions;



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- The climate and carbon benefits of active management and harvested wood through avoided emissions and a wholistic lifecycle of forest carbon; and
- Inclusion of science-based post-disturbance recovery actions and salvage within RCAs and HCAs.

Thank you for providing this opportunity to testify today.

Sincerely,

Dave Wells, State Chair
Oregon Society of American Foresters

Public comment statement to the Board of Forestry:

For the record, my name is Lisa Payne, Chair of the Jewell School District Board of Directors, and I am here representing the Jewell School District, a local taxing district that receives revenue generated from Board of Forestry Lands. Jewell School District is located in the heart of the Clatsop State Forest. The district is comprised of one school, Jewell School, and has a current enrollment of about 150 students, grades pre-school through 12.

I am testifying today regarding potential funding impacts to counties and local taxing districts with respect to the proposed Habitat Conservation Plan and associated Forest Management Plan.

The Jewell School District relies on revenue generated by the Board of Forestry Lands to fund our general fund budget. Since the annual revenue exceeds what the State would provide, Jewell School does not utilize any State School Funds. This revenue source has allowed Jewell School District to remain independent and operate a public school in a rural setting during the time when other rural schools have had to consolidate with adjacent districts or become charter schools.

Jewell School District's current budget utilizes approximately 4.45 million dollars of timber revenue for our General Fund. If the school were forced to use State School Funding, based on current enrollment, we would need to cut 1.75 million dollars from our budget. The only way to cut 40% is by reducing the number of people. This means that to make up 1.75 million dollars, Jewell School would have to cut 13.5 or 93% of 14.5 teachers from our general fund.

In your staff report on page 3, you received information of concerns that harvest levels with an HCP would be significantly different than projected harvest levels associated with the current Forest Management Plan. Your staff estimated the harvest would be similar to ODF's current planned annual harvest overall for districts, although it will be distributed differently. In your Business Case Analysis as well as the ODF Draft Habitat Conservation Plan and Forest Management Plans: a Comparative Analysis, it suggests that overall acres available for timber harvest would increase under the HCP and annual net revenue would remain stable or increase. This again is combined for all districts. Our concern is what potential effects will it have on the Astoria District and our local taxing district. This information is not available in your public documents.

The Jewell School District is concerned that lands within our taxing district will disproportionately be affected by the HCP compared to other Board of Forestry Lands. Based on the maps provided in the Draft Plan, we could see a 15% to 20% decrease in available acres for harvest compared to acres under the current Forest Management Plan. We believe that our local taxing district maybe economically penalized due to our location and the quality of timber currently present, as well as the number of conservation acres proposed.

I would recommend delaying any further decisions until economic impacts can be estimated for each ODF District so local taxing districts can determine how it affects them. We do believe that Oregon Department of Forestry's Astoria District has been doing a good job managing timber resources to provide adequate revenue for the Jewell School District under the current Forest Management Plan.

I understand that our little school and the funding it received probably doesn't mean much to you, but it means an awful lot to our community and the education of our kids.

Thank you for your time.



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LINN COUNTY BOARD OF COMMISSIONERS



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Linn County Courthouse
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(541) 967-3825 FAX: (541) 926-8228

DARRIN L. LANE
Administrative Officer

August 30, 2022

Jim Kelly, Chair of Board of Forestry
Oregon Department of Forestry
2600 State Street
Salem, OR 97310

Cal Mukumoto, State Forester
63612 Fifth Rd
Coos Bay, OR 97420

Dear Mr. Kelly and Mr. Mukumoto:

We write, again, to express our concerns about the proposed HCP. You have heard from Linn County regarding our concerns about best science not being considered (i.e. Trask Paired River Study, Spotted/Barred Owl management and others). You have heard a lot from Linn County about the social and economic issues from reduced revenue, loss of jobs and the loss of capacity as a direct result of the HCP very negatively affecting our communities and citizens. We have talked about the results that the massive wildfires have had and will have going into the future as large swaths of the forests are destroyed. We have reminded ODF and the Board of lost lives and the risk to our constituents.

It is our concerns regarding wildfires that causes us to write about the relationship of the HCP to Governor Brown's "Governor's Council Wildfire Response" released in 2019. As we reread that proposed response to wildfire, **more land** - not less, is to be treated annually per the plan. The plan talks of treating 300,000 acres annually; this is not all on State lands but also on Federal lands. How does the HCP address this increased need for treatment on state lands? It looks to us that the need for more treatment is not considered and it is important that the work described in the plan be integrated into the HCP. The proposed HCP does not treat more acres; it does the opposite by increasing acres not treated. Yet, treatment of forestlands was ranked "highest" priority in the Governor's plan.

The Governor's Council talks that the pace of treatments needs to increase 3 to 4 times what is happening now. How is the need to increase treatment rates addressed in the HCP for state lands? Do we have to wait for a new Forest Management Plan to be done after the approval of the HCP? It will be too late once the HCP is set as the HCP cannot be changed for 70 years which pushes preventative fire response into the distant future.

Please stop the current HCP. Do not let a "plan schedule" drive the decision. Please do not push out the current HCP. We do not support it!

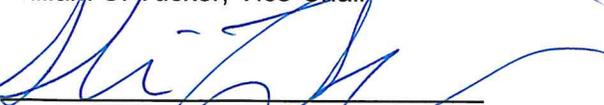
Sincerely,



Roger Nyquist, Chair



William C. Tucker, Vice-Chair



Sherrie Sprenger, Commissioner

c: David Yamamoto, Tillamook County Commissioner

Sept. 6, 2022

Jim Kelly
Chair, Oregon Board of Forestry
C/O Oregon Department of Forestry (ODF)
2600 State Street
Salem, Oregon 97310

Dear Chair Kelly,

The enclosed analysis of the Socioeconomic Section of the Draft DEIS for state forests was written by me for the Coast Range Association and submitted to the conservation community state forest coalition. Much of the analysis was used in the coalition's comments to the National Marine Fisheries Service (NMFS). It is my understanding that comments submitted to NMFS in an EIS process are not forwarded to the requesting HCP party.

Because of the above, I am submitting the Coast Range Association analysis to the members of the Board of Forestry (BoF) and State Forester Cal Mukumoto. I do this for reasons beyond the state forest HCP. I believe the climate crisis requires all parties involved in public advocacy to re-think their paths going forward. In a time of crisis, the usual conflict model of advocacy is likely not appropriate. The information explored in my DEIS analysis, particularly potential future climate impacts to coastal forests, has caused us to pause and reflect. It is my hope that in the future the Coast Range Association might play a more supportive role to the Board of Forestry and the Department of Forestry as state agencies and civil society struggle to find the proper path forward to address multiple crises facing the world.

And it is my hope that I might have a brief conversation with members of the BoF regarding key findings in the enclosed analysis and how a more collaborative relationship might be established between the Coast Range Association and ODF.

Sincerely,



Chuck Willer
Director

CC. State Forester Cal Mukumoto and Board of Forestry members Liz Agpaoa, Karla Chambers, Ben Deumling, Chandra Ferrari, Joe Justice, and Brenda McComb.

Coast Range Association
P.O. Box 2250 Corvallis, OR 97339
<https://coastrange.org>

Comments on the Socioeconomics Section of the DEIS for the Western Oregon State Forests Habitat Conservation Plan

Prepared by Chuck Willer
Coast Range Association



Draft Environmental Impact Statement for the Western Oregon State Forests Habitat Conservation Plan

Prepared for:

National Marine Fisheries Service
Oregon/Washington Coastal Area Office
1201 NE Lloyd Boulevard, Suite 1100
Portland, OR 97232

Prepared by:

ICF
1200 6th Avenue, Suite 1800
Seattle, WA 98101

March 2022

Final comments on the DEIS

By Chuck Willer

Coast Range Association

chuckw@coastrange.org

(541) 231-6651

Key issues identified in **red** text.

DEIS Section 3.12: Socioeconomics

“Section 3.12, Socioeconomics, describes the economic effects of potential changes in timber harvest and availability of other forest products in the region. In addition to direct jobs and labor income in the logging and milling industries, timber harvest in the permit area supports non-forestry jobs, labor income, value added, and output through indirect and induced effects. Economic activity also arises from collection of other forest products (e.g., moss, evergreen boughs, mushrooms) for commercial and non-commercial purposes. Some of this economic activity could contribute to employment and income for tribal groups. The distribution of employment impacts on tribal groups specifically (like other specific groups) depends on contractual relationships over space and time and cannot necessarily be inferred from aggregate economic effects. See Section 3.12 for more detail on these effects for each alternative.”

Comments and issues for Section 3.12 Socioeconomics and other relevant sections and appendices.

Section 3.12 Socioeconomics' discussion and presentation of data is weighted around income and employment projections from state forest timber harvests. Several tools were used to analyze timber harvest. The USDA Forest Service's *Forest Vegetation Simulator (FVS)* was used by the Oregon Department of Forestry (ODF) to project timber outputs through the year 2090. (Appendix 3.1-B, *Forest Model Description*). An ODF Log Distribution Model determined where logs flowed once harvested. An IMPLAN analysis by the DEIS contractor, ICF, was used to determine **indirect** and **induced** jobs and income related to state forest timber production for the first ten years of the HCP. It was not clear how **direct** jobs and income for the 70 year HCP period were determined. An ECONorthwest analysis of state forest timber sale income was used to list future state forest revenue distributions to local governments and taxing districts through 2090.

A list of tables associated with state forest timber production is as follows:

Table 3.12-1 Acres and Timber Revenue Distributions of Board of Forestry Lands to Counties (2016–2020)

Table 3.12-4 modeled harvest by decade by county - Alternative 1: **No Action**
Total Harvest = 12,239,265,000. Annual Average = 174,847,000

Table 3.12-5. Average Annual Direct Jobs by Decade of Analysis Period under Alternative 1: **No Action**. Total Annual Average Jobs = **607** (2023-2092)

Table 3.12-6. Average Annual Effects (Direct, indirect, and induced) of Alternative 1: **No Action** (2023–2032) in 2019 dollars.

<u>Effect</u>	<u>Jobs</u>	<u>Labor Income</u>	<u>Value Added</u>	<u>Output</u>
Direct	665	\$52,610,057	\$115,907,486	\$311,987,926
Indirect	1,385	\$81,097,034	\$111,204,000	\$207,487,051
<u>Induced</u>	<u>706</u>	<u>\$36,429,690</u>	<u>\$64,896,341</u>	<u>\$109,758,417</u>
Total	2,757	\$170,136,781	\$292,007,826	\$629,233,394

Equals \$79,112 Direct Labor Income per job.

Table 3.12-10. Average Annual Effects (Direct, indirect, and induced) of Alternative 2: **Proposed Action** (2023–2032) in 2019 dollars.

Effect	Jobs	Labor Income	Value Added	Output
Direct	863	\$68,278,118	\$160,876,435	\$377,832,770
Indirect	1533	\$89,731,109	\$123,043,443	\$229,577,363
<u>Induced</u>	<u>834</u>	<u>\$43,027,755</u>	<u>\$76,652,418</u>	<u>\$129,640,339</u>
Total	3,230	\$201,036,982	\$360,572,296	\$737,050,472

Table 3.12-7. Total Modeled Timber Harvest by County & by Decade of 2023-2092 under the Alternative 2: **Proposed Action** and Percent Change from the No Action Alternative. (timber harvest values are from both BOFL and CSFL)

2023–2032	2033–2042	2043–2052	2053–2062	2063–2072	2073–2082	2083–2092	Total All Years
2,506,618	2,452,762	2,398,190	2,236,537	2,124,694	2,054,402	2,031,475	15,804,679
+30%	+45%	+39%	+27%	+22%	+23%	+19%	+29%

Table 3.12-8. Average Annual Direct Jobs by Decade of Permit Term under Alternative 2: **Proposed Action** and Percent Change from the No Action Alternative.

<u>2023–2032</u>	<u>2033–2042</u>	<u>2043–2052</u>	<u>2053–2062</u>	<u>2063–2072</u>	<u>2073–2082</u>	<u>2083–2092</u>
863	855	842	777	734	716	715
+30%	+45%	+41%	+26%	+21%	+23%	+20%

Table 3.12-9. Change in Average Annual Harvest (MBF) and Employment by County under Alternative 2: **Proposed Action** Relative to the No Action Alternative (2023-2092)

	Average Annual Harvest	% Difference	Average Annual Employment	% Difference
Total:	225,781	+29%	786	+29%

Table 3.12-11 shows the modeled harvest by decade by county and the percent change in harvest for Alternative 3: **Increased Conservation** relative to the No Action alternative.

Table 3.12-12. Average Annual Direct Jobs by Decade of Permit Term under Alternative 3: **Increased Conservation** and Percent Change from the No Action Alternative.

Table 3.12-13. Average Annual Effects under Alternative 3: **Increased Conservation** (2023 to 2032) (in 2019 dollars)

Table 3.12-14. Change in Average Annual Harvest (MBF) and Employment under Alternative 3: **Increased Conservation** Relative to the No Action Alternative (2023–2092)

Difference in Harvest = +28%
 Difference in Employment = +28%

Table 3.12-15. Total Modeled Timber Harvest by Decade of Permit Term under Alternative 5: **Increased Timber Harvest** and Percent Change from the No Action Alternative.

Table 3.12-16. Average Annual Direct Jobs by Decade of Permit Term under Alternative 5: **Increased Timber Harvest** and Percent Change from the No Action Alternative.

Table 3.12-17. 2023 to 2032 Average Annual Effects under Alternative 5: **Increased Timber Harvest** (in 2019 dollars).

Table 3.12-18. Change in Average Annual Harvest (MBF) and Employment under Alternative 5: **Increased Timber Harvest** relative to Alternative 1: **No Action**.

Difference in Harvest = +34%

Difference in Employment = +34%

Table 3.12-20. Distributions of the Forest Products Harvest Tax Revenue to each Recipient under Alternative 1: **No Action** (in 2019 dollars).

Table 3.12-21. Distributions of BOFL Timber Sale Revenues to Counties under Alternative 2: **Proposed Action** (2023–2092) (in 2019 dollars)

Table 3.12-22. Taxing Districts Experiencing Reductions in BOFL Revenue under Alternative 2: **Proposed Action** (2023–2092) (in 2019 dollars)

Table 3.12-23. Timber Sale Revenues from CSFL under Alternative 2: **Proposed Action** Compared to the No Action Alternative (2023–2092) (in 2019 dollars)

Table 3.12-24. Forest Products Harvest Tax Revenue by Decade under Alternative 2: **Proposed Action** Compared to the No Action Alternative (2023–2092) (in 2019 dollars)

Table 3.12-25. Distributions of BOFL Timber Sale Revenues to Counties under Alternative 3: **Increased Conservation** (2023–2092) (in 2019 dollars)

Table 3.12-26. Distributions of BOFL Timber Sale Revenues to Counties under Alternative 5: **Increased Timber Harvest** (2023–2092) (in 2019 dollars)

The DEIS does not use a consistent naming descriptions for each alternative in the Socioeconomic section's tables. Some tables refer to an alternative by number and then in other tables refer to the alternative's name. All references to alternatives should include number and name. In the above list of tables, table descriptions have been edited for consistency.

Summary of Harvest and Direct Jobs by Alternatives

Prior Ten Years (2010-2019)

Average Annual Timber Harvest... **278,108,000 bf**

Alternative 1. No Action

Average Annual Timber Harvest... **174,847,000 bf**

Direct Jobs... 607

Alternative 2. Proposed Action..... +29%

+29%

Average Annual Timber Harvest... **225,552,630 bf**

Alternative 3. Increased Conservation..... +28%

+28%

Average Annual Timber Harvest... **223,804,160 bf**

Alternative 4. Reduced Permit Term

N/A

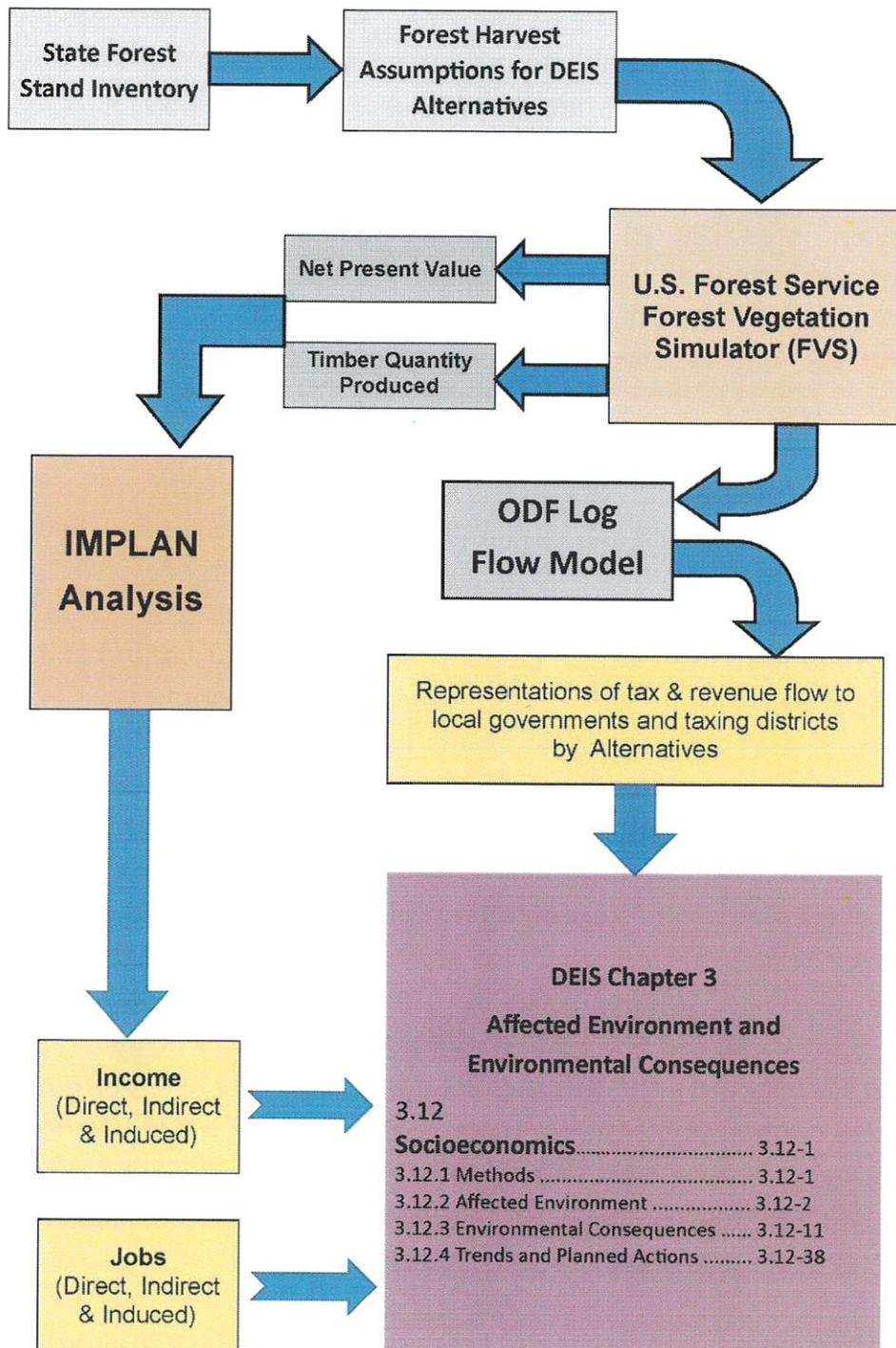
N/A

Alternative 5. Increased Timber Harvest..... +34%

+34%

Average Annual Timber Harvest... **234,294,980 bf**

Workflow of DEIS Analysis of Timber Values and Their Effects



It is hard discuss major points of view or evaluate DEIS Alternatives of socioeconomic effects when the quantitative modelling was only built around the effects of timber production. Land is a productive asset. How state forest land is used often precludes other uses. An economic impacts analysis must discuss economic tradeoffs as they ripple through an economy or foreclose on alternative economic activity. A dollar spent on state forest logs may very well be a dollar not spent on logs from private landowners. A landscape dedicated to timber production is arguably a landscape highly foreclosed to incompatible alternative economic uses such as camping, hiking and non-timber forest products. Businesses associated with non-timber land use may lose income and jobs or may never exist. Amenities associated with non-timber land use have positive economic effects in nearby communities which, in the case of Oregon's Northwest Forest District, are arguably significant. All of the above is extensively explored in the economic literature. See for example *Lost Landscapes and Failed Economies: The Search For a Value of Place*. Thomas Michael Power. 1996 Island Press. **The DEIS ignores the impact of amenity value loss.**

The ecosystem services discussion is generally qualitative, more of a listing, in the DEIS. We commend NMFS for quantifying net carbon sequestration per alternative and make recommendations for improvements. The fact remains, the vast majority of economic effects or socioeconomic representations in the DEIS are simply table after table of timber related metrics organized by alternatives. The use of IMPLAN is highly limited. All IMPLAN modeling was based on input data from the Oregon Department of Forestry's stand inventory and expected timber output using the USDA Forest Service's FVS model.

We therefore begin our comments on the DEIS by reviewing its discussion of the timber analysis and what for the general public must be a confounding narrative.

The sheer quantity of timber related tables in the DEIS and Appendices appear to convey substance of analysis. In fact, **the substance of economic effects is hardly insightful and likely highly inaccurate.** Regarding DEIS' narrative, the Code of Federal Regulation Title 40, Chapter V, Sub Chapter, Part 1502 at 1502.15 states *"Data and analyses in a statement shall be commensurate with the importance of the impact, with less important material summarized, consolidated, or simply referenced. Agencies shall avoid useless bulk in statements and shall concentrate effort and attention on important issues. Verbose descriptions of the affected environment are themselves no measure of the adequacy of an environmental impact statement."*

Even granting accuracy, **the tables of timber revenues, timber jobs and timber employment income are only meaningful relative to the economy's total jobs and total employment income.** The hundred plus pages of projected timber revenues to local governments and taxing districts in the Appendix is simply verbose and questionable for reason to be discussed.

Much of the DEIS Socioeconomic Appendix 3.12 is 'bulk' and no measure of the adequacy of the five alternatives' socioeconomic significance.

We consulted two IMPLAN experts, Dr. Hans Radtke and Dr. Greg Alward regarding the use of IMPLAN in the DEIS.

- Hans Radtke, PhD is an Oregon based economists specializing in natural resource analysis using I-O modelling.
- Greg Alward is Senior Scientist at the Policy Analysis Group, University of Idaho College of Natural Resources. Dr. Alward was one of the creators of IMPLAN.

Dr. Alward states: *"IMPLAN consists of two parts: 1. a descriptive set of accounts of a region's economy and 2. a predictive model for estimating counterfactual impacts on that regional economy. Contribution analysis uses IMPLAN accounts to portray how industry activities are organized to utilize a region's capital and labor to produce products (e.g., how stumpage growers, logger/harvesters, and mills are organized to produce wood products and how they each use capital and labor to do this). Contribution is typically measured as each industry's utilization of employment and "income" (labor and capital). "Income" is also referred to as "Value Added" or "Gross Domestic Income". GDI can be further broken down into categories: Employee Compensation (income of employees), Proprietors Income and Other Property Income (income of owners), and Taxes on Production and Imports (government). Summing the "Value Added" of all industries in a region measures the regions GDI using the "income approach". Summing the prices of all final products produced in a region measures Gross Domestic Product using the "expenditure approach". Since GDI equals GDP in an accounting sense, we can measure an industry's contribution to regional GDP/GDI by measuring its Value Added (it's use of labor and capital), often as a percent of the regions total GDP or employment. The contribution of a particular product (e.g., lumber) can be measured by the sum of VA contributions of the sequence of industries (e.g., stumpage growers, logger/harvesters, and mills) that are engaged in producing the final product. In the context of a DEIS, analysts should use contribution analysis to provide the "current situation" and the "no action" alternative."*

Given Dr. Alward's clarification of IMPLAN functionality, **we do not see a table stating the state forests contribution as a percentage of the region's total GDP or employment or any required discussion of socioeconomic significance relative to the total economy.**

Dr. Alward further states *"Using IMPLAN for impact analysis uses the fixed relationships from the contribution accounts as the basis for describing the consequences of counterfactual situations. In the case of the DEIS, this amounts to: "If harvest of State-owned stumpage increases/decreases, and all relationships between wood processing industries are fixed, then how does the sum of GDI & employment change throughout the chain of industries*

producing the final wood product?" As a counterfactual (i.e., DEIS alternative), this should be compared to the "factual" current situation contribution analysis."

IMPLAN was used to model the counterfactual DEIS alternatives but, again, the direct, indirect and induced jobs and income were not discussed compared to the total relevant economy. Nor was IMPLAN used for modeling non-timber forest products or ecosystem services.

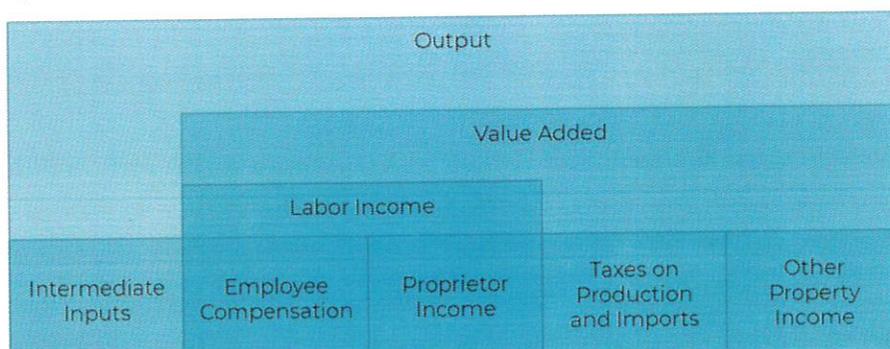
Additionally, **there is an error in representing the IMPLAN analysis**. Figure 1. In Appendix 2.12 provides the following explanation of the components of IMPLAN analysis – including the use of "output" values. The category termed **Output** is an artifact of the IMPLAN software analysis and **Dr. Radtke and Dr. Alward strongly advise against using the Output metric in public representations of IMPLAN analysis**. Their advice is similar to a caution stated in a paper published in the *Journal of Forestry* discussing use and misuse of IMPLAN in forest industry modelling.

Henderson, et al. Standard Procedures and Methods for Economic Impact and Contribution Analysis in the Forest Products Sector. Journal of Forestry. March, 2017.

The Henderson et al paper states "Total output, as calculated by IMPLAN, is not the same thing as GDP. GDP only considers the final cost of goods and services (the total of four value-added components: employee compensation, proprietor income, indirect business taxes, and other property type income) and **excludes the value of intermediate goods to avoid double counting**. IMPLAN's measure of total value added, not total output, is the most comparable measure of GDP or GSP....." And "Analysts should be aware of this very important difference, and when both output and value-added are reported, each should be clearly distinguished. However, output is a simpler concept than value added, and because it reports much larger values, it is **often requested by forest industry advocates for use in lobbying legislatures**."

In line with best practices of IMPLAN analysis, we strongly recommend IMPLAN's Output values not be reported in the DEIS. **The purpose of the DEIS is not to lobby using double counting but to accurately discuss economic significance and social context.**

Figure 1. Components of Output, Value Added, and Labor Income



Source: IMPLAN Group 2019b

Dr. Alward has expressed concern regarding the DEIS IMPLAN analysis use of NAICS industry categories. He states “*The nexus for the DEIS impact analysis is how harvest of State-owned stumpage will affect the economy, and the principal estimator used for this is the “direct effect” employment and wages of NAICS Industry 113 Forestry and logging. (DEIS Appendix 3.12, Direct Employment and Wages section, page 5). Specifically, the analysis uses reported employment and wages for NAICS 3-digit Industry 113 to measure average employment and wages per MBF of harvest of State-owned stumpage. However, NAICS 113 is comprised of three 6-digit industries: 113110 Timber Tract Operations (private stumpage companies), 113210 Forest nurseries, and 113310 Logging. Using NAICS 113 includes employment (and wages) of private stumpage companies and excludes employment (and wages) from State stumpage operations in computing the direct effects. Using this method seems contradictory of the purpose of the analysis and is a serious concern.*”

We urge the NMFS to reassess the use of the NAICS industry components and, if necessary, consult with Dr. Alward regarding his concern. See: <https://www.uidaho.edu/cnr/faculty/alward>

Appendix 3.12’s explanation of the IMPLAN analysis (the documentation) states the following: “*Because it is unclear what portion of ODF timber harvest spending flows to each mill type, this analysis uses only sawmills (IMPLAN Industry 132) to calculate value added, output, and the corresponding secondary effects.*” The use of IMPLAN’s off-the-shelf sawmill metrics means that national milling coefficients were used. Because Oregon is the nation’s leading producer of lumber, we hardly believe Oregon sawmills match national metrics. Log utilization and recovery metrics by sawmills in Oregon are known. The fact is that the vast majority of Oregon’s log production is processed in efficient, low cost and automated sawmills. We recommend NMFS document Oregon and national sawmill metrics and justify this aspect of the IMPLAN analysis.

We recommend the NMFS review two journal articles, the aforementioned Henderson et al paper and a 2007 paper by Watson et al on best practices of IMPLAN analysis. Henderson, et al. **Standard Procedures and Methods for Economic Impact and Contribution Analysis in the Forest Products Sector**. Journal of Forestry. March, 2017. and WATSON, P., J. WILSON, D. THILMANY, AND S. WINTER. 2007. **Determining economic contributions and impacts: What is the difference and why do we care**. *Journal of Regional Analysis and Policy* 37(2): 140–146.

Both of the above journal papers were submitted separately as comments to the DEIS.

Jobs per MBF of Timber

The DEIS notes that the IMPLAN analysis of indirect and induced jobs and wages is limited to only a ten year period because of future uncertainties in the economy. However direct employment and wages from timber harvest are given a fixed ratio and then calculated out to 2092. **We find the assumption of linear proportionality over the next 70 years not credible.** **Direct Employment and Wages** Appendix 3.12 states “*The alternatives vary by the amount of allowable harvest in the 5-year period increments, measured in MBF [thousand board foot]. Accordingly, the measure of the change is recorded in jobs and wages per MBF to understand the proportional change. On average from 2016 to 2019 there were 0.0035 jobs in the three industries per MBF of timber harvested in Oregon.*”²”

And

“*An assumption inherent in this approach is that jobs and wages are linearly proportional to changes in harvest levels. The analysis also assumes that the ratio of direct employment and income per MBF does not change over the analysis period.*”

Table 2. of Appendix 3.12

Employment per Thousand Board Feet, 2016 to 2019, Oregon Statewide			
Year	Total Harvest (MBF)	Total Employment (FYE)	Employment per MBF
2016	3,888,348	14,124	0.0036
2017	3,851,038	13,312	0.0035
2018	4,064,315	13,227	0.0033
2019	3,541,291	12,916	0.0036

Source: Calculated by ECONorthwest using data from U.S. Bureau of Labor Statistics and Oregon Department of Forestry

^aThis table reflects total employment for only the NAICS industries 321113, 3221, and 113.

MBF = thousand board feet; FYE = full-year-equivalent

The DEIS uses the above table to justify the 0.0035 employment per MBF metric. On face value the three NAICS industries indicate declining employment regardless of harvest level. A large literature exists on forest products industry employment in Oregon – see Simmons, et al below as an example.

Simmons, Eric A.; Marcille, Kate C.; Lettman, Gary J.; Morgan, Todd A.; Smith, Dorian C.; Rymniak, Luke A.; Christensen, Glenn A. 2021. Oregon’s forest products industry and timber harvest 2017 with trends through 2018. Gen. Tech. Rep. PNW-GTR-997. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 63 p.

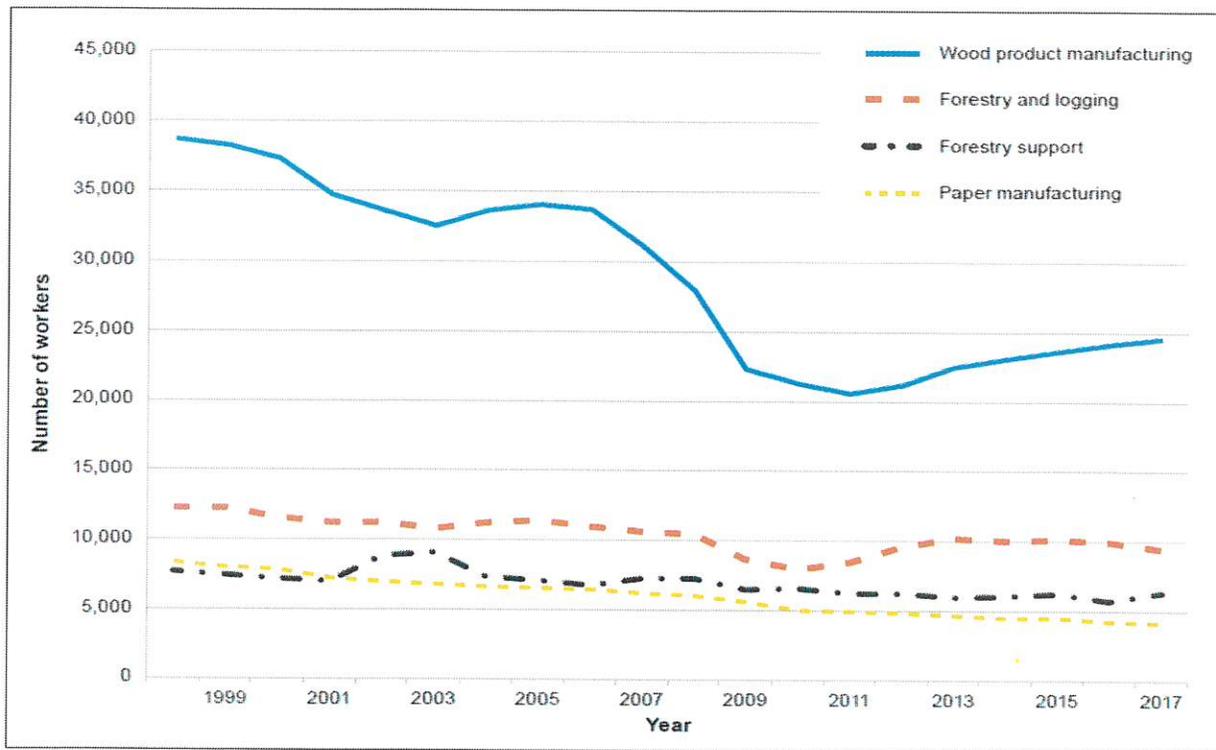


Figure 18—Oregon's forest industry employment by sector, 1998–2017.

From Simmons, et al. 2021. Oregon's forest products industry and timber harvest 2017 with trends through 2018. Gen. Tech. Rep. PNW-GTR-997. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 63 p.

The Simmons, et al 2018 Report states “The forestry and logging sector saw a 2 percent increase in labor income, despite a decrease (8 percent) of employment from 2013 to 2017. The forestry support sector also experienced this trend, where a modest employment increase of 5 percent was accompanied by an increase in labor income of 42 percent. A trend of employment increasing less than income may be observed during periods of expansion as a result of existing employees working more hours rather than additional workers being hired. Conversely, while the wood products manufacturing sector experienced the largest employment increase at 9 percent, labor income increased by only 6 percent. The average employee in the wood products manufacturing sector earned \$58,450 in 2017, compared to \$60,280 in 2013 (constant 2017 dollars)—a decrease of 3 percent.”(Page 53) And, “Decreasing employment trends in the forest industry reflect numerous factors, including innovations in the manufacture of wood products and paper, technological improvements to production, characteristics of timber available for harvest, market conditions, and shifts in public policy and forest management objectives.” (Page 52)

Given the above discussion by Simmons, et al, the long-term trend in the three NAICS is downward for employment per MBF and relatively flat or declining average wages in constant dollars. Yet, Appendix 3.12, tables 5 through 8 report an analysis of employee compensation by Alternative through 2092 is based on the assumption that “the ratio of direct

employment and income per MBF does not change over the analysis period.” Again, we find this assumption behind Tables 5-8 not credible.

Environmental Consequences

Tables 5 through 8 present the total employee compensation generated under the proposed action and alternatives. Alternative 4 has identical direct employee compensation as the first 50 years of the proposed action (periods 2023–2032 through 2063–2072).

Table 5. No Action Alternative Total Employee Compensation by Decade (in 2019 dollars)

County	2023–2032	2033–2042	2043–2052	2053–2062	2063–2072	2073–2082	2083–2092	Total, All Years
Benton	\$14,502,542	\$20,177,566	\$21,433,937	\$21,710,530	\$20,895,761	\$20,564,152	\$20,638,274	\$139,922,760
Clackamas	\$6,750,742	\$7,651,503	\$6,706,729	\$6,801,236	\$5,600,154	\$7,883,959	\$6,746,863	\$48,141,185
Clatsop	\$79,750,468	\$60,602,771	\$64,992,480	\$63,560,295	\$60,198,214	\$60,120,422	\$61,913,447	\$451,138,098
Columbia	\$50,312,922	\$40,354,960	\$42,329,671	\$37,390,392	\$36,483,802	\$36,493,256	\$35,477,332	\$278,842,336
Coos	\$3,660,530	\$10,353,878	\$7,697,213	\$6,977,213	\$7,089,197	\$8,395,853	\$10,525,461	\$54,699,345
Curry	\$1,822,043	\$194,196	\$596,493	\$1,278,204	\$2,014,069	\$1,315,561	\$0	\$7,220,567
Douglas	\$3,408,852	\$4,308,837	\$6,159,916	\$8,181,874	\$7,251,526	\$6,037,325	\$5,666,842	\$41,015,171
Jackson	\$45,584	\$29,541	\$1,150,736	\$135,517	\$334,559	\$659,682	\$17,816	\$2,373,435
Josephine	\$1,406,417	\$911,436	\$169,634	\$148,951	\$191,685	\$652,700	\$549,534	\$4,030,358
Lane	\$46,326,536	\$45,898,894	\$45,919,906	\$47,391,327	\$44,378,485	\$45,910,851	\$46,132,850	\$321,958,848
Lincoln	\$7,180,845	\$11,644,442	\$11,296,483	\$12,504,288	\$11,441,240	\$10,785,868	\$11,598,810	\$76,451,974
Linn	\$28,634,493	\$27,279,598	\$28,189,270	\$31,713,651	\$36,213,502	\$26,654,771	\$26,420,072	\$205,105,356
Marion	\$10,568,246	\$8,329,234	\$8,547,967	\$6,883,121	\$3,008,740	\$7,611,536	\$10,303,183	\$55,252,027
Multnomah	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Polk	\$1,816,591	\$4,722,787	\$3,642,094	\$2,685,979	\$2,891,216	\$3,032,183	\$4,975,684	\$23,766,532
Tillamook	\$98,994,780	\$95,381,179	\$96,054,303	\$104,084,964	\$102,975,172	\$98,193,022	\$98,050,927	\$693,734,348
Washington	\$77,731,277	\$49,586,714	\$48,974,060	\$53,657,942	\$55,502,423	\$49,841,693	\$53,001,261	\$388,295,371
Yamhill	\$65,702,254	\$53,672,132	\$53,279,200	\$56,771,814	\$57,403,793	\$53,485,323	\$55,020,826	\$395,335,342
Total, Decadal	\$498,615,124	\$441,099,668	\$447,140,090	\$461,877,297	\$453,873,538	\$437,638,156	\$447,039,182	\$3,187,283,054

Table 5 states the total “employee compensation” over the full analysis period, 2023 to 2092, is \$3,187,283,054. **Such a projection is bordering on fantasy.** If nothing else, just as we commented that IMPLAN could have been used to context total state forest timber values to regional or state domestic product, what is the corresponding total income for the analysis area? Or, what does \$498.6 million in total employee compensation for the first ten years mean in the context of the region’s total economy? **The simple fact is that the DEIS does not discuss Tables 5 through 8 in the context of total income for the relevant socioeconomic area which includes Metro Portland.**

Setting aside the impact of future climate conditions (discussed later), we suspect the reason for the above omissions is that state forests are fixed in size as is their future timber production. Such relatively fixed size and production volume is indicated by Tables 5 through 8. Yet, Oregon’s income will expand due to economic development and increased population. **The DEIS should discuss what will inevitably be a shrinking portion of the economy tied to state forest timber outputs regardless of the Alternative chosen.** The DEIS must be revised to compare timber values relative to total state income and other comparable metrics and then discuss such a comparison.

The entire presentation of timber related metrics appears to be motivated by a concern for the

Department of Forestry's budget and revenue distributions to local government and taxing districts and not about the HCP's environmental impact to Oregon's citizens.

A major question is why only timber outputs were modeled using IMPLAN? In 2011 the Massachusetts Department of Fish and Game, Division of Ecological Restoration (DER) commissioned ICF, NMFS contractor for this DEIS, to use IMPLAN in assessing socioeconomic effects of a set of ecological restoration projects.

See: <https://www.mass.gov/doc/phase-2-estimates-of-ecosystem-service-values-from-ecological-restoration-projects-in-0/download>

ICF was asked to answer four ecosystem services questions:

1. Flood Protection – Economic Impacts of the Town Creek Flood Mitigation and Salt Marsh Restoration Project.
2. Water Quality – Economic Impacts of Improving Water Quality through Implementation of the Muddy Creek Estuary Restoration Project,
3. Carbon Sequestration – Estimates of Carbon Sequestration from Wetland Restoration Projects and Reductions in the Social Cost of Carbon.
4. Landscape Appeal – Analysis of Property Value Changes Resulting from the Herring River Restoration Project.

The DER report states: *“Phase 2 of the study estimated the economic value of selected ecosystem services improved by DER projects. Under contract with DER in 2012-2013, economists from ICF International analyzed four types of ecosystem service enhancements: flood protection, water quality, carbon sequestration, and landscape appeal. The findings show a significant increase in value for the selected ecosystem services which represent just one of many service benefits resulting from each restoration project.”*

Arguably, flood protection, water quality, carbon sequestration and landscape appeal are of as great or greater economic value to Oregon's citizens as state forest timber. Towns and cities associated with state forest land watersheds (i.e. Vernonia and Tillamook) have experienced major flooding events. Ecosystem Services are explicitly addressed in the DEIS. While IMPLAN and FVS were used to produce volumes of data about timber, no multi-year quantitative analysis for ecosystem services other than carbon sequestration was seen fit to conduct. Why? The DEIS should be revised with such analysis—including counterfactual revenue projections from non-timber forest products sales and recreational fees over an appropriate time horizon. Tables of such income and revenue distributions to local governments and taxing districts should be included.

Beyond our above concerns, **we identify the following significant questions regarding timber production analysis.**

Forest timber production simulations

Model Function and Scenario Constraints: the **Objective Function**

Appendix 3.1-B states “*The most common objective function structure employed in forest linear programming analyses is net present value, otherwise known as discounted cash flow (Belavenutti et al. 2018). The discount rate employed in all versions of the forest model is 3 percent. In the absence of constraints, this solution would be consistent with a Faustmann (1849) approach for even-aged stands. For the habitat considerations, the model approach is more like what is described in Montgomery et al. (2006). The model was solved to maximize net present value for 100 years encompassing 20, 5-year time periods.*”

Appendix 3.1-B Forest Management Modeling

We ask NMFS to discuss the Forest Management model’s Objective Function of net present value (NPV). Why was a 3% interest rate chosen and not another rate or zero percent? On a deeper level, economic optimization for the DEIS is based on one value frame, namely the exchange value of transactions in markets. We find such a singular approach to value and meaning an affront to multiple cultures present in Oregon. **The DEIS must discuss how economic optimization denies all other cultural perspectives outside of market exchange transactions. Apparently, the NMFS sees no need to address cultures and citizens who believe in sacred value or any number of non-market values.**

Analysis Used-Linear Programming

We ask NMFS discuss the limitations of linear programming related to future forest conditions and socioeconomic effects. Arguably an uncertain future due to stressed planetary ecological limits, the certainty of climate impacts and lessons learned from the recent 2008 financial collapse **all suggest that linear projections undoubtedly fail to capture a dynamic future.** As a general rule most human and natural systems are nonlinear (i.e the [Lotka–Volterra equations](#) in biology). Again, it is important to distinguish between reasonable estimates of future conditions and fantastical speculation draped in technical analyses.

Net Revenue and Log Prices

“Net revenue for both the 2010 FMP scenario and HCP scenario included log prices specific to each region. The model tabulated log species and grade in each period. Costs were broken down into free-to-grow regrowth, pre-commercial thinning, road maintenance, spur roads, harvest cost, and hauling costs. The scenarios did not consider other ODF costs including the costs of road construction and repair.”

Will NMFS discuss why “*other ODF costs*” and “*road costs*” were not including in the forest output values? Road construction and maintenance is a substantial cost of forest management.

Log Values

Past actual log sale values from state forest timber sales are available. Why were regional log value used? It would be helpful if not only the choice was discussed but an actual comparison was provided between regional log values and past ODF log sales by log type. USDA Forest Service General Technical Report PNW-GTR-997 (October 2021) provides a detailed overview of log type and quantity harvested from major ownership types – including state forests.

Table 7—Oregon timber harvest by ownership class and product type, 2017

Ownership class	Sawlogs ^a	Veneer logs	Chipped logs ^b	Other timber products ^c	All products
Corporate ^d	1,831.4	411.4	287.9	29.3	2,560.1
Noncorporate ^e	389.2	72.2	34.2	14.4	509.9
National forest	240.2	71.8	25.2	0.8	338.0
State	241.1	60.1	1.6	—	302.8
Bureau of Land Management	117.1	43.0	2.3	0.2	162.7
Other public	32.9	11.1	0.7	—	44.8
All owners	2,852.0	669.6	352.0	44.7	3,918.3

^aExport logs are included in sawlogs.

^bChipped logs are primarily roundwood pulpmoed and also include industrial fuelwood.

^cOther timber products include logs for posts, small poles, pilings, utility poles, log homes, firewood, and log furniture.

^dFormerly "industrial private," an ownership class of private forest lands owned by a company, corporation, legal partnership, investment firm, bank, timberland investment management organization, or real estate investment trust (USDA FS 2006).

^eFormerly "nonindustrial private and tribal," private forest land owned by nongovernmental conservation or natural resource organizations; unincorporated partnerships, associations, or clubs; individuals or families; or American Indians (USDA FS 2006).

Note: Columns and rows may not sum to total because of rounding.

And USDA Forest Service research indicates that the theory of 'one price' appears to not hold for log sales on western federal forest timber sales. "Statistical evidence suggests that prices from the Beaverhead-Deerlodge and Salmon-Challis Forests and the Kootenai and Idaho Panhandle Forests are linked and that only these two sets of forests can be modeled as integrated stumpage markets. Aside from these four forests, *there is no evidence that the law of one price holds for national forest timber markets in the West.*" Daniels, Jean M. 2011. Stumpage market integration in western national forests. Res. Pap. PNW-RP-586. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 27 p.

All the more reason to document and discuss state forest timber sale values to regional sale values.

State Forest Income, Employment Projections and Climate

Potential Effects of Climate Change

The DEIS states "Climate change will continue to affect western region through the analysis period. The projected effects of climate change on western Oregon include increased temperatures, significantly drier summers, somewhat wetter winters, elevated sea-surface

temperatures off the Oregon coast, and reduced snowpack. There is projected to be a general shift in the timing and availability of water. Climate change is also projected to cause increased frequency, intensity, and duration of drought and disturbance events (i.e., severe storm events, wildfires, and invasive species).”

Appendix 3.2 “describes projected climate change effects in western Oregon in more detail.” We quote “In summary, climate change is forecast to reduce the resilience of forests to all forms of stress, particularly those associated with heat and drought, **leading to reduced growth** and increased vulnerability to stress-related disturbances such as pathogens and insect attack. Drought stress also increases vulnerability to severe fire because temperature, humidity, and fuel moisture loadings under drought conditions are conducive to ignition and rapid spread of fire. Climate change forecasts also predict more frequent occurrences of extratropical cyclones and thus increased risks of blowdown, flooding, and associated disturbances such as shallow-rapid landsliding and modification of stream channels. Accordingly, all disturbances discussed in Disturbance History and Effects are projected to become more severe during the analysis period, exceeding 20th century norms by mid-century and becoming even more severe by the late 21st century. **A measurable increase, including disturbances of all kinds that meet or exceed previous conditions, can be expected by halfway through the analysis period.** Substantial further increases in both disturbance frequency and severity can be expected by the end of the analysis period.”

And the DEIS states “**Income and employment:** This analysis quantitatively evaluates direct impacts on income and employment arising from changes in timber harvest activities in the plan area over the 70-year analysis period.” And “The forest model computes timber quantity and net harvest value, which are used as inputs to this analysis (Appendix 3.1-B, Forest Model Description).

Appendix 3.1-B, Forest Model Description states under **Growth and Yield:** “The U.S. Forest Service’s Forest Vegetation Simulator (FVS) (Dixon 2002), a distance-independent individual-tree growth model was used to project the stands with available SLI data forward in time for 100 years in 5-year periods. Post-harvest forest conditions were also projected using FVS, assuming reforestation with a site-appropriate species mix. These stand projections were completed using the range of site conditions present across the permit area. The model assigned yields to harvest units using site-specific and geographic rules.”

The Forest Service **Climate-FVS Version 2: Content, Users Guide, Applications, and Behavior** states that **a FVS model incorporating anticipated climate change is available.** We quote the users manual “The base FVS model, used without the climate adjustments, predicts a future that is a reflection of climates that predominated the last half of 20th Century. That

time frame is coincident with most of the measurements on which the model is based. The climates of the 21st Century are predicted to be warmer; assuming that they will not change is most likely wrong (IPCC 2013). While outputs from Climate-FVS may not turn out to be correct, ignoring climate change in prognoses of future forest species and size composition would misinform forest planning and forest management decisions.”

Crookston, Nicholas L. 2014. Climate-FVS Version 2: Content, users guide, applications, and behavior. Gen. Tech. Rep. RMRS-GTR-319. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 38 p.

https://www.fs.fed.us/ftpoot/pub/fmsc/ftp/fvs/docs/climateFVS/ClimateFVS_UsersGuide.pdf

There is no indication in the DEIS or its Appendix that income and employment projection were based on the Climate-FVS Version. On face value, it appears the wrong FVS model was used to determine “income and employment arising from changes in timber harvest activities in the plan area over the 70-year analysis period.” Given the stated DEIS climate impacts to forests and non-climate FVS model output projections – it is reasonable to assume a significant inaccuracy exists in projected timber quantity and net harvest values. Such inaccuracy will result in errors for “direct impacts on income and employment arising from changes in timber harvest activities.” **If such an error has occurred, then the error is amplified through the 100+ pages of detailed state forest revenue sharing projections for the DEIS Alternatives.**

We believe a new DEIS is required on this issue alone.

The DEIS Socioeconomic section must discuss future socioeconomic conditions and Alternatives in light of likely climate conditions. Likely global warming of 2 to 3 degrees centigrade will have demographic impacts, i.e. domestic climate refugees, relevant to state forests management and socioeconomic conditions. **The current atmospheric CO2 trend is following a reasonable projection that indicates a mid-range stabilization leading to severe climate impacts from 2C to 3C warming.**

Available literature based on Climate-FVS modelling suggests substantial changes in coastal growing conditions. We cite the paper **Projected future suitable habitat and productivity of Douglas-fir in western North America authored by Aaron R. Weiskittel; Nicholas L. Crookston; Gerald E. Rehfeldt** in *Schweizerische Zeitschrift für Forstwesen* (2012) 163 (3): 70–78. Available at: <https://doi.org/10.3188/szf.2012.0070>

The authors state: “*Douglas-fir (Pseudotsuga menziesii [Mirb.] Franco) is one of the most common and commercially important species in western North America. The species can occupy a range of habitats, is long-lived (up to 500 years), and highly productive. However, the future of Douglas-fir in western North America is highly uncertain due to the expected changes in climate conditions. This analysis presents a summary of work that utilizes an extensive network of inventory plots to project potential future changes in Douglas-fir habitat*

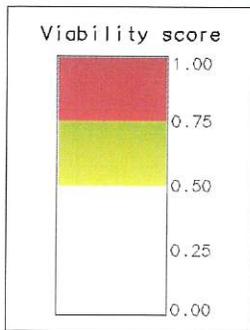
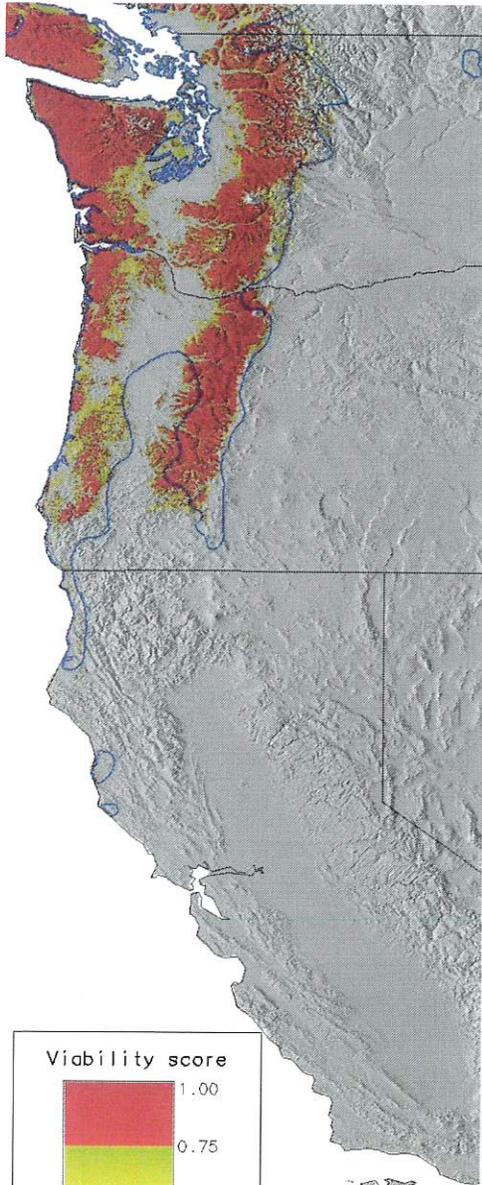
and productivity. By 2090, the amount of potential Douglas-fir habitat is projected to change little in terms of area (-4%). However, *the habitat is expected to shift from coastal areas of North America to the interior*. Corresponding changes in productivity are also projected as coastal areas experience reductions, while interior areas experience modest increases in productivity. Overall, the analysis indicates a sensitivity of Douglas-fir to climate and suggests that significant changes in North America are to be expected under climate change.”

As indicated by Weiskittel, et al, **suitable habitat for Douglas fir and the tree’s productivity will likely decline in Oregon’s coastal region—precisely where most state forests are located**. The climate impacts to Western Hemlock are even more dramatic. The Moscow, Idaho based Forestry Sciences Laboratory of the USDA Forest Service, Rocky Mountain Research Station has modeled changes in site viability for numerous tree species under expected climate change. **One mapped example, based on one of three climate models, demonstrates the potential dramatic shift in geographic suitability for Western hemlock**.

We urge NMFS to assess and incorporate the extensive data and literature on climate impacts to forests available at <https://charcoal2.cnre.vt.edu/climate/> : **Research on Forest Climate Change: Predicted Effects of Global Warming on Forests and Plant Climate Relationships in Western North America and Mexico**.

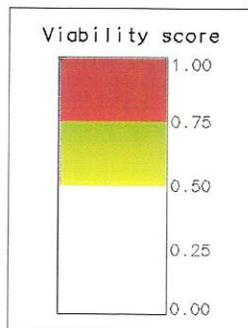
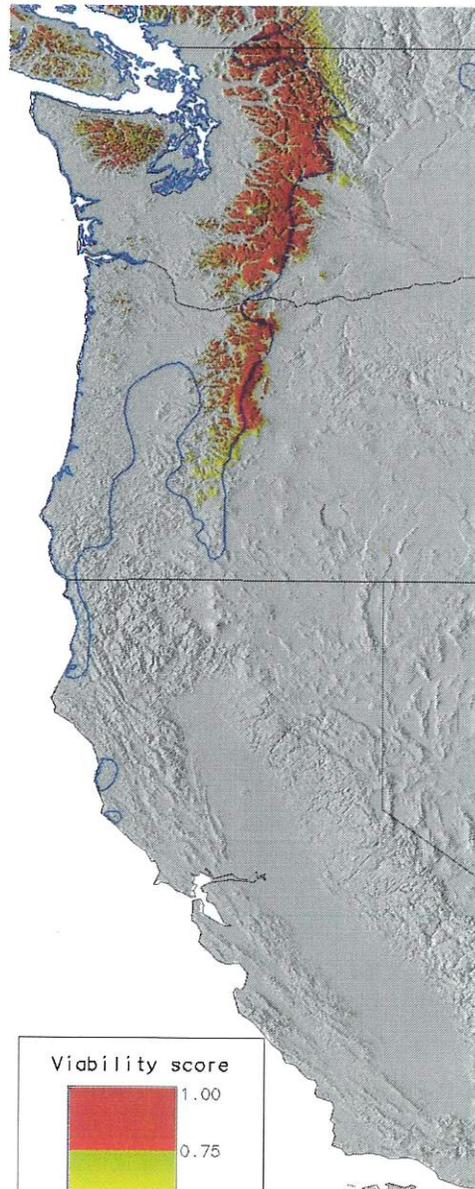
A cursory review of the mapped climate impacts to state forest commercial tree species and the extensive literature available at <https://charcoal2.cnre.vt.edu//climate/publications.php> suggests that the **current timber modelling and appropriate forest management strategy is likely orders of magnitude in error**. The two following maps of Western Hemlock site suitability under potential climate change are alarming.

Current Western Hemlock



Western-hemlock-

Western Hemlock 2060



Western-hemlock-

State Forests & the Value of Perceived Intact Forests

The DEIS misses what is arguably the most important social and economic aspect of state forests – namely their amenity value contribution to regional economic vitality. This economic dimension is well explored in economic literature and discussed in ***Economic Realities in the Tillamook and Clatsop State Forests: POSSIBILITIES FOR ECONOMIC EXPANSION AND DIVERSIFICATION*** by economists Thomas Michael Power and Philip J. Ruder. A Report Prepared for The Tillamook Rainforest Coalition. January 2003.

We quote the Power and Ruder report: “*considerable empirical evidence that documents the reality of such “amenity-supported” local economic vitality. One could include in this the economic vitality in western and central Oregon between 1988 and the beginning of the current recession despite the declines in the forest products industry. There are few economic commentators who, in explaining the ways in which the Oregon economy was transformed during that time period, have not mentioned the role played by Oregon’s natural amenities in attracting both new residents and businesses.*” And “*Knowing that natural amenities are likely to play a positive role in supporting local economic vitality does not 12 :: Economic Realities in the Tillamook and Clatsop State Forests necessarily allow one to predict exactly what the impact on the local economy will be if a certain part of the forested landscape is managed for something other than commercial timber production. While it is possible to say something fairly explicit about how increased timber harvests will impact employment in the wood and forest products mills, the same cannot be said for the impact of managing a certain percentage of those forest lands as forest reserves. We know that the direction of the change is positive and that it can be cumulatively very important (that is, Western and Central Oregon, or the Mountain West,), but a quantitative modeling of this impact is not possible. This fact does not mean that protected landscapes have no positive impact on the local economy or that this impact can be safely ignored. It means simply that the impact has to be considered in a qualitative manner when making public policy decisions.*”

The proximity of major state forest landscapes to Metro Portland, particularly Washington County, is significant far beyond a DEIS review of ecosystem services quantities or their monetary values. **The pull of perceived state forest amenities, only possible with low or reduced timber use, will be significant from a socioeconomic perspective in light of the future push of climate impacts as climate refugees and businesses seeks more habitable states to settle in.**

The above economic issue is not discussed in the DEIS and therefore the DEIS is need of revision. We will submit the full Power and Ruder Report as a separate comment on the DEIS.

Ecosystem Services

The DEIS includes a presentation of Ecosystem Services at **3.12.2.4 Value of Ecosystem Services**. We quote *“This analysis focuses on five categories of goods and services that forests in the permit area produce and people value: special forest products (plants used for food and materials) and hunting and fishing; climate regulation through carbon sequestration; water quality regulation; habitat for sensitive species; and cultural services (aesthetic, spiritual, heritage, and educational value).”*

Non-Timber Forest Products

The DEIS notes that the *“Collection of special forest products can occur throughout the permit area but collection for commercial use requires a permit, which generates revenue for ODF.”* Unfortunately, no data is provided on what non-timber forest products actually contribute to past revenues and **no counterfactual analysis is provided on the potential future value of non-timber forest products similar to the 70 year timber analysis. Why?**

The social value of an additional metric ton of CO2 sequestration

DEIS **Value of Climate Regulation** states: *“Trees and soils in the permit area are important carbon sinks for the region because they sequester carbon in their above- ground woody material and in their roots throughout their life cycle. Alternatively, forest disturbances can lead to the release of stored carbon (Binkley and Fisher 2019). Release of greenhouse gases such as carbon dioxide (CO2) contributes to climate change and leads to adverse health outcomes, increased risks of natural disasters such as floods, lost agricultural productivity, and other (largely adverse) economic outcomes for local, national, and international populations. The most recent estimates suggest that the social value of an additional metric ton of CO2 sequestration is about \$48 (in 2019 dollars) (Interagency Working Group on Social Cost of Greenhouse Gases 2021).”*

And

“Footnote 2: *Though the International Working Group report does not provide estimates for the social cost of carbon in emissions years after 2050, we applied the current emissions year value of \$51 per metric ton of carbon dioxide for the entire analysis period.”*

The above quoted footnote 2 in the DEIS references the *“International Working Group.”* Did the DEIS intend to reference the **Interagency Working Group on Social Cost of Greenhouse Gases (IWG)?**

The Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990. Interagency Working Group on Social Cost of

Greenhouse Gases, United States Government February 2021 provides the following:

Table ES-1: Social Cost of CO₂, 2020 – 2050 (in 2020 dollars per metric ton of CO₂)³

Emissions Year	Discount Rate and Statistic			
	5% Average	3% Average	2.5% Average	3% 95 th Percentile
2020	14	51	76	152
2025	17	56	83	169
2030	19	62	89	187
2035	22	67	96	206
2040	25	73	103	225
2045	28	79	110	242
2050	32	85	116	260

Several things are clear about the DEIS's carbon value: **Unlike the DEIS, the IWG's carbon values increase in the future years and the \$51 value is not credible for the HCP time period.**

The IWG has this to say regarding Table ES-1 *“Consistent with the guidance in E.O. 13990 for the IWG to ensure that the SC-GHG reflect the interests of future generations, the latest scientific and economic understanding of discount rates discussed in this TSD, and the recommendation from OMB’s Circular A-4 to include sensitivity analysis with lower discount rates when a rule has important intergenerational benefits or costs, agencies may consider conducting additional sensitivity analysis using discount rates below 2.5 percent.* Furthermore, the IAMs used to produce these interim estimates do not include all of the important physical, ecological, and economic impacts of climate change recognized in the climate change literature. For these same impacts, the science underlying their “damage functions” – i.e., the core parts of the IAMs that map global mean temperature changes and other physical impacts of climate change into economic (both market and nonmarket) damages – lags behind the most recent research. Likewise, the assumptions regarding equilibrium climate sensitivity and socioeconomic and emissions scenarios used as inputs to the model runs in this TSD will need to be updated. It is the IWG’s judgment that, taken together, these limitations suggest that the range of four interim SC-GHG estimates presented in this TSD *likely underestimate societal damages from GHG emissions.*”

The above passage suggests NMFS should seriously consider a revised DEIS using a much lower discount rate than 3% (“when a rule has important intergenerational benefits or costs, agencies may consider conducting additional sensitivity analysis using discount rates below 2.5 percent.”)

A current carbon market value estimate out of the University of Chicago suggests an immediate revision of the social cost of carbon to \$125. We quote: “This paper outlines a two-step process to return the United States government’s Social Cost of Carbon (SCC) to the frontier of economics and climate science. The first step is to implement the original 2009-

2010 Interagency Working Group (IWG) framework using a discount rate of 2%. This can be done immediately and will result in an SCC for 2020 of \$125. The second step is to reconvene a new IWG tasked with comprehensively updating the SCC over the course of several months that would involve the integration of multiple recent advances in economics and science. We detail these advances here and provide recommendations on their integration into a new SCC estimation framework.”

See: <https://ssrn.com/abstract=3764255>

And: <https://impactlab.org/research/updating-the-united-states-governments-social-cost-of-carbon/>

The DEIS must reassess future values based on a discount rate significantly below 2.5% and state a substantially higher social value of carbon using a schedule of values over the course of the planning period.

Values for net carbon storage:

The DEIS offers the following values of net carbon storage for the following Alternatives:

(1) **No Action Alternative:** “Based on modeling, net carbon storage—the stock of carbon in the forest—would average 571,095 metric tons carbon dioxide equivalent (MT CO₂e) per year over the analysis period under the no action alternative (Section 3.14, Greenhouse Gas Emissions and Carbon Storage), which would have an estimated social value of \$27.4 million per year (in 2019 dollars).²

(2) **Proposed Action Alternative:** “Based on modeling, net carbon storage would average 467,017 MT CO₂e per year over the permit term under the proposed action (Section 3.14), which would have an estimated social value of \$22.4 million per year (in 2019 dollars).”

(3) **Alternative 3:** “The impacts on ecosystem services under Alternative 3 would be similar to the proposed action. Based on modeling, Alternative 3 would result in carbon storage amounting to a social value of \$23 million per year over the permit term (in 2019 dollars), a 17 percent decrease compared to the no action alternative.”

(4) **Alternative 5 – Increased Timber Harvest:** “Based on modeling, increased timber harvest under Alternative 5 would result in carbon storage amounting to a social value of \$21 million per year (in 2019 dollars) over the permit term, a 23 percent decrease compared to the no action alternative and a 6 percent decrease relative to the proposed action.”

Therefore the No Action Alternative, the lowest timber harvest, will sequester a net 571,095 metric tons carbon dioxide equivalent (MT CO₂e) per year over the analysis period. While Alternative 5 presumably will decrease carbon sequestration by 23% to a net 439,744 metric

tons. From a socioeconomic perspective, it would be helpful if total potential state forest carbon storage without tree removal was stated during the next 70 years of the DEIS's time horizon along with **total forest carbon per alternative**. Then, the departure per alternative from total carbon potential could be seen in proper perspective. We presume all mentioned values above are available from the carbon modelling exercise.

Social and economic use of state forests following a Cascadia Subduction Zone earthquake?

"Oregon has the potential for a 9.0+ magnitude earthquake caused by the Cascadia Subduction Zone and a resulting tsunami of up to 100 feet in height that will impact the coastal area. There is an estimated 2-4 minutes of shaking or rolling that will be felt along the coast line with the strength and intensity decreasing the further inland you are."

And,

*"The Cascadia Subduction Zone has not produced an earthquake since 1700 and is building up pressure where the Juan de Fuca Plate is subsiding underneath the North American plate. **Currently, scientists are predicting that there is about a 37 percent chance that a megathrust earthquake of 7.1+ magnitude in this fault zone will occur in the next 50 years.** This event will be felt throughout the Pacific Northwest."*

Oregon Office of Emergency Management accessed on 5-3-2022 at:

<https://www.oregon.gov/oem/hazardsprep/Pages/Cascadia-Subduction-Zone.aspx>

We do not see a discussion of the impact of an inevitable subduction earthquake in the Pacific Northwest which, we believe, is highly relevant to the future economic use of Oregon's state forest lands. Whether a landscape is dedicated to recreation infrastructure (i.e. trails or campgrounds) or logging infrastructure (i.e. logging roads and bridges) is highly relevant to the impacts resulting from a major subduction earthquake.

The state forest HCP addresses **Unforeseen Circumstances**: *"Unforeseen circumstances are defined by federal regulation as "changes in circumstances affecting a species or geographic area covered by a conservation plan that could not reasonably have been anticipated by plan developers and the USFWS or NOAA Fisheries at the time of the conservation plan's negotiation and development, and that result in a substantial and adverse change in the status of the covered species." By definition, any circumstance not described in this HCP or as a changed circumstance in this chapter is considered an unforeseen circumstance. ODF is not obligated to respond to an unforeseen circumstance but may do so voluntarily."*

Because a subduction earthquake may likely occur during the IMPLAN analysis modelling time horizon (2022-2090) and is not discussed in the DEIS or the HCP, it is hard to square that a subduction earthquake fits the *"By definition, any circumstance not described in this HCP or as a changed circumstance in this chapter is considered an unforeseen*

circumstance" statement.

The State of Oregon has devoted a large amount of resources to prepare for and fully anticipates a major subduction earthquake. A subduction earthquake is, in fact, a foreseen circumstance that bears directly on the kinds of state investment in state forest lands and socioeconomic conditions in a post-subduction earthquake era. All alternatives in the DEIS must be evaluated relative to a major subduction earthquake.

Documents sent to NMFS with this analysis.

WATSON, P., J. WILSON, D. THILMANY, AND S. WINTER. 2007. ***Determining economic contributions and impacts: What is the difference and why do we care.*** *Journal of Regional Analysis and Policy* 37(2): 140–146.

Henderson, et al. ***Standard Procedures and Methods for Economic Impact and Contribution Analysis in the Forest Products Sector.*** *Journal of Forestry*. March, 2017.

Tillamook and Clatsop State Forests: POSSIBILITIES FOR ECONOMIC EXPANSION AND DIVERSIFICATION. By Thomas Michael Power and Philip J. Ruder.
A Report Prepared for The Tillamook Rainforest Coalition. January 2003.



August 30, 2022

VIA EMAIL (boardofforestry@oregon.gov)

Oregon Board of Forestry
Oregon Department of Forestry
Board Support Office
2600 State Street
Salem, OR 97310

Re: Comments on the Habitat Conservation Plan

Chair Kelly and Members of the Oregon Board of Forestry:

I am writing today to share my thoughts regarding the creation of a Habitat Conservation Plan (HCP) for the Western Oregon State Forest. There has been tremendous effort put into the draft plan proposed. However, as I sit on the Council of Forest Trust Land Counties (CFTLC), I cannot ignore the concerns raised by my fellow trust land counties that will be far more impacted than Washington County, should the draft HCP be approved.

The concept of Greatest Permanent Value (GPV), as supported by the Oregon Department (ODF) and Board of Forestry (BoF), ensures and values in equal measure all the benefits of forest resources, including sustainable timber harvest. I support this policy and if we are still abiding by the GPV in the formation of the HCP, find it hard to understand how the current draft lives up to the tenant of sustainable harvest while proposing to restrict access to so many acres of forest from that very activity. This impact to counties like Clatsop, most notably, is a significant depletion to the county budget and strain to ensure basic services to reliant community members. There are very real financial consequences at stake here.

Problematic still, is the lack of transparency from ODF and willingness to co-create with its county partners. On more than one occasion I have heard frustration expressed during a CFTLC meeting over the lack of involvement granted the counties in developing the HCP. It has been suggested that partnering early on, before a draft had been finalized, could have helped mitigate the opposition we now see at the end of the process. Instead, the counties were forced to develop their own version of a draft HCP that addresses the very real threat of the barred owl on the northern spotted owl population, and submit separately, only to then be dismissed by the federal agencies for consideration.

Board of County Commissioners

155 North First Avenue, Suite 300, MS 22, Hillsboro, OR 97124-3072

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Further, several times I have witnessed the counties request the data and modeling that form the basis for the conclusions made by ODF, only for it to never materialize. This lack of information sharing leading to more irritation and inability among the counties to understand how we got here. At the very least, there should be a common understanding of the baseline data we are working with that informs the different actions we could take. Without this baseline agreement, there can be no trust in the conclusions of the draft Environmental Impact statement or draft HCP.

There are benefits to an HCP. Protection against lawsuits cannot be overstated. However, it needs to be done right and with buy-in from the partners of ODF. That is not the case currently. As difficult and cumbersome as it might be, the most logical course of action right now is to start over with the HCP and in this second attempt, partner with the Counties of Forest Trust Lands to ensure all parties are brought on the journey.

Thank you for taking the time to consider my concerns. Should you have any questions, please do not hesitate to contact me.

Sincerely,

Jerry Willey
Washington County Commissioner, District 4



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September 6, 2022

Via Email: boardofforestry@oregon.gov

Oregon Board of Forestry
2600 State Street
Salem, Oregon 97310

RE: Written Public Testimony, Agenda Item #1, September Board Meeting

Dear Chair Kelly and Board of Forestry Members:

For twenty years, I've had the privilege of serving as the CEO of Hampton Lumber. I am providing testimony to express my deep disappointment in the Habitat Conservation Plan (HCP) prepared by the Oregon Department of Forestry (ODF) for management of western Oregon state forests.

Respectfully, it's a plan that looks all too familiar. During my career, I've watched as very similar "hands-off" strategies at the federal level have decimated rural communities without benefit to endangered species. Worse, those strategies have contributed to catastrophic wildfire seasons that leave Oregonians with severe safety and public health risks. In addition to the immediate physical threat posed by wildfire, researchers at Stanford University and the University of California, San Diego, calculated that pollution generated from wildfires last year accounted for half of all air pollution emitted in the entire United States. Oregon communities continue to bear the burden of these fatal policies, all while Northern Spotted Owl populations remain in decline.

Many scientists and conservationists now admit that shutting down harvests on federal forests was a mistake. A decision to not manage lands is, in fact, a management decision. Climate change is exacerbating hazardous conditions and turning overgrown forests into kindling. In my view, it would be a profound tragedy were you to ignore this history and persist in these failed strategies expecting a different result.

I want to be clear, I am not questioning the need for an HCP. Hampton led the effort to do the same thing on Oregon's private forests. HCP's can be designed in ways that meet both conservation and financial goals. What I do question is the process to develop this draft HCP and what appears to be a profound failure in negotiating with the federal services. I am not surprised at what the agencies have proposed. The federal services are not tasked with protecting the social and economic values of these forests. That is the Board's responsibility.

No reasonable Oregonian would agree that a plan that leads to long-term funding shortages, dwindling firefighting capacity, and economic hardship in rural communities achieves Greatest Permanent Value. To the contrary, you have heard frustration and discontent from forest sector stakeholders, schools, public safety officials, cities, chambers of commerce, and most importantly, the trust land counties. Despite thousands of comments from those who live and work in state

forest dependent communities, none of this public process has changed the content or direction of the HCP direction one bit.

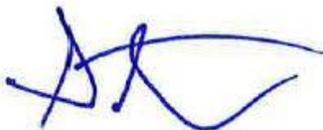
Neither do I have any confidence in ODF's harvest predictions or its ability to deliver conservation outcomes via this HCP. We've been sold this bill of goods for decades. ODF always starts with rosy predictions of the harvest levels and economic benefits and they never materialize. Even the HCP process started with twin goals of financial viability and improved conservation – and as has happened so many times before, the harvest predictions have dropped and the socioeconomic consequences are being under-examined and swept under the rug. Behind the curtain, ODF continues to evaluate additional steps to reduce harvest and revenue, with no direction from the Board and without county or stakeholder participation. Surprising even me, ODF has, to date, failed to *even analyze* financial viability for the agency.

No organization – business or government – should make important policy decisions without knowing the financial effects. Letting ODF proceed unchecked on its proposed action without first obtaining accurate harvest models and economic data and developing options to deal with the financial effects is, quite frankly, terrible governance.

In my view, the HCP prepared by ODF is not worth the harm it will inflict on rural Oregon. It will only result in a severe financial burden for future legislatures and the citizens of Oregon. With recession looming and the effects of climate change already apparent, communities will face greater demand for social services and emergency planning, preparedness and response. We should not be self-imposing significant limitations on our ability to manage these lands by implementing an overly-restrictive HCP.

The Board should take as much time as it needs to craft the best plan possible. It shouldn't let artificial timelines or unpredictable short-term risks condemn Oregon to 70 years of bad policy. The BOF controls the HCP process. Please take ownership, visit these forests and communities and see firsthand what will happen to rural Oregon if you proceed forward. Doing so will most certainly help you craft a more balanced and effective HCP and a better future for Oregon.

Sincerely,

A handwritten signature in blue ink, appearing to be 'SZ', with a long horizontal stroke extending to the right.

Steve Zika
CEO, Hampton Lumber