Data Submitted (UTC 11): 3/17/2025 4:00:00 AM
First name: Lia
Last name: Brewster
Organization: Sierra Club
Title:
Comments: Please find attached 12 files, including a copy of the Sierra Club's technical comments on the NWFP DEIS, FS_FRDOC_0001-3908, exhibit one - a copy of the Scoping Comments previously submitted by the Sierra Club, and copies of ten reports cited within the technical comments. This is intended as a correction to a previous version of the technical comments which was submitted with signatories missing, but the comments are otherwise unchanged.

March 17, 2025

Sierra Club 2101 Webster St Suite 1300

Oakland, CA 94612

Phone: 415-977-5500

Comments on Proposed NWFP Amendment Ms. Jacque Buchanan, Regional Forester Pacific Northwest Region

Ms. Jennifer Eberlien, Regional Forester

Pacific Southwest Region

R6 - Pacific Northwest Region All Units

USDA Forest Service

1220 SW 3rd Ave Ste. G015 Portland, OR 97204

Submitted Via: https://cara.fs2c.usda.gov/Public//CommentInput?Project=64745

RE: Region 5 and Region 6; DEIS Comments; California, Oregon, and Washington; Forest Plan Amendment for

Planning and Management of Northwest Forests Within the Range of the Northern Spotted Owl Project 64745, Docket # FS_FRDOC_0001-3908

Dear Ms. Buchanan and Ms. Eberlien:

Thank you for the opportunity to submit comments regarding the Draft Environmental Impact Statement for the Amendment to the Northwest Forest Plan, Washington, Oregon and California (the "DEIS").

On behalf of the Sierra Club, we write to submit this Comment Letter on the DEIS for the proposed amendment of the Northwest Forest Plan ("NWFP"). We have many concerns regarding the DEIS, although we share the Forest Service (FS) approach and proposals with respect to several significant issues. We will address both our concerns and our support in the following pages. Sierra Club recognizes the need to amend the NWFP to provide for meaningful Tribal involvement, strengthen protections for mature and old-growth forests, and address the challenges posed by climate change. However, for the reasons detailed in this comment letter,

Sierra Club does not support finalizing the proposed amendment (Alternative B), nor any of the action alternatives. Instead, the FS should prepare a supplemental environmental impact statement and provide for public comment on it prior to finalizing the EIS and prior to moving forward with changes to the NWFP. The FS has failed to satisfy many substantive and procedural legal requirements, as detailed here and in comments submitted by Earthjustice on behalf of the Sierra Club and others. The FS must correct these many errors prior to taking further action to finalize changes to the NWFP.

Sierra Club was founded in 1892 and is the nation's oldest grassroots environmental organization. Sierra Club is incorporated in California, and has approximately 620,000 members nationwide, and chapters in every state, including Washington, Oregon and California. The organization is dedicated to the protection and preservation of the environment. Sierra Club's mission is to explore, enjoy and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; and to educate and enlist humanity to protect and restore the quality of the natural and human environments.

Sierra Club has worked for many decades to ensure protection of 1) the Pacific Northwest's late successional forests, including mature and old growth forests, and 2) listed species dependent upon those forests, including the Northern and California spotted owl, marbled murrelet, and others.

Over many years, our members have been deeply engaged in development of the individual forest plans under the National Forest Management Act, designation of wilderness, and the Northwest Forest Plan and related processes.

Sierra Club was also an active participant in the ESA Petition to list the northern spotted owl and other old growth dependent species.

TRIBAL CONSULTATION AND STEWARDSHIP

Sierra Club fully supports the Forest Service's commitment to a NW Forest Plan amendment that incorporates Traditional Ecological Knowledge into landscape stewardship techniques and ensures robust consultation with the Tribes who have used and stewarded these lands for cultural practices, subsistence, and lifeways since time immemorial.

The Sierra Club respectfully requests that Tribal Consultation and Stewardship undertaken under the DEIS take into consideration and adopt the Sierra Club's comments and concerns raised in this DEIS Comment Letter, and in Sierra Club's prior comments submitted during the scoping period. See Exhibit 1 (scoping comments).

Please note that the Sierra Club is not commenting on the Tribal Provisions of the DEIS other than to extend its support for the Tribes' engagement and stewardship, as stated above.

INTRODUCTION AND OVERVIEW OF THE SIERRA CLUB'S RESPONSE TO THE DEIS TO AMEND THE NORTHWEST FOREST PLAN.

The challenge for this amendment process to the Northwest Forest Plan (NWFP) will be to strengthen protections, while at the same time addressing any issues that may need adjusted direction that includes and/or relies upon vegetative management.

Increasing the intensity and scope of vegetative management actions, as proposed in the action alternatives considered in the DEIS, will increase the conflict between meeting "primary Plan objectives" (i.e. "Protecting and enhancing biodiversity of mature and old growth ecosystems [that] is a central tenet of the NWFP") and the Forest Service's stated goal of increasing fire resistance in a climate change world.

As provided by the DEIS, expanding logging opportunities by raising or eliminating the stand age direction for no cutting in moist LSRs to greater than 80 years for allowable cutting, in order to 'improve fire resistance' or increase ecosystem adaptability, conflicts with the objective "to meet the original intent of the NWFP to conserve mature and old-growth ecosystems and habitat for the Northern Spotted Owl and other species, protect riparian areas and waters[hellip]"

We are concerned that "clarifying direction" in the DEIS is code for raising the planned cut levels across land use allocations (LUA) where cutting is now prohibited or limited. The findings of the Bioregional Assessments appear to raise the "above all" emphasis of the amendment so as to adjust management direction to permit that the Probable Sale Quantity (PSQ) levels, last adjusted in 2001, may now be amended and adjusted to meet the FS targets in the DEIS.

A major aspect of the rationale in the DEIS for "Strengthening the capacity of for the NWFP ecosystems to adapt to the ongoing effects of climate change and to mitigate impacts of climate change" is to provide greater management flexibility in order to facilitate an increase in cutting levels that allow the 2001 PSQ or greater to be met or to exceed the historic annual cutting levels since the NWFP was adopted in 1994.

Our review of the DEIS and supporting documents which invoke "clarified management direction," "active management," and/or "nuanced direction", conclude that the changes outlined in the DEIS may not "Improve sustainability of mature and old growth ecosystems by providing plan direction to maintain and expand mature and old growth forest conditions and reduce loss risk across all land use allocations" as required under the 1994 NWFP.

We conclude that the changes outlined in the DEIS, the Appendices and the Background Documents (defined below) would effect a wholesale change of the original emphasis of the NWFP.

Furthermore, the Sierra Club requests that the FS issue a Supplemental Environmental Impact Statement ('SEIS') which would be issued prior to the issuance, of course, of the FEIS. Sierra

Club requests that the FS incorporate the comments in this Letter into the SEIS and into the FEIS, and that the FS revise the DEIS to reflect the adoption of the concerns raised in this letter.

Please note that the comments in this Comment Letter focus on Alternative B, but also pertain to the other action alternatives, including Alternative D, where those alternatives suffer from the same or similar defects.

Preliminarily, and as will be reiterated and amplified upon throughout our Comment Letter where appropriate, we

have five (5) significant overriding concerns with the DEIS. Please note that we have many additional concerns which will also be addressed in this Comment Letter. Our overview comments are the following, which will be amplified upon in the body of this Comment Letter:

1. Concern: We question the appropriateness of contemplating the 'socio-economic' concerns that have been raised in the DEIS. Based on our research, which will be expanded on in detail in the following pages, many, although not all, of the local economies that are located in the NWFP area have significantly rebounded since 1990, substantially reducing their dependence upon direct timber sectors of the labor economy, since the adoption of the NWFP in 1994 with

* large expansions of the labor economy throughout most of the counties of the NWFP Socioeconomic Region of 72 counties, as defined in the DEIS;

*
* substantial reductions of timber dependence in rural NSO counties where in many cases timber jobs have been replaced by gains in other sectors resulting in overall increases in employment, and
* relatively low economic contribution of NF timber programs to the NWFP Socioeconomic Region (as defined in the DEIS, Section 3.8 and utilized solely in Section 3.8 and Section 3.9.2 of the DEIS)

An evaluation of actual economic growth in the NWFP Socioeconomic Region leads to our argument that "there is no need to attempt to revive the economies as they existed prior to 1990 as these economies generally no longer exist."

Consequently, there is no rationale to attempt to increase NF timber outputs under the NWFP Region (consisting of the 17 National Forests covered by the NWFP) from current levels for socio-economic purposes.

As a consequence of its flawed analysis of economies and sustainability, the FS is proposing projections, as currently in the DEIS, for Alt B of between a low average annual cut of 590 MMBF and a high average annual cut of 1,350 MMBF (see Table 3-27, on page 3-148),

notwithstanding that the actual average annual cut for the entire NWFP Region in 1993-2023 was 402 MMBF, and the actual average annual cut in 2014-2023 was 445 MMBF. See Table 3-22 on pages 3-117 and 3-118.

There was no analysis made in the DEIS of how the cut forests would regenerate and recover, let alone return to their former status, from the total of the much higher average annual cuts projected (as described above), together with the additional salvage projections (see last sentence on page 3-33) of 223 MMBF per decade.

Therefore, the Sierra Club requests the following:

That the proposed cut projections for Alternative B, shown in the Appendices A1, A2, and B and in the DEIS on page 3-148 Table 3-27, be revised by capping out the projected average annual cut to not exceed, as reported in Table 3-22 at page 3-118 of the DEIS, the actual historic annual average cut of 445 MMBF for the decade 2014-2023.

That the proposed Salvage projections be reduced as requested later in this Comment Letter.

That the proposed age definitions of Old Growth, and proposed age thresholds for cutting, be revised as requested later in this Comment Letter.

If the cut targets proposed by the Forest Service are implemented, it would result in possibly a 300% increase in annual cut from what has been conducted for the past three decades. In light of our analysis of the change in economic variables in the NWFP SocioEconomic Region since 1994, there is no economic justification to conduct such a cut, and certainly there is no ecological justification to conduct such a cut.

1. Concern: The DEIS fails to address the following with regard to Endangered and Threatened Species and other late succession and old growth dependent species:

1. The impact of the proposed amendments to the NWFP on the protections for the Northern Spotted Owl (NSO) and other Endangered and Threatened late succession and old growth dependent species (including all species listed on Tables 3.9 and 3.10 of the DEIS), as provided in the 1994 NWFP. The DEIS' failures include, but are not limited to, the DEIS not addressing the impact of any amendment on the persistence of Threatened and Endangered species as well as all other late successional and old growth dependent species, which was the focus of the 1993-1994 studies (Gang of 4, SAT 1 & SAT II, and FEMAT). We acknowledge that 'Sensitive Species' were addressed in the DEIS Appendix C, Draft Biological Evaluation, but not Threatened or Endangered Species.

and

1. Equally important, the increasing risk to the NSO which has even greater need of protection now than in 1994, given the USFW statements in the 2021 update to the 2012 Critical Habitat Rule:

* that the NSO is qualified for Endangered Species status; see page 96 of the 2021 Rule (which is an update to the 2012 Critical Habitat Rule) -

https://www.federalregister.gov/documents/2021/11/10/2021-24365/endangered-and-threatened-wildlife-and-plants-revised-designation-of-critical-habitat-for-the

and

*
* that the FS has failed to amend all forest LRMPs in the region of the NWFP to require the protections of Critical Habitat in Matrix as set forth in the 2012 Critical Habitat Rule, as amended in 2021, and the 2011 Revised Recovery Plan. see page 95 of the 2021 Amendment to the 2012 Rule:

"[hellip]the USFS has not yet revised its forest plans and applied the recommendations of the 2011 Revised Recovery Plan nor expressly taken into consideration the 2012 critical habitat designation into these plans

[hellip]"

Also see Page 96 of the 2021 update to the 2012 Critical Habitat Rule:

"Additionally, recent scientific findings and our December 15, 2020, finding (and supporting species report) that the northern spotted owl warrants reclassification to endangered status emphasize the importance of maintaining habitat in light of competition with barred owls." [emphasis added]

Sierra Club requests that the DEIS be revised completely after the FS conducts the review and analysis described above, and issue an SEIS reflecting such new, additional information.

1. Concern:The apparent timber grab resulting from the recommendation to raise the age ceiling on trees

permitted to be cut in moist forests of the Late Successional Reserves LUA from 80 years to 120 years. This recommended amendment is indicative of a flawed process guided by the FS that established the FAC, constrained its deliberations, and prejudiced its recommendations to ensure a reduced level of late successional habitat protection established in 1994.

Contrary to statements at the FAC meetings, there could be no 'giving up' of older trees in Matrix (i.e. older than 1905 per page 34, Section 6, Subsection I, Point 1. of the FAC Recommendations), as a trade for raising the age ceiling in LSRs, as older trees in Matrix were

already required to be protected as Critical Habitat for the Northern Spotted Owl under the 2012 and 2021 Critical Habitat Rules.

Thus, in 2024, there were no 'older trees' in Matrix to 'trade' for more LSR trees (i.e. raising the permitted cut age up to 120 years old), as those older trees in Matrix were all already set aside and protected under the 2012 and 2021 Critical Habitat Rules.

We address here whether or not the FS's failure to amend the LRMPs, as required under the 2012 Rule, and as commented on by the USFWS as noted above, erases the 'timber grab argument', as arguably the FAC in its Recommendation was 'fixing' what the FS failed to do. To the contrary, protecting Critical Habitat in Matrix was a legal requirement binding on the FS under the Critical Habitat Rule, and as such does not qualify as a voluntary 'trade' for cutting forest stands and trees in moist LSRs older than 80 years but younger than 120 years.

Anticipating concerns that the FS, per the 2021 Supplement Report to the Bioregional Assessment of NW Forests, Chapter 1 ('SRBA'), page 56, might have decreased the cut in Matrix by implicitly adopting the 2012 Critical Habitat Restrictions, the SRBA clearly states that there were three categories of conflicts that resulted in reduction of timber production:

"The primary intent of the matrix land use allocation under the NWFP was to support desired and probable timber production goals set forth in the plan, while also interfacing with other land use allocations to sustain old-forest and riparian areas. Most of the area where timber has been harvested since 1994 has been in matrix. Conflicts have added both tangible and perceived restrictions to mechanical vegetation management on matrix lands that we consider here. Conflicts generally fall into three categories:

Desired Conditions: spatial and design constraints include existing plan definitions, some plan components, Survey and Manage, lack of clarity of desired conditions for consultation processes, northern spotted owl critical habitat designation, and interpretation.

Process: constraints may include multiple layers of internal process, including the Regional Ecosystem Office, Regional Interagency Executive Committee, and adaptive management area processes.

Investment and Tolerance Limits: limits are reached by agency personnel related to planning process and perceived risk. Implementation of projects has limitations related to high complexity, process levels, and perceived litigation risk for the agency."

Clearly there were many issues impacting the low cut, of which the northern spotted owl critical habitat designation was merely one of the many issues.

In addition, the age at which trees should not be cut in Moist LSRs is 80 years of age. Changes to the NWFP that would allow trees 80 years or older to be cut are arbitrary and capricious, and unsupported by the best available scientific information. 80 years of age is a threshold for trees transitioning to Mature Trees and must remain unchanged.

80 years as a threshold is well supported in the literature, in the FEMAT to the NWFP, and in current federal rules. Citations will be provided later in this Comment Letter.

Implementing the change permitting the cutting of trees aged up to 120 years in moist LSRs would result, per the DEIS, in the loss of protection of approximately 824,000 acres (per Table 3.3 of the DEIS) of trees in moist LSRs, resulting in loss of protection of Critical Habitat as well as species persistence for the NSO, the Marbled Murrelet and other species dependent on Late Succession forests. Increasing the permitted age to cut trees from 80 to 120 years of age is a 50% increase (i.e. adding 40 years to the age of trees permitted to be cut) in age of trees permitted to be cut.

The Agency should have provided to the FAC, and in the DEIS, an analysis of the impact of the loss of protection of 824,000 acres of moist LSR, aged 80-120 years old, on species dependent on Late Succession Forests. In that analysis, the Agency should have included an overlay of GIS maps of Stand Ages in LSR overlaid with Critical Habitat Maps. The Public needs to know how many of the 824,000 acres which are proposed to be cut in the new unprotected group of trees and stands, fall into the following 20-year age brackets:

* Acres of trees in moist LSR that are 80 to 100 years of age; and
* Acres of trees in Moist LSR that are 100 to 120 years of age.

In sum, the DEIS should have included a detailed analysis of the impact of the loss of protection of 824,000 acres of Moist LSR, on species dependent on Late Succession Forests, and FS should issue an SEIS to address that additional new information and provide opportunities for the public to comment on it.

1. Concern: the addition of high age thresholds for cutting in Dry Forest

See DEIS, table 3-2, on page 3-25; and DEIS, table 2-1, on page 2-18, 2-17 re LSOG age changes. The exceptions are found in the proposed Standards and Guidelines, as well as in Table 2-1.

The following list of the proposed age changes is compiled from the several locations listed above in the DEIS where the age changes are described:

Dry Matrix protect TREES existing prior to 1850 (i.e. 175 years of age or older today, but would not protect new trees started after 1850)

Dry Matrix, dry LSR and other dry LUAs:

Cut TREES less than 150 years of age at any time, with exceptions

First, In addition to the Sierra Club's objection to cutting trees over the age of 80 in Moist LSR, as discussed previously in this Introduction, the Sierra Club further asks that the proposed threshold of 150 years for all Dry LUAs be replaced with a threshold of 80 years of age.

Second, the Sierra Club asks that a new protection be provided for those trees that are in the age gap between origination in 1850 and trees that are over requested limit of 80 years of age. The Sierra Club objects to there being an unprotected age range in Dry Matrix, dry LSR and Dry LUAs for trees between 150 years of age at any time, and trees existing prior to 1850 (i.e. 175 years of age today). There will be a group of trees that are older but not given protection.

There has been no analysis of number of acres of Dry forest (Matrix and LSR both) would be open to cutting if the 150 year threshold is adopted. The Sierra Club strongly requests that such calculation of impacted Dry Forest acreage be provided in the DEIS/SEIS, which would be analogous to the calculation that was provided in the DEIS of impacted acreage of 824,000 acres of moist LSR that would be impacted if the age change of increasing permitted cutting to 120 years of age were implemented.

Furthermore, there has been no analysis of the ecological impact on ecosystems and habitats if the proposed age changes are adopted. The Sierra Club strongly requests that such an ecological and habitat analysis be included in the DEIS/SEIS with a focus on the persistence of late successional species.

See Section IV Subsection F of this Comment Letter for further discussion of this issue.

1. Concern: the increased use of fire, as well as significant increase in the use of salvage harvest in dry LSR and all Matrix, and the impact again on habitat for endangered and threatened species, as well as impact on regeneration, regrowth and recovery of the forests where salvage harvest would be conducted.

In accordance with our Prescribed Burning on Public Lands Policy, Sierra Club supports the appropriate use of prescribed and cultural fire "in certain circumstances in

fire-adapted ecosystems as a practice to promote biodiversity, to restore vegetative communities and natural fire regimes, and to provide an additional wildfire safety buffer for communities." In Designated Critical Habitat and stands over 80 years old, Sierra Club views appropriate prescribed and cultural fire as low intensity fire only, with such action being timed to limit adverse impacts, including but not limited to breeding, nesting, and fledging requirements, to the life cycle of threatened and endangered species. This low intensity fire can help clear underbrush and reduce the risk of catastrophic wildfire,

while still protecting habitat, keeping the canopy intact, and not killing large

trees. However, Sierra Club recognizes that the use of fire is not always appropriate in Designate Critical Habitat, and opposes the use of fire that would lessen the available habitat for threatened and endangered species, whether that be through area burned or smoke impacts. In other forest ecosystems, Sierra Club recognizes that mixed intensity prescribed or cultural fire may be what is deemed ecologically appropriate.

* The DEIS does not address the significant impacts of salvage harvest on the regeneration, regrowth, and

recovery of the salvaged area, nor the use of the burned area for endangered and threatened species' habitat.
* The DEIS does not address the impacts of use of prescribed fire and salvage on the viability of endangered and threatened species dependent on the forests subject to prescribed fire and salvage, and more generally does not address the impacts of increased use of fire on the viability of endangered and threatened species.

The acreage suggested for prescribed fire and salvage harvest under both Alt B and Alt D, as well as the complete removal of the 1994 restrictions on salvage harvest, as indicated in Appendix B, are astounding. The Sierra Club urges that the suggested acreage for prescribed fire and salvage harvest be dramatically reduced. We discuss further concerns with Appendix B later in this Comment Letter.

Failure to consider all of the background information raised in these Four (4) Significant Overriding Concerns with the DEIS inevitably led to inappropriate and damaging recommendations by the FAC and the FS, resulting in many issues in the DEIS which would cause the NWFP, as amended, to no longer focus on and protect the core goals and protections of the 1994 NWFP. These issues will be discussed further in this Comment Letter.

Attached to this DEIS Comment Letter as Exhibit 1 is a copy of the Sierra Club's February 2, 2024 NOI Scoping Comment Letter for the proposed Amendment to the Northwest Forest Plan.

Exhibit 1 is incorporated herein by reference in its entirety, and made a part hereof as if set forth within this DEIS Comment Letter.

In the event there is any inconsistency between this DEIS Comment Letter and Exhibit 1, the terms of this DEIS Comment Letter shall prevail as the Sierra Club's official position on the DEIS.

.

The Sierra Club's additional comments and issues in this Comment Letter, in addition to the comments provided in the prior pages, are set out below in the following sections:

1. Change in Purpose for the NWFP
2. Economic Analysis Rebutting the Following Need for the Amendment, as stated in the DEIS Section 1.2.2, page 1-5:

"Providing a predictable supply of timber and non-timber products and other economic opportunities to support the long-term sustainability of communities located proximate to NFS lands and economically connected to forest resources"

Economic Analysis Rebutting the above Statement of Need

1. Legal Decision Framework
2. Increased Cutting of Trees and Stands
3. Loss of Habitat and Protection of Endangered Species
4. Prescribed Fire and Salvage Issues

-Appendix B (Salvage and Fire changes to S&G from 1994 NWFP

1. Forest Management Issues

1. -Lack of ecological justification for specific policy changes
2. Non-Fire/Salvage issues withAppendix B

1. Cumulative Effects Analysis
2. Conclusion

1. Change in purpose of the NWFP from original purpose.

1. 1994 NWFP Purpose and Need. In 1994, the purpose and need of the NWFP was expressed in the Standards and Guidelines, on page A-1, as follows:

"Purpose and Need for these Standards and Guidelines

The purpose, which includes President Clinton's mandate and principles as expressed at the April 2, 1993, Forest Conference, is to take an ecosystem management approach to forest management, with support from scientific evidence; meet the requirements of existing laws and regulations; maintain a healthy forest ecosystem with habitat that will support populations of native species (particularly those associated with

late-successional and old-growth forests), including protection for riparian areas and waters; and maintain a sustainable supply of timber and other forest products that will help maintain the stability of local and regional economies on a predictable and

long-term basis."

1.
1. 2024 DEIS Purpose and Need. The DEIS has added, as included on Page ES- 11, new goals:

'New goals included for all three action alternatives include supporting

*
*
* local community
* workforce capacity,
* improving access to opportunities for underserved populations, and
* identifying areas of common workforce needs by collaboratively prioritizing training and promoting workforce development . . . .

In addition, the action alternatives include

*
*
* an objective to increase restoration treatments using ecological forestry methods while

* also conserving and protecting older trees and
* achieving desired conditions for LUAs.

This objective in conjunction with the preceding goals, is expected to improve the consistency and reliability of timber harvest and restoration work and help align Forest Service needs and job opportunities in local communities.'

1.
1. Comparison of 1994 NWFP Purpose and Needs to the DEIS's Added Goals. The DEIS's new goals and focus on timber harvest and restoration work comes at the expense of the original intent of the 1994 NWFP, except for the goal of obtaining a sustainable supply of timber and non-timber forest products. The Sierra Club objects vigorously to the timber - focused elements of the new vision for the NWFP, and requests that the original purpose be retained.

1. Economic Analysis Rebutting the Following Need for the Amendment, as stated in the DEIS Section 1.2.2, page 1-5:

"Providing a predictable supply of timber and non-timber products and other economic opportunities to support the long-term sustainability of communities located proximate to NFS lands and economically connected to forest resources"

Page 3-99, Issue 7, Sustainable Communities

The DEIS stated "The Notice of Intent published for the NWFP amendment stated that development and implementation of the NWFP has had significant socioeconomic, cultural, workforce, and financial impacts on communities and publics."

COMMENT: While the NOI stated that the "implementation of the NWFP has had significant socioeconomic, cultural, workforce, and financial impacts on communities and publics," neither the NOI nor this DEIS has provided any numerical analysis as to the precise nature of these impacts or evaluates such impacts in the context of:

1. current levels of economic activity across the 92-county NWFP Area;
2. relating such impacts to the growth that has occurred in the 92-county NWFP Area since 2000 in all economic sectors particularly non-forest products sectors;
3. relating these impacts to structural changes that have occurred in the direct forest products sectors since 1990; and

4. relating future changes to direct forest products sectors that are necessary to increase direct forest products efficiencies so this sector can remain competitive.

Such analyses must include the share of timber-based employment that is actually contributed by the (a) national forest timber program for the 92-county NWFP Area; and (b) the contribution of the direct forest products sectors as a whole to the 92-county NWFP Area.

The Sierra Club requests that the DEIS/SEIS be revised to provide these analyses. Page 3-99, Issue 7 Sustainable Communities.

The DEIS stated "The NWFP has largely not achieved its timber production goals, which were

the NWFP's primary criteria for supporting economies and community wellbeing."

COMMENT: While the national forests in the NWFP Area have not achieved the 1994 goals for PSQ, neither the NOI nor this DEIS have produced a numerical analysis that addresses the following:

* the significance of the noted PSQ volume shortfall in terms of this shortfall's share of the 72 or 92-county NWFP Area total timber supply volume, or
* the share of the shortfalls contribution to direct timber's in terms of Full-time &

Part-time (FT & PT) share of direct timber employment or to total FT & PT employment in all sectors, or

* how the shortfall employment implications compare to the expansion of total FT & PT employment in the non-timber sectors of the 92-county region.

Our analyses find that the PSQ shortfall represents a relatively small segment of the regional timber supply and thus the shortfall's impact on community wellbeing cannot be expected to be significant, particularly when the economic implications of the shortfall are set against the total economic growth of all economic sectors of the 92-county NWFP Area.

The Sierra Club requests that the DEIS should clearly disclose and analyze that the regional timber supply (all ownerships) has been dominated by logs from private lands that have totaled 80% of the cut volume for the period 2002-2022 (source: https://bber.umt.edu/FIR/H_harvest.asp). This pattern of private log dominance has persisted since well before the NWFP implementation.

Our analysis shows that the 92-county NWFP Area regional timber supply volume contributed from private and tribal lands has declined between 2002 to 2022 by about 27.3% (source: https://bber.umt.edu/FIR/H_harvest.asp). This reduction in timber supply from private ownerships (1839 mmbf/yr) represents a volume that is substantially greater than the short fall volume 162 mmbf/yr (607-445) noted in the DEIS for national forest lands within the region.

The DEIS must analyze future timber supply trends for all ownerships within the region, particularly log volumes from the private sector, in order to assess the long-term stability of timber supply on the direct timber sector.

The Sierra Club requests that the DEIS/SEIS be revised to account for timber supply trends for all ownerships.

Page 3-100, Paragraph 3.8.1.1, Affected Environment-Analysis Area.

COMMENT: The DEIS has incorporated a new analytical framework that includes 54 of the 72 counties in the analysis area that is "based on federal forest land outputs and forest industry employment prior to the beginning of the NWFP era (1994)[hellip](emphasis added)" that places counties into six categories listed in Table 3-17 (page 3-104).

COMMENT: Utilizing a county typology based upon an analytical methodology that relies upon an economic baseline that predates the NWFP implementation in 1994 will not produce a realistic assessment of the importance of the DEIS Amendment effects for the following reasons:

*
* The DEIS approach does not account for the significant declines in the size and structure of the 92 or 72-county NWFP Area direct timber sector that have occurred since the 1970's;

* (2) does not evaluate direct timber job losses that have occurred since 2000 after the 1994 NWFP had been largely implemented1 ;

* (3) does not address the total economic growth and diversification that has occurred across all non-timber sectors in the 92-county NWFP Area since 1990; and
* (4) unduly biases the DEIS socioeconomic analysis to focus on economic conditions that no longer exist within the 92-county NWFP Area, with such conditions unlikely to reappear.

DEIS discussion appears to continually lament the passing of time when massive cuts and old growth liquidation was the order of the day across all ownerships in the region. Furthermore, the DEIS does not specifically identify the 54 counties it refers to and instead proceeds with a discussion of the 72 counties in Tables 3-17 and then lists an additional 20 counties Table 3-18 explicitly.

The Sierra Club requests that the DEIS/SEIS be revised to address these issues, and specifically identify the 54 counties referred to in the DEIS.

Page 3-100, Analysis Area. The DEIS defines a county typology that is based upon federal forest land outputs and forest industry employment.

COMMENT: The DEIS provides no explicit description of the specific federal forest land outputs or their size that produce impacts within the economies of the 72 or 92-county NWFP area.

Given the strong timber focus of the DEIS proposed action, the apparent nature of these outputs will be largely confined to the direct timber sectors. Our analysis shows that many of the noted counties that lie outside the range of the northern spotted owl (NSO), generally have little or no local timber economy, or any other obvious connection to the nearby national forests that lie within the range of NSO. Without a definition for the specific nature of these connections, many of the listed counties should be excluded from the DEIS's ever expanding definition of the NWFP socioeconomic area that started with 57 counties in 1994 (source: Final Supplemental Environmental Impact Statement on Management of Habitat for

Late-Successional and Old Growth Forest Related Species Within the Range of the Northern Spotted Owl, Volume I, Page 3 & 4-268).

Pages 3-100 thru 3-106. Paragraph 3.8.1.1 Analysis Area. The DEIS states "The analysis area for this section (Sustainability of Regional Communities) consists of the 72 counties shown Figure

1Synthesis of Science to Inform Land Management Within the Northwest Plan Area Volume 3, GTR-649, June 2018)

3-5, with two exceptions (as discussed below). The DEIS presents a county typology that is based upon data from 1988 and 1990 (pages 3-100 & 3-101)."

COMMENT: As noted above, utilizing data based on an economic structure that is more than 30 years old and reflects the characteristics of a time period when timber was substantially more important than it is today, will present a biased, unrealistic and misleading picture that distorts the projected effects of the DEIS, and produces estimates that do not apply to the current situation. Such analysis fails to account for the massive economic changes that have occurred within the 92-county NWFP Area since 1990.

* The DEIS has failed to recognize major structural changes that have occurred in the

economies of the noted counties in either the 72-county or 92-county NWFP Area, since the transactional relationships that currently exist between timber and non-timber sectors have not been explored. When the timber industry is a significant driver of the economy, as it may have been before 1980, other sectors of the economy, such as total employment, and total personal income will likely follow trends in the timber industry.

* Our research and these DEIS comments clearly demonstrate that most of the 92-county

NWFP Area counties have expanded in the non-timber sectors at the same time that timber has declined, thus largely decoupling the relationship between timber and non-timber sectors.

* In those communities that are timber-dependent, policies and management actions that

impact the timber industry can impact the overall economy. If, as is the case in most counties of the 92-county NWFP area, jobs in the non-timber sectors of the economy are growing independently of trends in the timber industry, then policies and management actions that potentially affect the timber industry may have impacts that are limited to that industry2.

Page 3-101, 3.8.1.1 Analysis Area. The DEIS states "This typology is used to help organize data in the following assessment. Federal land payments and county vulnerability are, for example, described for the 54 counties that belong to one of the five groups "low" through "extremely high."

COMMENT: We find that the typology and methodologies documented in the DEIS that is used to characterize the potential impacts to counties from national forest management to be often undefined, inaccurate, and dependent upon data that is more than 30 years old,

2 Headwaters Economics, Economics Profile System (EPS) data, Headwaters Economics, Economic Profile System, https://headwaterseconomics.org/apps/economic-profile-system. Quoted data from the standard report formats for Comprehensive Reports for Socioeconomic Trends, Key Indicators, and Industry Reports for Timber for the selected counties in the 72 and 92-county areas as applicable.

thus overstating the current importance of timber to the local economies with the 72 or 92-county NWFP Area. The Sierra Club urges that the DEIS/SEIS should be revised and reevaluate the county typology classifications using current information.

Page 3-102, Methodology. The DEIS states "Economic contributions are estimated by examining the flow of economic activity resulting from agency spending, payments to local governments, the use of forest resources for forest products and grazing, and recreational activities".

COMMENT: The above statement refers to information that is not found in the DEIS. The DEIS discloses neither the nature nor the level of economic contributions that define the thresholds used for the typology classifications such as "low," "moderate," "high," etc.

The Sierra Club urges that "Forest product volumes used to estimate jobs supported include all 17 national forest units that are geographically located within the 72-county NWFP socioeconomic region" should be included in the DEIS, and show the numbers of direct, indirect, and induced jobs or personal income at the level of each county. It is important for the DEIS to specifically call out the numbers of national forest timber-based jobs for each county, particularly for the 20 additional counties called out in Table 3-18 for the DEIS analysis and for which there seems to be a weak link to the NWFP socioeconomic region

Page 3-104, Table 3-17. List of counties in the NWFP socioeconomic region by typology group. COMMENT:

* County Typology Group "None": We agree that this group of eighteen (18) counties would not be measurably impacted by any DEIS decision that increased the national forest timber outputs because many of these counties: (1) have no included national forest land; (2) are located a long distance from the nearest applicable national forest administrative unit; (3) have only small numbers of direct timber jobs; (4) have few if any timber processing facilities and (5) have economies that are clearly not timber dependent. 3
* County Typology Group "Low": The DEIS states "While forest products industry employment was extremely important in these counties, federal forest lands management was relatively unimportant, though not negligible." We agree that these counties are minimally impacted by the proposed DEIS increases in the national forest timber cut.

The Sierra Club urges that the DEIS analyses should define the specific level of 'timber dependence' that constitutes "extremely important" to county level economies. Our analysis shows that the timber dependence of the private sector for the three noted CA counties is 3.0% of total private sector jobs in 2022. This level of timber dependence is not representative of an economy where timber is "extremely important."4

3Id.

4Id.

The Sierra Club requests that the DEIS/SEIS be revised to fully disclose what level of timber dependence (i.e. the share of direct timber employment to total employment using compatible definitions of employment) is consistent with the descriptor "extremely important."

Given the significant and well documented reduction of direct timber employment that has occurred since 1990 throughout the NWFP Area, the number of counties that fit the definition "[hellip][hellip] forest products industry employment was extremely important in these counties, federal forest lands management was relatively unimportant, though not negligible" has dramatically changed.

The applicability of the above definition should be applied to more than the nine counties listed as "Low" in Table 3-17 based on the current situation.

The Sierra Club requests that the DEIS/SEIS incorporate the comments above, and revise the list of counties that currently fit the DEIS definition of "Low."

* County Typology Group "Moderate": The DEIS states the "moderate" grouping includes "Both federal forest lands and industry employment were moderately important[hellip][hellip]"

We find this assessment erroneous, misleading, and clearly overstates the current importance of timber to the listed counties. Specifically, of the 17 counties shown in Table 3-17 that the DEIS classifies as "moderately" affected by the DEIS decision, only 2 counties had a timber dependence greater than 2% of private employment in 2022.

Furthermore, our analyses for 2022 shows that none of the three listed CA counties showed a timber dependence that was greater than 1.8% of private employment.

None of the six OR counties listed showed a timber dependence greater than 3.7% of private employment with four of the six having dependencies less than 1.5% or less.

None of the eight WA counties listed showed a timber dependence greater than 2.0% of private employment with five of the eight counties listed showing a dependence of 1.0% or less.5

Consequently, the county typology criteria that claimed 17 counties could be "moderately" affected by changes in national forest timber management exhibited current timber dependencies that were low enough to fall within the range of annual historic total employment growth rates.

The Sierra Club urges that the DEIS/SEIS must be revised to realistically evaluate the relationship of any employment changes driven by the DEIS/SEIS' proposed actions to the

5Id.

total employment changes (all sectors) occurring from normal employment growth rates that have occurred in the 72 or 92-county NWFP Area, as well as analysis of the impact of expected future growth rates on employment changes driven the DEIS/SEIS' proposed actions.

Such an evaluation is expected to move most of the listed counties now classified as "Moderate" into the "Low" or "None" category.

* County Typology Group "High": The DEIS states "Federal Forest land indicators and industry employment were, on average, highly important in these counties."

The Sierra Club does not agree that this assessment applies to all the eleven counties listed in Table 3-17 under the category of "High."

Again, the DEIS provides no numerical criteria for what constitutes "highly important" Federal Forest land indicators or industry employment. The DEIS must define what activity or definition constitutes a "Federal forest

land indicator."

Our analysis shows that a number of the listed counties clearly do not currently have economies where timber industry employment is highly important at the county level by any standard.

Of the six counties listed for WA State, four of these counties had timber dependencies that were 1.2% or less dependent upon private timber jobs in 2022. For example, the timber dependence of Chelan was 0.7% in 2022. Of the one CA county listed, its 2022 timber dependence was 0.6%.

Of the OR counties listed, three of the four have timber dependencies of 2.3% or less.6

While some of these counties contain a great deal of NF lands, most of these counties had only a very small dependency upon either national forest generated timber volumes or other forest industry employment. Neither current national forest management nor any other timber based economic activity produces much in the way of economic response in most of these listed counties. Consequently, characterizing the effects on these counties as "High" in terms of either current management or the effects of the DEIS proposed alternatives is at best misleading and more likely wrong.

The Sierra Club requests that the DEIS/SEIS be revised to correct these inaccurate characterizations of county typology.

6Id.

* County Typology Group "Very High": The DEIS states that the prime factor in this classification is "[hellip].. the very high importance of revenue-sharing payments derived from federal timber sales."

Again, the DEIS provides no numerical criteria for what constitutes the threshold of "very high importance of revenue sharing from federal timber sales."

We question if this category of "Very High" applies to Del Norte County CA because our analysis of the national forest cut and sold data for the county shows an annual average cut volume to be 0.72 mmbf for the period 2013-2022

(source-http://www.bber.umt.edu/default.asp). It appears unlikely that this level of national forest cut volume can produce a county revenue sufficient to be categorized as a "[hellip]very high importance of revenue-sharing payments derived from federal timber sales."

We raise the same question for Jackson County OR where the annual average cut volume from national forest lands has been 9.1 mmbf for the period 2018-2022

(source-http://www.bber.umt.edu/default.asp).

The Sierra Club requests that the DEIS/SEIS be revised and adjust the category of county typology accordingly where revenue sharing implications are problematic.

* County Typology Group Extremely High": The Table 3-17 lists both Lassen and Modoc Counties in CA in the Extremely High category.

We question if these two counties should be classified as part of the NWFP socioeconomic area at all since they lie outside the geographic scope of the range of the Northern Spotted Owl (NSO) and their timber economies range from extremely small to virtually non-existent.

Modoc County has almost no direct timber employment (estimated at 7 forestry and logging jobs in 2023) and no processing facilities.

Lassen County has an extremely small timber economy representing 1.1% of private employment and has no sawmills.7

We also question why Skamania is listed in the "Extremely High" group of counties. Thirty years ago, Skamania

was highly dependent on the timber program of the Gifford Pinchot NF. By 2023 the county's timber dependence had declined to 1.3% of private sector jobs.

However, since 1990 even as timber employment contracted, Skamania County had added almost 1400 FT & PT jobs (an increase of 53%) across all sectors by 2022. (source: US Department of Commerce, Bureau of Economic Analysis, full-time and part-time jobs for noted sectors). The noted data clearly shows that Skamania County is a typical example of a county that has largely transitioned away from its prior heavy dependence on timber.

7Id.

The Sierra Club requests that the DEIS/SEIS reevaluate the counties listed as "Very High" and apply measures that reflect the current situation.

Page 3-104, Table 3-18. Additional counties included in the economic contribution analysis.

COMMENT: These additional counties are located sufficiently far away from the Range of the Northern Spotted Owl (NSO) to raise the question of why they have been added to this DEIS study. No specific data or criteria in the DEIS answers this question.

Our analysis indicates that these seven added CA counties had a combined timber dependence of 0.6% of private employment in 2022 and have generally never been particularly timber dependent as a group in prior years, and whose total FT & PT employment has expanded by 42% since 2001.

The three listed NV counties are a very long ways from the most eastern extent of NSO region, have extremely low timber dependence (0.4%) and whose FT & PT total employment has grown by 37% since 2001.8

The employment trends noted above again demonstrate the limited connection between timber and total county economic activity. The Sierra Club urges that these additional counties be removed from the analysis in the DEIS/SEIS.

Page 3-106, Methodology. The DEIS states "Total contributions estimated by the FEAST model consist of direct and secondary contributions."

COMMENT: The DEIS must define the effects of the proposed action so that the results can be compared to the current economic baseline.

When developing these FEAST model impacts, the direct, indirect and induced employment figures must be compatible with the definitions used for the current baseline jobs. If compatible definitions of employment are not used, valid comparisons of national

forest-based effects and actual levels of economic activity (i.e. employment levels) cannot be made.

The indirect and induced jobs calculation occurs across a wide range of employment sectors. The DEIS must include a comparison between:

1. the FEAST estimated jobs (see Table 3-21) associated with national forest timber outputs, and
2. the direct timber sector made up of FT & PT jobs, and

8Id.

1. the total FT & PT employment (all sectors) within the 92-county NWFP socioeconomic region.

The Sierra Club requests that the timber sector (direct effects) calculation will include NAICS9 sectors of forestry, logging, wood products manufacturing, and paper manufacturing, as well as the total employment that includes FT & PT jobs for all sectors. All of these jobs must include both wage & salaried employees as well as proprietors that are defined by the US Department of Commerce, Bureau of Economic Analysis (BEA).

The Sierra Club requests that the timber sector analysis (direct effects) must compare the various Table 3-21 direct employment jobs associated with national forest timber outputs with the total direct FT & PT timber

jobs in the 92-county NWFP Area. And the full timber sector analysis (direct, indirect, induced) must also compare the various Table 3-21 timber-based jobs associated with national forest timber outputs with the total FT & PT employment (all sectors). These comparisons are critical to understanding if and how the increased national forest cut levels actually assist in enhancing the stability of sustainable communities.

Page 3-108, Employment. The DEIS states "Total annual covered employment and average annual wages for the NWFP socioeconomic region for 1975 to 2023[hellip].."

COMMENT: The DEIS analysis of employment information uses 'covered employment' as a basis evaluating the effects of the DEIS proposed action. The use of 'covered employment' as a definition for employment may not be compatible with the use of an input-output model such as FEAST. FEAST produces direct, indirect, and induced effects and these estimates are not directly comparable with 'covered employment' because 'covered employment' includes only wage & salary workers, but not proprietors. The DEIS must use compatible job definitions that allow valid comparisons in order to establish accurate and representative baseline conditions of the regional economic situation.

Page 3-108, Employment. Figure 3-8, Total covered employment and average annual wages, 1975 to 2023.

COMMENT: 'Covered employment' is not a complete definition of all employment because it does not include proprietors, a significant difference. The DEIS quoted employment baseline estimates are lower than actual employment values that include proprietors for the 72-county NWFP Area.

Employment trends shown in Figure 3-8 of the DEIS, therefore, understate the total employment in the 72-county NWFP Area. The Sierra Club requests that the DEIS/SEIS

9 NAICS (North American Industrial Classification) Code is a classification system developed by the Bureau of Labor Statistics that is used to categorize businesses for statistical purposes in the North American economy.

revise Figure 3-8 to include the 92-county NWFP Area as the full socioeconomic influence zone for the DEIS analysis.

We estimate the current level of total FT & PT employment for the 92-county NWFP Area in 2022 to be:

* WA 4,435,700 (33 counties);
* OR 2,622,635 (32 counties);
* CA 1,852,831 (24 counties); and
* Nevada to be 341,568 (3 counties).

The resulting total for the 92-county area for 2022 is 9,252,734 FT & PT jobs, not the 5.8/5.9 million shown in Figure 3-8 apparently applying only to the 72-county region.10

The Sierra Club requests that the DEIS/SEIS analysis be revised and use the Department of Commerce Bureau of Economic Analysis (BEA) data for FT & PT employment for the full

92-county NWFP Area in order to account for all the actual current employment within the region.

Page 3-108, Employment. Figure 3-8, Total covered employment and average annual wages, 1975 to 2023.

COMMENT: The DEIS discussion of employment expansion in the 92-county NWFP Area is incomplete since the chart reflects only the 72-county NWFP Area and then relies upon reading a trend chart (blue line) in order to identify employment changes within the region.

The DEIS should explicitly define the growth by depicting specific figures in the DEIS text that covers the period 1990-2022 or 2000-2022 or later.

Our analysis shows a vast and substantial employment expansion has occurred in the

92-county NWFP Area in each state and in both metropolitan and nonmetropolitan counties since 1990. That growth can be summarized as follows:

* FT & PT employment expanded in WA State from 1990 to 2022 by 1,974,000 jobs, with the largest share of these new jobs occurring in counties within the 92-county NWFP area. Total FT and PT employment expanded in the WA State portion of the NWFP area (data for 33 counties of the NWFP 92-county area) from 2000 to 2022 by 1,194,042 jobs or 37%. Furthermore, the non-metropolitan counties of the NWFP area (17 of 33 WA total counties in the 92-county NWFP area) FT and PT employment expanded by 57,460 jobs or 19% from 2000-

2022. Within the WA metropolitan counties (16 of 33 WA total

10See Footnote 2 above and based upon US Department of Commerce, Bureau of Economic Analysis (BEA) employment data).

counties in the area) of the NWFP area, FT and PT employment expanded by 1,136,582 jobs or 39% from 2000-2022.11

* A similar pattern holds for OR. Total FT and PT employment expanded in the OR State portion of the NWFP area (data for 32 counties of the NWFP 92-county area) from 2000 to 2022 by 566,223 jobs or 29%. Within the non-metropolitan counties of the NWFP area (19 of 32 OR counties in the NWFP 92-county area) FT and PT employment expanded by 27,893 jobs or 9%. Within the metropolitan OR counties (13 of 32 counties in the NWFP 92-county area) FT and PT employment expanded from 2000-2022 by 538,330 jobs or 31%.12
* The above pattern is repeated for CA. Total FT and PT employment expanded in the CA State portion of the NWFP area (data for 24 counties of the NWFP 92-county area) from 2000 to 2022 by 375,832 jobs or 16%. While this expansion occurred across the local economies, direct private timber jobs declined by more than 7,000.13

The DEIS must evaluate total employment growth in the 92-county NWFP Area and compare this growth to the estimates for the incremental growth associated with the DEIS proposed action that is shown in Table 3-27. It is critical that the DEIS explicitly recognize and evaluate the nature of the regional economic expansion after 2000 and not just focus on the timber sectors. (US Department of Commerce, Bureau of Economic Analysis, full-time and part-time jobs for noted sectors). The Sierra Club requests that this analysis and evaluation be included in the DEIS/SEIS.

Page 3-109, 3.8.1.4 National Forest Regional Economic Contributions. The DEIS states "Contributing to community well-being by providing a broad range of economic opportunities for national forest communities is consistent with the USDA strategic goal to expand opportunities for economic development and improve quality of life in rural and tribal communities (USDA 2022)."

COMMENT: Our analysis of the DEIS proposed actions shows that the goal of "providing a broad range of economic opportunities for national forest communities is consistent with the USDA strategic goal to expand

opportunities for economic development and improve quality of life in rural and tribal communities" is not being met because:

1. the increment of the estimated new jobs to be produced are primarily associated with the direct timber sectors (see Table 3-27);
2. timber sector jobs within the 92-county NWFP Area are mostly located in metropolitan counties;

11Id.

12Id.

13Id.

1. the direct timber sector represents a small and shrinking share of the diverse economy of the 92-counties of the NWFP Area;
2. the largest share of national forest-based regional jobs are the recreation-based (see Table 3-21) sector;
3. Most of the recreation-based jobs are located with metropolitan counties;
4. and recreation-based jobs are being placed at risk because the large increases of logging proposed by the DEIS proposed action may adversely impact the recreation sector.

The Sierra Club urges that the DEIS/SEIS must evaluate the broader range of impacts and risks across all relevant resources affected by increased timber cutting and the spillover effects of this activity can have on other resources, including but not limited to recreation and water.

Page 3-109, 3.8.1.4 National Forest Regional Economic Contributions.

The DEIS states "While national forests are not the sole factor determining economic well-being, they do make socioeconomic contributions to communities."

COMMENT: A more comprehensive review of the NWFP region's economy clearly shows that in terms of defined employment outputs described in this DEIS that the national forests are a relatively small economic contributor. Our analysis shows that within the 92-county NWFP Area, national forest-based employment currently generates

about 0.29% (26,499/9,252,734) of total employment.14

This 92-county region's historic growth is much greater than 0.3% per year. The Sierra Club urges that the DEIS/SEIS be revised to more accurately reflect the national forest's regional contribution.

Page 3-109, 3.8.1.4 National Forest Regional Economic Contributions. The DEIS states "While national forests are not the sole factor determining economic well-being, they do make socioeconomic contributions to communities."

COMMENT: The DEIS has biased its economic discussions to focus on rural communities but has not recognized that most direct timber sector jobs occur in metropolitan counties.15

Furthermore, the largest job producing national forest-based sector is recreation as noted in Table 3-21 of the DEIS. And the greatest share of recreation-based jobs is located in metropolitan counties.

While we agree that the national forests are certainly not the sole contributors to regional economic well-being, or even a major contributor, the data presented in the DEIS provides

14Id. and Table 3-21 of the DEIS

15Id. and see General Technical Report PNW-GTR-966 for county typology

little confidence that the proposed cutting increases with the associated employment effects will actually impact communities at the county level in any measurable fashion

National forests do, however, make a significant contribution to outdoor recreation opportunities in the region that impact all communities. The DEIS should be revised to reflect the importance of this unique contribution.

Page 3-109, 3.8.1.4 National Forest Regional Economic Contributions. The DEIS states "The 92-county study area used to assess economic contributions has a very large and diverse economy, with an estimated total of 8.4 million jobs and $670 billion in labor income in 2021(IMPLAN 2021)."

COMMENT: The DEIS notes on page 3-109, that the NWFP Region has expanded economically across the 92-county NWFP Area. However, this limited discussion does not define job numbers used, nor the time period when such jobs were created relative to the implementation of the NWFP, nor the economic sectors that produced these jobs.

The Sierra Club urges that the DEIS must be revised to provide relevant job definitions utilized, time periods that apply to the job creation, and more detail on the labor markets that have expanded.

Our analysis shows the 92-county NWFP Area supported 9,252,734 FT & PT jobs in 2022, a figure significantly greater than the 8.4 million noted in the DEIS.16 The 8.4 million jobs noted in the DEIS were apparently estimated by IMPLAN 2021. These figures are not consistent with actual employment data for the same area that is estimated by the US Department of Commerce, Bureau of Economic Analysis, Regional Accounts Data.

The DEIS should utilize actual employment data for establishing baseline conditions since the data presented in the DEIS substantially underestimates the actual employment level base experienced in the 92-county communities of interest, based on the sources listed above.

Utilizing a smaller employment base over estimates the importance of national forest-based current outputs and the estimated impacts of the DEIS proposed actions.

Although the resultant share of DEIS estimated employment impacts in the 92-county NWFP Area remains small whichever employment base is used, it is important for the credibility of this process for the DEIS to utilize robust methodologies. The Sierra Club urges that the DEIS/SEIS be revised accordingly.

Page 3-109, 3.8.1.4 National Forest Regional Economic Contributions. The DEIS states (page 3-109) "Contributing to community well-being by providing a broad range of economic

16Id. see Footnote 2 above

opportunities for national forest communities is consistent with the USDA strategic goal to expand opportunities for economic development and improve quality of life in rural and tribal communities (USDA 2022). However, national forest management alone cannot ensure community stability. Market conditions and changes outside the control of forest management influence employment in the forest products, agricultural, and recreation industries (Charnley et al. 2018a, Grinspoon, in press)".

COMMENT: The DEIS should provide numerical analysis that would shed light on whether the large increases in timber cut volumes proposed for national forest lands within the

92-county NWFP Area would actually produce or otherwise translate into measurable changes to community well-being at the county level when historic growth rates and predicted growth rates are evaluated in detail.

However, the DEIS provides no credible baseline analysis that will allow a comparison of the DEIS' proposed impacts for each alternative (or the current situation) against the current management situation and current regional economic conditions.

Our review of the DEIS has found no such analysis that compares theoretical DEIS induced employment increases with current level of actual employment in either the direct timber sectors or total employment for all sectors. The Sierra Club requests that the DEIS/SEIS be revised accordingly.

Pages 3-109 & 110, National Forest Regional Economic Contributions. The DEIS states "Viewed in terms of total jobs supported, recreation visitation is the largest contributor to the regional economy supporting an estimated 12,551 jobs, followed by agency operations (7,070 jobs) and forest products (5,091 jobs) (Table 3-21)."

COMMENT: The DEIS must be revised to show the current situation with respect to the direct timber FT & PT sector as well as the longer-term trends of direct timber employment that are more detailed than what is provided in "Figure 3-15. Wood products employment and average annual wages, 1975 to 2023."

Thirty-three of the thirty-nine counties of WA are within the 92-county NWFP Area. These thirty-three counties contain 95% WA's the direct timber FT & PT jobs,17 Therefore, the statewide timber employment trends are representative of trends within the 92-county NWFP Area of WA. Our analysis shows that direct timber employment peaked in WA State in 1977 at 73,653 and had declined by 2022 to 28,037 with only about 10,000 of these job losses occurring during the period of NWFP implementation in the 1990s (source US

---

17 The share of private direct timber employment in the 92-county NWFP Area for WA is estimated by dividing the ratio of NWFP private timber jobs/total state private timber jobs, multiplied by 2022 FT & PT timber jobs. (25567/26917) X 28037 = 26,631. (Source: Headwaters Economics, Economics Profile System (EPS) data and US Department of Commerce, Bureau of Economic Analysis, full-time and part-time jobs for noted sectors)

Department of Commerce, Bureau of Economic Analysis, full-time and part-time jobs for noted sectors).

[Figure of Employment trends in timber industry - SEE PDF]

Source: US Department of Commerce, Bureau of Economic Analysis, Regional Accounts Data

Thirty-two of the thirty-six counties of OR are within the 92-county NWFP Area. These thirty-two counties contain 95.7% of OR's direct timber FT & PT jobs.18 Therefore, the statewide timber employment trends are representative of trends within the 92-county NWFP Area of OR. Our analysis shows that direct timber employment peaked in OR State in 1979 at 100,038 and had declined by 2022 to 36,065 with about 18,000 of these job losses occurring during the period of NWFP implementation (US Department of Commerce, Bureau of Economic Analysis, full-time and part-time jobs for noted sectors).

---

18 The share of private direct timber employment in the 92-county NWFP Area for OR is estimated by dividing the ratio of NWFP priv timber jobs/total state priv timber jobs, multiplied by 2022 FT & PT timber jobs. (39503/41274) X 36065 = 34518. (Source: Headwaters Economics, Economics Profile System (EPS) data and US Department of Commerce, Bureau of Economic Analysis, full-time and part-time jobs for noted sectors)

[Figure of employment trends in the timber industry 1969-2022 - SEE PDF]

Source: US Department of Commerce, Bureau of Economic Analysis, Regional Accounts Data

The direct CA direct FT & PT timber employment (private sector) is estimated at 11,000 jobs in 2022.19 The NV direct FT & PT timber employment is estimated at 1200 timber jobs in 2022.20

Consequently, the total direct FT & PT timber employment in 2022 for the 92-county NWFP area is estimated to be about 73,349 jobs. The DEIS should be revised to include explicit estimates for the number of FT & PT direct timber jobs within the 92-county NWFP area.

The DEIS must apply methodologies that incorporate actual current economic conditions and not become distracted in conditions that no longer exist.

Our analysis shows that the impact of the current national forest cutting contributes about 3.1% (2280/73,348) to the current direct timber FT & PT sector (Table 3-21). The 5091 current timber (direct, indirect, induced) jobs are properly compared to the total 92-county area total FT & PT NWFP Area. These effects represent about 0.055% (5901/9,252,734) of NWFP Area total FT & PT employment. The DEIS should be revised to explicitly depict these "National Forest Regional Economic Contributions."

---

19 CA direct timber NWFP Area FT & PT timber jobs estimated at 9744 (Headwaters EPS data) plus estimated 1356 = 11,000.

20 NV direct timber NWFP Area FT & PT timber jobs estimated at 1067(Headwaters EPS data) plus estimated 133 = 1200.

Pages 3-109 & 110, National Forest Regional Economic Contributions. The DEIS states "[hellip]these jobs are not distributed evenly across the region and may be important to smaller, rural communities that have less diverse economies and fewer economic opportunities than communities with larger populations."

COMMENT: While the theoretical employment contributions are unlikely to be evenly distributed across the region, the proposed DEIS action will tend to concentrate these jobs in the timber-based sectors in current geographic locations where they are now located.

These timber-based sectors are not evenly distributed across non-metropolitan and metropolitan counties.

Our analysis shows that this statement is true for Oregon where in 2023 only 29% of the direct timber jobs in the private sector were located in 12 non-metropolitan counties with the remainder (70%) being located in metropolitan counties (metropolitan and nonmetropolitan definitions are based on data in GTR 966, Volume 1 dated June 2018).

The same pattern also holds true for WA where in 2022 where only 23% of the direct timber jobs in the private sector were located in the 14 non-metropolitan counties, with the remainder (77%) being located in metropolitan counties (based upon the 72-county NWFP Area definition found in GTR 966, Volume 1 dated June 2018). Since most of the DEIS theoretical economic response is expected to be in the timber sectors and most of the direct timber employment is currently located in metropolitan counties, most of the impact of this DEIS decision will

likely occur in counties that already exhibit the greatest growth and have the greatest future growth prospects within the region.

How will the proposed action support the "Stability of Regional Communities" goal if the economic response of this decision largely emerges in metropolitan counties?

Page 3-110, Timber Harvest. The DEIS states "Data compiled as part of the 25-year report indicate that viewed over a longer time frame (1978 to 2017) federal timber harvest volumes in the mid- to late-1980s were unusually high, reaching levels not previously seen since 1973 (Adams and Grinspoon, in press)."

COMMENT: We find this suggestion "[hellip]federal timber harvest volumes in the mid- to

late-1980s were unusually high[hellip]" to be a massive understatement of the situation. During the period 1950-1990 timber cuts across all ownerships in OR and WA, not just federal forests, were not just 'unusually high' but entirely unsustainable and represented a timber industry feeding frenzy that could only come to an end in a massive restructuring.

The Oregon Department of Forestry (ODF) has recorded that from 1947-1989 the total timber cut from all Oregon State forests averaged 8,115 mmbf/year. This ODF data also shows Oregon's national forests averaged a cut of 4,254 mmbf/year from 1962-1989.

The WA State Department of Natural Resources (DNR) recorded a similar massive overcutting of national forests in WA with an annual average cut of 1,329 mmbf/year from 1958-1989. These cutting levels were not sustainable over time and represented a policy of massive liquidation of old growth forests as well as a violation of multiple use principals and policies on federal lands. (source: Oregon Department of Forestry and Washington State Department of Natural Resource data).

The Sierra Club requests that the DEIS/SEIS should be revised to delete the statement "[hellip]federal timber harvest volumes in the mid- to late-1980s were unusually high[hellip]" and replaced with comments commensurate with the transient nature of events described.

Page 3-110 & 3-111, Figure 3-9. Timber harvest by ownership in the NWFP socioeconomic region, 1982 to 2022.

COMMENT: The figure 3-9 data, for the private and tribal ownership (which is largely private) shows a

decreasing trend for the period 2002-2022, possibly a 27% reduction. The total private cut volume reduction for the 21-year period is large relative to the

much-discussed PSQ shortfall from national forests and is large or larger than the expected cut increase that is proposed by this DEIS (Table 3-27).

The Sierra Club requests that the DEIS should analyze the impacts to the region of potential changes in timber supply from all ownerships for any foreseeable cause, particularly from a source that has been the dominant supplier of logs for decades.

Furthermore, the Sierra Club does not understand the constant reference in the DEIS to cutting levels prior to 1990? The Agency and the DEIS analysis are expected to address the current situation and future trends, rather than to be constantly harkening back to a dark past.

Page 3-114, Figure 3-13. Average annual timber harvest from federal lands by NWFP-socioeconomic-region county, 2013 to 2024.

COMMENT: We note that while Figure 3-13 shows that Lane County OR has had the highest national forest timber cut in the NWFP-socioeconomic-region, it should be pointed out that other ownerships, rather than NF lands, within Lane County provide nearly all of local timber supply, i.e. 88% of the timber supply by volume since 2014.

This pattern is likely repeated for many of 72 counties shown in this figure. The Sierra Club requests that the DEIS be revised to show the share of county level FT & PT employment that is a result of national forest timber-based programs for each of the 72-county Area.

This metric would be much more representative as an indication of the actual contribution that the national forest timber program makes to local economies. Please revise the DEIS accordingly.

Page 3-115, Probable Sale Quantity. The DEIS states "The current PSQ for the NWFP area for NFS and BLM-administered lands combined is 805 MMBF."

COMMENT: References to BLM in the DEIS must be revised to reflect and rationally address that BLM lands were eliminated from the NWFP. The DEIS/SEIS should take a hard look at how eliminating BLM-administered lands from the NWFP affects its analysis, in particular with regard to changing the baseline for comparison of alternatives.

The quoted statement above is not correct and must be revised. The Sierra Club requests that the DEIS/SEIS be revised accordingly.

Pages 3-117 and 3-118, Table 3-22. Annual volume sold by national forest in the NWFP area, 1994 to 2023 (MMBF).

COMMENT: The short fall volume is defined as the present PSQ volume for 2013-2023 minus the annual average sell volume for NWFP Area Total for 2014-2023 as shown in Table 3-22. The shortfall volume is 162 mmbf/year (607minus 445) for the noted time frame.

The DEIS must assess the significance of this shortfall volume in terms of its impact on the 72-or 92-county NWFP Area total timber supply that accounts for all ownerships. Our analysis shows the total timber supply for all ownerships of the NWFP Area for the period 2013-2022 is about 7,193 mmbf/year (based upon the 72-county area) (Source: https://bber.umt.edu/FIR/H_harvest.asp). Consequently, the impact of the much-discussed shortfall would be about 2.3% (162/7193) of the region's timber supply.

The Sierra Club requests that the DEIS must provide a numerical explanation as to why 2% of the timber supply represents a critical component of the 92-county NWFP Area timber supply and its implications for the regional economy when timber currently contributes 0.8% (73,348/9,252,734) of the region's labor economy. Please revise the DEIS accordingly.

Page 3-117 & 118, Table 3-22. Annual Volume Sold by National Forest in the NWFP Area, 1994 to 2023.

COMMENT: While sold volume data may be readily available, the DEIS analysis would be improved if the DEIS analysis was converted from sell volume metrics to cut volume metrics since only cut volumes produce an economic response (employment).

Page 3-119, Employment and Income. The DEIS states "Figure 3-15 presents annual employment and average annual wages in the wood products sector for the past 49 years (1975 to 2023)."

COMMENT: The data used for Figure 3-15 is from U.S. Bureau of Labor Statistics QCEW.

This definition of employment is incomplete since it does not include proprietors and therefore understates the

number of jobs associated with the direct forest products sector. A significant portion of the Forestry and Logging Sector is made up of proprietors. Our analysis of employment uses Department of Commerce, Bureau of Economics, Regional Accounts data for FT and PT jobs. See the two enclosed charts above that show direct timber employment trends for WA and OR covering the period 1969-2022. These data include proprietors.

Page 3-119, Employment and Income. Figure 3-15. Wood products employment and average annual wages, 1975 to 2023.

COMMENT: Figure 3-15 shows direct timber employment to be about 35,000 jobs, apparently for the 72-county NWFP Area. This figure is incorrect.

The employment shown is not accurate for direct timber employment, either for wage and salary workers alone or FT & PT employment or for the 72-county NWFP Area. Our analysis shows that direct timber employment (generated by all log ownerships) within the 92-county NWFP area to be about 73,349 jobs for 2022.21

The Sierra Club requests that Figure 3-15 be corrected to include all relevant components to direct timber employment for the 92-county NWFP Area.

The DEIS must provide a full set of employment information that shows the importance of timber to the 92-county NWFP Area. Our analysis for timber's importance shows that timber contributed about 0.8% (74,348/9,252,734) of total FT & PT employment in 2022. The Table 3-21 data indicates that current management of national forest lands from all agency programs and activities within NWFP Area represent about 0.29% (26,499/9,252,734) of total 92-county FT & PT employment.22

Furthermore, the Table 3-21 data also shows that current national forest timber programs in the 92-county NWFP Area contribute about 3.1% (2280/74,348) of total FT & PT direct timber employment of the NWFP Area. Consequently, national forest timber is a minor contributor to the regional timber economy.

We strongly agree that "[hellip][hellip] national forest management alone cannot ensure community stability." (DEIS at page 3-109). These data stated above reflect timber's actual importance.

However, the DEIS data, as presented, ignores or obscures the major changes that have occurred in the 92-county area since 2000 alone. Our analysis shows that total FT & PT employment in this area has grown by more than 2,220,000 jobs or almost 32% (2,228,989/7,023,745) from 2000 to 2022. This level of expansion is 250 (2,220,000/8,890)

21Id. at Footnote 2 above and US Dept of Commerce, Bureau of Economic Analysis, Regional Accounts Data

22Id. and Table 3-21 of the DEIS

---

times greater than the estimated employment increases that are shown in Table 3-27 (page 3-148) that are driven by large increases in the NWFP Area national forest cutting levels.

Our analysis shows that when the total FT & PT employment in the NWFP Area grew across nearly all of the 92-county area, that direct private timber jobs declined across the region at the same time. This decline occurred in WA State with a reduction of 38% in private timber jobs, in OR by 25.6%, in CA by 42.3%.

However, surprisingly NV private direct employment expanded by 132% or about 600 jobs. The NV expansion did not offset the overall trend.23

The growth in non-timber sectors more than offset declines in timber in nearly all NWFP counties.24

Our review of the Figure 3-15 trend chart shows declines in direct timber employment for WA, OR and CA that began in the late 1970s and continued through the Great Recession of 2008-2009. The Figure 3-15 decline shown in 2000-2001 does not represent an employment decline, but a revision in the reporting system when the Bureau of Labor Statistics (BLS) switched from job definitions defined by the Standard Industrial Classification (SIC) system to the North American Industrial Classification System (NAICS). The BLS revision reflected work force structural changes driven by the digital revolution, the same revolution that has so impacted the timber sectors.

Much of the economic data included in the DEIS tends to perpetuate the myth that the implementation of the 1994 NWFP was the underlying reason for the declines in the PNW timber industry given the constant references to logging volumes and timber employment levels in the late 1980's.

A review of timber sector employment data for the period 1969-2022 provides a much clearer picture of what happened with the timber sector in the NWFP Area. The Figure 3-15 data appear to match the trends in the enclosed charts we have provided for WA and OR (statewide). Those charts clearly show that for the period 1977 -1989 direct FT & PT timber jobs declined by almost 24,000 in WA & OR alone, well before the NWFP

implementation.

The values for direct timber jobs at the state level can be applied to this Figure 3-15 discussion because the 92-county area includes about 95% of the total direct timber employment for WA and OR occurred within the NWFP Area.

The Figure 3-15 data, however, does not match the trends that documented further declines in direct FT & PT timber employment by the Bureau of Economic Analysis for the period 2000-2022. During this later period WA and OR alone shed 44,000 direct timber jobs.

23Id. and US Department of Commerce, Bureau of Economic Analysis, full-time and part-time jobs for noted sectors

24Id.

When reviewing the entire period 1969-2022 WA & OR lost about 94,000 timber jobs, with almost three quarters of these occurring both before and after the NWFP implementation. The regional timber jobs losses after 2000 mirror national trends and have little to do with federal timber programs.

Notwithstanding these job losses in the timber sector, we refer you back to our data above on total employment growth across the 92-county region where significant expansion occurred in all three states during the period 2000-2022.

Page 3-120, Local Employment. The DEIS states "Job availability and individual income are key factors in assessing the social and economic health of communities."

COMMENT: While job availability and individual income are key factors in assessing the social and economic health of communities, the theoretical employment responses to increases in national forest cut levels are unlikely to be evenly distributed across the region or in locations most compatible with additional employment opportunities. The proposed DEIS action will tend to concentrate responses in the timber-based sectors, and the

timber-based sectors may not be equitably distributed across non-metropolitan and metropolitan counties.

Our analysis shows that in Oregon where in 2023 only 29% of the direct timber jobs in the private sector were located in 12 non-metropolitan counties with the remainder (70%) being located in metropolitan counties (based

upon the 72-county NWFP Area definition found in GTR 966, Volume 1 dated June 2018).

The same pattern also holds true for WA where in 2022 where only 23% of the direct timber jobs in the private sector were located in the 14 non-metropolitan counties, with the remainder (77%) being located in metropolitan counties (based upon the 72-county NWFP Area definition found in Synthesis of Science to Inform Land Management Within the Northwest Plan Area, Volume 3, GTR 966, dated June 2018).

The value of a small number of new jobs generated by the DEIS proposed action that may be located in counties that historically have exhibited large growth rates may not produce effects that are measurable.

The Sierra Club requests that the DEIS/SEIS be revised to identify the locations where any DEIS proposed increase in jobs may occur and if those additional jobs can be distinguished from historic and projected growth rates.

Page 3-121, The DEIS states "It is difficult to tie the NWFP directly to these various changes experienced by communities since its adoption. Over the past 25 years, the timber industry has undergone numerous technological and market-induced changes that have resulted in plant shutdowns and employee reductions, regardless of the forest policies in force. Sawmills and other wood products manufacturing facilities have been consolidated by international financial entities."

COMMENT: We strongly agree that "It is difficult to tie the NWFP directly to these various changes experienced by communities[hellip]" (DEIS at page 3-121) The myth that the NWFP is at the root of the difficulties that some communities have experienced in the region as evidenced by constant references in the DEIS to cutting levels that could not be sustained and jobs that are no longer available is not supported by the facts as discussed above.

Our analysis clearly shows that most of the direct timber job losses occurred both before the NWFP was implemented and continued to occur in the defined region after the Plan's implementation effects had played out. Notwithstanding those timber job losses, the total employment levels and diversification have resulted in significant increases in employment, as indicated above in our prior discussions.

In addition, the timber industry has struggled to modernize and increase its efficiency by automating the greatest extent it is able to do so. These effects are evident by reviewing timber job multiplication factors that have been calculated by the WA DNR that estimate jobs required to process a given volume of logs. The DNR shows the jobs required to process one million board feet of logs declined by about 20% between 2001 and 2017. (source: Final EIS for Long-Term Conservation Strategy for the Marbled Murrelet, Figure 3.11.1, dated September 2019). The DEIS must include an evaluation that accounts for future mechanization trends in timber processing that will

likely impact future direct timber employment.

Page 3-122 to 3-125, Wood Processing Facilities. "Figures 3-16 to Figure 3-18 show trends in the number of mills for California, Oregon, and Washington, respectively."

COMMENT: The mill counts shown for CA in Figure 3-16 must be revised to add the portion of the 72-county NWFP Area of CA ("CA NWFP") starting from 1968, rather than 2000 because the direct timber employment levels in the NWFP region began to decline in the 1970s and this trend went hand in hand with mill closures.

The DEIS must fully disclose and describe trends in the NWFP area timber economy and these mill closures trends clearly predate the 1994 NWFP implementation.

The mill counts shown for OR in Figure 3-17 must also be revised to add the portion of the 72-county NWFP Area of OR ("OR NWFP") starting from 1968, rather than 2003 because the direct timber employment levels in the OR portion of 72-county NWFP region began to decline in the 1978 along with mill closures. However, since the 72-county NWFP area of OR encompasses nearly all the OR wood processing facilities, the 'blue line' and 'green columns' will be nearly coincident. Figure 3-17 clearly shows that mill closures in OR predate the NWFP implementation when about 270 (490-220) mills were closed by 1988.

The mill counts shown for WA in Figure 3-18 must be revised to add the portion of the

72-county NWFP Area of WA ("WA NWFP") starting from 1968, rather than 1990 because the direct timber employment levels in the WA portion of 72-county NWFP region began to decline in the 1977 along with related mill closures. See enclosed chart showing WA total mill count trends. The WA Mill Survey Reports also show that the number of sawmills and veneer & plywood operations peaked in 1968, then shrank to 141 operations in 1988, a 45% decline. Such trends predate the NWFP by more than 20 years. Additionally, it must be recognized that these mill closures continued after 2000, when in WA sawmill and veneer & plywood operations decreased from 91 to 44 by 2016, a further 52% reduction.

[Mill Count trends in WA Timber Industry 1968-2016 - SEE PDF]

Source: WA DNR Mill Survey Reports, 1968-2016. Shake & Shingle, Pole, Post & Piling and Roundwood Chipping mill counts not shown, due to small volumes processed and shorter operating history.

The structure of the three mill-count trend figures for all three states of the NWFP Area represents further evidence that the Forest Service, by selective use of mill count data, is perpetuating the myth that the wood products decline across the NWFP Area was instigated by implementation of the 1994 NWFP.

The mill count trends clearly show that the decline in the number of operating mills predates the 1994 NWFP plan by at least 20 years. The mill count data presented suggests that logs from national forests supply all or most of the mills counted in each figure.

This is misleading and generally incorrect as a review of the WA Mill Survey for 2016 shows. The WA report documents that only three of the seven mill classifications consumed national forest logs in 2016, a typical share of national forest log consumption by mill type in WA. Furthermore, the largest share of national forest logs was consumed by sawmills alone, with sawmills and veneer & plywood mills consuming almost 90% of national forest log volume, representing a typical consumption ratio by mill type for national forest logs over time. Consequently, rather than 88 WA mills as noted in the DEIS utilizing at least some national forest logs, the typical figure in WA is more like 44 mills (sawmills and plywood & veneer mills).

Relatively few national forest logs were consumed by pulp & board; shake & shingle; post/pole & piling; and roundwood chipping in 2016. And all log export mill counts should be removed from all the noted figures.

The DEIS is deficient in that raw log exports are not addressed in pages 3-122 to 3-125 or elsewhere in the DEIS. In WA State the 2016 Mill Survey shows that 28% of WA's logs bypassed local mills and were exported for overseas manufacturing, representing a "lost" volume equal to twice local national forest and state log production. (source: DNR WA Mill Survey 2016, see Tables 1 and 8a). We believe that the WA mill data also reflects similar circumstances for mills in CA and OR such that far fewer than the 266 mills listed consume national forest logs as suggested by the DEIS. These data again reflect the Forest Service tendency for mischaracterizing the national forest timber contribution as well as the timber industry's contribution to local economies as being more significant than they actually are.

Page 3-127, Figure 3-19. Sawmill locations and disturbance restoration needed by watershed.

COMMENT: Figure 3-19 shows the current distribution of sawmills across the NWFP area (72-county definition). The documented mill locations are largely concentrated either within the range of the northern spotted owl in moist forests or outside the NWFP

72-county area. Given the limitations of log haul distances, we question if there is mill capacity to absorb the massive increases in national forest cut volume this DEIS is proposing.

The DEIS should provide a detailed analysis of the ability of existing mill distribution and capacity to process the increase in log volume that would theoretically become available by the DEIS proposed increase in cut volumes.

Page 3-129, Figure 3-20. Federal agency employment in the NWFP socioeconomic region by state, 1973 to 2017.

COMMENT: Figure 3-20 depicts the trends of federal agency employment by state in the NWFP socioeconomic region.

* The DEIS must be revised to delete any data or information that applies to the BLM in Figure 3-20 since the purpose and need for the DEIS deals only with National Forest System (NFS) lands.
* The DEIS should be revised to explain why the employment trends for CA and WA federal employees appear to be relatively stable after 1990. The DEIS should separately document those federal positions that were posted in metropolitan and nonmetropolitan counties separately per the typology definitions given in Synthesis of Science to Inform Land Management Within the Northwest Forest Plan Area Volume 1, General Technical Report PNW-GTR-966 Vol. 1, dated June 2018. The DEIS as written, can give the impression that the greatest share of federal positions eliminated were in nonmetropolitan counties.

The Sierra Club requests that these revisions to the DEIS/SEIS be made to provide these clarifications and corrections.

Page 3-133, Employment and Income. The DEIS states "Recreation visitor spending is the largest source of economic activity associated with NFS land management in the NWFP socioeconomic region, supporting an estimated total of 12,550 jobs and $628 million in income (see Table 3-21)."

COMMENT: The DEIS is proposing a massive increase in national forest cut volume levels across the entire NWFP socioeconomic area. Extractive activity such as proposed does not attract either visitors or their spending.

The Sierra Club requests that the DEIS must be revised to analyze these increases in cutting and associated activity, and evaluate whether or not such activity will negatively impact existing visitation and associated visitor spending.

Page 3-135, 3.8.1.9 Livestock Grazing. The DEIS states "Grazing on NFS and BLM-administered lands in the NWFP area primarily occurs west of the Cascade Range. Grazing in these areas is minor compared to grazing on NFS and BLM-administered lands in eastern Oregon and Washington and northeastern California, areas that are outside the NWFP area."

COMMENT: The DEIS/SEIS should address and take a hard look at how eliminating BLM-administered lands from the NWFP affects its analysis, particular with regard to changing the baseline.

We strongly agree with the data presented that grazing produces an almost non-existent economic response to the NWFP socioeconomic region in stark contrast to the significant environmental damage that results from this activity to soils, water, and wildlife habitat.

Per Table 3-21 (Page 3-110), grazing-generated employment generates 851 jobs in the 92-county NWFP region, this figure represents 0.009% (851/9,252,734) of total FT & PT employment, or less than one week of the region's average annual employment growth.

Pages 3-138 thru 3-140, 3.8.1.11 County Vulnerability Index. Figure 3-23. Social vulnerability in

the NWFP-area counties, 1990 and 2017.

COMMENT: The social vulnerability index shows a "large deterioration" for Mendocino County CA and Columbia County OR.

Our review of key indicators shows that both counties have little federal land, almost no national forest timber cut volume, and at most have a modest timber employment dependency.25

If this chart is intended to suggest the proposed DEIS actions will provide some relief to counties with problematic 'social vulnerability indices,' it seems likely that several factors beyond national forest management policies are the likely drivers for some or many of the local difficulties documented in Figure 3-23.

Pages 3-146 and 3-147, Improving Opportunities for Jobs Supported in Local Communities. The DEIS states "ECONSUST-GOAL-2, ECONSUST-GOAL-3, and ECONSUST-GOAL-4 are included in all action alternatives and identify the importance of economic opportunities from forest management, particularly with respect to the economic contributions resulting from forest products and restoration work."

COMMENT: The economic employment response data for the proposed DEIS actions in Table 3-27 (page 3-148) shows that the noted responses are primarily expected to occur in the following NAICS codes26 to define direct forest industry employment: forestry and logging (113); support activities for forestry (1153); wood product

manufacturing (321); paper manufacturing (322).

Our research shows that most of these jobs would be placed in counties where such jobs already exist. The greatest share of direct timber jobs occurs in metropolitan counties of WA and OR (typology defined in GTR-966, dated June 2018). Therefore, we agree with the DEIS' statement that the "likely scenario is that employment benefits will flow primarily to already job-rich metropolitan counties" (page 3-147). Given the limited number of projected new jobs (8890 per Table 3-27) the DEIS' proposed action could theoretically generate, we question if this NWFP amendment will produce measurable effects across the NWFP Area in the communities most likely affected.

25Id.

26 NAICS (North American Industrial Classification) Code is a classification system developed by the Bureau of Labor Statistics that is used to categorize businesses for statistical purposes in the North American economy.

FS must explain how such a small number of jobs, spread over such a large geography, that includes a large employment base, will actually strengthen local workforce capacity.

Page 3-147, 3.8.2.2 Forest Products. The DEIS states "Timber from NFS lands represents a small share of the total supply in the NWFP socioeconomic region accounting for just 6.6 percent of total harvest over the past decade."

COMMENT: We strongly agree that national forest logs currently represent a small contribution to the 72-county NWFP Area timber supply.

Our analysis shows that national forest logs provided 5.7% of the actual total timber cut across the 72-county area for the period 2002-2022 and 6.5% of the cut for the last ten years of data (2013-2022). At the state level, the 72-county NWFP Area provided 2.8% of the WA timber supply, 6.9% for OR, and 9.7% for CA for the period 2013-2022 (source: https://www.bber.umt.edu/FIR/H_Harvest.asp).

Given the "High transport costs and the species preference of mills mean that most wood processed within the region also originates in the region" and the "relatively small share, harvest from federal lands," (page 3-147), we question if this plan will meet its objectives for "Sustainability of Regional Communities).

Page 3-148, Jobs Supported by Changes in Timber Volumes by Alternative. COMMENT:

1. The DEIS shows Table 3-27, page 3-148, 'Estimated annual forest products employment' figure for Alternative A (the No Action Alternative) of 4,360 jobs. This figure is expected to closely align with the 'estimated annual employment figures for forest products 2021 of 5,091 jobs, although an estimate, (Table 3-21, at page 3-110).'

FS should explain the employment difference between the '2021 data' and the 'Alternative A data' and explicitly identify the source of the increased job numbers for forest products, since those numbers should have been more nearly identical, and then correct the identified discrepancies.

1. The Table 3-27 estimates the maximum increase in timber-based jobs (Alternative B-high) over Alternative A to be 8890 jobs. The DEIS must provide a definitive context and details for this increase in jobs produced as a result of the very significant increase proposed for national forest cutting.

In addition, FS must evaluate the significance of the Table 3-27 jobs increase to the 92-county NWFP Area in the context of existing employment levels and at least compare this increase to historic growth in the region.

1. Our analysis shows that the DEIS defined increase in timber-based (direct, indirect, induced) jobs represents an increase of 0.096% (8890/9,252,734) in the 92-county NWFP Area in 2022.27

This increase is equivalent to four weeks of historic growth in the defined area. Our analysis further shows that increase will likely be concentrated in the metropolitan counties of the 92-county NWFP Area.28

The Sierra Club states that such a minimal increase in jobs, and one concentrated in the metropolitan areas does not in any way meet the Purpose and Need of the DEIS.

Page 3-148, Jobs Supported by Changes in Timber Volumes by Alternative.

COMMENT: The DEIS analysis is incomplete and must show the PSQ volumes that are allocated to each national forest administrative unit.

A new table for the DEIS is required that contains volume targets for each national forest unit that is similar to the

table found in the 1994 Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old Growth Forest Related Species Within the Range of the Northern Spotted Owl, Table 3&4-44 Probable Sale Quantity (PSQ) in millions of board feet (MMBF).

The Sierra Club requests that such a table of PSQ volume targets be identified by alternative for each administrative unit, similar in form and substance to the table included in the FSEIS page 3&4-268. Please revise the DEIS to reflect this information.

Page 3-148, Jobs Supported by Changes in Timber Volumes by Alternative.

COMMENT: The DEIS proposes to allow cutting in the LSR LUA in the stand age classes 80 to 120 years old. The DEIS must fully disclose the expected LSR cut volume from all LSR age classes.

In addition, the DEIS must separate the expected cut volume from LSR 80-120 years old in Table 3-27.

The DEIS must further define the timber-based jobs associated with this expanded cutting in LSRs in Table 3-27. The Sierra Club requests that the DEIS/SEIS be revised accordingly.

Conclusion to Section II of the Comment Letter

27Id. at Footnote 2 above and Table 3-27 of the DEIS

28Id. and Table 3-27 of the DEIS

The DEIS has failed to make the case that implementation of the 1994 NWFP has had significant socioeconomic, financial impacts on communities and publics by ignoring both the minute contribution of the current national forest timber program, the relatively small regional contribution of the existing timber economy to the large, diverse, and ever-expanding regional economy as defined in the DEIS. Furthermore, the DEIS did not evaluate the economic impact of the projected increases in employment driven by the massive increases in national forest timber program relative to the size of the current regional economy. The DEIS does not consider a future where the relative importance of the projected incremental increases in the regional timber economy is set against the

context of future trends in both the timber economy and the regional economy as a whole, where timber will possibly continue to shrink but the total regional economy is projected to continue expanding.

The failure of DEIS analysis to make the case for measurable improvements in economic wellbeing becomes apparent when the proposed increases in national forest timber cutting are seen to produce the equivalent of about 4 weeks of historic annual employment growth across the 92-county NWFP Area.

1. DECISION FRAMEWORK; PLAN FAILURE ISSUES

Index to Legal Issues with DEIS re NSO and other listed species:

1.
1. 2012 Planning Rule Lack of Compliance
2. ESA Lack of Compliance

i) Cumulative Impact Analysis Missing

1.
1. NEPA Lack of Compliance

2. Hard Look Analysis Missing re ESA Lack of Compliance and re 2012 Planning Rule lack of Compliance

1. Other issues
2. Cumulative Impact Analysis Missing

1. The DEIS fails under the 2012 Planning Rule. The Forest Service did not determine the impact, as required under the 2012 Planning Rule, of the DEIS Alternatives on Threatened and Endangered Species with habitat in the NWFP 17 National Forests (including Northern Spotted Owl [NSO], Marbled Murrelet [MAMU], Pacific marten, and other T&E species) as follows:

1. Applicable 2012 Planning Rule requirements and discussion, pages 1-6 and 1-7 of DEIS:

As discussed on Page 1-6 of the DEIS, the Forest Service did recognize that Section 36 CFR 219.9 (b), as well as other sections, of the 2012 Planning Rule is directly related to the DEIS.

* Subsection 219.9 is titled Diversity of plant and animal communities.

* Paragraph (a) of Subsection 219.9 is titled Ecosystem plan components.
* Paragraph (b) of Subsection 219.9 is titled Additional, species-specific plan components.

The relevant portion of Subsection 219.9 (b) follows:

"(b) Additional, species-specific plan components. (1) The responsible official shall determine whether or not the plan components required by paragraph (a) of this section provide the ecological conditions necessary to: contribute to the recovery of federally listed threatened and endangered species, [hellip] If the responsible official determines that the plan components required in paragraph (a) are insufficient to provide such ecological conditions, then additional, species-specific plan components, including standards or guidelines, must be included in the plan to provide such ecological conditions in the plan area." [emphasis added]

See Page 21265 of 2012 Planning Rule https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd527654.pdf

However, the FS did not analyze that section with regard to Threatened or Endangered Species (T&E) and whether or not the DEIS components "provide the ecological conditions necessary to: contribute to the recovery of federally listed threatened and endangered species[hellip]".

Instead and first, the DEIS states on page C-1 of Appendix C, Draft Biological Evaluation:

"No determinations have been made for species listed as RFSS that are also listed under the ESA as threatened, endangered, proposed, or candidate. Effects to ESA species are being analyzed for the selected action in the Biological Assessments (BAs) and will be addressed in the final BE and summarized in the final EIS".

Second, the FS is waiting for USFWS and NMFS to issue their Section 7 Biological Opinions, after the Biological Assessments. See page 3-76 DEIS.

Third, the FS, on page 3-78 made the following assumption regarding Designated Critical Habitats (sometimes referred to herein as 'DCH') for Threatened and Endangered species:

"Treatments within critical habitat are expected to increase under Alternatives B and D, with the objectives for those treatments to be consistent with the conservation of those areas and the species that rely on those habitats. It was assumed that under all action alternatives, treatments within designated critical habitat would not adversely modify the critical habitat but rather accelerate ecological restoration to prevent risk to loss from wildfire and improve forest resiliency. Effects analysis to designated critical habitat will be disclosed in the BA." [emphasis added]

The FS should not have made such an assumption that increased treatments within designated critical habitat 'would not adversely modify the critical habitat', particularly in view of the extensive increase in volume of acres projected to be cut or burned, and particularly in view of the projected increase of the cut in moist LSRs by 50% from 80 year old to 120 year old trees, resulting in an additional 824,000 acres in moist LSR now only protected if the trees on that acreage actually reach 120 years of age.

Cutting or burning trees that are at the threshold of mature trees would decrease significant portions of necessary habitat, whether or not designated critical habitat, for foraging and dispersal of the NSO, and of many other T&E Species, as well as changing the edge habitat, which threatens MAMU activity.

In addition, the limited discussion of 'short term negative effects' and the limited discussion of 'long term benefits'

does not justify such an assumption. See page 3-76 and 1-7 of the DEIS. The listed species which depend on Late Successional and Old Growth habitat do not have time to wait for the 'ecological restoration' that the FS supports. Such 'ecological restoration' of 80 -

120-year-old trees speaks for itself: that habitat would take that 80-120 years to be restored, by which time we may well have lost the listed species that depend on such habitat.

Further, even though the FS is subject to the Section 7 review process, waiting for USFWS and NMFS to issue their Biological Opinions before doing any analysis in the DEIS is merely an additional avoidance of the FS 's obligation to analyze the impacts of the proposed action.

The FS should have determined whether the increased timber cut and burns projected in the DEIS, including but not limited to the increase in permitted cut in LSR to include trees aged 80-120 years of age, would impact the Designated Critical Habitat of T&E Species.

The FS could have made such a determination by producing and analyzing a GIS overlay of:

1. the maps of the Designated Critical Habitat for the NSO, the MAMU, the Pacific Marten, and all other Threatened or Endangered Species within the boundaries of the NWFP region (such T&E Species are listed on Tables 3.9 and 3.10, on pages 3-52 through page 3-55 of the DEIS), which maps and contact information for physical coordinates of each Designated Critical Habitat Unit are available in the Federal Register, see below for examples:

1. for NSO:

https://www.govinfo.gov/content/pkg/FR-2012-12-04/pdf/2012-28714.pdf (see pages 70253 through 70268 for maps)

1.
1. for MAMU: https://www.fws.gov/sites/default/files/federal_register_document/2016-18376

.pdf (see pages 61613 through 61621 for maps)

1.
1. for Pacific Martin:

https://www.govinfo.gov/content/pkg/FR-2024-05-29/pdf/2024-11254.pdf (see pages 46611 through 46616 for maps)

and

1. maps of all of the LUAs of the 17 National Forests in the NWFP region; and
2. maps of Stand Age within each LUA of the 17 National Forests in the NWFP

region.

Such overlays would have shown the amount and location of reduction of Designated Critical Habitat due to the proposed increase in timber harvest in moist LSRs due both to the increase in permitted age to cut or burn to 120 years of age, and any projected cuts or burns within stands less than 80 years of age, as even those stands provide dispersal and foraging territory for Threatened or Endangered Species and other aspects of Primary Critical Elements (PCE).

The DEIS did not include either a discussion of any such overlay map created by the FS, or copies of any such overlay map.

Instead, on page 1-7 of the DEIS, the FS merely stated the following conclusion:

"The proposed plan amendment is designed to increase ecological integrity and better adapt to the effects of climate change. An overall benefit to species diversity and resilience is therefore anticipated. The amendment does not include changes that would substantially lessen species-specific protections within existing plans and allows for the consideration of the needs for all species at the project-planning level and subsequent NEPA analysis completed by the local unit. Although individuals or populations of some species in the plan area may be adversely affected in the short term during individual project implementation, we do not anticipate a substantial adverse impact to a species or population because of the proposed amendment." [emphasis added]

Any assertion that harvesting, whether by mechanical means or hand cutting, of Designated Critical Habitat will: increase ecological integrity (as stated in the above quote on page 1-7 of the DEIS), and contribute to recovery of federally listed threatened and endangered species (as required by Subsection 219.9 (b) (1) of the 2012 Planning Rule, as quoted on page 1 above of this Comment Letter) fails to meet the test of logic, as logging of Designated Critical Habitat would result in decreased habitat and thus reduce the population numbers of those T&E Species which rely on that Designated Critical Habitat.

The Forest Service is obligated to protect Threatened and Endangered Species, such as the MAMU and the NSO, and their Designated Critical Habitat. See the following from the 2012 Planning Rule:

Under the ESA, the Forest Service is to carry out "programs and activities for the conservation of endangered species and threatened species" (16 U.S.C. 1536(a)(1)) and "insure that any action authorized, funded or carried out by [it] is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [designated critical habitat]" (16 U.S.C.

1635(a)(2)). [emphasis added]

See Page 21215 of the 2012 Planning Rule
https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd527654.pdf

Further, see also Page 1-7 of DEIS regarding obligations on the Forest Service under the ESA:

"The substantive provision at 36 CFR 219.9(b) requires ecosystem and, in some cases, species-specific plan components that "contribute to the recovery of federally listed threatened and endangered species, conserve proposed and candidate species, and

maintain a viable population of each species of conservation concern within the plan area."

Merely stating in the DEIS (see pages 3-76 and 1-7) that there will be short-term negative effects and long-term beneficial effects is insufficient, without going into detail of the length of time of the short-term and long-term effects on the Endangered and Threatened Species, let alone what those impacts would be on the NSO's Primary Constituent Elements (roosting, canopy cover, foraging, nesting, and dispersal (the 'PCE') and as the PCE are further described at page 71897 of the 2012 Critical Habitat Rule[see Section iii) below for citation].

The Forest Service did not make the required determination, required under paragraph (b) of Section 219.9 of the 2012 Planning Rule, of whether or not the plan components required by paragraph (a) of Section 219.9 provide the ecological conditions necessary to contribute to the recovery of federally listed Threatened and Endangered Species.

The FS needs to identify the impact of the proposed timber cuts and burns on the Designated Critical Habitats, and whether or not the DEIS negatively impacts the T&E Species and their Designated Critical Habitats, and thus fails to contribute to the recovery of federally listed Threatened and Endangered Species.

The FS needs to do the necessary analysis and revise the DEIS to include specific Standards and Guidelines on tree cutting or burning that ensure compliance with the 2012 Planning Rule, NFMA species viability requirements, and the ESA.

Note that wherever the word 'cut' or 'cutting' occurs in this Comment Letter, that usage includes both mechanical and hand-cutting.

1.
1. As stated above in SubSection A i) of this Section III, with regard to the Designated Critical Habitat of T&E Species, including but not limited to the NSO, as part of the proposal to have timber cutting in LSR stands and trees up to 120 years of age, the DEIS did not provide any information, other than the simple statements of short term negative impacts and long term benefits, as to the impact on the DCHs of that increase in age of trees available for cutting.

We know that DCHs extend beyond LSRs into other LUAs proposed for additional cutting under the DEIS, and thus those LUAs would have DCHs likewise impacted by the increased cut proposed under the DEIS.

By way of example of overlays of habitat and LUAs, the WA Dept Natural Resources' February 1, 2024 Comment letter to the December 2023 NOI, at page 3, states:

'The 2012 northern spotted owl critical habitat designation designated most forested areas on the OWNF and GPNF as NSO critical habitat including much of the matrix in addition to the late successional reserves.'

The FS did not include any mapping of an overlay of the DCH mapping for any of the T&E Species on the mapping of LSRs and other LUAs, or for that matter an overlay of the DCH mapping for any of the T&E Species on the Stand Ages of Moist LUAs and Dry LUAs, which would have provided important information helpful to analyzing the impacts of the DEIS changes on Designated Critical Habitat.

The 2012 Critical Habitat Rule for the NSO mapped the DCH across the Range of the NSO. See: https://www.govinfo.gov/content/pkg/FR-2012-12-04/pdf/2012-28714.pdf, as amended in 2021 (see below). Refer to the Critical Habitat maps included in the 2012 Critical Habitat Rule at pages 70253 through 70268; reference is made also to page 70252 for information on where to access physical detail about the Designated Critical Habitat Units and the physical GPS coordinates for each Map.

* Note, the 2012 Maps were slightly updated in 2021 when 204,294 acres were removed from Critical Habit Designation across the entire NWFP region, representing about 2% of the original acreage designated. Those removed acres are BLM lands and Tribal (Indian) Lands, and did not include any NWFP lands. See: https://www.govinfo.gov/content/pkg/FR-2021-11-10/pdf/2021-24365.pdf

* Additional Note, the 2021 Update provides addresses for obtaining the physical coordinates of each of the Designated Critical Habitat units.

The FS should verify that the FS' GIS files posted on the Project Website for Designated Critical Habitat are identical to the 2012 Critical Habitat Rule maps as modified by the 2021 Rule, which show the Designated Critical Habitat units, both as to coverage and as to scale and detail. The DEIS/SEIS should include that verification.

The GIS overlay maps requested will only be meaningful if they are compiled utilizing the Unit Maps for the DCHs. Those Unit Maps provide significantly more detail, showing individual unit map boundaries for each Unit in each of the three States in the NWFP Region, than the FS GIS data bases provided on the Project Website, which relatively speaking only show gross scale on a State basis rather than on a Unit basis for each and every DCH Unit.

We request that Designated Critical Habitat maps for the NSO be overlaid, via GIS procedures, onto the FS's maps of the LUAs for all 17 National Forests in the Range of the NSO.

We also request that those DCH maps for the NSO should be overlaid as two additional GIS maps, via GIS procedures, onto 1) the FS's maps of Moist Forest Stand Age and 2) onto the FS's maps of Dry Forest Stand Age, together with an overlay of the FS's LUA maps. Such a three-layer overlay will get to the issue of the impact of removing trees aged 80-120 years from Critical Habitat.

Such a GIS map overlaying the DCH Units onto the LUAs and Stand Ages of all 17 National Forests will reveal and identify which areas of LUAs under the NWFP include DCH Units. Those maps will also enable the FS to determine which DCH Units will be impacted by the proposed alternatives in the DEIS, and allow the FS to determine the impact of the proposed Alternatives on the NSO.

A determination should then be made as to whether or not "if the proposed amendment would substantially lessen protections for a specific species" as stated by the FS on page 1-7 of the DEIS. Such a determination must be included in full detail in the revised DEIS/SEIS.

Once those overlay maps are completed, the FS should disclose to the Public copies of those overlay maps, and further disclose the extent of the overlays and the extent of the impacts to designated critical habitat for the NSO.

The FS should also complete similar overlay maps for other T&E species including the MAMU, in the NWFP Region.

The Sierra Club requests that all of such GIS maps be publicly available, and be interactive maps that allow overlay selection and zoom-in.

See the last paragraph of Section III for copies of the Sierra Club's preliminary GIS maps made using the FS's GIS data found on the Project Website.

https://usfs-public.app.box.com/v/PinyonPublic/folder/294104586601.

Such disclosure must be made in a way to allow for Public Comment. In other words, an SEIS must be issued so that the Public can submit comments on this new information and analysis, for consideration prior to the issuance of a FEIS.

This newly-analyzed information is critical for determining the viability of the T&E Species under the actions proposed in the DEIS, and needs to be disclosed and discussed in an SEIS, as required per 40 CFR 1502.9 (d) (ii), as such overlay maps and analysis would constitute substantial new information not included in the DEIS:

"40 CFR 1502.9 (ii) There are substantial new circumstances or information about the significance of adverse effects that bear on the analysis."

We argue that if DCHs are included in LUAs that are subject to harvest and cutting, whether for production of timber or for restoration or for fire protection, those DCHs will be negatively impacted under the DEIS alternatives.

In addition, the Standards, Guidelines, and other plan components which would be changed as proposed in the DEIS, particularly in LSR, could lead to adverse modification of Designated Critical Habitats, and should be revised as a result of any determination of negative impacts to Designated Critical Habitats.

Furthermore, any reduction of NSO Designated Critical Habitat by any of the alternatives in the DEIS would have to be addressed in an amendment or addendum to the 2012 Critical Habitat Rule and the 2011 NSO Revised Recovery Rule.

In addition, changing the amount and locations of Designated Critical Habitat included under the NWFP will have effects beyond the NWFP, and impact various Federal Rules and monitoring that relies upon the NWFP as written in 1994.

We object to the DEIS for all of the reasons listed above and request the issuing of a Supplemental Environmental Impact Statement.

Many scientists have been involved in setting up the protections for Threatened and Endangered Species, including:

* For the NSO, both in the 1994 NWFP and including the Designated Critical Habitat in 2012 and in 2021 for the NSO, and in the establishment of a Survival Plan for the NSO in 2011.
* For all other T&E Species, including but not limited to the MAMU and certain salmon, including the designation of Critical Habitats for all other T&E Species.
* Monitoring the NSO and DCH, as well as monitoring for all other T&E Species.

The FS should establish an independent team of nationally recognized scientists to conduct the assessment of the impact of the proposed amendments to the NWFP on Designated Critical Habitat and survivability of T&E Species, and to participate in the issuance of Supplemental Environmental Impact Statement.

1. the DEIS fails the Endangered Species Act Protections and Obligations for Northern Spotted Owls, and other T&E Species, and fails NEPA Requirements:

1. The DEIS did not include proper analysis required under NEPA of the impact of the Alternatives on the NSO and other T&E Species.

The DEIS must include detailed analysis describing impacts on the NSO, and cannot merely rely on the Bio Assessments and the final Biological Evaluation not yet completed or available, as stated in the DEIS at page 3-51, page 3-55 and at page C-1 of Appendix C:

"Effects to ESA species are being analyzed for the selected action in the Biological Assessments (BAs) and will be addressed in the final BE and summarized in the final EIS."

The DEIS fails the NEPA requirement that the Forest Service must take a 'Hard Look' at the proposed action and the environmental impacts of that proposed action. Under NEPA, agencies must take a "hard look" at the environmental consequences of their actions. Kleppe v. Sierra Club, 427 U.S. 390, 410, n.21 (1976). A "hard look" requires that the agency provide "a reasonably thorough discussion of the significant aspects of the probable environmental consequences" of a proposed action. Center for Biological Diversity v. Nat'l Highway Traffic Safety Admin., 538 F.3d 1172, 1194 (9th Cir. 2008). A "hard look" at the potential environmental consequences "should involve a discussion of adverse impacts that does not improperly minimize negative side effects." League of Wilderness Defs.-Blue Mtns. Biodiversity Proj. v. U.S. Forest Serv., 689 F.3d 1060, 1075 (9th Cir. 2012) (internal quotation marks and citations omitted).

In addition, the DEIS did not address the direct, indirect, and cumulative impacts of past, present, and reasonably foreseeable future actions on the NSO, the MAMU, and all other T&E species populations subject to take (i.e., loss and death of individuals and species populations due to significant habitat modification or degradation). The analysis of these impacts is necessary to "determine the reasonably foreseeable environmental effects of the proposed agency action" and "the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity." 42 U.S.C. [sect] 4332(C)(i), (iv). See also 36 C.F.R. [sect] 220.4(f) (discussing evaluation of cumulative effects). These impacts would result from the timber harvest of a significant acreage of Critical Habitat in both Moist Forest and Dry Forest, as specified.

Furthermore, comprehensive data was not provided for any area, let alone the entire NWFP region, resulting in failure to consider the impact of the actions proposed by the DEIS on the NSO, MAMU and other T&E Species, as well as Sensitive Species, that are dependent on Late Succession and Old Growth habitat.

The DEIS has no discussion of the impacts of eliminating nesting, roosting and foraging habitat for T&E species in the range of the NWFP due to cutting or burning. The DEIS also fails to describe how and where the associated increase in habitat fragmentation, habitat degradation and loss of available habitat due to the DEIS proposed actions will affect competition between Barred Owls and NSO. The DEIS further fails to describe the effects of the timber sales and prescribed fire on long-term survival of T&E Species in the face of climate change.

The DEIS does not even offer the possibility that untreated Critical Habitat either will exist, or will be sufficient to provide alternative habitat, for the NSO and other affected T&E Species, or even be sufficient to offset the impact of Barred Owls.

The FS needs to do the 'Hard Look' required under NEPA and address the Primary Constituent Elements (PCEs) for the NSO, and other T&E Species, as impacted by the Alternatives.

Merely stating that there will be short-term adverse effects, and long-term benefits, as stated in the DEIS at pages 3-76 and 1-7, without describing either the specific, local impact on PCEs, or duration of adverse effects contemplated, or the nature of those effects other than noise and loss of canopy cover, is insufficient.

FS cannot rely on USFWS to do the analytical work necessary under NEPA. Section 7 consultation under the ESA, and issuance of Biological Opinions, are separate from the impact analysis required under NEPA. See, e.g., WildEarth Guardians v. Bucknall, No. CV 23-10-M-DLC, 2024 WL 4711128, at *10 (D. Mont. Nov. 7, 2024) (explaining why a post-decisional "no jeopardy" determination cannot remedy absence of adequate analysis in NEPA documents because "no jeopardy" finding is not the same thing as finding of no significant impact); Makua

v. Rumsfeld, 163 F. Supp 2d 1202, 1218 (D. Hawaii 2001) ("A [Finding of No Significant Impact]

[hellip] must be based on a review of the potential for significant impact, including impact short of extinction. Clearly, there can be a significant impact on a species even if its existence is not jeopardized."); National Wildlife Federation v. Babbitt, 128 F. Supp.2d 1274, 1302 (E.D. Cal. 2000) (requiring EIS under NEPA for ESA section 10 Habitat Conservation Plan even though mitigation plan satisfied ESA where there were substantial questions about effectiveness of mitigation); Portland Audubon Society v. Lujan, 795 F. Supp. 1489, 1509 (D. Or. 1992) (rejecting action agency's request that the court "accept that its consultation with the United States Fish and Wildlife Service under the Endangered Species Act constitutes a substitute for compliance with NEPA."). Further, the scope of actions considered in the cumulative effects analysis that FWS conducts under the ESA is different than the scope required for NEPA analysis. See, e.g., Nw. Envtl. Def. Ctr. v. Nat'l Marine Fisheries Serv., 647 F. Supp 2d 1221, 1247 (D. Or. 2009) ("The ESA requires [the Service] to consider only future non-federal activities that are reasonably certain to occur within the action area[hellip]whereas NEPA requires the [action agency] to consider all past, present, and foreseeable future actions, regardless of who performs the action, that combine with the proposed action to cause an incremental environmental impact[.]").

Moreover, because the ESA does not mandate public comment in connection with the section 7 consultation process, compliance with the section 7 process does not provide the opportunity for public comment on the

analysis that NEPA requires. See, e.g., San Luis & Delta-Mendota Water Auth. v. Jewell, 747 F.3d 581, 649-50 (9th Cir. 2014) ("We cannot say that Section 7 of the ESA renders NEPA 'superfluous' when the statutes evaluate different types of environmental impacts through processes that involve varying degrees of public participation.").

Also, the DEIS should consider the effects of new wildfires, and new protocols to permit burning, which might burn alternative habitat for the NSO, and thus further decrease survivability.

Proposed timber sales and wildfire management efforts are likely to 1) result in destruction or adverse modification of some of the Designated Critical Habitat; and 2) jeopardize the continued existence of the NSO, and possibly other T&E Species.

The Hard Look must also include the critical habitat of other T&E species. Reviewing merely the issues of the NSO is not sufficient because the different critical habitats of other T&E Species are not identical; the FS must look at all DCH of T&E Species in the NWFP area.

The DEIS analysis is unsound due to the failures described above. Therefore, we request that the DEIS be completely revised so as to comply with all applicable law, rules and regulations.

Further, an SEIS should be issued which includes the information and analysis included in the BAs as well as the Biological Opinions yet to be issued by the USFWS and the National Marine Fisheries Service.

1.
1. The DEIS does not address that the NSO has not only Threatened status, but qualifies for Endangered Status under the U.S. Endangered Species Act.

FWS found in 2021 that the NSO qualifies for Endangered Status, which is not mentioned in the DEIS nor taken into consideration. With Endangered Status, there must be no take of NSO or reduction of its habitat except in extraordinary circumstances.

See the following USFW statements in the 2021 update to the 2012 Critical Habitat Rule:

* that the NSO is qualified for Endangered Species status; see page 62655 of the 2021 Rule - https://www.govinfo.gov/content/pkg/FR-2021-11-10/pdf/2021-24365.pdf:

"Second, our evaluation of the best available information on the status of the subspecies resulted in our recent finding that the northern spotted owl's status has declined such that we would be warranted in concluding that is now an "endangered" species under the Act, and not just "threatened," i.e., it is in danger of extinction

throughout all or a significant portion of its range and warrants reclassification, but that such "uplisting" is precluded by other priorities (such as work to evaluate whether to list a species not already on the list). This "warranted but precluded" finding, which was made just prior to the January Exclusions Rule, reinforces the importance of ensuring essential habitat remains across the landscape conservation network provided by the designation."

and

* that the FS has failed to amend all forest LRMPs in the region of the NWFP to require the protections of Critical Habitat in Matrix as set forth in the 2012 Critical Habitat Rule, as amended in 2021, and the 2011 Revised Recovery Plan. see page 62652 of the 2021 Amendment to the 2012 Rule:

"[hellip]the USFS has not yet revised its forest plans and applied the recommendations of the 2011 Revised Recovery Plan nor expressly taken into consideration the 2012 critical habitat designation into these plans [hellip]"

Also see Page 62652 of the 2021 Amendment to the 2012 Critical Habitat Rule:

"Additionally, recent scientific findings and our December 15, 2020, finding (and supporting species report) that the northern spotted owl warrants reclassification to endangered status emphasize the importance of maintaining habitat in light of competition with barred owls." [emphasis added]

Sierra Club requests that the DEIS be revised completely after the FS incorporates the review and analysis described above of the qualification of the NSO for Endangered Status, and issues an SEIS due to the extensive new and additional information.

We note that the FWS is not giving the NSO priority at this time to be up-listed as there are other species submitted for listing but not yet protected which would come ahead of the NSO uplisting.

In the Species Assessment And Listing Priority Assignment Form as of August 12, 2022, signed on June 20, 2023, the FWS found that the NSO has a greater than 50% chance of going extinct; however, the FWS does not believe it needs an emergency listing or even an up-listing of its Priority Number from the current listing of 3, to a listing of 2 or 1. (note, Priority Numbers range from 1-10, with 1 being the Highest, most imminent risk of extirpation). See https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs/publication/4117.pdf

Per Page 72050 of the 2012 Critical Habitat Rule:

"Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or

adversely modify critical habitat under section 7."

[hellip]

"the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency."

We object to the DEIS's failure to protect Critical Habitat of the NSO. The NSO needs continued protection and it qualifies for Endangered Species Status. The proposed changes to the Designated Critical Habitat of the NSO must not be implemented.

Following are three requests made by the United States Environmental Protection Agency Region 10, in its Comment Letter, page 6, dated January 31, 2024, responding to the December, 2023 NOI for the DEIS, for specific discussions to be included in the DEIS:

* "discuss the project's consistency with federal or state ESA; and

* Discuss mitigation measures to minimize impacts to ESA-listed and sensitive species; and
* describe the effectiveness of such measures, and indicate how they would be implemented and enforced."

The DEIS did not include any of the discussions requested by the USEPA, for any of the

ESA-listed Threatened and Endangered Species. Those discussions should be added to and included in an SEIS.

1.
1. The FS and the USFWS must not rely on the Barred Owl Removal Project for mitigation of harvest or fire and permitted destruction of DCH.

The USFWS should not approve the FS's plans in the DEIS for cut and harvest of Designated Critical Habitat, nor should the USFWS rely on the barred owl removal project (regardless of its final terms and provisions) for protection of the NSO, as justification for the FS to obviate any need to comply with Designated Critical Habitat.

Note, that the Sierra Club submitted a Public Comment on January 14, 2024, on the proposed Barred Owl Project, and, notwithstanding any reference in this NWFP DEIS Comment Letter to the proposed Barred Owl Project, the Sierra Club reserves all of its reservations and objections to the proposed Barred Owl Project. This DEIS Comment Letter is qualified by that January 24, 2024 Comment letter, as if set forth herein.

The Barred Owl project cannot substitute for the protection of Designated Critical Habitat to protect the NSO. Protection of Designated Critical Habitat is imperative for survival of the NSO. See the following:

1. the USFWS Designated Critical Habitat 2012 Rule (see: https://www.govinfo.gov/content/pkg/FR-2012-12-04/pdf/2012-28714.pdf, for Page 72051 et seq of the 2012 Critical Habitat Rule), for the Rule and Designated Critical Habitat, as amended by the 2021 Amendment discussed above in this Comment Letter; and
2. Per the 2022/2023 Species Assessment And Listing Priority Assignment Form as of August 12, 2022, signed on June 20, 2023, page 52 and 53, the FS is obligated to protect habitat as well as to conduct the barred owl project. See below from page 52 and 53 of the 2022/2023 Species Assessment:

'Given that natural resource managers cannot control climate variation, and barred owls are likely to persist and increase in the range of the northern spotted owl, integrating management strategies to reduce the impacts of barred owls on spotted owls while maintaining sufficient high-quality habitat on the landscape remains the most prudent management strategy for the conservation of this subspecies (USFWS 2011a, p. vii; Glenn et al. 2010, p. 2551). As stated in the 2011 Revised Recovery Plan, addressing the threats associated with past and current habitat loss must be conducted simultaneously with addressing the threats from barred owls.' [emphasis added]

https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs/publication/4117.pdf

Any attempt to justify logging or burning of Designated Critical Habitat by the implementation of the barred owl project is neither justified, nor permitted or contemplated under the 2022/2023 Species Assessment, the 2012 Critical Habitat Rule or even the 2011 Revised Recovery Plan.

We request that the DEIS be revised to exclude logging and burning of Designated Critical Habitat.

1.
1. Missing Pieces of Cumulative Effects Analysis

The Forest Service should include in its Cumulative Effects Analysis in the DEIS:

1. an analysis of State and private land Safe Harbor Agreements and other Habitat Conservation Agreements/Habitat Conservation Plans permitting Incidental Take of T&E Species, including Monitoring of effectiveness and Compliance with all terms thereof and set metrics to track and know when 'incidental take' allowed under a Conservation Agreement, SHA or HCP has been exceeded and what mitigation steps are required and are taken; and

1. an analysis of the impact of the information obtained from 1) above, on the viability of the T&E Species protected within the NWFP Area; and

2. an analysis of the impact of reducing habitat for MAMU and NSO, and all other T&E Species, in USNF-NWFP lands, as such reduced habitat impacts the viability of the T&E Species under the State and private land Safe Harbor Agreements and other Conservation Habitat Agreements; and
3. an analysis of the impact of incidental take of the NSO under implementation of the Barred Owl culling program, as it would impact the NSO on USNF-NWFP lands.

See Page 29 of the 2022/2023 Species Assessment and Listing Priority Assessment Form, regarding the NSO:

'There are a total of 21 current conservation plans in these states, including seven HCPs and three SHAs located in Washington, two HCPs and five SHAs in Oregon, and two HCPs and one SHA in California, with an additional SHA occurring in both Washington and Oregon.'

There are additional current conservation plans for the NSO in addition to the 21 current conservation plans referenced above. See https://ecos.fws.gov/ecp/species/1123

* HCP as used herein means Habitat Conservation Plan
* CP as used here in means Conservation Plan
* SHA as used herein means Safe Harbor Agreement

For the MAMU, see https://ecos.fws.gov/ecp/species/4467 for an additional 22 current conservation plans.

There are other conservation plans for the other T&E Species in the NWFP area. Some of those plans may include multiple species, but others are single species. All of the conservation plans for the T&E Species should be reviewed to analyze the impact on the continued existence of those species once the DEIS proposed actions go into effect, and how the continued permitted Incidental Take on the State and Private lands impacts the survival of the T&E Species.

In addition, the FS should look at BLM lands and Oregon & California Lands Act treatment, or lack thereof, protecting NSO and MAMU and other T&E species, and analyze how the NSO, MAMO and other T&E Species there would be impacted by the actions taken on the NWFP lands.

The DEIS must therefore demonstrate whether or not the Amendment to the NWFP will result in reduction of populations of T&E Species when cumulative with all permitted Incidental Takes, and whether or not this population reduction would exceed the threshold for survival of the Northern Spotted Owl.

Cumulative effects analysis should take a HARD LOOK at all state and local programs, including historical compliance, rather than 'assuming compliance' of state and local programs.

Unfortunately, the DEIS makes several assumptions regarding state and local programs: See page 3-156 of the DEIS:

"[hellip]assumptions about future management on other ownerships are based on existing and proposed or draft plans applicable to those lands, current trends, and the potential effect of existing laws, regulations, and management plans."

See also page 3-162 of the DEIS:

"Activities on non-federal and non-NFS lands that support the management and conservation of imperiled species and habitat is assumed to complement and contribute to efforts on NWFP NFS lands."

Those assumptions are not appropriate under a NEPA analysis of cumulative effects.

There has been decline in nest/roosting and foraging habitat on non-Federal lands. See page 11 of 2022/2023 Species Assessment and Listing Priority Assessment Form:

"On non-Federal lands, State regulatory mechanisms have not prevented the continued decline of nesting/roosting and foraging habitat; the amount of northern spotted owl habitat on these lands has decreased considerably over the past two decades, including in geographic areas where Federal lands are lacking."

The conclusion of the USFWS of all these issues is that the Standards and Guidelines of the 1994 NWFP should provide the context for conserving the northern spotted owl. See Page 65 of the 2022/2023 Species Assessment and Listing Priority Assessment Form:

'Forest lands in the range of the northern spotted owl should continue to be managed within the context of conserving the northern spotted owl through the standards and guidelines of the NWFP and BLM RMPs, as well as State forest practice rules, HCPs, and SHAs.'

In addition, failure to follow the conditions of Incidental Take Agreements, within the range of the NSO could contribute to failure of NSO viability under the NWFP because habitat outside of the 17 National Forests of the NWFP is complementary to the NSO within the NWFP. Thus, if the critical habitat within the NWFP is reduced, it will compound the effects of failure of Incidental Take Agreements and other actions on State monitored lands to protect Designated Critical Habitat.

Note that, when written in 2022/2023, the USFWS document was relying on the NWFP as written in 1994. Since the DEIS and proposed Alternatives are not as protective of the NSO as the 1994 NWFP, based on the statements on page 65 of the 2022/2023 Species Assessment and Listing Priority Assessment Form, the DEIS and proposed Alternatives would not meet the mandate quoted above.

Since the above analysis of the impacts of Habitat Conservation Agreements and Safe Harbor Agreements was not described in the DEIS, and may well not have been conducted, such analysis of state and private land HCPs and CPs must be conducted, and evaluated with regard to the cumulative impacts of the implementation of the actions proposed in the DEIS. The results of such analysis must be included in an SEIS.

1. The Plan fails certain Administrative Procedure Act requirements:

For all of the reasons stated above, the DEIS is arbitrary and capricious because it fails to discuss the direct, indirect, or cumulative impacts, including past, present and reasonably foreseeable future impacts of the proposed action, on the NSO, the MAMU and all other T&E Species populations, that would result from timber harvest and prescribed burning of a significant acreage of Designated Critical Habitat both on Moist Forest and on Dry Forest, as required under NEPA.

1. GIS overlay maps prepared by the Sierra Club

Below, the reader will find three (3) overlay maps of Critical Habitat and LUAs. There is an overlay map for each of Washington, Oregon and Northern California. The Sierra Club prepared these preliminary maps using only the FS's own GIS data. These preliminary overlay maps show significant overlay of Designated Critical Habitat in Matrix and LSR in each State. The Sierra Club asks the FS to respond and to identify how it will protect that DCH when the DEIS proposes significantly increasing timber cuts in both LSR and Matrix.

Legend

:- NWFP_Boundaiy_2002 NWFP Land Use

[?v'C:;1 N.SpottedOwlCritical Allocations

1'L',CJ Hab(USFS)

* Matnx
* Adaptive Management Area

* Adaptive Management Reserve
* Late Successional Reserve Areas
* Protected Areas

* Riparian Reserves

;>ilJSIERRA

CLUB

=

:- NW_FPBoundary_2002 NWFP Land Use

l7'v":,\ N.SpottedOwlCritical Allocations

Hab(USFS)

-Matrix

- Adaptive Management

Area

*
* Adaptive Management

Reserve

*
*
* Late Successional Reserve Areas

* Protected Areas

* Riparian Reserves

l1SIERRA Vi/CLUB

_::- NWFP_Boundary_2002

fQQ3l N. Spotted Owl Critical Hab (USFS)

Legend

NWFP Land Use Allocations

-Matrix

*
* Adaptive Management Area

*
* Adaptive Management

Reserve

*
* Late Successional

Reserve Areas

*
* Protected Areas
* Riparian Reserves

l1SIERRA V;ICLUB

1. INCREASED CUTTING OF TREES AND STANDS

1.
1. Key Glossary Entries for application in Section IV Forest Management as well as in Section VI Prescribed Fire:

2. the definition of Stand

The original Glossary definition in 1994 NWFP Final Supplemental EIS:

"Stand (Tree Stand) - An aggregation of trees occupying a specific area and sufficiently uniform in composition, age, arrangement, and condition so that it is distinguishable from the forest in adjoining areas. FEMAT"

The Glossary in NWFP Draft Amendment proposes the following amended definition:

"Stand - A descriptor of a land management unit consisting of a contiguous group of trees sufficiently uniform in age-class distribution, composition, and structure, and growing on a site of sufficiently uniform quality, to be a distinguishable unit."

The use of accurate terminology, including Glossary entries such as this, is crucial for any federal decision process. The use of "stand" for a group of trees can be convenient for describing forest conditions anywhere.

However, we see no valid reason why the sound, scientifically based definition for "stand" that was used in the original FEMAT report should be altered in the DEIS.

The original FEMAT definition of "stand" was developed from an ecological basis that has nothing to do with human forest management activities. The proposed new definition in the DEIS is geared toward human land management activities, where the forest landscape is divided up into age class groupings that are useful for planning for timber production and developing timber sales. Such groupings may have a very limited ecological basis and should not be used in a management system that is supposed to be based on the best available science.

For example, under the FEMAT definition, a stand might cover an area of ground with highly variable soil conditions, yet the overall "aggregation of trees" might nevertheless be considered fairly uniform, allowing the entire aggregation to be considered a "stand."

Under the DEIS's proposed definition, the soil conditions would all need to be relatively similar for such an aggregation to be considered a "stand." Thus, the FEMAT definition recognizes the

inherent variability within a natural forest, while the DEIS proposed definition is geared toward a human-centric view of the forest as a source of timber commodities that will be extracted based on growth rates, soil fertility, access, and so on[mdash]concepts suited to timber production, not to preserving ecological processes needed to sustain native vertebrate species as required by law.

We thus call into question the scientific soundness of the DEIS's approach to forest management when "stand" is used as the basis of so much of the management language proposed in the DEIS.

This new definition is much more easily geared to even-aged management, driving forest managers to look at forests from that perspective, rather than the 1994 NWFP's approach of respecting the diversity that has evolved in natural forests.

Finally, changing from the original FEMAT definition puts at risk the very ecological premises on which FEMAT and the 1994 NWFP Final Supplemental EIS were based.

The Sierra Club requests that the DEIS proposed definition change be removed, and that the original FEMAT definition of "stand" used in the 1994 NWFP be retained.

1. the definitions of Dry Forest and Moist Forest

The Glossary in the DEIS includes the following definitions:

"dry forest - Dry forests historically experienced frequent fire with fires primarily resulting in low severity effects with some medium severity fire. Dry forests are also comprised of meadows, oak woodlands, and other non-forested habitats. Seasonally dry, fire-prone forests are common east of the Cascades and in southern Oregon and northern California. They are also found embedded within the broader moist forests of the western Cascades and Coast Ranges."

"moist forest - Moist forests are found in landscape settings that receive significant precipitation and experience somewhat cooler summer temperatures than dry forests. These areas are generally very productive and typically have high levels of organic matter, which they can maintain over long periods of time. Absent influence of cultural burning, fires in these ecosystems are typically climate limited, not fuel limited. Plant series associated with moist forests include Sitka spruce, western hemlock, Pacific silver fir, mountain hemlock, subalpine fir-Engelmann spruce, lodgepole pine, coast Redwood, tanoak (in Oregon), and California red fir. Douglas-fir is a common early-seral species throughout much of the moist forests."

In comparison, the 2018 Synthesis of Science report includes these descriptions:

"The complexity of land management becomes more apparent as we consider not just a simple dichotomy of wet and dry forests, but instead a spectrum of precipitation and fire regimes as well as the importance of fine-scale heterogeneity." (Synthesis of Science p.

17; emphasis added)

"At a broad scale, forests of the NWFP area can be classified into moist forests (including the western hemlock, Sitka spruce [Picea sitchensis], coastal redwoods, Pacific silver fir [Abies amabilis], and mountain hemlock [Tsuga mertensiana] potential vegetation zones west of the crest of the Cascade Range in Oregon and Washington), and dry forests (mainly ponderosa pine [Pinus ponderosa], Douglas-fir, grand fir [A. grandis], and white fir [A. concolor] potential vegetation types) east of the Cascade Range and in southwestern Oregon and northern California (Franklin and Johnson 2012). We use this moist forest and dry forest classification to frame much of this chapter." (Synthesis of Science p. 101)

The Synthesis of Science definition is framed in terms of potential species composition of a forest, which by its nature is ultimately determined mostly by climatic conditions, soil conditions, slope, and aspect, and is not a simple "dry" or "moist" delineation on a map, which is likely to change over long periods of time with changing climate and weather patterns and changing human influence such as human fire ignitions.

Because so many parts of the DEIS, including Standards and Guidelines, are based upon the distinction between "moist" and "dry" forests, it is crucial that "moist" and "dry" are precisely and accurately defined according to a sound scientific methodology.

The Synthesis of Science attempted to do that and concluded that potential species composition is itself a sound indicator of "moist" vs. "dry" conditions, since forests evolve over centuries in response to climatic conditions (which include moist or dry conditions), among other factors.

It is inappropriate that the DEIS has diverged from the scientifically based definition of "moist" and "dry" from the Synthesis of Science.

We point to an example of where the DEIS's "moist" vs. "dry" distinction fails. Throughout substantial areas in the Washington Cascades, classic "westside"-type forests extend miles east of the Cascade Crest, due to special climatic conditions, rich lowland valley soils, or other conditions that lead to comparatively high levels of soil moisture and large quantities of organic matter on the ground. These are places such as the White River Valley, Icicle River Valley, and numerous others, where fire intervals are long, allowing the development of Douglas-fir, western hemlock, and western red cedar trees many feet in diameter. Unfortunately, the DEIS's Glossary definition of "moist" and "dry" forest does not allow for this type of distinction.

While "dry" forest types can be "embedded within the broader moist forests of the western Cascades and Coast Ranges," the Glossary definitions have no such provision for "moist" forest

types to be embedded within the broader dry forest of the eastern Cascades or southwest Oregon.

The "spectrum of precipitation and fire regimes" and "fine scale heterogeneity" emphasized in the Synthesis of Science is lost in the Glossary definitions in the DEIS.

This example shows one of the fundamental failings of the DEIS definitions and implementation. The DEIS does not identify the subtle distinctions that exist among forest ecosystems in both Dry and Moist Forests.

This failing could, for example, allow for the cutting of 150-year-old trees (the Sierra Club urges instead be limited to younger than 80 years in Dry Forests) within what are actually "moist" forests in LSRs east of the crest of the Washington Cascades, because these forests would be designated as "dry" forests simply because they are east of the crest.

"Moist" forests of very similar composition west of the crest would instead have the limitation that at most 120-year-old trees (80 years in the 1994 NWFP, and as urged by the Sierra Club to be retained instead of the proposed increase to 120 years of age) can be cut.

These "moist" vs. "dry" distinctions do not match the reality on the ground and would lead to scientifically irrational and harmful management decisions. The Sierra Club urges that the definition of Dry Forests be revised to include a parallel carveout to what was done in the definition of Moist Forests. We propose the following addition to be added to the definition of Dry Forests:

"Moist Forests are also found embedded within the broader Dry Forests of the eastern Cascades Ranges and southwestern Oregon, and shall be treated with the protections of Moist Forests even though embedded within Dry Forests."

1.
1. Change from 80 to 120 years of age in Moist LSR;

As a result of increasing the age up to 120 years at which trees can be cut in Moist LSR, 824,000 acres would be removed from protection in Moist LSR per the DEIS, see page 3-26, Table 3.3.

Even though such acreage would remain within LSR, the removal of 824,000 acres from protection results in the loss of a huge acreage of conservation and transition habitat and future potential for all species dependent on LSOG habitat.

Sierra Club objects to increasing the age to 120 years of age for permitted cuts in Moist LSRs. There was no ecological justification provided in the DEIS for such an increase. For the following reasons, the Sierra Club requests that the 1994 Standards and Guidelines ("S&G") not be revised, and that the 80-year threshold be retained.

1. First, even the 2018 Synthesis of Science, the Forest Service's own document, raises significant questions as to the appropriateness of "treating" trees over 80 years of age in moist forests. See Page 188 of the 2018 Synthesis of Science:

"Depending on the structure and composition of stands, and landscape context and objectives, restoration treatments in forests over 80 years could promote old-growth characteristics or reduce them (e.g., reduce number of large dead trees). However, in general, and given a lack of new information, treatments of stands over 80 years in moist forests would still be expected to have less benefit for reaching old-growth structure than restoration in stands under 80."

1. Second, the literature from the 1990s includes many scientific articles and treatises which utilize the 80-year threshold as the appropriate indicator of the change of the life stage of trees to Mature trees, at which stage trees in Moist LSRs need to be protected. By way of examples, see the following:

1. 1993 FEMAT (Forest Ecosystem Management Assessment Team), see sample pages and language copied below:

page II-19

'Late-successional forests -stands in mature (80+ years) and old-growth seral stages -compose a large percentage of this total.'

Page III-21

West of the Cascades there is no entry allowed in stands older than 80 years of age. page IV-22

'Late-successional forests include mature forest stands greater than 80 years old,

stands of mixed age (mature and old-growth forests), and old-growth forests.'

Page IV-39

'In this process our working definition of late-successional, including old-growth forests included all forests in which the dominant overstory trees were at least 80 years old.'

Page IV-53

'In Washington and Oregon, the abundance and distribution of late successional forests (forests older than 80 years) were estimated from digital maps derived from satellite imagery classified by Pacific Meridian Resources

under contract with the Forest Service.'

Page IV-109

'Riparian stands older than 80 years should not be thinned or harvested.'

ii) the FSEIS to the 1994 NWFP
page F-12:

'As described in Appendix B2, Ecological Principles for Management of

Late-Successional Forest 80 years is the age when many forest stands begin to develop late-successional characteristics, such as the formation of heavy limbs and an accumulation of coarse woody debris on the forest floor. An 80-year-old stand is not defined as old-growth forest.'

iii) the 1994 S&G
Page C-12:

'West of the Cascades - There is no harvest allowed in stands over 80 years old (110 years in the Northern Coast Adaptive Management Area). Thinning (precommercial and commercial) may occur in stands up to 80 years old regardless of the origin of the stands (e.g., plantations planted after logging or stands naturally regenerated after fire or blowdown)'

iv) the 80 year ---OGSI and the 20- and 25-year Monitoring Reports:

(NORTHWEST FOREST PLAN The First 20 Years (1994-2013) Status and Trends of Late-Successional and Old-Growth Forests General Technical Report PNW-GTR-911 December 2015); and

(NORTHWEST FOREST PLAN The First 25 Years (1994-2018) Status and Trends of

Late-Successional and Old-Growth Forests General Technical Report PNW-GTR-1004 |

September 2022)
Preface to the 25-year Monitoring Report:
'Monitoring is conducted in 1- to 5-year intervals, and results are documented in a series of technical reports. This report, and the others in the current series, covers the first 25 years of the NWFP'.
Page 6 of the 25-year Monitoring Report:
"The first threshold we chose was based on a stand age of [ge]80 years for all forest vegetation zones with the exception of the ponderosa pine zone, which was [ge]120 years owing to the shape of the OGSI curve being flat until the stand age was >80 years. We called this threshold "OGSI 80" and used it to describe the point on the forest succession time scale at which young forests in the NWFP area generally begin to "mature" and

start exhibiting stand structure associated with older forests (FEMAT 1993, Franklin and Johnson 2013, USDA FS and USDI BLM 1994)."

Dozens of scientists researched, drafted and worked on these documents, and have used them, and their definitions, for many years. These are peer-reviewed documents that stand the test of time. Certainly, if there had been any scientific disagreement about the use of 80 years as the threshold at which LSRs should be protected, such scientific disagreement would have been well documented before the Forest Service proposal in this DEIS lifting the age of protection from 80 years to 120 years. There is no scientific justification for such a change.
3) The DEIS has not provided any ecological justification for increasing the age from 80 to 120 as the threshold for permitted cutting in Moist LSR.
Please see Page 2-16 of the DEIS, Table 2.1 for the Forest Service's explanation, which does not include any scientific justification, which is copied below [emphasis added]:

Forest Stewardship - Late Successional Reserves, Moist Guideline for treatments in stands less than 120 years old

Changes authorization for forest management activities in stands less than 80 years old to 120 years old to account for 30 years of time passage since the 1994 NWFP decision. Applies to all moist forest stands, including those east of the Cascades. Expands type of treatments from thinning in Alternative A to forest management activities and adds purposes for management activities from the FAC.

The explanation above on page 2-16 to increase to 120 years of age, from 80 years of age, of LSR trees available for harvest, i.e. aging out of trees, was not the intent of 1994 NWFP. The statement turns on an irrational and arbitrary and capricious characterization of the 1994 NWFP and does not reflect the best available scientific information.

Further, see Page 3-26 of the DEIS [emphasis added]:

'Under Alternatives B and D for young moist forests in LSRs, stand age where forest management treatments can occur would be raised from 80 to 120 years old to extendopportunities to restore late-successional forest conditionsin LSRs to meet the intent of the 1994 NWFP and purpose and need of the amendment.

The assertion above on page 3-26, that raising the treatment age from 80 to 120 years old would extend

'opportunities to restore late-successional forest conditions', does not meet the Intent of the 1994 NWFP. Raising the treatment age serves only promoting economic development, and does not provide for the protection of late succession dependent species, as explained further in the discussion below.
4) General Discussion
It has been said that the 80-year threshold was 'arbitrary'. However, in view of the extensive literature supporting the use of an 80-year threshold, there is no validity for such a statement. The literature cited above certainly was reviewed by peers, and independent scientists.

Cutting down 80-120-year-old trees, which are already late successional forests, requires new trees to be started or planted in the cut which over time will become new 80-year-old trees. Cutting down the original 80-120-year-old trees does not create 'opportunities to restore' late-successional forest conditions but merely delays for 80 years the next mature forest transition to Mature and Old Growth.

Given the focus of the DEIS, likely there would be future cuts which would also cut down the 'new' 80-120-year-old trees, perpetuating the cycle. Late-successional forest conditions would never be restored in this scenario. It is simply impossible, and the Forest Service's statement belies the truth. The Forest Service is setting up a perpetual harvest in LSR which will never restore the 80-120-year-old trees and stands, and never provide for transition to Mature and Old Growth.

The only possibility to encourage such a transition is to conduct very limited hand thinning of openings no larger than 5 acres size, to open up the stands and permit more light to reach remaining trees to encourage more growth; however, that possibility is not a required silviculture protocol in the DEIS for the 80-120-year-old stands and trees.

As an aside, changing from 80 to 120-year threshold will render the results of the 25 Year monitoring report and other scientific literature which relied upon the 80-year threshold meaningless as those reports do not address consequences of reducing mature habitat which is known to be valuable for Critical Habitat, dispersal and transitioning and for prey habitat, for T&E Species dependent on Late Successional Old Growth habitat, and LSRs. As a result, much of the scientific literature relied upon by the FS for the DEIS as well as other purposes could no

longer be relied upon for management.

Note that the Northern Spotted Owl uses trees that have passed the 80 years of age threshold for foraging, and the Marbled Murrelet uses those trees that have passed the 80 years of age threshold for dispersal. Loss of those trees will impact the survivability of each of those species, as well as other species dependent on late succession and old growth ecosystems.

Cutting those 824,000 acres, and removing them from protection against cutting, would also impact water quality and quantity of creeks, streams, rivers and watersheds within and adjacent to those 824,000 acres. That would have down-stream impacts on aquatic life as well as human communities which utilize those water sources.

Cutting those 824,000 acres, and removing them from protection against cutting, would have an impact on bank stabilization and water filtration. Those trees which are cut could have helped minimize scouring of waterways, loss of nutrients, protection of spawning habitats, tree canopy cover for species dependent on such cover, salmon and other fish conservation, and other ecosystem services such as carbon sequestration.

The DEIS should instead continue the focus of the 1994 NWFP to Steward and Enhance Old Growth ecosystems, including Mature Trees and Stands, rather than providing merely the insufficient protections set out in the DEIS.

Note, although the FS stated in its Webinar on Dec 5, 2024 that the 1994 NWFP had a range for age of starting maturity, the 1994 S&G did not state, as mentioned by the FS, that the mature stage starts between 80 and 140 years; instead, the 1994 S&G spoke of a duration of the mature state. Per the 1994 S&G, the duration of Stage 3 was about 60 or 70 years. The 1994 S&G stated at page B-3:

'Stage 3 starts about 80 years and lasts until about 140 years, and Stage 4 starts about 150, for Doug Firs on the Western side of the Cascades, the dry side was left to discretion in conformance with S&G for LSRs.'

The 1994 S&G did not utilize a range of Stage start dates for specific tree types, although the above statement references Doug Firs on the West side.

5) Sierra Club Requests

As reflected in the DEIS, and the Appendices, specifically in Appendix B, at Page B-20

ID 47; page C-12, the Forest Service is proposing a 50% increase in the LSR age of permitted cuts on Moist Forests.

For the reasons explained here, the Forest Service must retain the 80 years of age limit to cutting of trees in Moist LSR.

1.
1. In addition to increasing the permitted cut age to 120 years of age in Moist LSR, to which the Sierra Club objects, the Forest Service is proposing to permit additional expansionof cutting in LSR for forest management activities to maintain or restore habitat for speciesthat depend on younger stands. Younger stands would include early seral habitats.

(FORSTW-LSR-MOI-GDL-01-B) provides, on page DEIS 2-16, that forest management activities of LSRs would now be permitted, as one alternative, to focus on young stands rather than only on late succession. On page DEIS 2-16, one of the three alternatives for LSRs is:

"(b) maintain or restore habitat for other species that depend upon younger stands"

This is a significant change. The focus of LSRs should only be on late successional and old growth forests, as provided under the 1994 NWFP. If LSRs allow an additional focus on young stands, that will open the door to regeneration harvest or other intensive harvest, which would defeat the purpose of LSRs to encourage late succession and old growth species.

As a result of this proposed change, in LSR Moist forest, anything under 120 years old would be open to forest management activities for early seral habitat, which generally includes regeneration harvest, AKA clearcutting. See also DEIS Page 3-77.

The Sierra Club strongly objects to this proposed change. FS must not proceed with any amendment that includes that proposed change.

D. Dry Forests

On the Dry Forest, the Forest Service is proposing thresholds of 150 or 175 years of age for protections, depending on Alternative. The thresholds on the Dry Forest, which the Forest Service states will be protected as Old Growth, does not provide for any protection of Mature Forest on the Dry Forest.

Given how difficult it is for any tree or stand to grow on the Dry Forest due to drought, insects, disease, fire and timber harvests, the Forest Service must provide protection for Mature Trees and Stands on the Dry Forest, as well as for Old Growth on the Dry Forest.

In addition, the Forest Service must set a threshold of 80 years of age for protection of both Mature Trees and Old Growth trees and stands in Dry Forests.

1.

1. Revise Definitions in Appendix F, Glossary

Appendix F, Glossary must be amended for the following definitions: First definition requested to be changed:

"mature forest stands in moist forests- In NWFP Late-Successional Reserves, mature forest stands are greater than 120 years old. For NWFP Matrix land use allocations, it refers to forest stands that originated between 1825 and 1905 with structural characteristics associated with mature forests."

Consistent with the concerns identified in this comment letter, as laid out in detail in this Section IV, Increased Cutting of Trees and Stands, the Sierra Club requests the following:

1. FS must retain the 80-year threshold in Moist LSRs as reflective of the transition age of forest stands which cannot be cut, the Sierra Club requests that the phrase '120 years' be deleted from the above definition of "mature forest stands in moist forests" and replaced with the phrase '80 years'; and
2. FS must provide definitions that ensure protection of trees in Moist Matrix that are over 80 years of age, as well as trees in Moist LSRs that are over 80 years of age.

Second definition requested to be changed:

"old-growth forest stands in dry forests- In dry, fire-frequent forests, old growth is characterized by large, old fire-resistant trees and relatively open stands without canopy layering."

The above definition of "old-growth forest stands in dry forests" must be revised to include an age threshold instead of a focus on size. In the dry forests the droughts, insects, disease and fire make it extremely difficult for trees to reach a large size. Size is not appropriate as an indicator of old-growth in dry forests. Instead, the Sierra Club requests the following:

1. that the phrase 'over 80 years of age' be used, consistent with the Sierra Club's earlier requests regarding the use of the 80 year of age threshold for all Moist and Dry Forests; and
2. that aging be conducted on a tree by tree basis, by doing mandated field verification and reporting, using the then-current best practices and industry standard methods of aging trees.

There was no analysis in the DEIS of the harsh environment of the Dry Forest, and that the reality is that it takes longer for a tree to become a large old tree where there is drought, disease, insects and fire. For that matter, in dry forests, an old tree may well have a smaller diameter of a similarly aged tree in moist forest. Size is not the appropriate metric for age determination in the Dry Forest.
F. Inconsistency in Tables for Change in threshold ages of Old Growth, as differentiated per LUA; and undermining the stated protection of Old Growth:

See also Section VII Forest Management of this Comment Letter for additional issues with included exceptions or qualifications that effectively undermine the stated protection of Old Growth trees, and their limited protection under the DEIS, as well as a requested correction to a Standard proposed in the DEIS relating to Old Growth.

See DEIS, table 3-2, on page 3-25; and DEIS, table 2-1, on page 2-18, 2-17 re LSOG age changes.

There is an inconsistency between Table 3-2 page 3-25 (150 years threshold limited to Dry LSR) versus the Table on page 2-18 which indicates that the 150 years of age protection threshold applies to all LUAs:

See (FORSTW-ALL-DRY-STD-01-B): "Adds constraint on harvest of trees older than 150 years with limited exceptions. This applies to all land use allocations including Matrix and LSRs."

The Sierra Club also objects to there being an unprotected age range in Dry Matrix, dry LSR and Dry LUAs for trees between 150 years of age at any time, and trees existing prior to 1850 (i.e.

175 years of age today). There will be a group of trees that are older but not given protection.

The threshold of 150 years must be replaced with a threshold of 80 years of age, as discussed in the prior subsection above.

Second, a new protection must be provided for those trees that are in the age gap between origination in 1850 and trees that are over 80 years of age, as requested above.

It is inconsistent to have a moving target of an age of 150 years (requested to be changed to an age of 80 years) that changes annually, but does not protect those trees that fall into the gap between current 80-year-old trees and trees existing prior to 1850.

As stated previously in these Comments, all Old Growth Trees in Dry Forest should be protected, and the age threshold for protection should be trees and stands 80 years and older.

As stated above, the Sierra Club objects to increasing the cut age in Moist LSR, and urges that based on our prior discussion above that the 80-year threshold be retained.

Please revise the Table 3-2 and Table 2-1 in the DEIS, as well as similar text in the DEIS and the comparable sections in the Appendices to reflect this change in age threshold to 80 years of age in both Dry and Moist Forests.

In addition, there is no discussion at all in the DEIS on how to actually recruit new mature and old growth trees. There is no scientific analysis.

As noted at the FACA meeting in December 2024, silviculturalists focus on cutting trees rather than on growing trees. In other words, the FS would, per Jerry Franklin, have to hire professional personnel who would design both a cut and the subsequent maintenance which would result specifically in the recruitment of new mature and old growth trees.

This gets to the putative argument that after cutting 80-120-year-old trees in Moist LSR, the FS will encourage new mature and old growth, while in actuality, the FS has just cut down the next generation of Mature and Old growth.

The Forest will not recruit new mature and old growth until new trees reach the age of 80-120 years; in other words, an entire generation of trees that were being recruited to mature and old growth has been cut down and destroyed.

Given climate change, and risk to T&E Species, there is no ecological justification for the FS to allow for cut and kill of an entire generation of trees that were transitioning to Mature, and Old Growth, and the DEIS did not supply any ecological justification for such an amendment.

G. MANDATE to Cut:

See DEIS Appendices A1 and A2 which include the statements of target acres to be cut, which are stated as Mandates:

* Objective (FORSTW-MTX-MOI-OBJ), page A1-21,

* 'treat at least one tenth (65,000 to 81,000 acres per decade) of young stands (established after 1905) in moist forest Matrix'

* No targets are stated for Moist LSR, as previously discussed in this Comment Letter

* Objective (FORSTW-ALL-DRY-OBJ), page A1-22,

* 'Within 15 years of amendment approval, implement treatments that contribute to ecological resilience on at least one-third of dry forests (527,000 to 643,000 acres per decade or 790,000 to 964,000 acres per 15 years across the Northwest Forest Plan area, not including any additional acres of salvage treatments may occur, while also conserving and retaining older trees and promoting the development of future functional old-growth forest ecosystems appropriate for dry forests.'

In addition, on page 3-43 of the DEIS, the Forest Service targets 2,650,000 acres per decade:

* "Alternative B would include the following specific actions designed to increase fire resistance and ecosystem resilience within the NWFP area:

*
* [sect] Treat 150,000 additional acres per decade within community protection areas in addition to the current/historic fuels management of 2,500,000 acres, for a total of 2,650,000 acres per decade across all LUAs. Treatment would include:
* [minus] 1,750,000 acres per decade treated with wildland fire (including prescribed burns, unplanned ignitions, and cultural burning).
* [minus] 900,000 acres per decade treated by mechanical means."

For comparison, the DEIS provides that for the decade 2014 - 2023, the average annual harvest actually sold was 445 MMBF. See page 3-118 of the DEIS, Table 3-22. Mathematically, a decade at that annual average would be 4,450 MMBF.
The DEIS does not translate Board feet to targeted acreage. The DEIS does not provide Board Feet for this target, but the DEIS does provide the historical sale per year and the decade averaged for 1993-2023, and 2014-2023, all of which were historically referred to in Board Feet.

A board foot conversion is necessary for the public to understand how the historical harvest compares to the Targeted harvest as described above. The Sierra Club requests that the Forest Service provide such conversion in the DEIS, so as to compare comparable data.

There was no 'Mandate to cut' in the 1994 NWFP; and there were no acreage targets in the 1994 NWFP other than the PSQ board footage, which was not a 'mandate'. The language in the DEIS appears to drive a significant program to cut trees, without qualifications for consideration of ecological justification for any such cut.

Another way of looking at the DEIS' focus on maximizing the cut is the description of the 'Targeted Volume to Cut'. See Table 3-27 of the DEIS, at page 3-148. Without explanation as to how the volumes were calculated, the DEIS proposes the following Volume (sold?produced?) for Alternative B:

*
* Low 590MM Board Feet annually, versus
* High 1,350MM Board Feet annually,

The DEIS provides that for the decade 2014 - 2023, the average annual harvest actually sold was 445 MMBF; see page 3-118 of the DEIS, Table 3-22.

The DEIS provides the following as to how volume estimates were calculated:

"Estimates of acres that would be treated by action alternative (Alternatives B, C, and D) and the corresponding volume estimates are influenced by a variety of factors as discussed in Section 3.3.2.2 and, as a result, estimates are provided for these alternatives as a range from low to high volumes in each case (Table 3-27)." Page 3-149

Section 3.3.2.2, at page 3-32 and 3-33, provides the following with regard to the 'variety of factors' mentioned in the prior paragraph:

'The timber volume sold and timber harvest objectives included in the action alternatives are designed to reflect the treatment intensity of dense stands to improve stand structure and resilience to insects, disease, and wildfire. It is important to note the objective estimates, much like the NWFP PSQ volume, are influenced by factors within agency control as well as those outside of agency control.'

However, the referenced Section 3.3.2.2 does not provide any information as to the variety of factors utilized in calculating the proposed timber volume sold and timber harvest objectives.

The public is entitled to transparency regarding the methods for calculation of volumes and harvest objectives, and full disclosure would be appropriate under NEPA.

The High annual volume in the DEIS Table 3-27 is more than three (3) times the most recent annual volume sold/produced in 2023, and the average annual volume for the decade

2014-2023.

The significant questions as to whether or not such a tripling of volume sold can be attained, let alone which forests are targeted, let alone how such forests will look after such extensive harvest, let alone the impact of such harvests on Critical Habitat of T&E Species, are results of the failure to disclose how that volume was calculated.

The Sierra Club requests that the DEIS be revised to:

1. fully disclose not only the formula by which the volumes were calculated, but also
2. Fully disclose which forests are targeted
3. Fully disclose which portions of each forest are targeted, including LUAs, and whether dry or moist forest.

The Sierra Club also requests that the DEIS be revised to describe in detail how such forests will visually look after such extensive harvest, and also describe in detail the impact of such harvests on Critical Habitat of T&E Species and their Primary Constituent Elements.

In addition to the above discussion which specifically lists targets for Matrix, see DEIS Page 3-36 for clarification regarding lack of targeted volume to cut objective for acres treated for other LUAs:

*
* "Moist forest LSRs, AMAs, and RRs do not have a specific objective for acres treated under this amendment, unlike moist Matrix, which does have an objective for acres treated, and varies between the proposed action alternatives."

*
* "However, it is anticipated that forest stewardship in moist forest LSRs, AMAs, and RRs will continue as described by the 1994 NWFP and by the proposed guidance under the amendment. Young forest treatment acres within moist forest LSRs, AMAs, and RRs are expected to be proportional to the objective treatment acres proposed for moist Matrix, under each action alternative.
* This is based on an average percent of those LUAs currently being treated, as compared to Matrix lands."

Therefore, there will be additional acreage per decade cut under the DEIS for other LUAs, above the acreage listed above for Matrix.

In addition to the discussions above regarding Matrix, LSRs, AMAs and RR, note that there is a specific objective for acres treated under Salvage Harvest:

Page 3-33 DEIS; see all Appendix A1-31 for ECON-SUST-OBJ-01:

'The action alternatives include additional salvage treatment acres and volume that are included in the ECON-SUST-OBJ-01 ranging from 25,000 acres and 170 MMBF/decade under Alternative C to 33,000 acres and 223 MMBF/decade under Alternative B, and 34,000 acres and 229 MMBF/decade under Alternative D.'

Therefore, there would be further additional acreage per decade cut under the DEIS in addition to the acreage listed above for Matrix, plus the unknown acreage cut under LSRs, AMAs and RR.

Thus, the acreage and Board Feet cut and produced would exceed the total target acres listed in the DEIS.

The DEIS must include a new table, to be included in an SEIS as this will be new additional information which is more comprehensive than had been included in the DEIS, which includes all projected data for harvest, all in the same format and data presentation.

The DEIS, as currently written and published, has that data appear in several separate places in different formats and data presentations. Only when the public can accurately compare data to data will the public have received full disclosure as required under NEPA.

We note also the following paragraph located at the bottom of DEIS page 3-36:

* 'Forest management objectives in Alternative B are the greatest for dry forests in both LSR and Matrix, while

Alternative D has the highest harvest objective for moist forests in Matrix (Table 3-7).'

The Sierra Club demands that the proposed acreage to be cut per year and per decade under the DEIS not exceed the annual and decadal acreage sold during the decade 2014-2023, per Table 3-22 at page 3-118 of the DEIS. Elsewhere in this Comment Letter, the Sierra Club makes recommendations for reducing the cut in Riparian Reserves, and for reducing Salvage Harvest.

In addition to the issues with the significant increase in acreage proposed to be cut, there is the vast scale of impact to the Aquatic Conservation Strategy and Riparian Reserves by both the Mandate to Cut, and the targeted Board Feet per acre to be cut. There would be a huge impact to aquatic species, due to significant increase in road systems needed for the vast increase in acres cut per decade as well as increased usage of existing roads. Road systems, both newly built and existing roads, would contribute to erosion and thus contribute to increased sediment in streams and rivers, and wetlands and water systems, impacting aquatic species and water quality for all species including humans. The DEIS failed to address these impacts in any of the Alternatives.

The DEIS also did not address the direct impacts of the increase in acreage of forests cut which would result in runoff and erosion, and thus contribute to sedimentation of streams and rivers.

The DEIS must evaluate and address all of these adverse cumulative impacts on the Aquatic Conservation Strategy and the Riparian Reserves, and streams and rivers, and wetlands and water systems, and that a Supplemental Environmental Impact Statement be issued including such evaluation and analysis, and describe in full the cumulative impacts.

As an additional point of concern, we note the following:

DEIS, Page 3-37
'Additional modeling of tree age and impacts of alternative implementation is being conducted to provide more detail of potential effects and will be available in the FinalEIS.'

The Sierra Club firmly emphasizes that we need to review and provide comments on that additional modeling described above prior to issuance of the FEIS.

The Sierra Club strongly urges that the Forest Service should issue an SEIS since the modeling will provide new, additional information, thus requiring an SEIS.
H. Limitation on Dry Forests to protect only INDIVIDUAL TREES rather than STANDS as is the case in Moist Forests.

No ecological justification was included in the DEIS for this change in focus merely on protecting individual trees

rather than stands for Dry Forests, and no public safety justification was included in the DEIS for this change in focus for Dry Forests.

The Sierra Club strongly demands that on Dry Forests stands be protected, as well as individual trees, under the age protections discussed elsewhere.

It is well known that stands provide more benefit to ecosystems and habitat than single isolated individual trees. In addition, individual trees are significantly more vulnerable to windthrow, thus defeating the stated purpose of replacing ecosystems that have been cut down. The DEIS and the Appendices must be revised to protect tree stands, as well as individual trees, in Dry Forests.
I. Limitation on Matrix to NOT have younger stands and trees AGE OUT; therefore, the Forest Service is not providing any potential for creating and recruiting future Mature and Old Growth trees in Matrix

This change precludes the recruitment of future Critical Habitat for NSO, or other T&E Species that future critical habitat would have provided dispersal and foraging habitat, as well as such habitat for other species dependent on LSOG ecology, within Matrix. Such future Critical Habitat might well provide connectivity to the Old Growth habitat being protected in Matrix, which Critical Habitat within Old Growth habitat would be for nesting as well as foraging. See the following from the DEIS:

Appendix A-1 page 19, FN 1:

'The use of a stand origin date to limit harvest instead of the age of stands at any time is designed to allow today's young forest found across Matrix and Adaptive Management Areas to remain available for timber harvest.'

Use of year the stand was established, rather than age of trees, in Matrix results over time in the possibility that individual trees or stands which were not cut soon after implementation of the DEIS could, during the next cycle of timber cut, have aged into mature and old growth trees that could that could then nevertheless be cut even though they should have been protected.

Age of trees must be reinstated as the method of determining availability for harvest.

J. The Sierra Club requests that the DEIS be revised so that so-called Plantation stands (which were planted by the Forest Service after previous harvest) be harvested prior to any harvest of naturally generated stands (which grew after natural disturbances such as windstorms or wildfire). Preferentially, the Sierra Club contends that the naturally generated stands would mature and age out as originally anticipated in the 1994 NWFP.

While the Forest Service has not provided a strict definition of the term "plantation" in this DEIS, the Sierra Club understands the meaning of "plantation" to be as follows, in any use of this term in these comments: A plantation is an area of NFS (National Forest System) land that has been subject to past timber harvest, includes stands 80

years old or less, and have been replanted with the intention of subsequent harvest to be performed at a future time. NFS

lands that have been subject to past disturbance (fire, blow down, etc) and have naturally regenerated are not plantations. No other areas that are managed by the Forest Service, whether replanted or not, are considered plantations.

There is a need to protect the naturally regenerated stands and trees, to encourage transition to Mature stands and trees, and to protect Mature and Old Growth trees and stands that are existing in the naturally regenerated stands. Naturally regenerated stands and trees are likely to have old-growth components like large trees, snags, and down wood.

The Forest Service has maps, at least those prepared by Jan Henderson, former US Forest Service Employee, which do show stand ages even if not derivation of stand. However, the Forest Service certainly also has records of plantings of plantations, in both LSRs and Matrix, since the Forest Service contracted for such plantings. Thus, the Forest Service can in fact determine stand ages based on its own records.

Therefore, the Forest Service can determine, by excluding stand age data where there were plantings of plantations, where natural regeneration following natural disturbances has occurred. These naturally regenerated stands are sources of carbon storage, water retention, and habitat for LSOG species.

The FS must provide for the protection from harvest for all naturally regenerated stands and trees in the 80 and over years of age portions of both Matrix and LSRs.

K. Historic Range of Variation

The Glossary to the DEIS, Appendix F, has the following definition:

'historic range of variation- Similar to the natural range of variation, but with an emphasis on the range of variation in an historical period. In the Northwest this period has been described as the 400 years prior to the beginning of Euro-American settlement. A future range of variation, reflecting climate change effects, is also under research, but methods are not yet commonly agreed on.'

The DEIS discusses the historic range of variation in the context of dry forests. See page 3-29, and see below:

"Dry forests would be anticipated to become more open and reflective of historic range of variation, with fewer dense, multi-canopy stands. It is anticipated that treated dry forest stands would be more heterogeneous and

reflective of conditions prior to fire exclusion activities and thus more resilient of more frequent fires. These stand conditions would result in loss of dense canopy stands and habitat for associated species, but would be more reflective of historical natural conditions, enhancing sustainability (Spies et al. 2018)."

There are no other references to "Historic Range of Variation" in the DEIS other than in the context of an argument for permitting cutting and prescribed fire in the range of the NSO; however, that argument is not supported in the DEIS as there is no discussion of what the habitat was prior to when fire was suppressed, as well as whether or not there were populations of NSO on the dry forests when fire was naturally occurring in the dry forests and not suppressed. It may well be that the NSO developed a population in the dry forests once dense multi-canopy stands developed and thrived without fire. Prior to fire suppression, it may well be that there were open areas where natural fire occurred, but also large areas of dense, multi-canopy stands which would have provided habitat for NSO and other LSOG dependent species.

With climate change and droughts, it may be that where there is prescribed fire and timber cuts, the forests will be too dry to regenerate to their historic or even to their current status. Anecdotally, we are seeing even on the west side of the Cascades that when there is drought as in recent years, younger, 12" or so DBH diameter trees fail and die in the drought, but the 24" dbh trees withstand the droughts with their deeper roots and thicker bark, merely dropping some branches in protective self-pruning, and appear to thrive for another year.

It seems that the principle of Historic Range of Variation is being put forth by the FS as justification for burning and cutting, but without any context of multi-decade historical background prior to suppression of fire.

We need more historical information to determine whether or not the NSO would have historically existed in the Dry forests, and whether or not it would thrive in the openness that the Forest Service anticipates from its proposed timber treatment and prescribed fire treatment of the Dry forests.

The Sierra Club requests that the Forest Service obtain and provide such information, and issue a Supplemental Environmental Impact Statement with that information.

The goal of "restoration" of the forest is clouded by what that term can mean. Often, the FS uses the term to drive management practices that attempt to return the vegetative composition of the landscape to the perceived composition it had around the year 1900. We do not believe this will achieve the greatest benefits to the forest. The goal of forest management, rather, should be the restoration of fully functioning ecological processes within the context of the changed landscape conditions. These changed conditions include new climatic conditions, greater fragmentation by human development, and greater resource extraction activities. The FS must look to future conditions, not historic conditions.

The DEIS's characterization of the goal of the NWFP as managing toward forests that are "reflective of historic range of variability" (p. 3-29) does not demonstrate the use of the best available science, which shows how

climate is driving changes to forest vegetation and how to best manage for future conditions. The guideline for focusing dry forest treatments on

vegetation "departed from historical conditions" (p. A1-22) uses an improper criteria for such efforts.

The FS must, instead of looking back, look forward to protect large and old trees, and allow ecosystems to unfold that will dominate the conditions we will see in the next 100 years. Using passive management and letting natural processes adapt the biota to the changing conditions is the most appropriate approach to achieve this.

The use of HRV for FS management decisions was first promoted in the 1990's. In 2009, Keane et al. 29 pointed out weaknesses and pitfalls in using HRV while still holding it as a possible aid, with limitations. The authors state (p. 1034):

"To use HRV in an operational context, it must be assumed that

the record of historical conditions more or less reflects the range of possible conditions for future landscapes; an assumption that we now know is overly simplistic because of documented climate change, exotic introductions, and human land use."

And (p. 1035):

"If expected biotic responses to climate change come true, tomorrow's landscapes will be so altered by human actions that current management philosophies and policies of managing for healthy ecosystems, wilderness conditions, or historical analogs will no longer be feasible because these objectives will be impossible to achieve in the future."

HRV as a management goal also fails to address the forest ecosystem processes that are all important to forest resilience. Resilience is highly dependent upon biodiversity and the interactions of a multitude of plants and animals. Other natural processes to consider are natural plant succession and the interactions of flora and fauna, as influenced by the geologic conditions of each site and microsite. Accurate management and control of nature is unlikely. Anthropogenic climate change has resulted in a different range of future possibilities relative to the past. The historic range of variability may be a useful point of reference, but it is an unattainable goal today. We suggest that the agency needs to tolerate more dense stands, as occurs in natural plant succession, while allowing for enough variability so that disturbances are limited by discontinuities on the landscape. The post-disturbance landscapes must be allowed to recover their complexity.

29 Keane, Robert E., Paul F. Hessburg, Peter B. Landres, Fred J. Swanson. The use of historical range and variability (HRV) in landscape management. Forest Ecology and Management, j.foreco.2009.05.035, May 2009. https://www.fs.usda.gov/research/treesearch/33776

Many published papers and analyses have concluded that global warming warrants new approaches to ecosystem restoration. (For example, Science News 30.) Even a researcher frequently used and supported by the Forest Service has made the use of HRV a conditional, limited tool (Johnston, et al.31, pp. 9-10):

"Our thinning simulations are designed to inform managers about the effects of thinning at very broad spatial scales. Individual silvicultural prescriptions that consider site specific conditions and other management objectives will be necessary to meet

stand-scale restoration objectives."

It is also true that forests have changed given ongoing management practices of large diameter timber (high grading) harvest, extensive roading, and intense livestock grazing. Species composition in the ecosystem have also changed with, for example, the extirpation of large predators and new invasive plant species. The FS should drop arguments that a restoration of tree species to HRV composition also restores a resilient forest. If HRV is to be used to return forests to their historic levels of tree composition, levels of human intrusion must also be reversed to historic levels, including reducing road density and other disturbances and modifications (grazing, harvesting), if this is to be an honest goal for management.

This article in Science News also describes the need for modeling the future range of variability, "Global Warming May Warrant New Approaches To Ecosystem Restoration."32

And:

"Restoration targets should not be informed strictly by historical conditions because of changing climate, different land use practices, spread of invasive species, and other considerations (Keane et al. 2009, Kerns et al. 2020). However, future climatic conditions in eastern Oregon are projected to be even less conducive to extensive shade-tolerant tree cover than the historical past (Kerns et al. 2018). Global climate models predict a hotter and drier summer climate in eastern Oregon which is expected to lead to more extensive burned area and larger patches of high severity fire (Mote and Salathe 2010, Littell et al. 2018, Halofsky et al. 2020)." --- Johnston et al.33, p. 10.

30 Science News. 2006. "Global Warming May Warrant New Approaches To Ecosystem Restoration," June 15, 2006. https://www.sciencedaily.com/releases/2006/06/060615082745.htm.

31 Johnston, James D., Skye M. Greenler, Becky A. Miller, Matthew J. Reilly, Amanda A. Lindsay, and Christopher J. Dunn. 2021. "Diameter Limits Impede Restoration of Historical Conditions in Dry Mixed-conifer Forests of Eastern Oregon, USA." Ecosphere 12 (3). https://doi.org/10.1002/ecs2.3394.

32 Science News. 2006. "Global Warming May Warrant New Approaches To Ecosystem Restoration," June 15,

2006. https://www.sciencedaily.com/releases/2006/06/060615082745.htm.

33 Johnston, James D., Skye M. Greenler, Becky A. Miller, Matthew J. Reilly, Amanda A. Lindsay, and Christopher J. Dunn. 2021. "Diameter Limits Impede Restoration of Historical Conditions in Dry Mixed-conifer Forests of Eastern Oregon, USA." Ecosphere 12 (3). https://doi.org/10.1002/ecs2.3394.

"Our study results indicate that historical time series should be used in conjunction with simulated future time series as references for managing landscapes." --- Keane et al.34

We again note that our forests will continue to be altered by a warming planet, and the forest ecosystems will naturally adapt and change. Further human intervention and manipulation to mimic forest structures under a past climate regime[mdash]one that no longer exists and will not exist in any near future[mdash]is ill advised, and arbitrary and capricious.

34 Keane, Robert E., Lisa M. Holsinger, Russell A. Parsons, and Kathy Gray. 2008. "Climate Change Effects on Historical Range and Variability of Two Large Landscapes in Western Montana, USA." Forest Ecology and Management 254 (3): 375-89. https://doi.org/10.1016/j.foreco.2007.08.013.

V. LOSS OF HABITAT AND PROTECTION OF LISTED THREATENED AND ENDANGERED SPECIES

1.
1. Overview Comments and Lack Of Ecological Justification for Destruction OfHabitat

The existing protections under the 1994 NWFP are not 'single species' oriented35 as the species protected by the 1994 NWFP include, in addition to the Northern Spotted Owl, a long list of other protected species including the Marbled Murrelet, the Pacific Marten (recently listed), the Canada Lynx, various salmon and steelhead as well as other species. In addition, there are the species which must be monitored and protected under the Survey & Manage Requirements under the Standards & Guidelines ("S&G") of the NWFP. See the DEIS table 3 of threatened and endangered species under the DEIS tables 3.9 and 3.10 on pages 3-52 through 3-54.

The primary concern of the Sierra Club regarding threatened and endangered species, other than the issues discussed in Section III of this DEIS Comment Letter, is that the FS assure protection of Designated Critical Habitat for threatened and endangered species. The updated NWFP must protect the quantity and quality of habitat needed to meet requirements for ESA listed and non-listed old growth and late successional forest dependent species including the spotted owl, marbled murrelet, salmon and steelhead runs, and more as discussed in Section III above of this Comment Letter.

There is no ecological justification in the DEIS for loss of habitat for associated species; instead, merely an acknowledgement of short term/long term loss, noise and loss of canopy (see pages 1-7 and 3-76 of the DEIS).

There should be an independent scientific analysis of the impact of the loss of habitat for the associated species, and the Sierra Club requests such an analysis and that the analysis be issued in an SEIS.

As stated earlier in this Comment Letter, the DEIS does not discuss in any depth the impact of habitat loss, and even when it mentions noise and loss of canopy, does not analyze the impact of habitat loss on primary habitat needs for forage, dispersal, nesting and protection from predators for T&E Species. This is a failure of the Hard Look required under NEPA.

The DEIS must be revised to include this analysis directly, and not rely merely on the finalization of the Biological Evaluation and Assessments and the issuance of the USFWS Biological Opinion. NEPA requires that such analysis be included in the DEIS.

The Sierra Club requests that the DEIS require new surveys for occupied and potential nesting habitat, as well as foraging and dispersal habitat of all listed species and other habitat for

35As asserted on page 231, as Recommendation 8 (Referring to Bioregional Assessment, Chapter 2 Management Recommendations) found in Chapter 4 of the 2021 Supplemental Report to the 2020 Bioregional Assessment

foraging prior to consideration and/or adoption of any management changes from those included in the original 1994 NWFP.

The Sierra Club demands that the Forest Service must meet in the DEIS all other requirements of the ESA for the Northern Spotted Owl, the Marbled Murrelet, the Pacific Marten, the Canada Lynx as well as listed salmon and steelhead, as well as all other listed species living in the region of the NWFP.

Regarding the NSO, we also refer you back to Section III of this DEIS Comment Letter for citations noting that the NSO qualifies for up-listing to Endangered, and thus the DEIS must discuss that critical vulnerability in its analysis of impacts of the actions under the proposed Alternatives to the NSO.

Regarding the Sierra Club's particular concern with Northern Spotted Owls, the Sierra Club is extremely concerned about the likelihood of significant decrease in suitable forest cover types used by NSO, based on the terms and provisions of the DEIS. See also Section III of this Comment Letter.

1. Impact of fire, thinning and logging on Designated Critical Habitat ofNorthern Spotted Owls and other T&E Species

We refer you to the following quote from The 2018 Synthesis of Science, at Page 269:

"If the likelihood and impacts of high-severity wildfire are assumed to be high, thinning treatments are more likely to have a positive outcome for spotted owls (e.g., Roloff et al. 2012). If the likelihood of high-severity wildfire is assumed to be low, however, then thinning treatments are more likely to produce only declines in the amount of suitable forest cover types used by spotted owls."

The above analysis suggests that, where the risk of high-severity wildfire is lower, there would be a real detriment on the Dry Forest for NSO, and other similar species, for use of thinning treatments with the stated purpose of minimizing the risk of high severity wildfire.

Using a thinning treatment[mdash]as well as any other treatment[mdash]would reduce suitable forest cover types for NSO, thus reducing Critical Habitat and creating difficulties for the survival of the NSO as a species.

As requested above, the DEIS must be revised to include both:

1. an inventory of historical fires, and their severities, as broken out by specific national forests and as broken out by forest type, whether dry or moist; and

1. an inventory projecting the risk of high severity wildfire, again, as broken out by specific national forests and as broken out by forest type, whether dry or moist, and identifying which national forest, or part thereof, is likely to have a future high risk of high-severity wildfire.

The information provided by both inventories will allow us to better evaluate the challenge to Critical Habitat for NSO as well as for all other T&E Species.

Please also see the following citation regarding the impact of thinning and logging on NSO, from 9/19/24 Letter to Linda Walker, Director, Ecosystem Management Coordination, United States Forest Service, from the Sierra Club and others re the DEIS for Old Growth Forests Across the National Forest System:

Page 39

Spotted owl (northern and Mexican subspecies listed as threatened): Spotted owls need mature and old-growth forests for nesting and roosting, and, in the Pacific Northwest, for withstanding invasive barred owl population growth. When older forests are logged, including by reducing canopy levels via thinning and fuel reduction treatments, northern spotted owls are forced to compete with barred owls.240 Additionally, studies have found that any reduction in canopy cover by logging harms spotted owls by negatively impacting site occupancy,

reproduction, and survival.241 These impacts from logging can be dramatic within just a few years. Indeed, based on modeling studies, the rate of old forest loss from proposed thinning in the northern spotted owl recovery plan exceeds the anticipated loss of nesting and roosting habitat from fires over a 40-year period, even with climate change in the model.242

1.

1. Dugger, K.M. et al. "The effects of habitat, climate, and Barred Owls on long-term demography of Northern Spotted Owls." The Condor (2016) 118(1): 57-116. http://dx.doi.org/10.1650/CONDOR-15-24.1.
2. Stephens, S.L. et al. "California Spotted Owl, songbird, and small mammal responses to landscape fuel treatments." BioScience (2014) 64(10): 893-906. https://doi.org/10.1093/biosci/biu137; Tempel, D.J. et al. "Meta-analysis of California Spotted Owl (Strix occidentalis occidentalis) territory occupancy in the Sierra Nevada: Habitat associations and their implications for forest management." The Condor (2016) 118(4): 747-765. https://doi.org/10.1650/CONDOR-16-66.1.
3. Odion, D.C. et al. "Effects of fire and commercial thinning on future habitat of the Northern Spotted Owl." The Open Ecology Journal (2014) 7: 37-51. http://dx.doi.org/10.2174/1874213001407010037.

More detailed analysis of the impact of fire on the NSO and the MAMU specifically is found in Subsection C below.

2. Proposed Change to 1994 NWFP Standards and Guidelines regarding Recovery Plans for Listed Threatened and Endangered Species.

Looking at Appendix B of the DEIS, Page B-18, the Forest Service is proposing to remove existing language that protects Recovery Plans for Listed Threatened and Endangered Species. See the following:

DEIS Appendix B, Page B-18:

1994 NWFP ID 42; page C-11

Existing language in 1994 NWFP:

Exceptions - Research Natural Areas and activities required by recovery plans for listed threatened and endangered species take precedence over

Late-Successional Reserve standards and guidelines.

New Language proposed by DEIS:

Replace with: Exceptions - Research Natural Areas take precedence over Late-Successional Reserve standards and guidelines.

The Forest Service proposes removing critical ESA language protective of T&E Species, including the NSO and MAMU, and other listed threatened and endangered species.

The FS must not proceed with any amendment that includes the change shown in DEIS Appendix B. The original language found on page C-11 of the 1994 NWFP must be retained.

B. The DEIS must provide a legally sufficient analysis of the impacts of Habitat Loss on All Listed Species in the NWFP region, including but not limited to meeting both NEPA and ESA Requirements

The Sierra Club urges that the DEIS include a legally sufficient analysis of the impacts of the proposed actions, resulting in habitat loss, on all listed endangered and threatened species, as listed in the DEIS.

The ESA requirements for all listed species must be implemented in the DEIS as required by the ESA, and the DEIS must also list compliance measures with applicable State issued listings.

The Sierra Club urges that the DEIS must implement the ESA requirements.

1. Protections for T&E Fish Species

The Sierra Club urges that the DEIS must document all US F&WS listings of Threatened and Endangered fish species within the NFWP Region.

In addition, the DEIS must address the continued decline of anadromous fish within the Region. While the initial listing of anadromous fish was developed in the early 1990s in the Snake and Columbia Rivers, it was clear that salmon and steelhead were also at risk throughout their historic range, much of which overlaps with the Region addressed by the NWFP. Indeed, between 1997 and 1999 key runs of salmon and steelhead were listed, including: California Coastal Chinook, Puget Sound Chinook, Upper Willamette River Chinook, Upper Columbia River Spring Chinook, Upper Columbia River Steelhead, Northern California Coast Steelhead, Oregon Coast Coho, Southern Oregon/Northern California Coho, Ozette Lake Sockeye. However, fish stocks have continued to decline. In addition, Bull Trout were listed

throughout their range in the lower 48 states. And, just recently, on Dec. 7, 2023, a petition was filed with NOAA Fisheries to list Washington Coast Chinook.

The Aquatic Conservation Strategy (ACS) was incorporated into the 1994 NWFP to help address the significant decline in salmon and steelhead runs occurring in the Northwest and Northern California in advance of these F&WS listing of species.

Clearly the need to maintain and strengthen the ACS in order to address the ongoing challenges of endangered native fish throughout the area of the NWFP is required. The DEIS must document such strengthening of the ACS, including but not limited to the following requirements for the ACS and for habitat protection. Climate change makes this mandate even more important. The fish species continue to face the following impacts which need to be addressed to meet the requirements of ACS:

1. sedimentation from legacy roads that have not been eliminated; and
2. impacts to watersheds from logging, which contribute to warming water temperatures from loss of canopy cover, and
3. scouring of streambeds from increased precipitation including novel summer storm rain events.

The DEIS must be revised to include and implement detailed plans to eliminate the above three impacts on Listed Fish Species, and to provide for monitoring of success or lack thereof of the implemented plans in eliminating the three impacts across the NWFP Region.

In addition, however, the DEIS proposes to remove (see Appendix B, page B-93 regarding S&G D-10) the following language from the 1994 NWFP S&G, page D-10, which will significantlyimpact the Aquatic Conservation Strategy and all species which live in the watersheds, including NSOs:

"At the same time, any analysis of Riparian Reserve widths must also consider the contribution of these reserves to other, including terrestrial, species. Watershed analysis should take into account all species that were intended to be benefited by the prescribed Riparian Reserve widths.

Those species include fish, mollusks, amphibians, lichens, fungi, bryophytes, vascular plants, American marten, red tree voles, bats, marbled murrelets, and northern spotted owls. The specific issue for spotted owls is retention of adequate habitat conditions for dispersal."

The Sierra Club strongly urges that the FS must not proceed with any amendment that includes that proposed change. Instead, the original language for S&G D-10 must be retained in its entirety.

1. Reintroduction of Grizzly Bears to the North Cascades Ecosystem

Additionally, the Forest Service must consider theeffects of NWFP amendment on grizzly bear reintroduction into the North Cascades ecosystem.

If reintroduction proceeds, a small number of grizzly bears will be reintroduced over the next several years and likely initially released into the North Cascades National Park Service Complex in Washington State. Grizzly bears have a wide range and will, in time, undoubtedly move onto adjacent lands administered by the Forest Service, such as the Mount Baker-Snoqualmie National Forest.

Grizzly bears need large areas undisturbed by human activities to scavenge and hunt for food, court for mates, use as hiding cover and to establish dens. Given that the revised NWFP will be in place for decades, the DEIS must analyze potential impacts to grizzly bears as a listed species likely to be present in the foreseeable future, and implement measures to protect grizzly bears.

3. Protections Against Incidental Take

The Sierra Club requests that the DEIS include protections against any 'take', as defined in the ESA, of ESA-listed species, and also avoid take of state-listed species, in the NWFP region.

The Sierra Club urges that such a prohibition on incidental take should be included and clearly described in the DEIS not only for the northern spotted owls, but also for the marbled murrelet, the Pacific Marten and the Canada Lynx, and all other state and/or federal listed species.

C. Impact of fire, natural or prescribed, and other management activities specifically on the Spotted Owl and the Marbled Murrelet, and designated critical habitat protection.

Specifically, regarding the impacts of fire on the Northern Spotted Owl, and on the Marbled Murrelet, see the quotes below taken from the 2018 Synthesis of Science [note that bold emphasis was added by the Sierra Club]

The Sierra Club points out that although the following comments from the 2018 Synthesis of Science in sum provide substantial support for minimizing disturbance by natural fire, the results of the analysis clearly would be applicable to the impacts of prescribed fire, or other management, in critical nesting and roosting habitats for these two listed species.

Please note that the Sierra Club supports a change in FS policy regarding wildfire, and supports wildfire no longer being suppressed in the backcountry.

The Sierra Club urges that the DEIS should incorporate the following analyses from the 2018 Synthesis of Science into the FS's description and evaluation of decision making on forest management, and minimize the impact of prescribed fire on these two species, provided however, that neither prescribed fire nor salvage should be permitted in LSRs either dry or moist.

Spotted Owls:

Page 264

"Recent research on disturbance effects on spotted owls indicates that disturbances such as mixed-severity fires that generate heterogeneity at landscape and stand scales are not necessarily adverse, provided that adequate nesting and roosting structural conditions remain after the disturbance (Clark et al. 2013, Comfort et al. 2016)."

Page 267 - 268

"Most studies focused on wildfire effects evaluated the short-term response of spotted owls to wildfire, but in one of the few studies of the long-term effects of wildfire on spotted owls Rockweit et al. (2017) used 26 years of demographic data in a landscape with several wildfires and found that moderate and high burn severities negatively affected spotted owl apparent survival. They also found that burned territories functioned as ecological sinks where recruitment was high, but survival was lower than in nearby unburned territories."

"Coupling wildfire and salvage logging results in a high probability that a site becomesunoccupied after the first year postfire, especially if the core area burns at high severityand is subsequently logged (Bond 2016, Ganey et al. 2011, Lee et al. 2013)."

Page 269

"Landscape managers implementing forest restoration treatments in drier, mixed- and low-severity fire regime forests face substantial challenges in balancing the tradeoffs between known short-term forest cover impacts on spotted owls from restoration and fuel reduction treatments versus potential benefits of reducing losses of forests with larger trees from high-severity, large-scale wildfire (Hessburg et al. 2015, 2016; Lehmkuhl et al. 2015; Stine et al. 2014)."

Page 274

"Research is needed in both dry and moist forest landscapes to evaluate the short- and long-term effects of silvicultural treatments and wildfire on spotted owl occupancy, forest dynamics, and prey, but research questions differ between forest types."

Page 279

"The definition of habitat for spotted owls must now consider that forests that were once suitable for spotted owls are less suitable habitat if occupied by barred owls."
? [however, if the barred owls are culled, then the Sierra Club posits that such habitat again would be suitable, and should not be harvested or submitted to fire]
Page 280

"The optimization of forest restoration and conservation of spotted owls will require more knowledge about the conditions under which restoration activities can benefit spotted owls in the long term without significant detrimental impact in the short term."

Page 281

"Conversely, disturbances that substantially simplify stands or landscapes often have long-lasting negative impacts on spotted owls and their habitat. Finally, we emphasizethe importance of conserving sites currently occupied by spotted owls as well as thosethat are known to have been historically occupied by the subspecies."[underlining added]

The following paragraph was copied from the January 14, 2024 Comment Letter of the Sierra Club to the US Fish and Wildlife Services regarding the Barred Owl NOI and is equally applicable to this Comment Letter regarding the NWFP:
"As noted numerous times in the DEIS [the Draft Environmental Impact Strategy for the Barred Owl Management Strategy; Washington, Oregon and California], destruction of old growth forest habitat has been a leading- and, arguably, the primary - cause of the decline of the northern spotted owl. Despite attempts to address habitat destruction through development and implementation of the Northwest Forest Plan, spotted owl populations continue to be in free fall in large part due to delayed effects of habitat destruction and loss of existing suitable habitat to wildlife and other climate-related stressors. The Northwest Forest Plan amendment must address existing habitat loss by conserving all remaining mature and old growth forest throughout the spotted owl's range and through landscape level forest restoration, including corridors for connectivity, in seasonally dry forests to increase the resilience of these habitats to frequent fire events. Nesting areas for spotted owls must be protected from logging and forestry practices. Barred owls are edge area nesters, and forest fragmentation contributes to their establishment in forests."

Not only Barred Owl territorial incursions but also forest management policies, logging, wildfire, prescribed fire and disease and insects contributed to habitat loss for the Spotted Owl, both the Northern and the California varieties.

Marbled Murrelet:

Page 334

"One caution should be recognized: managing forest cover to reduce fire risk could also lead to better habitat for corvids (nest predators); silvicultural practices near suitable murrelet nesting habitat may need to be fine-tuned to ensure they do not inadvertently impair nesting success of murrelets by increasing the rate of nest depredation."

Page 337

"Because it can take many decades for murrelet nesting habitat to develop, protection of existing habitat for the next several decades will continue to be key to minimizing habitat losses, both within and outside of reserves."

That comment on page 337 clearly supports the conclusion that logging and prescribed fire in existing Marbled Murrelet habitat should be avoided.

See Page 73 of Executive Summary of the 2018 Synthesis of Science:

"Development and implementation of forest management practices that protect (short term) and develop (long term, i.e., over many decades) suitable murrelet nesting habitat on NWFP lands within the murrelet range would be beneficial in recovering murrelet populations."

Section VI PRESCRIBED FIRE AND SALVAGE

1. Necessary Required Background Information for Analysis of Need for Fire

The Sierra Club requests that the information requested below to supplement the DEIS be provided in a Supplemental Environmental Impact Statement.

The Sierra Club requests that the Forest Service must provide the following background information in an SEIS so as to determine the appropriateness of increased fire, in the NWFP region, as suggested by the DEIS:

1.
1. an inventory of fires occurring prior to 2025 so as to clearly identify where there is historical fire risk; see below for more detailed description of what such an inventory should include; and
2. because the DEIS lists significant acreage for both wildfire and prescribed fire, and has made a determination of the risk of future wildfire in specific forests justifying the acreage proposed for treatment, the DEIS should identify specific areas and specific National Forests of the NWFP Region that are subject to future wildfire risk.

The DEIS must include specific data that fully describes the areas that have burned for each ecological province. These area descriptions should be disaggregated for at least the period 1990-2024, by National Forest administrative unit and include the following information:

* geographic province,
* burn intensity and severity,
* the state of road development (whether or not there are Inventoried and uninventoried Roadless Areas; and areas that were roaded, and areas with roads that were recently closed or are designated to be closed)
* the status of infrastructure (infrastructure that burned, that was at risk of burning, and that posed ignition risks),
* whether or not there are bridges, water systems, water treatment plants, power lines, power plants, communities of over 500 people,
* the cause of each fire,
* the year the fire occurred, and
* land use allocation of the area burned.

Such an inventory together with identification of specific areas and National Forests of the NWFP Region that are subject to future wildfire risk (as the FS determined in reaching its calculations of acreage likely to be treated for preventing wildfire), is critical for making the determination of how much and where future controlled fires should occur, and of how much and where wildfire should be allowed to burn.

B. ?Any amendment must exclude Fire Treatments, of any nature, from the Congressionally Designated Areas LUAs and the Administratively Withdrawn Areas LUAs

1.
1. Fire in LUAs which are Congressionally Reserved Areas or Administratively Withdrawn Areas

The DEIS provides the following provision which sets out the Forest Service's goal to use fire in designated wilderness areas:

Page 2-6: 'Key features of the fire resilience plan direction in Alternative B include:'

. . . .

Page 2-7:

'Goal of encouraging reintroduction of fire in designated wilderness areas where wildland fire' is determined to be the minimum tool required to maintain wilderness character

Thus, when throughout the DEIS, and the DEIS Appendices A1 and A2, the Forest Service refers to proposed actions applying to All LUAs, we conclude that when those proposed actions include fire, those provisions then refer to Wilderness Areas which are part of the Congressionally Reserved Areas LUAs. However, there are three

LUAs from which Fire Treatments should be excluded:

1.
1.
1. The Congressionally Designated Area LUAs that include Wilderness Areas, and Wild and Scenic Rivers; and
2. The Administratively Withdrawn Area LUAs that include Inventoried Roadless Areas, which are protected from timber harvest and road construction, although Section 294.13 (b) (2) of the Rule would permit, per the USFWS response to comments on page 3258 of the Rule:

" fireline construction for wildland firesuppression or control of prescribed

fire".

Timber cutting only for fireline construction is permitted in the IRAs under the Rule. However, Section 294.13(b) (2) of the Rule also permits "The cutting, sale, or removal of timber [if it] is incidental to the implementation of a management activity not otherwise prohibited by this subpart."

1.
1.
1. Riparian Reserve LUAs. The Sierra Club urges that the Forest Service PROHIBIT CARVEOUTS for fire or timber harvest within RR; AND that THE RR BUFFERS SHOULD RETAIN 1994 SIZES. For further discussion, see Section E below of this SectionVI.

The statement above on page 2-7 of the DEIS must be revised to clearly state that the FS will no longer suppress wildfire in designated Wilderness Areas and that prescribed burns will not be implemented in Wilderness Areas.

ii) Fire proposed in ALL LUAS in DEIS and Appendices

In addition, throughout the DEIS and Appendices, the Forest Service uses the phrase 'All LUAs', as well as the phrase 'entire NWFP', on multiple occasions in the proposed Standards and Guidelines, Goals, Objectives, Directives, PMAs and elsewhere.

Throughout the DEIS and Appendices, the Sierra Club requests that the phrase 'All LUAs', as well as the phrase 'entire NWFP', be removed and different terms chosen to identify which LUAs the particular protocol will apply to. The Sierra Club suggests the phrase 'LUAs to be Treated' or 'Treated LUAs'.

The Sierra Club strongly believes that the Wilderness Areas, the Inventoried Roadless Areas and the Riparian Reserves must not be subject to prescribed fire, or to timber treatments or harvest. However, the Sierra Club supports not suppressing wildfire in those three areas unless deemed necessary for public safety.
Appendix A1 examples, listed by page, showing the use of the phrase 'all LUAs':

A1-9:

A1-24:

A1-25:

"Silvicultural treatments including fire are used in all LUAs, and in both moist and dry stands, to promote ecologically and culturally appropriate species such as beargrass and huckleberry."

"In this section there is plan content specifically related to community resilience to wildland fires. The PMAs provide a process for further refining the extent of the area (community protection area) to which this plan direction applies. In situations where a more comprehensive fire risk assessment does not exist, this plan direction applies in all LUAs within 1 mile of a community."

"Objectives (FIRE-ALL-OBJ)"

"01 Treat 2.65 million acres per decade employing all fuel treatments across all LUAs, including 150,000 acres per decade in the community protection areas (1-mile buffer HUD); total includes FIRE-ALL-OBJ-02-B."

Appendix A2 examples of overly inclusive phrases 'All LUAs', 'across the Northwest Forest Plan Area', by page:

A2-11:

"Forest Stewardship - All LUAs, Dry Forests"

"(FORSTW-ALL-DRY-OBJ-01-B): Within 15 years of amendment approval, implement treatments that contribute to ecological resilience on at least one-third of dry forests (527,000 to 643,000 acres per decade or 790,000 to 964,000 acres per 15 years) across the Northwest Forest Plan area, not including any additional acres of salvage treatments that may occur,[hellip]"

A2-14:

"Fire Resilience - All LUAs"

"(FIRE-ALL-OBJ-01-B): Treat 2.65 million acres per decade employing all fuel treatments across all LUAs, including 150,000 acres per decade in the community protection areas (1-mile buffer HUD); total includes FIRE-ALL-OBJ-02-B"

A2-14:

"Fire Resilience - All LUAs"

"(FIRE-ALL-OBJ-02-B): Treat 1.75 million acres per decade with wildland fire that meets resource objectives."

A2-15:

"Fire Resilience - All LUAs"

"(FIRE-ALL-PMA-B): Expand the strategic use of wildland fire to reduce undesired impacts from wildfire including fire size, intensity, and severity..... "

iii) Disapproval of fire in AWA LUAs or CRA LUAs

The Sierra Club strongly disagrees with any blanket approval of prescribed fire in either Administratively Withdrawn Areas, including Inventoried Roadless Areas, or Congressionally Reserved Areas, or any other LUA where logging is not now permitted, and urges that the DEIS not include any such approval.

The Sierra Club supports restoring the natural role of wildland fire in backcountry areas - where the bulk of Congressionally Reserved Areas in the National Forest are located - and monitoring wildland fires to ensure the safety of communities.

iv) The Sierra Club Requests only Limited Fire on the Dry Forests, so as to protect 70% of Dense Canopy for T&E Species, and all other species dependent on Dense Canopy.

In addition, the Sierra Club urges that the DEIS specify pretreatment/ladder fuel elimination, and the DEIS require that in such pretreatment, the canopy remains intact at 70% of Dense Canopy.

1. Analysis of DEIS acreage targets for fire management including treatments,prescribed fire, cultural fire, and for wildfire

We refer the reader to Section IV of this Comment Letter for the Sierra Club's requested revised definitions of 1) Old-Growth Forest Stands in Dry Forest and 2) Mature Forest Stands in Moist Forest.

For our discussion about the dramatically increased acreage and Board Feet targets for theDEIS, as compared to actual annual cutting from 1994 - 2023, we also refer you to Section IV above of this DEIS Comment Letter, for

discussion about Increased Cutting of Trees and Stands included in this DEIS Comment Letter.

Based on that discussion in Section IV of this Comment Letter, the Sierra Club argues that the timber targets for fire management, including fuels reduction treatments, prescribed fire, cultural fire and wildfire, should be reduced to 445 MMBF per year sold per year for the entire NWFP Region. To confirm as discussed above in Section IV, the 445 MMBF per year sold is the average MMBF sold in the decade 2014 - 2023 as shown on page 3-118 of the DEIS, at the end of Table 3-22. That is the average actually sold, and the number for actually cut, as we know, exceeds the actually sold number.

D. Efforts to reduce Wildfire Risks in Dry Forests

See Subsections A-C above for discussion about acreage proposed for fire, and about need for prior inventories, and other information requested to document the actual need for fire before finalizing DEIS sections on reducing wildfire risks.

For dry forests, The Sierra Club supports the reduction of wildfire risks so long as the following requirements are included in the DEIS:

* reducing ladder fuels,
* retaining canopy density at a minimum of 70%
* using handheld tools, low compaction wide tire machines,
* retaining old trees and mature trees,
* excluding access to Roadless Areas (inventoried and not),

* limiting new mileage of temporary roads or permanent roads, as well as reconstructed roads, as critical to the Aquatic Conservation Strategy which requires the reduction of mileage of roads.
* protecting soils,
* Retaining derivative snags and logs that are core structural elements and social icons of natural Dry Forest ecosystems, and
* generally "retaining mature and old trees to reduce threats to old trees, reduce overall stand density, increase average tree diameter, and favor early seral species such as ponderosa pine, western larch, Douglas-fir, and white and black oak, where each was historically a dominant tree." J. Franklin's book The Making of the Northwest Forest Plan, page 366.

Notwithstanding the foregoing, the Sierra Club does not support mechanical efforts to reduce wildfire risks and severity in Dry Forests.

1. Efforts to Reduce Wildfire Risks in Moist Forests

The Sierra Club does not support reduction of wildfire risks in Moist Forests, with the exception of plantations, exclusive of any tree islands or pockets of mature or old growth within plantations.

1. Fire and timber cut in Riparian Reserves

The Sierra Club urges that prescribed or other active management fire and other strategies notbe used or introduced into riparian areas in the NWFP area, in either moist forests or the dry forests except as permitted in the 1994 Standards and Guidelines.

The Sierra Club requests that there be no change to management of Riparian Reserves, as they are refugia not only for listed fish but also for resident wildlife and older trees, and have performed well since the implementation in 1994 of the NWFP.

Chapter 3 of the March 2021 Supplemental Report to the Bioregional Assessment of NorthwestForests, at page 177, Call-Out Box 23, states the following:

"One area of apparent relief from increasing stream temperatures will be in complex terrain where there is prolonged stream shading combined with subsurface streamflow and cooler groundwater inputs. Maintaining stream buffers for shade and complex channel and floodplain dynamics appear to be important for minimizing the impacts of a changing climate on stream temperatures and fish habitat (Spies et al. 2018). These are examples of climate refugia."

This statement certainly supports continuing the Riparian Reserve Buffers at a maximum width in view of climate change, rather than the many suggested statements to include Riparian Reserves in areas recommended for fire modification and/or mechanical treatments.

The Sierra Club urges that the DEIS not recommend such treatments in Riparian Reserves, but instead comply with existing NWFP direction on buffer widths. See Appendix B to the DEIS, pages B-8, B-45, B-52 and B-93.

The Sierra Club does agree with retaining the 1994 Standard and Guidelines for C-3 as proposed on DEIS at page B-8. The 1994 S&G at page C-3, which includes the following:

"Watershed analysis is required to change Riparian Reserves widths in all watersheds."

Thereby keeping the original widths of the Riparian Reserves unless a Watershed Analysis has been conducted that indicates otherwise.

See also, the 1994 S&G, page 31, which prohibits the use of timber cuts and harvest in Riparian Reserves, which is to be retained according to Appendix B, page 45.

However, curiously on page B-93 of the DEIS, the Forest Service proposes removing the following two sections regarding Riparian Reserves, even in Adaptive Management Areas:

Page B-93, D-9 of 1994 S&G:

"Riparian protection in Adaptive Management Areas should be comparable to that prescribed for other federal land areas. For example, Key Watersheds with aquatic conservation emphasis within Adaptive Management Areas must have a full watershed analysis and initial Riparian Reserves comparable to those for Tier 1 Key Watersheds. Riparian objectives (in terms of ecological functions) in other portions of Adaptive Management Areas should have expectations comparable to Tier 2 Key Watersheds where applicable. However, flexibility is provided to achieve these conditions, if desired, in a manner different from that prescribed for other areas and to conduct bona fide research projects within riparian zones."

Page B-93, D-10 of 1994 S&G:

"At the same time, any analysis of Riparian Reserve widths must also consider the contribution of these reserves to other, including terrestrial, species. Watershed analysis should take into account all species that were intended to be benefited by the prescribed Riparian Reserve widths. Those species include fish, mollusks, amphibians, lichens, fungi, bryophytes, vascular plants, American marten, red tree voles, bats, marbled murrelets, and northern spotted owls. The specific issue for spotted owls is retention of adequate habitat conditions for dispersal. "

The Sierra Club objects to those removals, and requests that the 1994 S&G shown above be retained for full protection of Riparian Reserves.
G. Thinning, in General

The Sierra Club points out that Thinning arises in two different scenarios:

1.
1. Timber Management/Treatments thinning for forest management and ecosystem protection and restoration (see above Section IV). This type of thinning removes fuels off the forest floor and does remove trees within treatment parameters; and
2. Preparation for Prescribed Fire (see this Subsection F); site preparation for a prescribed burn only removes brush and saplings but does not cut saplings or trees 8" and above DBH to prohibit commercial sales, and such cut is prohibited. However, such prohibition on cutting trees 8" or above DBH does not apply to plantations. In addition, contrary to thinning in Timber Management/Treatments that do not involve fire, the site preparation for a prescribed burn does leave thinning debris on the ground.

The following general comments re Thinning, should be reviewed and incorporated by reference to thinning discussed in Section IV.

Set out below are the Sierra Club's requests for Thinning in General as applicable in all circumstances, both as Site Preparation for Prescribed Burn, and as part of Silvicultural Management without fire:
1. There is no definition of thinning in the DEIS. The Sierra Club requests the following requirements be included in the definition of 'thinning' as used under the DEIS and the Appendices:

* retain at least 70% percent of canopy left in NSO Designated Critical Habitat areas in LSR and in Matrix; when in MAMU Critical Habitat areas, we have the same stipulation plus concerns about 'edges' for predation by corvids; and
* size of gap/skip shall not exceed [frac14] acre;

* must include the acreage of all temporary roads constructed to conduct thinning as part of calculation of target amount of thinning

2. Requirements so as to minimize adverse impacts of thinning:

1. . access for thinning, i.e. 'new' roads, even if temporary, should be as few as possible, so as to avoid impacting soils and inadvertently hitting saved live trees:

* i.e. limit temp roads, i.e. limiting temporary roads to [frac12] mile or less in length; and

*
* limit temporary road density;

1. . require decommissioning, including but not limited to contouring restored to original pre road construction; and remove culverts for temp roads and decommission for maintenance level 0;
2. . only conduct salvage to protect communities;
3. . there should be no thinning in LSRs of trees or stands which are 80 years of age and older, so as to promote the transition of those mature trees to old growth. However, if the stand in LSR was planted by the FS and is a plantation, and is less than 80 years of age, then such a stand may be thinned.

4. . no thinning in OG in Matrix;
5. . the DEIS has not prioritized plantations in Matrix; the DEIS needs to do so. The Sierra Club agrees with permitting thinning in those Matrix plantations, as well as OK concern re dog-haired stands, never going to get bigger; and
6. . No mechanical thinning in LSR plantations; handwork only, no feller bunchers or other machines; and

h) Note, the Sierra Club does not support broadcast burn if done without site prep to create conditions for a burn intensity most beneficial to the ecosystem.

All definitions of Thinning in the DEIS must specify whether or not pile burning, even with no other burns, is included in the definition of prescribed burn

H. Prescribed Burn Fire

Please also see Section V Endangered and Threatened Species, for specific discussion of impactsof fire on NSO and MAMU.

The Sierra Club supports the use of prescribed fire in certain circumstances in fire-adapted ecosystems as a practice to promote biodiversity, to restore vegetative communities and natural fire regimes, and to provide an additional wildfire safety buffer for communities. Individual burns should respect Tribal treaty and consultation rights, prioritize the safety of firefighters and residential communities, comply with applicable environmental laws, minimize air quality impacts, and be based on best-available ecological and fire science, including Traditional Ecological Knowledge.

Further, the Sierra Club recognizes the important cultural and ecological role of Native American cultural burning, and supports reducing or removing policy barriers that impede such practices. Indigenous peoples in many ecological zones of North America engaged in cultural burning for millennia. Indigenous people burned - and continue to burn - for a wide variety of reasons, including to produce basket materials and materials for arrows, to stimulate growth of preferred foods, to create deer and elk habitat for hunting, and to protect villages from wildfire. These acknowledgements are important for understanding the context of this Prescribed Fire policy, which may or may not be applicable to Indigenous cultural burns.

The Sierra Club is concerned that there are ways that prescribed fire has been and is being misused on public lands. The Sierra Club requests that the DEIS prohibit:

1. commercial logging as a part of prescribed fire activities, or as part of post-fire salvage logging after prescribed fire; and

2. the application of prescribed fire in ecosystems that currently have an unnatural excess of fire, or where such application would create an unnatural frequency of fire at an unnatural hyper-frequency; and
3. the implementation of prescribed fire during times and circumstances that are damaging to ecosystems, or in circumstances and conditions that create an unnecessary risk to nearby residential communities.

Prescribed burning is a tool in the toolbox of land managers. It is important to note that prescribed burning as described herein, while necessary, is not a substitute for natural fire in ecosystems that evolved to depend upon fire of various intensities and severities as an ecological process.

There is broad agreement among scientists that the monitoring of wildland fire

(naturally-ignited fire, such as from a lightning strike) is an ecologically appropriate strategy for most fire-adapted ecosystems, particularly in areas distant from communities, to maintain and restore habitat heterogeneity and native biodiversity with a natural mix of fire intensities and severities.

I. Salvage Logging

No ecological justification is included in the DEIS to expand salvage in any post disturbance landscape whether caused by fire, windstorm and windthrow, insects, disease or otherwise, across moist and dry forests. The expansion of Salvage across both moist and dry LUAs is not ecologically justified. The Forest Service does not provide any justification for removing dead and dying trees from the disturbed areas, nor does the DEIS present and analyze the negative impacts of mechanical removal on soils and remaining live trees and snags.

Compacted soils are much harder to regenerate, and contribute to erosion and runoff. In

addition, the creation of roads to access dead and dying trees, whether formal roads or merely roads created by usage, contributes to runoff and erosion issues.

The Sierra Club stands by statements in our NOI Scoping Comment Letter for this project (64745), a copy of which is attached hereto as Exhibit 1 (see pages 26, 37, 39 and 40) that post fire salvage logging is detrimental to the ecosystem, as forest ecosystems are adapted to fire and have natural processes that require occasional fire as a restorative process, and the remaining ash and biomass, both living and dead, after a fire, or any disturbance, is integral to the recovery processes.

We are aware of, and believe the Forest Service should be aware of, the well-founded, peer reviewed science that documents the many negative aspects of salvage logging. These negative effects include not only soil compaction and increased erosion, but the loss of organic matter (trees) for rebuilding soil, the loss of habitat for decomposing fungi and insects which are near the bottom of the food chain, and the loss of habitat for woodpeckers and other species that utilize both standing and downed dead timber. Naturally created standing

snags have been proved more beneficial to wildlife than any snags created by Forest Service silvicultural practices. Fire has been a part of the healthy forest ecosystem for eons, allowing regeneration and resiliency, and providing necessary gaps that increase the diversity of vegetation and wildlife.

See the following sources for background on the conclusions in the prior paragraph:

Leverkus, A.B., Buma, B., Wagenbrenner, J., et al. "Tamm review: Does salvage logging mitigate subsequent forest disturbances?" (2021) Forest Ecology and Management. Volume 481, 1 Feb. 2021, 118721. https://doi.org/10.1016/j.foreco.2020.118721

Thorn S., Chao, A., Georgiev, K.B. et al. "Estimating retention benchmarks for salvage logging to protect biodiversity." 2020 Nature Communications, Vol. 11, 4762, 21 Sept. 2020 https://doi.org/10.1038/s41467-020-18612-4

LSRs, Moist and Dry

The DEIS at Page 3-31, regarding Moist LSR Salvage under Alternative B, has added three (3) categories of exceptions for permitted salvage:

* "Alternative B only permits[salvage] harvestfor tribal cultural use, public and firefighter safety, and protection of critical infrastructure and along public roads"

In addition, the Sierra Club requests that the following be added immediately below the quoted language on page 3-31:

* "Any salvage harvest done should not be for the primary purpose of commercial gain, but rather for the reasons in the prior sentence. "

In addition to the above, the Sierra Club objects to those exceptions and carveouts on page 3-31 for Moist LSR, and requests that they be removed from the DEIS.

The Sierra Club specifically objects to salvage in dry LSRs, and asks that the DEIS, and Appendices be revised to reflect that change.

The Sierra Club suggests that salvage be considered, on a case by case basis, around communities, as the phrase 'critical infrastructure' is not broad enough to include communities.

However, we note that not all infrastructure is critical, that not all existing public and firefighter access needs to be sustained, and that not all existing forest system roads should remain open. Therefore, the Sierra Club requests that the exception/carveout for those activities be significantly narrowed on a case by case basis whether or not the infrastructure meets the threshold of critical so that salvage is not done in all instances.

The Sierra Club believes post-disturbance salvage should be avoided where safe and environmentally appropriate since it is not consistent with the objectives of "protecting and enhancing biodiversity of mature and old growth ecosystems," and is destructive and harmful to regrowth and regeneration of the disturbed areas.

A disturbance is a good time to evaluate the need for motorized access versus the need to reduce habitat fragmentation and wildlife disturbance. We put a high priority on biodiversity, wildlife habitat, and long-term recreational and societal benefits from a naturally restored ecosystem.

Although the prior discussion focuses on Moist and Dry LSRs, the concerns that the Sierra Club raised are also concerns that the Sierra Club has with salvage in Matrix.

The Sierra Club urges that the DEIS must clarify that the beneficial use of fire and other strategies or activities in NWFP Area Forests:

1.
1. shall not be deemed in any way to be an advance approval or permission of post fire salvage logging which must be approved only on a case by case basis after completion of the FS activities and actions for treatment; and
2. must not be associated with or be a precursor to, nor interpreted as approval of subsequent logging of the area to be burned.

The Sierra Club objects to the removal by the DEIS of the 1994 S&Gs for Salvage specifically and requests that the 1994 S&Gs for Salvage should be retained for all LSR/Mature and old-growth stands in all LUAs both moist forest and dry forest. Appendix B to the DEIS shows that all original S&Gs in the 1994 NWFP for Salvage protection have been removed.

Given the negative impact of the salvage process on soils and on subsequent regeneration of salvaged areas after or other disturbance, all of the 1994 S&Gs regarding Salvage should be retained but limited to all LSR both moist forest and dry forest.

Further requests by the Sierra Club on salvage protections:

* Allow salvage to protect roads, trails, and communities but not generally in forests where timber harvests or timber thinning have taken place
* Specify that salvage shall not be for the primary purpose of commercial harvest
* If doing salvage, do NOT cut live trees of any nature, even if showing only little life or injured. Those remnants will be valuable for shade and seeds;

* example - oak trees that have been trimmed or injured in any way can take 2-3 years to resprout and show life

* Minimize mechanical salvage, as root rot and damage can be caused by trucks

* specify the use of large rubber tires.

1. Community Protection Area or Wildland-Urban Interface
i) Definitional issues; From Appendix F, Glossary -Community Protection Area

The following definition of 'Community Protection Area' raises several concerns. Here is a copy of the Appendix F Glossary definition:

"community protection area - The community protection area encompasses locations where wildfire risks affect communities, tribal values, and infrastructure. There is significant risk of potential economic loss and public safety concerns posed by a wildfire occurring within this area."

First, the DEIS needs to precisely identify what infrastructure will be considered to be "urban" or "community".

Second, the DEIS needs to define 'infrastructure' as used in the Community Protection Area definition. The Definition of Community Protection Area in the Glossary should be expanded to

describe precisely what are included in the word 'Infrastructure', such as powerlines, cell towers, water treatment plants, power plants, and roads.

The Sierra Club requests that the word 'communities' be defined in the Glossary as the word is used in DEIS and Appendices not only for Community Protection Areas and WUI, but also in the exceptions and carveouts throughout the DEIS and Appendices with regard to various forest management protocols and actions.

The word 'Communities' as added to the Glossary shall include only the following:

* Only active, inhabited year-round or vacation communities with a cluster of hundreds of homes, with collectively over 500 residents. i.e. not based on number of residents per acre;

* By way of example, "communities" does NOT include:

* an historic forest service cabin in woods; or
* individual homes isolated in woods

1.
1. Buffer for HUD, as part of Community Protection Areas

2. Regarding community protection areas, we note that with regard to the 1-mile buffer for HUD that is required under the DEIS (see pages 2-20, and 3-64, and 3-99 of the DEIS, and pages A2-14 and A1-24 of Appendices A1 and A2), the DEIS needs to articulate how the distance would be determined, including measurements, not merely that the FS consulted with all appropriate stakeholders.

1. Importantly, nowhere in the DEIS is a definition of 'density' provided for use with the HUD in community protection areas. The Sierra Club requests that the Forest Service use the Community definition earlier in this Section VI of a minimum of 500 people as the definition of density in a HUD, so that the public knows what the threshold is for a community being protected in a Community Protection Area with HUD housing unit density.
2. In addition, however, the Sierra Club urges the FS to reduce to [frac14] mile the width currently set for the buffer for HUD (housing unit density, per the Acronym and Abbreviation List on page xvii of the DEIS), instead of the 1 mile buffer for HUD provided in the DEIS.
3. Any forest trees or stands within Community Protection Areas should not be clearcut, but rather should consist only of thinning shaded fuel breaks for the buffer up to defensible space. In addition, the shaded fuel breaks in the Community Protection Areas should have the following features:

*
* 150-300 ft deep,
* retain 60-70% canopy cover;
* purpose is to suppress brush growth.

As a general comment, the Sierra Club notes that it appears that the Community Protection Areas/Buffers will not be sustainable as there is insufficient money and personnel to maintain buffers, which would then result in a worse situation having been created as new brush and saplings regrow.
iii) Second Definitional Issue from Appendix F, Glossary:
The following definition has several concerns:

"wildland-urban interface- The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetation fuels."

The Sierra Club requests that the WUI definition be revised to clearly apply only to the interface of undeveloped wildland or vegetation fuels with urban areas, and in the State of Washington to Urban Growth Areas, and that the WUI definition not apply in non-urban settings.

The DEIS in addition needs to define 'structures' in the WUI definition, and whether or not that includes infrastructure as included in the Community Protection Area definition discussed above.

Given the discussion below in subsection iv) about duplicative definitions, the Sierra Club suggests that the definition of Community Protection Area replace in its entirety the wildland-urban interface definition.

iv) Duplicative Definitions in Glossary:

The Sierra Club requests that the DEIS explicitly choose one or the other of the two definitions, WUI and CPAs, and delete all references to the definition not chosen. We were unable to find any meaningful discussion in the DEIS of WUI, not even at pages 3-152 and 3-163, or at Appendix A2-22, notwithstanding the definition in the Glossary.

In addition, the DEIS for this project uses two different terms for the same issue, those terms being "community protection area" or "community protection zone", and "wildland-urban interface". That is, the DEIS is inconsistent and unclear whether these terms have different intentions.

We request that the DEIS consistently use only one term, specifically since Appendix A2-22 clearly states that:

"Provisionally, the community wildfire protection zone is defined as the wildland-urban interface (see glossary)."

K. FOREST THINNING IN THE CONTEXT OF PRESCRIBED FIRE AND WILDFIRE

Thinning to reduce the intensity of wildfire is appropriate near urban areas and Communities as defined above in Section VI of this Comment Letter.

While forest thinning is often proposed as a strategy to mitigate wildfire risks across the landscape, there are several reasons why it often is not the most effective approach:

1. Limited Impact on Severe Wildfires: Thinning may not significantly affect the large, severe wildfires that are primarily driven by environmental factors such as drought, high temperatures, low humidity, and strong winds. These conditions can lead to intense fires that are not easily controlled.
2. Potential for Increased Fire Severity: Some studies suggest that thinning can inadvertently make wildfires more harmful. This can occur if the thinning process creates more flammable debris or alters the forest structure

in a way that allows fires to spread more rapidly, such as increased drying and greater wind speeds.
3. Mismanagement of Forest Ecosystems: Thinning practices can sometimes be a form of logging disguised as wildfire prevention. This can lead to ecological imbalances and disrupt natural processes that would otherwise help maintain healthy forest ecosystems.
4. Ineffectiveness in Certain Conditions: Research indicates that thinning alone is largely ineffective at preventing fires in many cases. The focus on thinning may divert attention from more effective strategies, such as judicious use of prescribed burns, which can help manage fuel loads and promote healthier forest conditions.
5. Economic and Social Considerations: While thinning can provide jobs and resources for local communities, the economic benefits must be weighed against the ecological impacts. If thinning does not effectively reduce wildfire risks, the resources spent on these efforts may not yield the desired outcomes. Economic benefits are often short-lived, not sustainable for multiple generations.

In summary, while forest thinning is often viewed as a solution for wildfire control, it does not address the root causes of severe wildfires and can sometimes lead to unintended negative consequences.

Alternative strategies, such as prescribed burns, may be more effective in promoting forest health and reducing wildfire risks. Forests in the NWFP region are fire adapted, and while

short-term impacts can be severe, long-term forest health over the large landscape benefits from wildfire.

L. In closing of this Section VI on Fire and Salvage, we refer you to the following article addressing the overlap of forest carbon storage and fuel-reduction treatments:

https://esajournals.onlinelibrary.wiley.com/doi/abs/10.1890/110057
Can fuel-reduction treatments really increase forest carbon storage in the western US by reducing future fire emissions?
John L Campbell, Mark E Harmon, Stephen R Mitchell

First published: 15 December 2011

"Abstract

"It has been suggested that thinning trees and other fuel-reduction practices aimed at reducing the probability of high-severity forest fire are consistent with efforts to keep carbon (C) sequestered in terrestrial pools, and that such practices should therefore be rewarded rather than penalized in C-accounting schemes. By evaluating how fuel treatments, wildfire, and their interactions affect forest C stocks across a wide range of spatial and temporal scales, we conclude that this is extremely unlikely. Our review reveals high C losses associated with fuel treatment, only modest differences in the combustive losses associated with high-severity fire and the low-severity fire that fuel treatment is meant to encourage, and a low likelihood that treated forests will be exposed to fire. Although fuel-reduction treatments may be necessary to restore historical functionality to fire-suppressed ecosystems, we found little credible evidence that such efforts have the added benefit of increasing terrestrial C stocks."

VII. FOREST MANAGEMENT ISSUES IN THE DEIS
A. Failure to include impacts on drinking water:

The DEIS must include an analysis and objectives for the protection of drinking water sources including riparian areas, rivers, springs, wells, and municipal outtakes whose water sources originate on FS lands.
B. Roadless Areas (both Inventoried and Non-inventoried) and the 2001 Protection of Inventoried Roadless Areas Rule

1.
1.
1. The DEIS must reflect that the Roadless Rule applies and that the FS must adhere to it. The FS should expressly acknowledge that the requirements of the 2001 Inventoried Roadless Areas Rule apply to the areas under the NWFP, as it is a settled federal rule that greatly affects the direction associated with the NWFP amendment. Further, as applicability of the Roadless Rule affects the plan amendment and the analysis of alternatives, the amendment should expressly incorporate its restrictions. The entire NWFP Region and all its Land Use Allocations (LUA), particularly the LSRs, are overlaid by substantial areas of roadless areas (including both Inventoried and non-inventoried) lands. See Subpart B[mdash]Protection of Inventoried Roadless Areas, 3272 Federal Register / Vol. 66, No. 9 / Friday, January 12, 2001 / Rules and Regulations
2. Any "clarified management direction", "active management," and/or "nuanced direction" in the DEIS must not result in any cutting of trees or any road construction into any of the roadless areas on any national forest administrative unit unless expressly allowed by the 2001 Inventoried Roadless Area Rule.

C. Use of phrases 'All LUAs' and 'entire NWFP' and 'across all LUAs' is overly broad and must be changed to target only appropriate LUAs
The Sierra Club objects to uses of the phrase 'All LUAs', as well as the phrase 'entire NWFP', and the phrase 'across all LUAs', where-ever it occurs (as in the DEIS: page ES-8, ES-4, page 2-5, page 2-6, 2-18 page 2-20, and page 3-64; as well as in multiple locations in DEIS Appendices A2 and A1).

The list of LUAs includes designated LUA units that are not allowed by statute or Congressional designation or Administrative Withdrawal to be treated. The Congressionally Reserved areas include Wilderness, and Wild and Scenic Rivers. The Administratively Withdrawn Areas include Inventoried Roadless Areas.

The Land Use Allocations under the NWFP are listed on page 2-2 and page 2-3 of DEIS as follows:

'All lands in the NWFP area are allocated to one of the following six designated areas or to Matrix:

* Congressionally Reserved (CR) areas
* Late-Successional Reserves (LSR)
* Adaptive Management Areas (AMA)
* Managed Late-Successional Areas (MLSA)
* Administratively Withdrawn (AW) areas
* Riparian Reserves (RR)

The term "designated areas" in this document includes all the LUAs listed above. In some cases, Late-Successional Areas are located within AMAs, shown in tables as AMA + LSR.'

Clearly, using any of the collective phrases listed above that reference All LUAs, would include the six designated LUAs as well as Matrix, and thus include CRAs and AWAs.

The Sierra Club requests that the DEIS remove the phrase All LUAs where-ever it appears in the DEIS and the Appendices. The DEIS should only use the names of the LUAs which are actually being targeted for actions. The DEIS instead used a shortcut by referring to 'All LUAs', and thereby would harm LUAs that should not be subject to such actions. There must be a list of appropriate LUAs for each of those locations of ALL LUAs instead of the overly inclusive phrase.

The Sierra Club requests that the DEIS and the Appendices be revised to indicate that Congressionally Reserved LUA and the Administratively Withdrawn LUA are expressly excluded from actions.

By way of example, the Sierra Club requests that prescribed fire and salvage (See also Section VI on Fire and Salvage) should be excluded from Wilderness, unless specifically needed for protection of public infrastructure and communities that abut the Wilderness, and the prescribed fire and salvage does not extend more than 100 yards inside the Wilderness boundary.

D. Data Information Needed in the SEIS/DEIS
The FS should provide extensive additional information to the public. As a result of the requested information listed below, the FS should issue a Supplemental Environmental Impact Statement.

The FS should provide in the SEIS/DEIS the following new information:
? Specific detail as to how the projections in Table 3.27 were specifically, and in detail, determined, which should include:
*
* how the high and low projections were calculated;

*
* which national forests will be included,
* acreage proposed to be cut per each national forest;
* specific locations of where the timber cut impact will be in each NF, and which of the LUAs in each National Forest will be targeted.

? In addition, a single new table which includes all listing information by each LUA:

*
* proposed cuts,
* proposed fire and salvage,
* all sources of timber,
* specifically for LSRs, Board footage and acreage with separate line item in that new table notwithstanding that the LSR Board Footage is not included in the PSQ; and
* Identifying which LUAs are included in the acreage of Board Footage

These new tables are requested to amplify the information provided in the DEIS's merely individual tables that list only some information but not all information, which presently are the only tables in the DEIS and the Appendices. Tables that exist in the DEIS do not collectively indicate sources by LUA of timber volume, nor all of the above requested information.

* In addition to the tables of information requested above, given that the FS has specific maps of all of the LUAs in the NWFP region, the FS should overlay those LUA maps with data from the Alternatives and create a map showing the locations of the acreageswhich are being proposed for:
* timber cut harvest;
* prescribed fire; and
* cultural fire.

Those newly created data maps must be included as part of the SEIS/DEIS. The public needs that disclosure to know and evaluate where, and how much, timber harvest and prescribed fire will occur.

The Sierra Club strongly urges the Forest Service to prepare and include the above requested new Tables and the above requested new GIS Data maps, in the SEIS/DEIS.

In addition, the Sierra Club objects to:

* the high acreage of both timber harvest and prescribed fire,
* high MMBF,
* high PSQ, and
* high salvage acreage,

as shown throughout the DEIS, which far exceed the historical harvest as also shown in the DEIS.
The Sierra Club demands that those acreages and projections of MMBF in the DEIS be revised to not exceed the annual and decadal harvests of past historical timber harvest cut for the decade 2014-2023 as shown in Table 3-22 at page 3-118. The higher projections are unjustified.
See also Section IV Increased Cut of this Comment Letter for further discussion.

In addition, the Sierra Club objects to the high age increase of trees permitted to be cut, which reduces the

number of protected trees and stands as shown in the DEIS, as discussed further in Section IV Increased Cut of Trees and Stands of this Comment Letter.
E. Issues with Several Dry Forest Standards: 1) age thresholds; and 2) included exceptions or qualifications, and in one instance a use of a vague phrase; and 3) a requested correction to a Standard
1.
1.
1. Request to change Age Thresholds for protection in Dry Forests: The Sierra Club requests that all of the Standards, Guidelines and Desired Conditions for Dry Forests be revised to have the threshold protection date changed from 150 years to 80 years.

By way of example, please see the following subsection ii) of this SubSection D which identifies, without limitation, several specific S&Gs and DCs which should be changed to 80 years as well as the changes to the 'exceptions' that are discussed in subsection ii) below.

1.
1.
1. Exceptions that undermine protection of Older Trees: The exceptions throughout the DEIS and Appendices, including Guidelines and Standards, are open-ended, with no specific parameters or limitation, resulting in almost meaningless rules which can be applied with subjective interpretations and lack of consistency across the NWFP region, leading to less protection than implied.

Following are several examples of the problematic use of 'exceptions' or qualifications which carve out and limit intended protections:

* DEIS, Page 2-18, and Appendix A1-22:

* "Forest Stewardship -All LUAS, Dry Forests.

"Adds constraint on harvest of trees older than 150 years with limited exceptions. This applies to all land use allocations, including Matrix and LSRs.

*
* "(FORSTW-ALL-DRY-STD-01-B): Vegetation management and harvest should retain all trees older than 150 years. Exceptions apply for tribal co-stewardship and cultural use, restoration of unique ecosystems, and

to reduce wildfire risk to communities and infrastructure. See also FIRE-ALL-PMA."

* Page 3-27

* As a standard, in moist forests in Matrix, no timber harvest shall occur inold-growth stands (those that established prior to 1825) except to providefortribal co-stewardship and cultural use or to reduce wildfire risk to

communities at risk (FORSTW-MTX-MOI-STD-01). Additional guidelines will also be in place to conserve individual trees established prior to 1905 in stands that have originated after 1905 (FORSTW-MTX-MOI-GDL-03).

* Page 3-29:
* "For dry forests, Alternative B includes a standard that states: "Vegetation management and harvest should retain all trees older than 150 years.Exceptions apply for tribal cultural use, restoration of unique ecosystems, and to reduce wildfire risks to communities and infrastructure. See also FIRE-ALL-DC-01 and FIRE-ALL-PMA" (FORSTW-ALL-DRY-STD-01-B).

This standard would apply to around 835,000 acres of stands in dry forestLSRs. However, the standard would not prevent treatments in thesestands, but would provide for conservation of individual older trees in these stands. A subset of these acres would also be in RRs with additional needs to meet ACS objectives."

* Page 3-70 Dry Forests:
* Alternatives B, C, and D would also add a standard

(FORSTW-ALL-DRY-STD-01) regarding conservation and protection of older trees within dry forests in all LUAs. Under Alternatives B and C, vegetation management and harvest would retain all trees older than 150 years, with exceptions for tribal cultural uses and co-stewardship, restoration of unique ecosystems, and to reduce wildfire risk to communities and infrastructure.

One consequence of the exceptions to the above four Standards is that the Old Growth trees and stands are not completely protected, as they should be. The exceptions go too far, and should not permit timber treatments to reduce wildfire risk to communities unless the Standards are revised to include additional very clear parameters:

1. That the Standard is not to be interpreted to permit commercial harvest or mechanical treatment; and
2. That the Standard for reducing wildfire risk to communities and infrastructure shall be applied no further than [frac14] mile from the communities and infrastructure; and
3. The Standard should prohibit construction of new logging roads and spurs within old-growth trees and stands. As written, Infrastructure exceptions are undefined and could include, without limitation, the construction of new logging roads. New roads and spurs could be located within patches of old-growth forests to maximize operational flexibility and volume generation, at the potential loss of old-growth trees and stands.

Such should be specifically prohibited.

1. The focus on 'operational purposes' needs to carefully apply both to safety concerns, and to scrutinize balance of retaining complex older trees and stands. Such a balanced approach could be accomplished by diverting a road away from older trees and stands and locations of safety concerns, and thus speed of operations and safety could be achieved, while saving the older trees and stands. Creative management is required.

The Sierra Club urges and demands that any amendment must reflect revisions to include these changes to

these Standards and descriptions so as to provide better protection for old-growth trees and stands across the NWFP Region.

In addition, the Sierra Club urges and demands that all of the above examples of 'qualifications and exceptions' be further revised to delete the number '150' and replace it with the number '80', consistent with the Sierra Club's request in the Comment Letter that all trees and stands over 80 years of age, regardless of LUA or Moist or Dry Forest, be protected.

Further, the Sierra Club reiterates its demand that in Dry Forest, the DEIS protect Stands rather than merely individual trees. As stated elsewhere, an individual tree both does not constitute a viable ecosystem, and also is significantly more at risk for windthrow, thus defeating the alleged purpose of encouraging older ecosystems.

1.
1.
1. An additional example of problematic wording is the use of words orphrases that permit exercise of subjective discretion, such as the permitted carveout of 'operational purposes' in the S&G found at page A1-20 of DEIS Appendix A1. 'Operational Purposes' can be quite broadly interpreted and applied, and the Sierra Club requests that instead specific examples be utilized and the 'operational purposes' be defined in the Glossary,

i.e. Appendix F to the DEIS.

It is critically necessary, and the Sierra Club strongly urges the Forest Service to revise, as suggested above in this DEIS Comment Letter, in subsection i) and ii) of this Subsection E of this Section VII, Forest Management, all of these listed exceptions and qualifications as well as all other exceptions and qualifications which are included throughout the DEIS, including those that are not listed above, as the Sierra Club has suggested above.

We acknowledge that some exceptions and qualifications may be appropriate, but only so long as additional clarifying language is provided; without clarifying language, the DEIS has provided too much discretion to the Forest Service as well as to agents and contractors for timber harvests.

iv) Requested Correction in a Standard to use of the word 'Shall' instead of the word 'Should', as present in all other Standards.

The Standard (FORSTW-ALL-DRY-STD-01-B) (see below) needs to change the word 'should' to the word 'shall'. All Standards under the NWFP are mandatory and require the use of the word 'shall'. All of the other standards in this DEIS do use the word 'shall'.

Page A2-12:

Forest Stewardship - All LUAs, Dry Forests

(FORSTW-ALL-DRY-ST

D-01-B): Vegetation management and harvest should retain all trees older than 150 years.

Exceptions apply for tribal co-stewardship and cultural use, restoration of unique ecosystems, and to reduce wildfire risk to communities and infrastructure. See also FIRE-ALL-DC-01 and FIRE-ALL-PMA.

Failure to make this requested change will result in significantly decreasing the intended protection of trees older than the protected age range in All LUAs, Dry Forests, and permit the Forest Service and its contractors and agents to use their subjective discretion as to whether or not to retain trees older than the protected age range in All LUAs, Dry Forests.

There is no need for using the word 'should' rather than the word 'shall', and that correction must be made in the DEIS and the Appendices. The Sierra Club urges that this word change be made to the subject Standard in both the DEIS and the Appendices.

In addition, the Sierra Club urges and demands that all of the above Standard on page A2-12, as well as any reference in the DEIS to said Standard, be further revised to delete the number '150' and replace it with the number '80', consistent with the Sierra Club's request in the Comment Letter that all trees and stands over 80 years of age, regardless of LUA or Moist or Dry Forest, be protected.

F. Continue protection of Riparian Reserves and ACS

Notwithstanding the critical importance of the ACS and the Riparian Reserves under the 1994 NWFP, the DEIS proposes removals of several of the 1994 Standards and Guidelines for Riparian Reserves and ACS. It is well accepted that the ACS and Riparian Reserves have worked well under the 1994 NWFP, so the Sierra Club is surprised at the proposed amendments described in the DEIS. Here are the provisions at issue:

* Notwithstanding that at Page B-8 the DEIS proposes retaining the S&G at page C-3 of the 1994 NWFP, in addition the DEIS at

* Page B-93 proposes to remove several S&Gs re Riparian Reserves and ACS (parts of D-9 and D-10 of 1994 S&G); and
* Page B-93, proposes to remove D-10 Riparian Reserve Widths from the 1994 NWFP

There are no other comparable provisions of the proposed amendment that would continue to provide such

protection as is contained in the above S&Gs, and thus these protections must be retained.

Regardless of whether or not the DEIS has removed the general management protections from Adaptive Management Areas, the Riparian Reserves and the ACS still need to be protected, just as those areas are protected in all other LUAs.

The Sierra Club strongly requests that those protections of the Riparian Reserves and the ACS be retained in full, even if the characterization of the LUA has changed from Adaptive Management Areas to a different LUA such as Matrix.

G. Inconsistencies between proposals to modify 1994 S&Gs C-44 and D-11
1.
1.
1. Treatment of 1994 S&G C-44 (re Matrix and Adaptive Management Areas):

* Appendix B page B-67, re C-44: proposed to modify re use of fire and pesticides: the modification, removes 'fire' but retains the directive tomodify pesticide uses;
* Appendix B Page B-68, re C-44, retains the directive to protect Old growthfragments in watersheds where little remains

However, Appendix B, page B-96 and B-98, then turns to the 1994 S&G D-11, and instead of retaining the above directives as shown on page B-67, removes those directives for the exactsame LUAs, Matrix and Adaptive Management Areas:

1.
1.
1. Treatment of 1994 S&G D-11 (re Matrix and Adaptive Management Areas):

* B-96, Removes directive to modify use of pesticides from treatment practices; and
* B-97, Removes directive to protect for old-growth fragments inwatersheds where little remains

In addition, the proposed revised S&G for both C-44 and D-11 remove the directive that Prescribed fires should be planned to minimize the consumption of litter and coarse woody debris.

The Sierra Club has the following three (3) requests based on D-11 and C-44:

1. In view of the fact that old-growth fragments are so important for both habitat for T&E Species, and for the surrounding forest ecosystems, the Sierra Club demands that the DEIS retain D-11 directive re protecting old-growth fragments in watersheds where little remains; Except for NSO considerations in the Finney and Northern Coast Range AMAs, no Action Alternatives as proposed would retain any

old-growth fragments in watersheds where little remains, as opposed to the current direction (Alternative A). Existing watershed analyses have identified where

late-successional forests exist, what role they play, and whether they can be modified. We object that this existing requirement would be entirely thrown out in all Action Alternatives, without explanation, and without enumeration of environmental consequences.

By having the same management in all Action Alternatives, NEPA's requirement for a broad range of alternatives is violated; and

1. the Sierra Club demands that the DEIS retain the directive in D-11 to

modify use of pesticides in treatment practices; and

1. in view of the fact that coarse woody debris is critical for forest ecosystems and regeneration, as well as for habitat of T&E Species, the Sierra Club demands that the DEIS retain the directive in both D-11 and C-44 that Prescribed fires should be planned to minimize the consumption of litter and coarse woody debris. A clear intent of the original 1994 NWFP S&Gs within Matrix was to ensure that prescribed fires do not consume excessive amounts of large woody debris that is critical to many late-successional dependent species. The Action Alternatives would entirely remove this limitation on the use of fire, undermining the ability to provide for the long-term viability of such species, without demonstration of scientific validity. These changes are therefore in violation of NFMA viability regulations.

H Requested Revisions to Appendix B:

ID 41, Page C-11

The language for the Action Alternatives, "Retain and augment with additional forest stewardship plan components" is vague and has no specifics. Specific management language with standards and guidelines must be provided in this part of the DEIS so that the public can understand whether NFMA viability regulations will continue to be met.

ID 42, Page C-11

The effect of this change in management language is that recovery plans for listed threatened and endangered species would NOT take precedence anymore over LSR standards and guidelines, for Alternatives B, C, and D.

Recovery plans for TES must take precedence over management language in the NWFP, as currently provided in the NWFP. The FS cannot on its own set aside requirements for recovery plans. Moreover, what if a new threatened or endangered species is listed by USFWS or NMFS that needs specific habitat management or conservation needs that were never before considered by the NWFP? This change to key language in the NWFP would make it impossible to recover newly listed TES.

ID 47, Page C-12

As described elsewhere in our comments, we are very concerned that increasing the allowed age of harvestable stands and trees within LSRs has not been demonstrated by the DEIS to protect and recover TES species and the myriad other species that the FS is obligated to conserve under the NFMA. The DEIS has not included the scientific validation, as was done for the original NWFP (e.g. the FEMAT Report), to demonstrate that NFMA and other federal regulations will continue to be met.

ID 48, Page C-12

In the third paragraph in the Action Alternatives, the FS seems to believe that local managers will be able to determine[mdash]on their own[mdash]how, where, and in what circumstances management activities in older stands will promote "long-term maintenance of habitat" and "reduce risks." This terminology is completely vague and without specific standards and guidelines.

Local managers do not possess the scientific capability to make such determinations. It is up to the FS to provide specific management language that is proven, through scientific validation, to meet NFMA regulations for species viability.

ID 64, Page C-17

To match the usage in Table 2-1, FORSTW-ALL-DRY-GDL-01 should instead be labeled

FORSTW-ALL-DRY-GDL-01-B, -C, and -D within columns for Alternatives B, C, and D, respectively. The same issue applies to FORSTW-ALL-DRY-GDL-02 and FORSTW-ALL-DRY-GDL-03.

While FORSTW-LSR-MOI-GDL-01 is described in Table 2-1 and elsewhere in the DEIS, there is no corresponding description of "FORSTW-LSR-MOI-GDL-02" or "FORSTW-LSR-MOI-GDL 02".

ID 128, Page C-37

In addition, the terms TRIBAL-TPTR, TRIBAL-AWA, and TRIBAL-WRKFOR do not match the longer terms used in Section 2.3.2.1.

ID 160, Page C-48

If coordination with local government and landowners on fire management in Matrix cannot be handled during watershed analysis, when and how will it be? Simply removing this requirement (for all alternatives) isn't adequate[mdash]it must be replaced with some other means for coordination.

The Sierra Club requests that all comments in this Sub-Section H be adopted and implemented.

I. Overreach for NWFP region-wide use of PODs and PCLs, when not reviewed or approved specifically under NEPA

It is unclear from the DEIS whether or not PODs ("Potential Operational Delineations") and PCLs ('Potential Control Lines') have been designated for the NWFP Region. See Page A2-16 and

A1-27 Fire Resilience - All LUAs; (Fire-All-PMA-13); and See also DEIS page 2-22 and 3-43.

Whether or not PODs and PCLs have been designated for the NWFP Region, the Forest Service is required to go through NEPA process for such landscape scale programs and plans, and because they are proposed across the individual national forests. Before implementing any program of PODs and PCLs under the DEIS, which would be large scale and NWFP Region-wide, the Forest Service needs, under NEPA, to prepare a Programmatic Review and EIS of the broad scale environmental impacts of such a proposal.

In addition, once the DEIS is finalized, the Forest Service will need, notwithstanding the NEPA region-wide and landscape scale EIS, to prepare additional Project Specific EIS's for PODs and PCLs proposed for timber projects implemented under the amendment.

J. Carbon benefits of Mature and Old Growth trees and stands in the NWFP Area

See page 29 of Exhibit 1 hereto (the NOI Comment Letter) for detailed discussion of carbon benefits, and the need to protect Mature and Old Growth trees and stands, which are incorporated herein by reference. The Sierra Club restates its concerns and requests that the DEIS be supplemented to address the carbon benefit issues which we have identified in Exhibit1.

K. No Ecological Justifications for use of Ecological Forestry, as applied

The Sierra Club requests that the defined phrase 'ecological forestry methods' be revised for specificity and clarification, as a new definition for the NWFP, set out in the Glossary, Appendix F. The phrase 'Ecological Forestry' in Mature and Old Growth, needs significantly more detail as to what is meant by such Ecological

Forestry Methods so as to ensure that similar approaches are applied across the NWFP Region, as appropriate for each ecosystem, and so as to ensure agreement as to what methods are taken to protect, encourage and revitalize Mature and Old Growth.
L. Change in purpose of Adaptive Management Areas; Need for DEIS to include provisions for Adaptive Management Protocols
1. ?Adaptive Management Areas- Change in Purpose; Requested Revisions

The Forest Service has removed, via proposed changes described in the DEIS and in Appendix B, all of the education and science-based components, and even removed the sections re 1) Finney AMA's need for NSO Reserved Pair Protection, and protection of Marbled Murrelets, and 2) the Northern Coast AMA's need for NSO and Marbled Murrelet protection, from the Adaptive Management Areas section of the original 1994 NWFP.

See Appendix B for listing of protections removed re C-9, 10, 11, C-41, C-44, D-3, D-4, D-5, D-6, D-7, D-8, 9, 10, 11, re old growth and 5th field watersheds, D-16 (replaced for Alt D; retained for others), E-1 (modified for Alt D; retained for others).

Adaptive Management Areas are described in the DEIS Appendix A1 at page 22, item 09 under Dry Forest, Desired Condition:

"09 Within Adaptive Management Areas, ecological forestry approaches and treatments contribute to the goals of accelerated restoration and tribal co-stewardship where desired by Tribes. These landscapes support projects that address:

* _climate change resistance, resilience, mitigation and adaptation
* _fire-adapted landscapes and communities
* _restoration of non-forested habitats
* _ecological stewardship of mature and old forests
* _tribal co-stewardship for ecological and cultural restoration"

It is unfortunate that the Forest Service has determined to remove the focus of AMAs, but notwithstanding, the FS should retain:

1.
1. the 1994 NWFP S&G section, Page D-12 and D-13 that explicitly spelled out protections for the Finney AMA's need for NSO Reserved Pair Protection, as well as Marbled Murrelet protections and

1.
1. the 1994 NWFP S&G Section, Page D-15 that explicitly spelled out protections for the Northern Coast Range AMA's need for NSO and Marbled Murrelet protections.

See Page 4 of the following source: Learning to Manage a Complex Ecosystem: Adaptive Management and the Northwest Forest Plan Editors George H. Stankey, Roger N. Clark Bernard T. Bormann, U.S. Department of Agriculture, Forest Service Pacific Northwest Research Station Portland, Oregon Research Paper PNW-RP-567 August 2006,

"Finney

Restoration of late-successional and riparian habitat components. (Given that most late Successional forests have already been harvested, the record of decision directed that special steps be taken to survey and protect marbled murrelets and the retention of areas critical to owl survival)."

"North Coast

Management for restoration and maintenance of late-successional forest habitat, consistent with surveys and protection of marbled murrelet. (Like the Finney, most

late-successional forests have already been harvested in the North Coast adaptive management area; thus, special steps were called for to protect murrelets and owls)."

The Sierra Club demands that the any amendment be revised to include the original sections of the 1994 S&Gs for protections needed for both the Finney AMA and the North Coast AMA, for protection of NSOs and MAMUs.

In addition, the Sierra Club demands that any amendment clearly articulate the protections for Old Growth as well as NSO Designated Critical Habitat in Matrix, including those Adaptive Management Areas which will now be treated as functionally equivalent to Matrix.

ii) ?Inclusion in the DEIS of the 'adaptive management' protocol
While description of AMAs, as revised, described under the DEIS and Appendices may give the impression that adaptive management will result in forest ecosystems that are biodiverse and ecologically sound, it leaves too much up to local land managers. The amendment described in the DEIS lacks solid standards for adaptive management to meet. It only describes active management projects, without metrics for monitoring and feedback and implementation of changes suggested by the feedback data. There is no predictability set up for adaptive management protocol. Without such standards and predictability, there is no clear path to preserving natural resources for the NWFP Socio-economic Region.

The FS needs to determine, via adaptive management protocols, how to protect water for communities, as well as for aquatic species which are sensitive to temperature increases of water as well as to decreases in water volume, and how to limit CO2 emissions from prescribed fires, as well as such emissions released by the timber

industry cutting of trees, and how to limit the impact on recreation caused by extensive tree cutting and prescribed burns in areas formerly regularly used by the recreating public, such areas which have been bringing in income to the Socio-economic Region of the NWFP. In addition, the FS must anticipate and prepare for increased temperatures from climate change, and increased drought from climate change. As discussed in Section II of this Comment Letter, there are economic consequences of all these changes.

In addition, the DEIS does not discuss passive management approaches neither as part of adaptive management protocols or as part of other timber management protocols. The Sierra Club requests that 'passive management' explicitly be part of the analysis conducted by the FS to implement the provisions described in the DEIS.

The DEIS also notes that the "spirit of adaptive management" (p. 3-15) would allow future changes in guidelines and resources. While adapting to changing conditions is what adaptive management should mean, there needs to be a clear understanding of what can be and should be achieved using this or any management style, as well as limits on how to achieve those results, and what happens once those results are achieved.

The Sierra Club requests that both the provisions describing the AMAs and the use of adaptive management as that concept is understood in the context of land management, be further detailed in the DEIS. The AMA provisions and the adaptive management protocols as described in the DEIS/SEIS should not only correlate with best management standards but also include caveats about making changes after after finalization of the EIS or approval of local projects, since the input of the public needs to be obtained for such changes.

VIII. CUMULATIVE EFFECTS ANALYSIS

For all of the reasons stated above in this Comment Letter, the DEIS is arbitrary and capricious because it fails to discuss the effects of the proposed action, on the NSO, the MAMU and all other T&E Species populations, of the take that would result from timber harvest and prescribed burning of a significant acreage of Designated Critical Habitat both on Moist Forest and on Dry Forest, as required under NEPA. In addition to failing to discuss the collective direct and indirect effects of the proposed action on ESA listed species, the DEIS also fails to discuss the cumulative effects of the proposed action with other past, present, and reasonably foreseeable effects from other actions and activities affecting the same areas and species, including activities on state and private lands.

In addition the DEIS is arbitrary and capricious because it fails to discuss the effects of the proposed action on the ecosystems in the NWFP Region that would result from a significant increase in timber harvest and the implementation of widespread prescribed fire, resulting in significant exposure of land and dried out lands and ecosystems, erosion and impacts to watersheds and water sources both for wildlife, ecosystems and humans. Again, in addition to failing to discuss the collective direct and indirect effects from increases in timber harvest and prescribed fire, the DEIS also fails to discuss the cumulative effects of the proposed action with other past, present, and reasonably foreseeable effects from other actions and activities affecting the same areas and species.

IX. CONCLUSION

What We Need Going Forward:

* Stronger Protections: The amended plan must enhance current protections for mature and old-growth forests. In addition to protecting mature and old trees, the amended plan should provide strategies for recruitment of and preserving the next generation of old trees across the landscape.
* Tribal Involvement: Meaningful inclusion of tribes in forest management was not considered in the original plan and is essential going forward.
* Climate Resilience: The amended plan must address the challenges posed by climate change to ensure ecosystems continue to thrive. Currently the plan addresses managing fire and thinning, but the amended plan should incorporate additional climate-related issues such as wildlife migration and connectivity of ecosystems and watershed health.

After 30 years, the Northwest Forest Plan - in its scope and guiding principles - has been successful in preserving late-successional and old-growth forest habitat, and meeting the needs of the region. The Sierra Club supports the general principle of targeted and strategic updating of the NWFP, but the DEIS fails to provide the analysis of the proposed action and action alternatives necessary to comply with NEPA, and to make a rational decision that complies with all substantive and procedural requirements. Any changes to the NWFP must ensure that the NWFP will continue to work effectively well into the future. The defects and omissions in the DEIS and the amendments described in it must be addressed, and additional opportunities for public comment provided, before FS proceeds.

We add the express caveat that the underlying principle of protection of habitat of endangered species, including but not limited to the Northern Spotted Owl, the Marbled Murrelet, the Wolverine and several species of protected fish which are listed elsewhere in this Comment, is paramount and of primary importance. Sierra Club does not support any changes to the NWFP that would undermine that principle.

As the largest grassroots-led environmental non-profit organization in the United States, and a leader in the fight against climate change, the Sierra Club shares the Agency's concerns of a changing climate and commitment to mitigating the impacts that it will have on ecosystems, species, and communities. And, as an entity that was central in the effort to develop the original Northwest Forest Plan, Sierra Club is fully committed to retaining the meaningful protections that the plan provides for late-successional/mature and old-growth forests and their dependent species - especially as science continues to reaffirm the role these forests play as a climate solution for their ability to sequester and store carbon.

The original NWFP's objective to maintain viable populations of species associated with late successional/old growth forests that are well distributed across the planning area resulting in a high likelihood of species persistence over an extended period must be retained to the greatest extent possible in this amendment process.

The overriding principle of the 1994 NWFP is to assure species persistence. While much has changed in the region after thirty years, the vision and goals of the 1994 NW Forest Plan remain unchanged and are arguably more significant than ever before.

Due to the many defects described above and in the comments submitted by Earthjustice, the Sierra Club does not support any of the Action Alternatives as currently described in the DEIS. The FS must address and correct these errors prior to making any changes to the NWFP.

The Sierra Club requests a Supplemental Environmental Impact Statement for the NWFP Amendment process and DEIS, for the reasons stated in this DEIS Comment Letter.
Sincerely,

ATTACHMENT-LETTER TEXT: Signed_64745_DEIS_Sierra_Club_Technical_Comments_(Mar_17_2025).pdf; this is the same content that is coded in text box above; it was originally included as an attachment[rdquo]

ATTACHMENT-OTHER: 64745_Scoping_3929_Sierra Club_ NWFP NOI technical comments (Feb 1 2024).pdf; Sierra Club scoping comments (2024)

ATTACHMENT-REFERENCE: Campbell J.L. Harmon M.E. and Mitchell S.R. (2012) Can fuel-reduction treatments really increase forest carbon storage in the western US by reducing future fire emissions.pdf

ATTAHMENT-REFERENCE: Dugger K.M. et al. [ldquo]The effects of habitat climate and Barred Owls on long-term demography of Northern Spotted Owls%22.pdf

ATTACHMENT-REFERENCE: Ecosphere - 2021 - Johnston - Diameter limits impede restoration of historical conditions in dry mixed-conifer forests of.pdf

ATTACHMENT-REFERENCE: horn S. Chao A. Georgiev K.B. et al. [ldquo]Estimating retention benchmarks for salvage logging to protect biodiversity.[rdquo].pdf

ATTACHMENT-REFERENCE: Keane Robert E. Lisa M. Holsinger Russell A. Parsons and Kathy Gray. 2008. [ldquo]Climate Change Effects on Historical Range and Variability of Two Large Landscapes in Western Montana USA%22.pdf

ATTACHMENT-REFERENCE: Keane Robert E. Paul F. Hessburg Peter B. Landres Fred J. Swanson. The use of historical range and variability (HRV) in landscape management..pdf

ATTACHMENT-REFERENCE: Leverkus A.B. Buma B. Wagenbrenner J. et al. [ldquo]Tamm review- Does salvage logging mitigate subsequent forest disturbances[rdquo].pdf

ATTACHMENT-REFERENCE: Odion D.C. et al. [ldquo]Effects of fire and commercial thinning on future habitat of the Northern Spotted Owl%22.pdf

ATTACHMENT-REFERENCE: Stephens S.L. et al. [ldquo]California Spotted Owl songbird and small mammal responses to landscape fuel treatments%22.pdf

ATTACHMENT-REFERENCE: Tempel D.J. et al. [ldquo]Meta-analysis of California Spotted Owl (Strix occidentalis occidentalis) territory occupancy in the Sierra Nevada- Habitat associations and their implications for forest management%22.pdf