To: Regional Foresters, USDA Forest Service Region 5 and Region 6
From: James Johnston, PhD
Re: Comments on Region 5 and Region 6; California, Oregon, and Washington; Forest Plan Amendment for Planning and Management of Northwest Forests Within the Range of the Northern Spotted Owl (via https://cara.fs2c.usda.gov/Public//CommentInput?Project=64745, cc: Dennis Dougherty, Planning Portfolio Supervisor sm.fs.nwfp_faca@usda.gov)

Thanks for the opportunity to provide comments about the Forest Service's proposal to amend planning and management of northwest forests within the range of the spotted owl. My comments are based on more 30 years of experience working with diverse stakeholders to monitor and implement the Northwest Forest Plan, including ten years of scientific research about disturbance and vegetation dynamics across diverse forests within the NWFP area.

I believe there are three important opportunities to augment and improve the environmental performance of the plan:

1. Better and more meaningful tribal inclusion
2. Increasing resilience of forests to fire and climate change
3. Conservation of mature and old forest

I believe that there are essentially two approaches for amending the NWFP. The first is to revise the boundaries of existing land use management allocations (LUAs) and revise standards and guidelines for existing LUAs. The second is to emphasize identification of Forest Landscape Conditions (FLCs) with certain characteristics. These characteristics could be defined by successional stage, origin, risk of disturbance characteristic disturbance patterns, and opportunities for co-management. These and other characteristics are likely to shift across the landscape and change over time. Given the purpose and need identified in the Notice of Intent to Prepare an EIS, at least six different Forest Landscape Conditions which are expected to be dynamic in time and space may be appropriate:

1. Community Protection Zones, which are found in the immediate vicinity of communities that are vulnerable to catastrophic disturbance including fires, storms, and floods.
2. Tribal Management Areas, in which certain resources will be co-managed with tribes.
3. Seasonally dry, fire prone forests ("Dry Forests") that are a) departed from historical conditions; b) experience significant summer aridity, c) where structure, composition, and ecological function is vulnerable to uncharacteristic disturbance; and, d) where silvicultural interventions are likely to be effective at restoring resilience to future change.
4. Old Forests, which includes all forest stands which originated prior to the establishment of forest reserves in the late 1800s.
5. Timber Harvest Stands, which include all stands within matrix lands which originated after the establishment of forest reserves in the late 1800s and where a

range of silvicultural actions are appropriate to achieve multiple objectives including production of timber products.

6. Critical Infrastructure, which includes all roads, stream crossings, drainage systems, communication facilities, and power transmission sites and routes.

Existing LUAs, for instance, riparian reserves, could be adopted to a Forest Landscape Condition. Forest Landscape Conditions (FLCs) could be inventoried and mapped as part of the NWFP amendment process, but site-specific planning may alter the boundaries of FLCs as new information or more fine-grained information becomes available. Changes to the boundaries of FLCs is appropriate because the extent and character of different FLCs will change over time and space, as when stands grow to be Old Forest, when succession is reset by stand replacing fire, when new risks and opportunities for community protection are identified, or when new opportunities to co-manage landscapes with tribes develop. Iterative inventory and mapping of FLCs in the course of site-specific planning will also be informed by ongoing monitoring and scientific research.

FLCs could overlay and augment existing NWFP LUAs or completely supplant existing NWFP LUAs. In either case, standards and guidelines for FLCs should be designed to augment existing LUA standards and guidelines. FLCs will often overlap other FLCs, and standards and guidelines for FLCs will generally augment one another. For instance, an Old Forest stand may also fall within Dry Forest and/or Tribal Management Areas, in which case both existing NWFP land management allocations standards and guidelines and standards and guidelines for all three FLCs will apply. In rare cases where FLC management guidance conflicts, standards and guidelines for Community Protection Zones will supersede standards and guidelines for Tribal Management Areas, which will supersede standards and guidelines for Dry Forests, which will supersede standards and guidelines for Old Forest, which will supersede standards and guidelines for Timber Harvest Stands.

I believe existing legal and regulatory authority provide support for Forest Landscape Condition plan components. For example, the Forest Service Handbook at 22.2 provides the following authority:

> The public, governmental entities and Forest Service employees need to know where plan components apply. The plan must indicate which plan components apply unit-wide, which apply to specific parcels of land, and which apply to land of specific character). Plans use management areas or geographic areas to apply plan components to specific mapped parcels of land. Some plan components apply to land of specific character (for example riparian areas, roads, springs, streams, and wetlands) and this is explained in the wording of the plan component itself.
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> A plan can have complicated land allocation schemes. Some plans may include static areas (for example, old forest emphasis areas), overlapping areas (for example, wildland-urban interface may overlap with old forest emphasis areas), and dynamic areas that may change over time (for example, spotted owl protected activity centers). If a plan has overlapping areas and direction that overlaps, the plan must clearly explain which direction has priority.

Strategy for better and more meaningful tribal inclusion

I believe that better and more meaningful tribal inclusion could be provided via two plan components. First, identification of Tribal Co-Management Conditions, which would consist of specific resources and/or specific geographies that tribes can co-manage so as to right historical wrongs and provide better landscape and resource management outcomes by incorporating diverse expertise. Second, use an Ethical Space process to enter into memorandums of understandings between individual national forests that provide guidance about Tribal Co-Management Conditions as well as opportunities to co-manage across the entire national forest landscape. An example of an MOU is the Memorandum of Understanding for proposed National Park Reserve in the South Okanagan – Similkameen region of British Columbia (https://parks.canada.ca/pn-np/cnpn-cnnp/okanagan/pe-mou).

Strategy for increasing resilience of forests to fire and climate change

There are a large number of potential adaptions to climate change. I believe the four most important opportunities include:

1. Better management of fire risk to key resources including old trees, watersheds, and wildlife habitat.
2. Better management of fire risk to human communities and infrastructure.
3. Active management to increase forest resilience to drought, insect attack, fire, and other disturbance.
4. Management of Critical Infrastructure to improve resilience to large storms and other hydrologic events.

Strategy for conservation of mature and old trees

The key to achieving conservation of mature and old forest is identifying where old forests are and distinguishing between old forests where old forest conditions can be conserved by protective, passive management (i.e., prohibitions on logging) and where active management including thinning and reintroduction of fire is necessary to conserve old forest. This distinction is often referred to as the difference between "moist" and "dry" forests. The distinction to be made is not strictly a matter of identifying distinctive biophysical thresholds, but identifying specific vulnerabilities and efficacy of restoration actions. Accordingly, the Dry Forest FLC consists of all forests that:

1. Historically experienced relatively frequent fire and are found on a landscape setting that is prone to fire.
2. Experience significant summer aridity.
3. Contain significant amounts of species that are well adapted to drought and fire.
4. Have significant resource including but not limited to old trees, potential wildlife habitat, and water regulation that are at risk from uncharacteristic drought, fire, and insect disturbance.
5. Where common restoration treatments including but not limited to thinning and reintroduction of fire are likely to be effective at restoring desired structure,

composition, function, and effectively mitigating risk of uncharacteristic disturbance.

Potential Distinctive Roles and Contributions plan components

NWFP area forests play a distinctive role in providing the Pacific Northwest and the nation with diverse forest conditions, including a broad range of vegetation types, successional stages, and habitats. NWFP area forests play a key role in sustaining human communities and tribal nations.

NWFP area forests provide significant and distinctive old forest habitat. Old forests are rare or absent across many non-federal landscapes in Oregon, Washington, and northern California. Old forest in NWFP area national forests has declined as a result of past timber harvest and increasing extent and severity of natural disturbance. Old forest is distinguishable by a variety of characteristics, particularly the presence of old trees and distinctive ecosystem services associated with old trees including unique wildlife habitat and water and carbon regulation. Both live and dead old tree structure contribute to the unique ecosystem services provided by old forests.

Old forests are found throughout the Northwest Forest Plan across a broad range of moisture availability, topography, and vegetation types. Structure, composition, and successional and disturbance dynamics of old forests vary significantly across NWFP landscapes. In the moistest and most productive parts of the western Cascades and Coast Ranges, old forests are characterized by large and old trees, large accumulations of dead woody material, and multiple canopy layers. Seasonally dry, fire prone forests that are common in eastern Washington, eastern Oregon, southern Oregon, northern California, and interdigitated with moister forests in western Washington and western Oregon are also characterized by old trees but accumulate less live and dead wood and historically had more open forest structure.

Forest disturbance may reset succession and convert old forest to young forest, but disturbance may also help maintain and enhance old-growth conditions, particularly in seasonally dry forests. A variety of management strategies are necessary and appropriate to conserve old forests given diversity in vegetation, successional, and disturbance dynamics. These strategies include passive management that protects forests from timber harvest and other anthropogenic disturbance in cases where current and future old forest structure is at low risk from uncharacteristic disturbance. These strategies also include active management including thinning and reintroduction of fire in cases where old forests are departed from resilient conditions and current and future old forest structure is at high risk from uncharacteristic disturbance.

The Northwest Forest Plan area includes millions of acres of stands that were harvested and replanted. Many of these stands have low structural and compositional complexity and relatively low biodiversity relative to older forests or stands that were regenerated following natural disturbance. There is a distinctive role to be played by planted stands in

increasing biodiversity, promoting stand and landscape scale resilience, recruiting new old forest, and providing economic opportunities.

The Northwest Forest Plan area includes millions of acres of seasonally dry, fire prone forests that are significantly departed from historical forest conditions, are vulnerable to uncharacteristic disturbance that significantly degrades forest ecosystem functioning, and can be made more resilient using a variety of silvicultural techniques. Absent silvicultural intervention, many of these stands will experience significant mortality of old forest structure and have diminished capacity to provide critical ecological functions.

There are important opportunities to produce wood products as a byproduct of restoration activities in Dry Forests and from planted stands. There are also opportunities to produce wood products using a wide range of silvicultural techniques across matrix lands that are not Old Forests.

National forests provide significant economic opportunities to residents of rural communities and exceptional national forest experiences for residents and visitors.

Tribal communities potentially provide exceptional knowledge and expertise that informs management of the national forests in a co-management framework.

<u>Potential Desired Conditions plan components</u>

1. NWFP area forests continue to play a critical and distinctive role in providing diverse forest habitats and a range of ecosystem services, including but not limited to wildlife habitat, wilderness experiences, clean water, carbon storage, recreational opportunities, and wood products.
2. NWFP area forests sustain place-based meaning tied to cultural identity and heritage; local economies and ways of life; traditional and subsistence uses; aesthetic, spiritual, and recreational experiences; and Indigenous histories, cultures, and practices.
3. NWFP area forests provide significant social, cultural, and economic opportunities for human communities.
4. Old forest increases across each national forest unit and the major forest types found across each national forest. A range of passive and active management strategies relink the characteristic pattern and process feedbacks that are responsible for developing and maintaining old forest across different forest types. Both natural disturbances and human stewardship provide for: a) A wide range of live and dead old forest structure; b) the successional and disturbance dynamics that are appropriate for different landscape settings; and c) conditions that are resilient and adaptable to future climate and disturbance stressors.
5. Actively managed planted stands within LSRs, riparian reserves, and matrix make a contribution to: a) Diverse stand and landscape habitat; b) adaptation to future climate and disturbance regimes; and, c) high quality, resilient forest conditions

across time. Planted stands in matrix lands also provide a wide range of wood products.

6. Restored seasonally dry, fire prone forests continue to provide old forest habitat and critical ecosystem services.
7. National forest land provides significant wood products to local industries and significant non-timber economic opportunities to local and regional communities.
8. The Forest Service, Tribes, other governments, and public stakeholders collaboratively steward forests for present and future generations. Forest stewardship is grounded in recognition of and respect for Tribal sovereignty and Indigenous Knowledge and the ethic of reciprocity and responsibility to future generations. Implementation of proactive stewardship actions and other activities occur through government-to-government consultation and co-stewardship partnerships with tribal nations to fulfill treaty obligations and the federal trust responsibility.
9. Active and passive management strategies utilize and reference the best available science including Indigenous knowledge.
10. Community Protection Zones significantly augment the safety of people and property, create effective defensible space, and significantly mitigate risk of catastrophic losses.
11. Tribal Management Areas provide meaningful opportunity for tribes to co-manage resources to protect and enhance cultural and economic values.

<u>Potential objectives plan components</u>

1. During the current planning horizon, increase the extent of Old Forest by 1-5% across the NFP region.
2. During the current planning horizon, restore ecological resilience to at least one third of extant Dry Forest while conserving and protecting old trees and conserving and promoting the development of future functional old-growth forest ecosystems appropriate for Dry Forests.
3. During the current planning horizon, implement silvicultural treatments that increase diversity, structural and compositional complexity, and resilience to disturbance across at least one third of extant planted stands.
4. Within five years, work with tribal governments, state, federal, county, and municipal governments to perform comprehensive risk management planning for Community Protection Zones that identifies opportunities for active management to mitigate risk.
5. During the current planning horizon, provide 800mmbf of wood products from a combination of restoration treatments in Dry Forest and planted stands and a wide range of silvicultural activities in Timber Harvest Stands.
6. Provide significant opportunities for tribes to co-manage resources in the course of site-specific projects.

Potential standards plan components

1. Loss of Old Forest from timber harvest is prohibited.
2. Restoration activities including but not limited to thinning and prescribed fire designed to conserve old trees and restore resilient old-growth conditions shall be implemented in Old Forest found within Dry Forests. Restoration activities that conserve old trees and restore resilient old-growth conditions in Dry Forests shall not constitute loss of Old Forest from timber harvest.
3. Salvage logging is prohibited in all Old Forest types, except to reduce fuels in Dry Forest as needed to create future resilient Old Forest conditions.
4. Active management in Timber Harvest Stands, with priority given to management of planted stands, shall be implemented to accomplish one or more of the following:
    a. Facilitate development of future Old Forest and increase connectivity of Old Forest;
    b. Increase heterogeneity of forest structure and composition;
    c. Improve growth and vigor of residual trees;
    d. Reduce likelihood of loss from fire, insects, and disease;
    e. Create diverse habitat, including early seral habitat;
    f. Mitigate risk of fire that threatens communities or Old Forest; or
    g. Generate wood products
5. Active management in Timber Harvest Stands shall include thinning, un-even aged management, and variable retention harvest silvicultural treatments. Silvicultural treatments shall be permitted in planted stands of any age in Late-Successional Reserves shall be consistent with desired conditions for late successional reserves. Variable retention harvest to create early seral habitat shall be limited to the Matrix land use allocation.
6. Pre-disturbance surveys shall not be required in Timber Harvest Stands or for restoration treatments in Dry Forest.
7. Active management in planted stands within riparian reserves including thinning shall be implemented that achieves desired conditions for riparian reserves.
8. The Forest Service shall establish Community Protection Zones, which encompass those resources that are at high risk of catastrophic disturbance that threatens the built environment. Delineation of resources included in Community Protection Zones can be revised in the course of site specific project planning and shall including but not be limited to:
    a. Transportation infrastructure
    b. Facilities including but not limited to communications equipment, dams, power generation, and power transmission infrastructure.
    c. Forest stands at high risk of transmitting catastrophic disturbance that threaten the built environment, and where common silvicultural techniques including thinning and prescribed fire can effectively manage risk.

9. Within two years, every national forest shall enter into a Memorandum of Understanding with affected tribes to co-manage resources as appropriate to achieve desired future conditions. Tribal Management Areas shall be established as appropriate and requested by tribes in the course of site specific implementation to achieve
10. Active management within Community Protection Zones shall augment protection of the built environment and contributes to the prevention of catastrophic losses from fire, storms, floods, and other disasters. Active management shall implement standards and guidelines for existing NWFP land management allocations and standards and guidelines for Old Forest, Dry Forest, and Timber Management Stands when possible, but active management to protect people and property will be the over-riding objective of land management in Community Protection Zones. Active management activities shall include but not be limited to:
    a. Thinning;
    b. Prescribed fire;
    c. Clearing of roads and construction of fuel breaks;
    d. Maintenance and hardening of road and stream passage infrastructure to accommodate catastrophic events;
    e. Cross-boundary treatments to harden or otherwise protect structures; and
    f. Disaster preparedness planning.

<u>Potential Monitoring plan components</u>

Each national forest unit or combination of units shall regularly and at least every five years assess:

1. The abundance, distribution, quality, and trends of Old Forest.
2. The extent of restoration actions in planted and the effects of these actions on fire behavior, habitat capability, and development of Old Forest.
3. The extent of restoration actions in Dry Forests and the effects of these actions on forest resilience and maintenance and development of Old Forest.
4. The extent of silvicultural treatments implemented in Timber Harvest Stands and wood products produced.