April 18, 2022

Doug McKay, Heppner District Ranger,
PO BOX 7, Heppner, Oregon 97836

RE: Comments on the Draft Environmental Impact Statement for the Ellis Integrated Vegetation Management Project; Ellis Project website (https://www.fs.usda.gov/project/?project=41350)

Dear Mr. McKay,

Please accept the following comments from the Great Old Broads for Wilderness (Broads), Central Oregon Bitterbrush Broadband Chapter (COBB) regarding the Ellis Integrated Vegetation Management Project DEIS. The Great Old Broads for Wilderness has over 10,000 members across the nation. We are a national grassroots organization, led by women, that engages and inspires activism to preserve and protect wilderness and wild lands. Part of our mission is to conduct stewardship projects on public lands and advocate for those lands. We also believe that conservation and restoration of Oregon's wildlands, fish and wildlife and their habitats, and water resources are a lasting heritage that requires responsible stewardship.

Our local Bitterbrush Broads chapter has over 400 friends and members in central and eastern Oregon. The Bitterbrush Broads have been doing educational hikes, stewardship projects, and overnight camping trips in a variety of our central and eastern Oregon national forests since our chapter was formed almost 10 years ago. Our chapter has assisted the Deschutes, Ochoco and Malheur national forests on many partnership projects including noxious weed pulling, closed and decommissioned road surveys, monitoring beaver populations, planting native milkweed for restoration of monarch butterfly populations, and engaging in discussions of ways to mitigate user-created impacts in Central Oregon wilderness areas. While our chapter has not worked with the Umatilla National Forest (UNF) districts, we had planned to participate in trail work on the forest in 2020 until Covid stopped our planned activities. Many of our members and supporters live in central and eastern Oregon and recreate in the proposed project area. They hunt, fish, backpack, camp, photograph, view wildlife, hike, drive, and engage in other recreational activities.

<u>General Comments</u>

The Ellis Integrated Vegetation Project is a huge, proposed project to meet a wide variety of purposes including reducing wildfire risk, increasing forest health and vigor for timber and non-timber values, and improving wildlife habitat. It is located within the Upper Butter Creek, Upper Willow Creek, Rhea Creek, Lower Camas Creek, and the Potamus Creek-North Fork John Day

River 5th field watersheds. Private land accounts for approximately 4,626 acres within the project boundary, leaving up to 110,000 acres that are proposed for treatment on National Forest System (NFS) lands. The project proposes a mix of commercial harvest, thinning, prescribed burning, road reconstruction, temporary roads, some road closures and decommissioning, and other activities.

The Broads support some level of forest restoration, particularly in upland sites using a blend of commercial and non-commercial harvest and prescribed burning but encourage the Forest Service not to apply mechanical treatments in any portion of Riparian Habitat Conservation Areas (RHCAs). These are important areas for aquatic species such as salmon, steelhead and redband trout and their essential habitats. We also encourage the Forest Service to balance "restoration" goals using silvicultural treatments that have an emphasis on stand management with competing resource needs to reduce road densities, and not increase new miles of temporary and permanent roads. We support the goals of improving wildlife habitat but also emphasize the need to restore very degraded streams, wetlands, and riparian areas, but not through commercial harvest and thinning activities.

Any commercial harvest or thinning in RHCAs will cause the UNF to be in violation of PACFISH and INFISH standards. These standards clearly lay out that no activity can be done that has the potential to compromise fish habitat including impacts to shade, water temperature and sediment. All of the action alternatives that include any treatment in any portion of a designated RHCA will cause impacts to aquatic species and their habitats.

We strive to be good partners with the Forest Service because protecting and restoring our public lands is critically important for the enjoyment of current users as well as future generations. Overall, we support an alternative that minimizes timber harvest, livestock grazing and road impacts to streams and riparian areas, and aquatic habitats. We make several recommendations to retain and restore viable habitat for fish and wildlife species. We also recommend that the final recommended alternative exclude any activity in RHCAs that will affect shade, stream temperature, and increase sedimentation and the construction and use of temporary roads. We recommend excluding any management activities in undeveloped lands and no fuel breaks. We also support all permanent and seasonal road closures.

<u>Size of the Project</u>

We oppose implementing such a large project under one NEPA process. It is an unprecedented size for a forest timber sale, with commercial logging planned for between 46,247 and 84,750 acres. This project is more than 2.5 times bigger than any Forest Service project that we have observed and commented on, and believe it needs to be vastly scaled down. The potential for harm to a diversity of fish and wildlife species including ESA listed and sensitive species is enormous. This area is also heavily used for recreation by a large array of user types from spring to fall such as upland bird and big game hunting, camping, hiking, equestrians, mountain bikers, fishing, boating at Penland Lake, firewood cutting, wildflower viewing, collecting mushrooms, and winter sports like snowmobiling and cross-country skiing.

Because this is such a large area, we are concerned that many wildlife species will be impacted by this project. They include big game species like Rocky mountain elk and mule deer, several woodpecker species including the Pileated woodpecker and Three-toed woodpecker, species that need large intact areas such as the American marten and Northern goshawk, other species that rely on intact forests such as Cooper's hawk, numerous passerines, and potential species that use the area including Great Gray owl, the Pacific fisher, Canada lynx, and Gray wolves.

Recommendation: We recommend that you scale down this project at least in half and preferably more. It is a ridiculously large project with the potential to cause great harm to fish and wildlife habitats and recreation.

Purpose and Need

The proposed project is intended to restore characteristic forest vegetative conditions, thereby increasing resilience to insects, disease, fire, and drought, reduce the risk of high severity fires, and enhance and restore hardwood communities. Despite the severe degradation of streams, wetlands and springs and other important fish and wildlife habitats, their restoration is largely not being considered. The project is all about tree health and moving stands toward "resilience" while other natural resources are left out.

We note that the analysis uses the "historic range of variability" (HRV) as the theme for restoring vegetation on the forest (Hessburg et al. 1994, 1999). In evaluating HRV on the Malheur National Forest, Churchill et al. (2017) used the year 1890 and sampled sites to examine how tree composition, density, openings, clumps, and age have changed in the past 100 plus years. Not surprisingly, many dry side forests have changed given past management practices of large diameter timber (high grading) harvest, extensive roading, and intense livestock grazing. The year 1890, the base year used for comparison to existing conditions, also did not have high road densities on the landscape that are known to occur on the UNF, which have caused continued degradation of streams and wildlife habitats. The point is that while using HRV as a target to increase forest resiliency in the face of climate change and hotter, drier weather cycles, the UNF needs to balance the needs and obligations for maintaining fish and wildlife habitats and productivity with this effort to restore forest resiliency. Resiliency and sustainability should not just apply to timber stands, but to other resources including native fish and wildlife species and their habitats.

There are no restoration goals stated in the Purpose and Need section that would restore fish and wildlife habitats other than adding wood to meadow habitats and some road closures which typically occur long after the treatments if they ever occur at all. While actions to restore streams are discussed later, the entirety of this section is largely about restoring forests without discussing the need to restore fish and wildlife habitats, with the exception of the proposed closing of roads for elk habitat. In the project area the conditions of the streams are largely degraded, and watersheds are functioning at risk or not at all.

Recommendation: We recommend that the project include restoration goals and management actions that improve RHCAs, streams, wetlands, seeps, and springs such as implementing fencing to keep out livestock grazing.

Historic Range of Variability (HRV)

The proposed project is an effort to move forest stands toward a condition more resilient to wildfire, insects and disease in the short term that has taken 100+ years of past (mis)management to unbalance. The DEIS (p. 1) states that "*The Ellis Project is intended to reduce tree density in overstocked stands and improve ecosystem health. The desired outcome of the proposed activities is to enhance landscape resiliency by creating and maintaining diverse vegetative conditions at both stand and landscape scales.*"

Churchill et al. (2017) stated that "*The historical forest conditions we reconstructed on these plots have all of the characteristics of frequent-fire, open-canopy, old-growth, pine and mixed-conifer forests described by many researchers (Agee 1993; Cooper 1961; Fry and Stephens 2010; Kaufmann et al. 2007; Keen 1940; Larson and Churchill 2012; Sánchez Meador et al. 2009; Weaver 1961)*." The authors added that research from Kaufmann et al. (2007) reported that "*The strongly clumped spatial patterns, openings, wide distribution of age classes, presence of old trees, and dominance of large-diameter trees are clear evidence of a fine-scale, multicohort, gap-phase replacement system that has persisted through multiple centuries of frequent disturbance and climatic fluctuation.*"

In essence, some of the key characteristics of implementing HRV according to these authors include 1) a number of openings with linear and sinuous shapes and a range of widths, 2) treatments that mimic historical clumped-stand structure (that were effective at reducing fire severity and crown scorch), 3) medium and large clumps of trees as they provide patches of continuous canopy that are large enough to create a shady understory, and differences in sub-canopy temperatures and soil moisture levels; they also create niches for different understory species, can alter fire behavior, and provide cover and nesting locations for wildlife species and snag creation through competitive mortality, 4) retain some areas with individual widely spaced trees with deep and wide crowns as they are fire resistant, provide habitat elements, and eventually become large snags and downed logs, and 5) provide variation and density in clumping within and across treatment units, which is thought to be an important aspect of resilience. This multiscale variation is thought to impede the spread of high-severity disturbances, perpetuate variable post disturbance patterns, and facilitate species diversity.

We are concerned that HRV may be mischaracterized as forest stand treatments which emphasize commercial treatments and thinning when in reality HRV is more complex and should meet the description in the above paragraph. Our experience with HRV treatments on the ground is that they look much more like a shelterwood, or seed tree cut where there are just a few trees left standing in each acre treated. That is not management action described by Churchill et al. (2017).

Further, Churchill et al. (2017) and other authors used 1890 as their reference point for HRV forest stand conditions. In 1890, there were almost no roads and the few that might have been present were of such a small amount that the forest road density was virtually zero. In addition, Churchill et al. (2017) and other authors evaluating HRV did not have any HRV plots in riparian areas. Sampling occurred on upland sites.

Recommendation: We recommend that any treatments in RHCAs should be extremely limited to only aspen stands and meadows, and that all trees should be dropped by hand with no mechanical treatments, heavy equipment, or removal of wood. It should be left on the ground to deter livestock grazing. We also recommend that implementation of HRV for forest management should go hand in hand with closing many more miles of project area roads.

Alternatives

The UNF proposes five alternatives for analysis, including the (No Action) Alternative 1, and four action alternatives that propose a range of commercial harvest, non-commercial thinning, and prescribed burning throughout the project area to move timber stands toward HRV. We recommend Alternative 1 because it has the least impact on other natural resources. However, recognizing the UNF is likely to implement a project, we secondarily recommend an alternative that is similar to Alternative 3, but with lighter treatment of proposed commercial harvest and thinning and a many more road closures. We recommend no new temporary roads, especially in RHCAs.

Recommendation: We strongly recommend that you consider a new preferred alternative that would combine both no new temporary roads, no harvest or thinning in any portion of RHCAS, and more road closures and a much lighter treatment program. For example, the DEIS (P. 113) stated "*Alternative 3 contributes the least to sedimentation potential in streams. Alternative 4 removes more wood from the area and slightly increases sediment potential in RHCA corridors if trees are dragged out. Alternatives 2 and 5 are the most likely to result in sediment reaching streams and fish habitat due to proposed actions"* yet Alternative 3 had the least amount of road closures. We recommend that the UNF not equate the maximum road closures with maximum harvest and thinning treatments. We recommend that the preferred alternative use the most ecologically sound concept of blending the least amount of thinning and harvest with the most amount of appropriate road closures and fire use.

Alternative 5 Harvest of Trees over 21 Inches DBH

We strongly oppose the harvest of all large trees greater than or equal to 21-inch DBH. We participated in the flawed Eastside Screens NEPA process that was incomplete and hijacked by the Trump Administration at the behest of then Congressman Walden and the timber industry. This protection from the original Eastside Screens was changed with a rushed process in January 2021. The Eastside Screens were implemented in 1995 in order to preserve the few remaining large and old trees, and the ecosystem values they provide for soils, water quality, wildlife, and fish habitats. Those protections were removed by the highly controversial decision

made by the Undersecretary of the Department of Agriculture in January 2020 and the Forest Service never even complete the promised formal NEPA and objection process.

Historically, large old trees dominated as much as 75% of the eastern Oregon forests (DellaSala and Baker 2020). The Eastside Screens were barely in place for 25 years and not in place long enough to restore the historic amount of large and old trees. The previous century of logging from the 1920s to the 1990s removed the largest and oldest trees across many of the forests in eastern Oregon and impacted biodiversity, soils and many fish and wildlife species that used large old trees for part or all of their life history needs.

Large trees are particularly important as either live or dead, standing or fallen onto the forest floor or into the stream and are critical to forest and watershed function. In streams, they are referred to as large woody debris (LWD). There is abundant literature on the importance of LWD to the structure, function, and biodiversity of forests and in both upland and aquatic ecosystems. Large old trees provide wildlife habitat as standing live or dead trees and as downed wood on the forest floor. Habitat for a diversity of wildlife species is found in the dead branches, cavities, seeds, cones, snags, and the buildup of the forest floor with littler. Large old trees have thick bark and are the trees that withstand forest fires and survive. They provide shade, wind breaks, soil moisture and a cooling effect in the multilayered canopy.

Large trees in RHCAs are particularly important for a multitude of reasons. They are a "bio cultural heritage" that are critical for sequestering and storing (long term) carbon and a myriad ecosystem services including filtering providing clean water, nutrient cycling, below-ground processes (DellaSala and Baker 2020). The authors reported that in a rapidly changing climate it is of utmost importance to keep as much atmospheric carbon tied up in the forest, which also benefits biodiversity and water quality (Brandt et al. 2014, DellaSala and Baker 2000). Large trees in riparian areas provide stream-side shading and, when they fall into streams, hiding cover for aquatic species. Large mature trees accrue soil depth, cycle nutrients, mitigate pollution, purify water, release oxygen, and provide habitat for wildlife at levels far superior to logged forests (Mackey et al. 2013, Mackey 2014, Mackey et al. 2014; Brandt et al. 2014).

DellaSala et al. (2011) reported that clearing old growth and mature forests in primary forests can have major impacts on forest-driven water and energy cycles at local, global, and continental scales. Not only do old growth and mature forests provide the highest water quality, but they also generate water vapor through evapotranspiration, affecting precipitation at continental scales, provide cooling at local and global scales, and provide infiltration and groundwater recharge. Further, the authors explain that roadless areas (which have generally not been harvested) provide the best examples of clean water and biodiversity that are most closely linked to undisturbed natural ecosystems. Numerous authors have reported that when undisturbed watersheds in roadless and protected areas such as national parks, wilderness areas, and national monuments are fragmented by roads, logging, and intensive recreation development, both water quality and biodiversity decline as hydrological integrity is lost (USFS 1972, 1979, 2001; Alexander and Gorte 2008; Anderson 2008).

Last but not least, large old trees are important for carbon sequestration and a natural (and free) component for fighting climate change. Large trees in eastern Oregon are only 3% of the remaining trees but store 42% of the carbon (Mildrexler et al. 2020). Every large old tree on the forest is critical to retain on the landscape, especially with the twin crises of climate change and loss of biodiversity. As DellaSala and Baker (2020) reported, these legacy trees are a biocultural legacy and must be protected and not harvested. A variety of species, many in decline because of the loss of their habitat, depend on large trees and old forests for habitat including the American marten, Pacific fisher, Vaux's swift, Pileated woodpecker, Black bears, Northern goshawk and other accipiter hawks, Great gray owls, Black-backed woodpeckers, Three toed woodpeckers, Pileated woodpeckers, Olive-sided flycatchers, and other species rely on denser forests, mature or old growth mixed conifer forests, and are negatively impacted by logging. They rely on large old trees for foraging and reproduction. Harvest of these large mature trees will continue the decline of many species that rely on these special habitats. The DEIS did not provide any evidence that commercial harvest of large trees over 21 inches will benefit wildlife or restore ecosystem processes.

Recommendation: We recommend that this project NOT cut any trees over 21 inches for the reasons stated above.

<u>Data, Analyses and Conclusions</u>

The DEIS failed to provide any numerical data on stream conditions and parameters for meeting or violating Riparian Management Objectives (RMOs from PACFISH and INFISH). RMOs were established for the following habitat features: (1) pool frequency; (2) water temperature; (3) large woody debris; (4) bank stability; (5) lower bank angle; and (6) width/depth ratio. Actions that reduce habitat quality, regardless of whether existing conditions are better or worse than RMOs, conflict with the purposes of PACFISH and INFISH. While the DEIS repeatedly states that most streams and watersheds are in poor condition, and fail to meet water quality standards for temperature, there was no data or trend information provided to the public to determine how bad stream conditions are in the project area. Without this information, our default recommendation is to unequivocally recommend NO tree harvest or thinning or any temporary roads in RHCAs. This is not just the "inner zone" but for the entire RHCA.

The DEIS (p. 55) reports that "*There are fourteen subwatersheds within the analysis area and within the Willow Creek, Umatilla, and North Fork John Day Subbasins (Table 3-9).*" Further, DEIS (p. 56) "*Existing conditions are reported for two types of watersheds, those with anadromous species or critical habitat present (Potamus Creek-North Fork John Day River and Lower Camas Creek), and those without anadromous species or critical habitat present (Rhea Creek, Upper Willow Creek, and Upper Butter Creek) that have native redband trout.*"

Most of the relevant information, but with no detailed data, were stated in the following 2 paragraphs of the DEIS (p. 56): "*Data from the last 10-15 years of the PIBO monitoring program suggest that higher than desired levels of fine sediments in pool tailouts (<6 mm) occurred in streams of the Blue Mountains ecoregion and specifically on the Umatilla National Forest*

(Archer and Groce 2020; Archer and Ojala 2017). Having high fines in this habitat type leads directly to issues with spawning and emergent salmonids, as these are the specific locations where many species of fish prefer to spawn."

"*Many streams in the project area experience high summer water temperatures. Only one of the stream sites monitored in the Potamus Creek or the Fivemile Creek Watersheds are properly functioning for stream temperature. The Smith Ditch site did barely meet the upper temperature threshold for properly functioning in 1997 (highlighted in red font and outlined below). This is the only site sampled in either the Potamus or Fivemile watersheds that met standards. This pattern is also evident for sites in the PIBO program. The Matlock Creek-Stony Creek, Ellis Creek-Potamus Creek, Potamus Creek, Mallory Creek, and Ditch Creek subwatersheds were described as exceeding water temperature standards (U. S. Department of Agriculture 2004)."*

Despite the lack of data, the DEIS (p. 57) reported that most streams in the project area were indeed water quality impaired for stream temperature and sediment. The DEIS stated that "*Historic timber harvest in RHCAs has resulted in increased soil erosion and sedimentation in streams, reduced recruitment of large wood affecting pool formation and cover, and reduced shade, affecting water temperature. Shading was highly variable between streams and between reaches within streams. Many values were less than 20% and likely reflected the timber harvest in RHCAs that occurred prior to the stream surveys. Timber harvest in RHCAs and stream shading were used to characterize RHCAs for the 1999 evaluation. Using these indicators, watershed functioning was rated as "Not Properly Functioning" for the Mallory/Ditch, North Fork John Day/Matlock, and Fivemile watersheds and "Functioning at Risk" for the Potamus Creek watershed in the 1999 evaluation. Currently, "Not Properly Functioning" is the most appropriate rating for the Potamus Creek-North Fork John Day River and the Lower Camas Creek watersheds."*

Further the DEIS (p. 57) stated that "*Watershed functioning using most recent data for the substrate/Embeddedness Indicator suggested the Potamus Creek-North Fork John Day River and Lower Camas Creek watersheds as "Functioning at Risk". The data above and field observations indicate that fine sediments continue to be a problem in many streams in the Project area*." Essentially the vast majority of streams in the project area are highly compromised for important habitat parameters that contribute to the listing and designation of ESA and sensitive species. Yet, the focus is on "restoring" timber stands while largely disregarding the severely compromised fish and wildlife habitats and the impacts to water quality, and fish and wildlife species and their habitats that will be further harmed by this project. We are disappointed in the single-minded focus on timber extraction under the guise of wildfire protection at the expense of other degraded natural resources.

The only data provided were the expected sediment load increase from all action alternatives (Ellis Hydrology Report, p. 26-29). The projected sediment increase is alarmingly high, and in most of the subwatershed sediment is expected to increase anywhere from 100% to an astonishing almost 400% (Johnson-Butter Creek subwatershed) over the existing condition during treatment. The Hydrology report also claims that after treatment, sediment will decline.

It is well documented in many studies that elevated sediment occurs as a result of timber harvest and the increase of "temporary" roads long after treatment stops. PACFISH and INFISH both expounded on the contribution of timber harvest and roads to the degradation of streams and listing of anadromous and inland fish species. Elliot et al. (2011) reported that sediment is the greatest pollutant of forest streams with a forest road network as the main annual source of sediment in forest watersheds. A major factor that increases erosion is traffic. Roads with heavy traffic generate 4 to 5 times the sediment of roads compared to roads with light traffic (Elliot et al. 2010). Carnefix and Frissell (2009) found that there is not truly "safe" threshold road density for aquatic species, but instead negative impacts begin with the first road segment in a watershed, and highly significant impacts began at road densities as low as 1 mi/mi2.

Blue Mountains Biodiversity Project (BMBP 2021) reported that "*A large body of scientific research shows that logging near streams can have long-term and devastating consequences for stream ecological integrity and water quality. Logging in RHCAs can cause degradation of water quality such as stream temperature increases, changes to stream temperature patterns, increased fine sediment inputs, stream bank instability, and other problems. The USFS has ignored and downplayed the well-documented negative effects and ecological risks associated with logging within streamside corridors. Even non-commercial thinning in RHCAs is, at best, a large scale and ecologically risky experiment in which little is known about the outcome. Risks are considerable, and the outcome can have unintended negative consequences. Rieman et al. (2001) noted that: "…vulnerable aquatic species could be impacted in the short term in ways from which they could not easily recover, even if long-term benefits eventually became evident in later years."*

We note that there are two standards in the Umatilla Land and Resource Management Plan (LRMP) that address sediment:

1) Standard TM-5S. Silvicultural practices shall include provisions, as appropriate, to avoid detrimental changes in water temperatures, blockages of water courses; including protection for streams, stream banks, shorelines, lakes, wetlands, and other bodies of water, and deposits of sediment.
2) Standard RE-4S. Minimize water and sediment delivery from roads and trails to streams. This includes roads, or road segments, whether inside and outside of riparian management areas, that deliver sediment to streams.

We assert that the level of sediment increase from this project will cause a huge impact to ESA-listed Mid-Columbia steelhead and sensitive native redband trout with a doubling to quadrupling the amount of sediment that streams will receive from harvest and road activities. These sediment release will occur not only during treatment activities but long after the activities have ceased. Any level of increase of sediment that could harm species covered under both PACFISH and INFISH appears to be in violation since they are retarding attainment of habitat restoration and RMOs for native fish.

Recommendation: We recommend that the UNF include any and all relevant data and analyses on other natural resources such as habitat stream parameters identified in PACFISH and INFISH. In addition, we recommend no logging or road activity (other than permanent road closures) occur in any portion of RHCAs out to the full width of each RHCA.

Transportation, Road System and Densities

We support the proposed permanent and seasonal closure and decommissioning of many roads in the project area in the different alternatives. High road densities are another major concern and are a major pathway to altered hydrology in each basin including altering peak and base flows and as a contributor to sediment in streams. Also, during the analyses all roads that are driven should be counted, not just open roads in density calculations. These should include any closed (ML 1), decommissioned, temporary, user-created, and motorized trails that are functionally open because they are driven by motorized vehicles.

The DEIS (p. 58) reported that "*Overall road densities for the Potamus Creek-North Fork John Day River were 3.0 and 4.0 mi/mi2, respectively. Road densities by subwatershed ranged from 0.0-4.7 mi/mi2. Road densities within RHCAs ranged from 0.0-2.7 mi/mi2 by watershed and 0.0-3.8 by subwatershed."* It further stated that "*Of the total of 580.7 miles of roads, 241.4 or about 42% are ML1. ML1 roads are closed to vehicular traffic, with exceptions for administrative uses. However, these ML1 roads are not necessarily hydrologically stable."*

The DEIS (p. 58) states that "*to meet the "Properly Functioning" category, overall road density needs to be <2mi/mi2 with no roads in RHCAs. Similarly, to meet the "Functioning At Risk" category, overall road density needs to be 2-3 mi/mi2with 0.1-1.0 mi/mi2. Using the most recent data, both the Potamus Creek-North Fork John Day River and Lower Camas Creek watersheds were "Not Properly Functioning."* We strongly support using this project as a means to close as many roads as necessary to achieve the <2mi/mi2 road density with no roads in RHCAs.

Roads are well documented in the literature to cause permanent impacts to a variety of terrestrial and aquatic ecosystems, and are considered a major threat to biological diversity, fragmentation, loss of connectivity for animal distribution and movement patterns, and have contributed to the spread of invasive and exotic weeds. The existing road system has also caused changes to the natural hydrology, adverse impacts to soils, water quality and stream flow, reduced riparian habitat, altered floodplains, and added sediment that has degraded streams and destroyed fish habitat

The Broads recognize that the UNF has implemented a Travel Management Plan using Motor Vehicle Use Maps (MVUMs). MVUM maps identify for the forest user the open roads identified in the TMP, but these maps may not accurately reflect actual roads that are present on the landscape that are used. Maps do not prevent or enforce users from traveling on closed, decommissioned, and user-created roads and trails.

Recommendation: We recommend that all designated closed roads should be clearly signed and physically blocked, and that all decommissioned, user- created and temporary roads be physically blocked for entry by any motorized vehicles. Signage is useful for the majority of forest users but unfortunately, there is a segment of users that don't believe any road should be closed. Therefore, ALL closed, decommissioned, and temporary roads and any user-created roads should be physically blocked to not allow motorized vehicle use.

Hydrology, Streams, Riparian Areas, Wetlands, Seeps and Springs

We note that virtually all streams in the project area are degraded and largely not in a proper functioning condition. While the data were not provided, we suspect that all RMO parameters for shade, temperature, large woody debris, stream bank stability and cutbanks, and pool frequency failed to meet PACFISH and INFISH standards.

We recommend that you provide all RMO data in the Final EIS, so the public has a chance to look at the information that was not provided in the DEIS. While some of the data may be old, several years of data provide an understanding of the trend in riparian and instream conditions, and how desperate or urgent the situation may be for aquatic species.

Stream and riparian habitats are extremely fragile communities that support ESA-listed species and Regional Forester Sensitive species. PACFISH and INFISH (1995) set riparian goals that include: maintain or restore water quality, stream channel integrity and channel processes, and instream flows to support healthy riparian and aquatic habitats. Interim riparian management objectives include bank stability greater than 80%, and interim pool frequency objectives. PACFISH and INFISH also stated that "*Actions that reduce habitat quality, whether existing conditions are better or worse than objective values, would be inconsistent with the purpose of this interim direction.*"

Recommendation: We recommend that because watersheds are largely functioning at risk or not functioning at all, and streams are highly degraded and fail to meet RMO standards, that the UNF exclude any harvest and thinning activities in the entire designated RHCAs with only select areas of prescribed fires. We recommend that you permanently close all roads possible in RHCAs and reduce road densities to <2mi/mi2.

Invasive and Noxious Weeds

One of the greatest threats to public lands is the spread of exotic and noxious weeds. Invasive and noxious weeds often colonize disturbed sites where the native vegetation has been disturbed, reduced, or removed. Executive Order 13112 directs federal agencies to reduce the spread of invasive plants, which has been identified as one of the four major threats to ecosystem health.

All action alternatives in the project area including timber harvest, thinning, prescribed burning, road reconstruction, temporary roads, livestock grazing, and other activities have a high

potential for introducing and spreading exotic weeds, including species that are already present or bringing in new weed species. This can occur on upland sites as well as meadow, riparian, and wetland sites. While the DEIS proposes some resource protection measures, the project has a very high risk of introducing and/or spreading exotic and invasive species to important habitats in violation of the Executive Order above.

The DEIS (p. 130) reported that "*Treatment activities that reduce existing plant cover and increase the amount of ground disturbance have the highest risk for potential establishment and spread of priority noxious weed species*" and "*Alternative 2 and 5 have the highest risk of the establishment and spread of invasive plants. These two alternatives have the highest number of acres of mechanical treatment, and the highest number of miles of temporary roads. Alternative 3 has the least amount of acres mechanical treatments, and fuel breaks proposed. Alternative 3 does not include any construction of temporary roads*." In other words, the greater amount of timber harvest, temporary roads, and disturbance, the worse the likelihood of spread of invasive noxious weed species.

Recommendation: We find this section on the spread of invasive noxious weed species clearly lacking in analyses and constructive comments to reduce the spread of weeds. Only 2 ½ pages of the NEPA document was devoted to identifying and limiting the spread of noxious weeds that have the potential to cause considerable harm to the future of fish and wildlife habitats and native vegetation in a huge area of over 100,000-acres. This analysis is insufficient to deal with the consequences of such a huge disturbance. We recommend that you downsize the scope and scale of this project to a more reasonable size and pursue more aggressive approaches to limiting the spread of invasive noxious weed species.

<u>Fuel Breaks</u>

We oppose creating fuel breaks along roads since it will memorialize them into perpetuity on the landscape. The huge scale of the sale and the intensity of logging planned for the amount of excessive fuel breaks that are proposed (up to one and a half miles out to either side of roads) is completely unacceptable. These areas could become enormous contiguous blocks of dry open stands. Fuel breaks are notorious for having a host of negative impacts on other resources including loss of wildlife hiding cover, increased poaching, increased sedimentation to nearby streams and RHCAs, fragmentation and loss of connectivity of wildlife habitats for large and small wildlife species, and the increased spread of noxious and invasive weed species.

Recommendation: No fuel breaks! This appears to be disguised as an expanded timber harvest under the guise of wildfire protection, with no understanding of the consequences to other natural resources.

<u>Undeveloped Lands</u>

We oppose the huge amount of logging proposed on undeveloped lands that have not been logged or roaded. Estimated amount of harvest is 16,785 acres (an astounding 26 square miles) under alternative 3, 17,103 acres under alternative 4, and 27,515 acres (an astronomical 43 square miles) under alternatives 2 and 5. We are concerned about these huge areas of

mechanical treatments in largely undisturbed and unroaded areas. While the DEIS is unclear how much of that is commercial logging or thinning treatments, both activities will cause considerable damage to other natural resources including fish and wildlife habitats.

The DEIS (P. 145) reports that "*In the 145,900-acre analysis area, approximately 69,868 acres (about 48% of the analysis area) have been identified as polygons of other undeveloped lands that are at least one acre in size."* These polygons range in size from 1-10 acres to over 640 acres. While not designated as roadless areas, they are de facto roadless areas that provide the same benefits as roadless areas.

Many authors have reported on the consequences of forest management and the importance of leaving roadless areas (and undeveloped lands) intact. DellaSala et al. (2011) states that "*the roaded, intensively managed landscapes of the other national forest lands have been closely correlated with heavily sediment-laden streams and dramatic changes in flow regimes (Espinosa et al. 1997; Trombulak and Frissell 2000; Center for Biological Diversity et al. 2001; Coffin 2007; Frissell and Carnefix 2007). The small roadless areas that have been left "unmanaged", with a dearth of logging and roads, play a critical role in maintaining high-quality water and protecting aquatic ecosystems. The clean water from remnant roadless areas is important to maintain healthy coldwater salmonid fisheries, sustain viable aquatic ecosystems, and help protect threatened species and ecosystems (Abell et al. 2000; Trout Unlimited 2004). Roadless area are an important refugia for many salmon and trout populations, as well as for a diversity of endangered freshwater species (Henjum et al. 1994; Huntington 1998; Trombulak and Frissell 2000; CBD et al. 2001; Strittholt and DellaSala 2001; Oechsli and Frissell 2002; Strittholt et al. 2004; Petersen 2005)."* DellaSala et al. (2011) state that "*restoration of salmon and trout fisheries in places with high road densities will likely fail without the pivotal role provided by roadless areas as fishery strongholds*." Further, they state that "*For many major drainages (entire watersheds of major rivers, such as the Columbia River Basin), roadless areas and other wilderness areas represent the last few percentages (typically 1% to 5%) of the landscape with a minimally disturbed, or near natural, hydrology*."

Recommendation: We recommend absolutely no logging, roads or treatments in undeveloped lands.

<u>Wildfire</u>

New science has been emerging on the importance of a variety of wildfires from low severity at frequent intervals to mid severity and occasional high severity fires. Not all wildfires as the DEIS seems to imply are bad and in fact have important ecosystem functions for restoration and wildlife habitats (Hutto et al. 2016, DellaSala 2020, Harmon et al. 2022). For example, Hutto et al. (2016) reported that "*First, many plant and animal species use, and have sometimes evolved to depend on, severely burned forest conditions for their persistence. Second, evidence from fire history studies also suggests that a complex mosaic of severely burned conifer patches was common historically in the West. Third, to maintain ecological integrity in forests born of mixed-severity fire, land managers will have to accept some severe fire and maintain the integrity of its aftermath. Lastly, public education messages surrounding fire could be modified so that people*

better understand, and support management designed to maintain ecologically appropriate sizes and distributions of severe fire and the complex early seral forest conditions it creates."

DellaSala (2020) reported that "*In our region, and much of the West, wildfires burn in a mixed pattern of severity effects on plant communities. The largest wildfires are not uniform conflagrations – rather they burn in a mosaic pattern of mixed severity effects (unburned, low, moderate, high severity burn patches). At the landscape scale, this pattern has been referred to as "pyrodiversity" and it is responsible for Oregon's extraordinary levels of biodiversity present in wildfire burn mosaics1. Most notably, the high severity burn patches where most trees are killed (known as "complex early seral forests," snag forests, or charcoal forests) are as bio-diverse as patches of old-growth forests*."

Further, DellaSala (2020) stated that "*Active management is often proclaimed as a panacea for reducing wildfire-human conflicts, yet it is seldom even defined. Active management can mean just about anything – clearcut logging, salvage logging, high-grade logging, fuels reduction, prescribed fire, thinning, road building, etc. And while degraded forests like plantations can benefit from ecologically appropriate thinning and other restorative actions (snag creation, down logs, road obliteration, weed removals), in most cases thinning – even if done properly – will not encounter a fire during the short period (10-15 years) of when fuels are lowest.*

The Oregon landscape is so vast and efforts to spend billions of dollars on thinning are not likely to be effective nor will they make us safer. This is because we do not know exactly where wildfires will occur, and thinned forests will just grow back quickly in many cases. In fact, the largest empirical dataset ever assembled by researchers recently documented the low co-occurrence of wildfires and thinned sites. Some 99% of thousands of acres of fuels treatments on federal lands did not encounter a wildfire when fuels were lowest. Further, these same researchers found that despite the emphasis on the so-called WUI, codified in the Healthy Forest Restoration Act of 2003, most fuel treatments were being conducted outside this zone and in the backcountry where they will do nothing to protect homes."

From this discussion we conclude that the Forest Service is using the threat of wildfire to conduct large amounts of timber harvest. While in some dry site ponderosa pine forests, thinning and harvest may be warranted, the proposed thinning and harvest of such a huge project area is not warranted and will likely have severe impacts on cool, moist forested areas, old growth and large multilayered forest that provide other essential services for carbon storage, biodiversity, soil and nutrient cycling and water quality.

We find the discussion on ember reduction zones for fire embers bizarre and not founded in science. We recommend you delete this issue.

Recommendation: The Broads are concerned that overstocked stand density has been (mis)used by the Forest Service to proclaim the need to do intensive forest management including timber harvest and thinning to justify "wildfire resiliency". There is much respected science and research coming from a variety of universities and other learned institutions that

indicate that these justifications are wrong. We recommend that the UNF speak the truth about this work, that it's about getting the Annual Sale Quantity (ASQ) out for sale of merchantable timber rather than relying on the worn-out discussion about saving communities from wildfire. Frankly even the biggest fires in the last few years were climate and wind driven events and megafires burned treated areas just as much if not more than untreated areas. It's time to use the current and best science and not misuse science from the past.

Climate Change

The climate change section in this proposed Ellis project of over 100,000 acres is inadequate due to a complete lack of analyses (only 3 short paragraphs on DEIS p. 137) devoted to climate change. The DEIS minimizes the impact of climate change while overstating the need to do forest management (at the expense of streams, water quality, fish and wildlife habitats and soils) in order to protect forests from increasing wildfires from a warming and drying climate. As stated in the previous section on wildfires, future severe wildfires will be climate and wind driven events and no amount of forest management will stop big events.

There is a huge body of science on climate change and the relationship of forests in the Pacific Northwest and their importance for carbon storage and species biodiversity. Clearly, this project flies in the face of this science and demonstrates how dangerous this project will be by removing large mature trees that are important for carbon storage and biodiversity, and the great loss of carbon by logging much of the project area. Logging in Oregon is the number one emitter of carbon contributing to climate change. This project as designed is flawed and supports further climate and species biodiversity degradation.

Today's world has 50% more carbon dioxide in the atmosphere compared to preindustrial levels. A recent study by Oregon State University (Law et al. 2018) reported that logging is Oregon's largest source of annual carbon emissions at 35%, while between 2011–2015, forest fires only accounted for 4% of Oregon's total carbon emissions each year. The authors report that the Pacific Northwest contains some of the highest carbon density forests in the world that can store carbon in trees for 800 years or more, and that reducing logging on public lands by half would have huge climate benefits. The authors also found that forests retain the majority of their carbon after wildfires as snags if they are not harvested by "salvage logging."

Law et al. (2021) expounded more recently on the importance of strategic forest reserves in the 11 western states for assisting with the twin crises of biodiversity and climate change. The researchers at Oregon State University stated that the U.S. needs to establish new "Strategic Forest Reserves" to protect wildlife and reduce the carbon emissions that contribute to climate change. Researchers analyzed which forests are currently protected in 11 states and which ones should be prioritized for protection in the future, outlining a plan for creating Strategic Forest Reserves across the region. The maps in the study showed that Western forests would store the most carbon and help the most species if they were given the same level of protection from logging, grazing, and mining as designated wilderness areas receive. These maps most definitely included significant areas of the UNF.

Forest Service lands are critically important for carbon storage and repaying the carbon debt. While the UNF believes it is important to move this project toward "resiliency," research is showing that these same forests are critical for combating climate change by moving toward old growth forests because larger trees store far more carbon. We ask you to consider these facts and emphasize that the project should retain more areas with large mature trees, intact landscapes, and roadless areas because these areas have the trees that store the highest amount of carbon and are part of the climate change solution. The project as proposed currently in the DEIS will increase are harm from climate change, reduce biodiversity, and not make the forests any more resilient and likely less so with the loss of large mature trees.

Climate change is expected to alter many of the native habitats of fish and wildlife species on forest lands, even for our iconic species such as elk and mule deer. Streams and riparian areas will be critically impacted by warmer and drier winters, and by more extreme weather events. Climate change predictions suggest that temperature increases alone will render 2 - 7% of headwater trout habitat in the Pacific Northwest unsuitable by 2030; 5 - 20% by 2060; and 8 - 33% by 2090 (Bisson 2008; Independent Scientific Advisory Board 2007). Climate change, particularly in light of already poor stream conditions of high sediment, poor bank stability, low pool frequency, and high summer temperatures on UNF lands may cause numerous species to go extinct.

Law (2021) in testimony before Congress stated that "*Forests with medium and high carbon per acre also have medium and high biodiversity, promoting ecosystem resilience to climate change We are in the midst of an emergency to address both climate change and biodiversity loss (Ripple et al. 2019). We must consider both forest carbon and biodiversity when determining management strategies in forests. Studies estimate that at least one-third of American wildlife, more than 12,000 species, are at increased risk of extinction, with extinction risk being highest in the largest and smallest vertebrates (Ripple et al. 2017). Under future climate projections, medium to high carbon density western U.S. forests with relatively low to moderate vulnerability of mortality from fire or drought also have high amounts of critical habitat and high species diversity (Buotte et al. 2020). If protected, these forests have a strong potential to support biodiversity into the future and to promote ecosystem resilience to a changing climate. These areas are primarily in the Pacific Northwest and northern Rocky Mountains in Idaho and Montana. A recent global study also strongly confirmed the spatial coincidence of areas important for carbon storage and biodiversity protection (Dinerstein et al. 2020).*"

Recommendation: Follow the science, that is, the correct and best science and use this to minimize the project's impact on the landscape. The Broads support the science and research stated by numerous scientists that climate change is the main driver for wildfires while current forest management practices (aka timber harvest especially any large mature trees) of forests is depleting not only carbon storage and sequestration but is a huge threat to fish and wildlife species biodiversity which is in crisis right now. We believe the best option for this project is to first, eliminate the project (Alternative 1), or second minimize the size of the project by at least

half, and third, stay out of RHCAS, old growth, undeveloped lands and other areas that should remain unmanaged.

Conclusion

We believe the Umatilla Forest has special places that need special consideration for vegetation management projects that cover large areas with treatments. We believe that the project area is best protected with Alternative 1. Any action alternative should be at a minimum reduced by ½ or more of the current project size since this is so large it will cause significant irreparable damage to a large number of natural resources including rivers and streams, water quality, soils, riparian areas, wetlands and springs and fish and wildlife habitats.

Of all the action alternatives, Alternative 3 is the more reasonable effort to meet many of our concerns, but the project would need to be reduced in scope and scale and include no logging in undeveloped lands, RHCAs, and old growth, and include significantly more road decommissioning and closures with physical barriers. Alternative 3 appears to have been designed to emphasize thinning on dry forest that was historically more open, reduce the width and logging intensity of planned fuel breaks, avoid harvest in old growth forest and in most moist, cool mixed conifer forests. It also did not construct "temporary" roads. Overall, alternative 3 has the least amount of commercial logging but needs to include a much greater amount of road closures and decommissioning.

We understand the Forest Service must meet a Congressional mandate for multiple-use and is also trying to reconcile implementing projects to "restore HRV". We recommend that you pursue an alternative that substantially reduces the size and scope of the project, removes any temporary roads, substantially closes, and decommissions roads more than what is stated in the DEIS, and restricts timber harvest, thinning and prescribed burning to areas in upland dry site areas and stay out of RHCAs, old growth and undeveloped lands.

Thank you for the opportunity to comment.

Sincerely,

*/Mary Fleischmann/Joanne Richter/*electronic signature

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