Juniper Group, Oregon Sierra Club
c/o Environmental Center
16 NW Kansas Avenue
Bend, OR 97703

Central Oregon Bitterbrush Broads and Bros
Great Old Broads for Wilderness
61503 Camelot Pl., Bend, OR 97702

October 27, 2024

Via Electronic Portal

Ochoco National Forest
Shane Jeffries, Forest Supervisor (Reviewing Officer)
3160 NE Third Street
Prineville, Oregon 97754

Re: North Fork Crooked River Forest Restoration Forest Resilience Project (61651) Final Environmental Assessment and Draft Decision, https://cara.fs2c.usda.gov/Public//CommentInput?Project=61651

Dear Reviewing Officer:

The Great Old Broads for Wilderness, Central Oregon Bitterbrush Broadband (COBB), and the Juniper Group of the Oregon Sierra Club (JGSC) jointly file these objections for the North Fork Crooked River ("NFCR") Forest Resilience Project (61651) in accordance with 36 CFR 218, Subpart A and B. We submit objections to the Draft Decision Notice ("DDN") and Final Environmental Assessment ("FEA") for the NFCR Project. These comments are similar in nature to our comments on the recent Mill Creek Project (58081) and incorporate by reference and are consistent with those comments.

The JGSC represents over 2000 members in Eastern Oregon counties. The mission of the Sierra Club 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.
- To educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives.

We are filing these objections in part to protect wild places, educate, and restore the quality of the natural and human environment.

The mission of the Great Old Broads for Wilderness, including the Bitterbrush Broadband, is to preserve and protect wilderness and wild lands. We give voice to the millions of Americans who want to protect their public lands and wilderness for now and future generations, bring knowledge, leadership, and humor to the wilderness preservation movement, and educate the public about the critical connection between healthy public lands and climate change mitigation.

We commend the Ochoco National Forest (ONF) and Paulina Ranger District for several substantive changes that were made to the project since the Draft EA was issued in November 2023. We support the removal of timber harvest of all trees 21 inches and over (consistent with the "Eastside Screens") and the elimination of all commercial timber harvest in Riparian Habitat Conservation Areas (RHCAs) except for 109 acres in Category 4 RHCA (DDN p. 4). As noted in our organizations' comments to the Draft EA, these two actions that were originally proposed are very contentious, not scientifically supported, and

when implemented, have a large potential to impact other natural resources including soils, native plants, fish and wildlife populations and their habitats, biodiversity, carbon storage, ecosystem services, and climate change.

We support the ONF decision to not cut trees 21 inches and over, consistent with the original 1994 Eastside Screens as well as Judge Hallman's ruling on August 31, 2023, in the District Court of Oregon, 2023 (Greater Hells Canyon Council v. Wilkes, Case No. 2:22-cv-00859-HL, ECF 97). The Forest Service's 2021 Amendment to the Eastside Screens which eliminated the 21-inch rule was unlawful under NFMA, NEPA and the ESA and the Screens Amendment is vacated. On March 29, 2024, Judge Aiken affirmed the lower court's findings (Greater Hells Canyon Council v. Wilkes, Case No. 2:22-cv-00859-HL, ECF 104, March 29, 2024), ordered a vacatur of the Screens Amendment, issued an injunction, and ordered the USFS to prepare an Environmental Impact Statement. We note that the US Forest Service recently withdrew the appeal to these decisions. This is also consistent with President Biden's Executive Order 14072 [2] which stresses protection and the importance of mature and old-growth (MOG) forests on federal lands for their role in contributing to nature-based climate solutions by storing large amounts of carbon and increasing biodiversity.

We note that the ONF Project 61651 analysis document "North Fork Crooked River Forest Resilience Project, Environmental Assessment", dated September 2024, on page 6, references the Eastside Screens Amendment described above without reference to the court finding of the unlawfulness of this amendment, which had been decided in August 2023. We are disappointed in the ONF's interpretation and other issues of ecosystem importance, once again raising concerns of distrust and the need for public monitoring of ONF and Forest Service.

We also note the Crazy Creek Fire (almost 87,000 acres), started by lightning in July 2024, made substantial changes to the eastern half of the NFCR project area, and support the reduced footprint of the project as described in the DDN. The original project planning area of 37,577 acres proposed treatment on approximately 11,000 acres (FEA p. 1). It is unclear in the FEA and the DDN, that despite the reduced treatment area of 6,655 acres, the size of the remaining footprint of the project area with the elimination of the east half of the project area.

We welcome the substantive changes made since the Draft EA and efforts to reduce the project impacts and support restoration of stream and aquatic resources. However, the Broads and Sierra Club have several ongoing concerns about the DDN and project proposal. These include planned management activities in RHCAs and streams, wildlife, travel management and roads, HRV, livestock grazing, the use of forest products for biomass energy, economics, undeveloped lands, steep slope logging, climate change, and cumulative effects.

**Objector Name and Contact Information**

Great Old Broads for Wilderness, Bitterbrush Broadband
Lead Objector: Amy Stuart, Bitterbrush Broadband Co-leader
13501 NW Grizzly Mtn Rd.
Prineville, OR 97754
541-233-8215

Juniper Group, Oregon Sierra Club
Co-Objector: Mathieu Federspiel, Juniper Group Executive Committee

c/o Environmental Center
16 NW Kansas Avenue
Bend, OR 97703
541-363-4117

**Proposed Project**
North Fork Crooked River Forest Resilience Project

**Name and Title of Responsible Official**
Scott McFarland, Paulina District Ranger

**National Forest and Ranger District**
Ochoco National Forest, Paulina Ranger District

**Suggested Remedies that would Resolve the Objection:**
The Broads and Sierra Club ask the ONF to adopt and incorporate the following changes to the proposed project. Remedies are provided for each topic.

**Specific Issues Addressed by these Objections.**
In the following statements, excerpts from other documents are indented. Citations in these excerpts are as given in those documents. As the FEA includes in "Appendix F – Response to Public Comments" quotes from several organizations, including ours, from comments on the Draft EA, our comments to the Mill Creek Project are incorporated by reference in this objection for the NFCR project (Public Reading Room for the Mill Creek Project, https://cara.fs2c.usda.gov/Public//ReadingRoom?Project=58081).

## *Large Tree Timber Harvest*

**A Few Examples of our Comments to the Draft EA**

> Do not cut any mature and large trees equal to or over 21 inches consistent with the Eastside Screens (1995). Support the recommendations of climate scientists for forest protection and establishment of forest reserves as low-cost solutions to climate mitigation. Protect all large mature and old growth trees which accumulate massive amounts of carbon in trees, vegetation and soils, homes for diverse wildlife, and serve as sources of water for drinking and other uses.
>
> Historically, large old trees dominated as much as 75% of the eastern Oregon forests (DellaSala and Baker 2020). The Eastside Screens were in place for 25 years and not 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, water quantity and quality, and many fish and wildlife species that used large old trees for part or all of their life history needs.
>
> Large trees are important as either live or dead, standing or fallen onto the forest floor or into the stream and are critical to forest, wildlife habitat, and watershed function. In streams, fallen logs are large woody debris (LWD). LWD is important for structure, function, and biodiversity of forests in upland and aquatic ecosystems. 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 that withstand forest fires and survive, and provide shade, wind breaks, soil moisture and a cooling effect in the multilayered canopy.

Large trees in RHCAs are a "biocultural heritage" that sequester and store carbon and provide ecosystem services such as clean water, nutrient cycling, and below-ground processes (DellaSala and Baker 2020). With climate change, it is critical to retain as much atmospheric carbon tied up in the forest and soils, 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 instream 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 (Brandt et al. 2014).

Removing large trees, that is, trees great than 21-inch DBH, runs counter to the environmental needs to:
- protect LOS,
- recruit old growth,
- provide carbon sequestration.
- provide forest health
- provide forest structure and diversity

While such harvesting provides an economic incentive to the local timber industry, there is much sound scientific analysis that demonstrates this is bad for the health of the forest and for the ecosystem. It also has a negative effect on most recreational experiences, as demonstrated by standard efforts to provide viewsheds and buffers to hide evidence of logging. Large trees in riparian areas provide streamside shading and instream 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.

Large trees are especially significant for carbon storage and biodiversity. (See [34], [46], [47]) In forests, this means no cutting of any mature or large trees, that is, no cutting trees older than 80 years or larger than 21-inch DBH. Old growth stands must be protected for this reason as well as for the unique ecological value these stands provide. Countering anthropogenic climate change by allowing trees to grow to maturity and into old growth stands is required for long-term sustainability of our public forests' health.

**Issues and Impacts**

The DDN (pp. 3 and 4) states:

> A high volume of comments were focused on harvesting trees greater than 21" diameter and commercial thinning within Riparian Habitat Conservation Areas (RHCAs)…By limiting the size of trees of any species to be removed to less than 21" DBH, this decision responds to several organizations' positions in opposition to such thinning.

Since the issuance of the Draft EA in 2023, we support the ONF's decision change to not cut trees 21 inches and over. This change will benefit fish and wildlife species, biodiversity, soils, native plants, water quality, and carbon storage and sequestration to mitigate the impacts of climate change. It is also consistent with President Biden's Executive Order 14072 [2] and goal to reach 30X30 which is a global initiative to conserve biodiversity and climate.

The DDN uses the measure 'greater than 21" diameter' or '> 21" DBH' in several places, including the NFMA section (p. 7). The Eastside Screens specify greater than or equal to 21" DBH, and we trust that while the "or equal to" part is often left off, the ONF intends to follow the Eastside Screens specification.

**Remedy**

We support the ONF decision to conserve large trees in support of fish and wildlife habitats, climate change, and biodiversity.

## *RHCAs and Streams*

We support the selection of Modified Alternative 2M that eliminates commercial harvest in RHCA Categories 1-3 and reduces commercial harvest in Category 4 to 109 acres. The DDN (p. 4) states:

> The majority of treatments are noncommercial thinning within Categories 1 through 4 RHCAs but there are 109 acres of commercial thinning proposed in Category 4 RHCA. These activities will develop conditions that will accelerate attainment of riparian management objectives (RMOs).

We strongly support the elimination of commercial harvest in RHCA Categories 1-3 and limiting harvest in Category for to 109 acres. We thank the ONF for providing a map of the proposed location of commercial harvest in Category 4 RHCAs on Map 3 on p. 48 of the DDN. We remain concerned about the amount of noncommercial thinning proposed in RHCAs.

The Broads and Sierra Club commented on our concerns with proposed treatments in RHCAs and streams during the Draft EA comment period related to this objection. The following are examples.

**A Few Examples of our Comments to the Draft EA**

> Timber harvest and thinning near streams and in riparian areas harms water quality and fish habitat, especially the negative effects associated with the removal of large, commercial-sized trees. While some habitat loss from thinning and burning has a shorter-term impact, the loss of large-diameter trees, snags and down wood takes decades or centuries to recover. Harvest and thinning also reduces recruitment for future snags and downed wood.
>
> To "fix" the extensive failure of RHCAs in meeting RMOs, the Draft EA (p. 139) action alternatives propose to harvest conifers in RHCAs to promote hardwood recovery, create additional pool habitat, and reduce sediment transport. However, this approach will fail as it does not address the many causes of stream degradation identified in the EA. These include lack of floodplain connectivity, past and ongoing livestock grazing, timber harvest, and road densities.
>
> Effects on fish habitat from loss of streamside vegetation [from timber harvest, roads, and livestock grazing] include increased stream temperature, loss of cover, increased erosion, widening and shallowing of the stream channel, and reduction or loss of perennial flow. Degraded habitat is characterized by increased sediment and water temperatures, declines in pool depth, quality, and frequency, reduced LWD, increased cutbanks and bank instability, and high width/depth ratios. Water quantity and quality problems, primarily flow reduction or loss,

temperature, sedimentation, and turbidity, limit fish distribution and production (Bottom et al. 1985).

Riparian areas are or can be some of the most biodiverse areas in the forest, and thus require the most protection from human manipulation. Any activities in these areas should be minimized and approached with critical concerns. Past efforts have been detrimentally affecting riparian areas, and continued efforts are not faring better

Logging in riparian areas can increase nutrient loads, stream temperature, and sediment to the stream, compromising fish habitat and water quality. Any active management in stream corridors and riparian areas risks harm to stream ecosystems ([52]) via the release of nutrients and increases in sediment and stream temperatures.

**Issues and Impacts**

*a. Commercial Timber Harvest*

The Ochoco Land and Resource Management Plan (LRMP) for riparian areas (MA-15) specifically states the following:

> Riparian areas are among the most critical wildlife habitats in the Forest. Over 75 percent of the Forest wildlife species are directly dependent on riparian zones or utilize them more than other habitat areas Wildlife use streamsides as "connectors,'' or travel lanes between forested habitats…For management purposes, a special protection area (100 feet from the edges of perennial bodies of water) will be apparent.

INFISH established RHCAs because of the long history of stream degradations caused by management activities including timber harvest, livestock grazing, and roads. INFISH (A-5) states that:

> Widths of interim Riparian Habitat Conservation Areas that are adequate to protect streams from non-channelized sediment inputs should be sufficient to provide other riparian functions, including delivery of organic matter and woody debris, stream shading, and bank stability (Brazier and Brown 1973, Gregory et al. 1984, Steinblums et. al 1984, Beschta et al. 1987, McDade et al. 1990, Sedell and Beschta 1991, Belt et al. 1992). The effectiveness Of riparian conservation areas in influencing sediment delivery from non-channelized flow is highly variable. A review by Belt et al. (1992) Of studies in Idaho (Haupt 1959a and 1959b, Ketcheson and Megehan 1990. Burroughs and King (1985 and 1989) and elsewhere (Trimble and Sartz 1957, Packer 1967, Swift 1986) concluded that non-channelized sediment flow rarely travels more than 300 feet and that 200-300 foot riparian 'filter strips' are generally effective at protecting streams from sediment from non-channelized flow.

INFISH includes the following objectives for Riparian Management Objectives (RMOs):

- Bank stability greater than 80 percent
- Width/depth ratio (W/D) less than 10, (mean wetted width divided by mean depth)
- Shade greater than 80 percent of water surface shaded
- Large woody debris greater than 20 pieces per mile; less than 12 inches diameter; less than 35-foot length

- Pool frequencies varies by width (10-foot channel width = 96 pools/mile, 20-foot channel width = 56 pools/mile, 25-foot channel width = 26 pools/mile, etc.)
- Water temperature less than 59° F within adult holding habitat. No measurable increase in maximum water temperature (7-day moving average of daily maximum temperature measured as the average of the maximum daily temperature)
- Turbidity: Stream channel cutbanks should not exceed an average of 20 percent for any given stream drainage.

Implementation of INFISH buffers and monitoring of habitat parameters has been critical to restore habitat and water quality to restore and protect native inland fish. It specifically directs that commercial logging in RHCAs should only be applied in very limited situations when treatments are needed to attain RMOs. INFISH standards clearly specify that no activity can be done that retards attainment of these RMOs.

> The exclusion of proposed timber harvesting in the affected areas would permit the natural succession of forest vegetation and would rely more heavily on natural events, such as fire and insect and disease infestations, to influence or shape forest succession. Consequently, increases in tree mortality and the associated risk of fire, insects, and disease would be expected.
>
> The INFISH standard and guideline TM-1 prohibits timber harvest in RHCAs except to apply silvicultural practices for Riparian Habitat Conservation Areas to acquire desired vegetation characteristics where needed to attain Riparian Management Objectives. Apply silvicultural practices in a manner that does not retard attainment of Riparian Management Objectives and that avoids adverse effects on inland native fish.

**Remedy**

Please provide management direction and supporting information such as the specific units, locations, species, and number of trees for each unit proposed for commercial harvest in Category 3 RHCAs in the Final Decision Notice regarding location and prescription for where and how much commercial harvest will occur in RHCAs. While the Map 3 on p. 48 of the DDN shows locations of proposed commercial harvest, it does not show the prescription. All trees commercially harvested in RHCAs must be left on site in the floodplain or placed instream or in channel to provide LWD, assist restoring degraded stream channels and morphology, assist building pools, and block livestock from further degrading streams.

*b. Noncommercial thinning*

The DDN (p. 9) reports there are 6,655 acres of treatment in the remaining project area since the Crazy Creek Fire burned much of the proposed area on the east side. Noncommercial thinning will occur on 3,233 acres (49% of the remaining project area planned for treatment), followed by fuels treatment. While it is not stated in the DDN or FEA how many RHCA acres (by category) remain in the proposed project area, 430 acres of Category 1, 2, and 4 will be thinned followed by prescribed burning.

Since the FEA was not written to provide updated information on the newly revised project with a smaller footprint, it is unknown by the public on what proportion of RHCAs will be treated.

We remain concerned that the level of thinning may compromise fish habitat for shade, bank stability, and future wood recruitment. It may also impact a multitude of wildlife species that use riparian areas as migration corridors, breeding habitats such as nesting birds, fawning and calving areas for mule deer

and elk, and hiding and thermal cover. Any type of thinning and prescribed burn treatments in RHCAs can impact stream habitat values for aquatic life, wildlife food, resting and cover habitats, and soils.

The DDN (p. 4) Table1 states that the noncommercial thinning will occur in 225 acres (52%) in Category 1 RHCA, 10 acres (2%) in Category 3, and 195 acres (45%) in Category 4 RHCAs.

Our concerns are that large amounts of thinning in RHCAs has the potential to reduce shade and increase already elevated stream temperatures that violate water quality standards. In other words, harvest of trees, either commercial or noncommercial thinning, even in Category 4 intermittent streams, can result in higher stream temperatures, even when these streams go dry.

While we are not strictly opposed to noncommercial thinning or prescribed burning in RHCAs, we remain concerned about the potential impact on shade, bank stability, and stream temperatures. We recognize that chronic disturbances such as insects, disease, and fire are a part of the natural processes of forests along riparian areas and streams. We caution the use of thinning over large areas to restore hardwood species as this has not been demonstrated in this forest from all the previous "treatment" projects. These include a multitude of projects over the past 25 years or more, since the 1990s, when treatments were proposed along riparian areas and streams to "improve" riparian hardwood species and have failed to demonstrate restoration of riparian and stream habitats.

For example, the Mill Creek Project 2024 Aquatics Report (p. 33) alleges that proposed thinning and prescribed fire activities and hardwood enhancement would improve riparian vegetation which in turn would further stabilize streambanks and foster improved hardwood growth. Yet, this failed to occur as a result of the 1999 project in the same area using largely the same riparian treatments. Unless this NFCR project adds floodplain restoration, instream wood placement and livestock fencing, we are skeptical that thinning and burning will result in restored riparian vegetation. We recommend that the ONF add restoration work including protection from livestock grazing to increase the likelihood of success.

We also assert that the ONF failed to adequately evaluate and acknowledge short-term impacts, while at the same time, arbitrarily asserting that long-term benefits will offset any short-term impacts almost immediately without conducting a full and fair assessment of the effectiveness of project mitigation measures (Pac. Coast Fed'n of Fishermen's Ass'ns v. Nat'l Marine Fisheries Serv., 265 F.3d 1028, 1035–37 (9th Cir. 2001), failure to address short-term impacts; S. Fork Band v. U.S. DOI, 588 F.3d 718, (9th Cir. 2009), "An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective").

Given the current conditions of incised channels, overgrazed riparian areas, and failure to meet many INFISH RMO standards, we are skeptical that this project will do better. We recommend that any and all trees cut in RHCAs are left instream or on the floodplain to collect sediment, provide downed wood habitat, and block livestock grazing.

While today's science says that careful and constrained thinning of forest types on the east side of the Pacific Northwest may improve stands, thinning is also controversial because it also opens the canopy to greater wind speeds and drying and increase wildfire risk in the future. Since there is limited consensus on thinning, particularly in RHCAs, it is prudent to limit the impacts on other resources against the risks of ignorance and arrogance.

**Remedy**

Explain where, how large, and in what pattern natural leave areas are retained in RHCAs for the benefit of other natural resources since these details affect how much the project will impact fish and wildlife and their habitats. Implement a Resource Protection Measure that sets a significant percentage of each treated unit that will remain unthinned as leave areas for riparian, fish, and wildlife protections. No mechanized thinning in RHCAs to avoid soil disturbance and compaction and stream sedimentation. All trees thinned in RHCAs must be left on site in the floodplain or placed instream or in channel to provide LWD, assist restoring degraded stream channels, building pools, retain sediment, and prevent livestock from further degrading streams and riparian areas. Additional LWD for stream restoration should be brought in from outside RHCAs to meet LWD targets.

*c. Prescribed Burns*

Prescribed burns can be an opportunity or a risk to create disturbance that may improve or harm riparian areas.

> The DDN (p. 2) states that 6,655 acres will receive prescribed burning treatments. The DDN (p. 4) also states that commercial thinning and noncommercial thinning will occur on 109 of Category 4 RHCA and 430 acres of Category 1 and 3 RHCA, respectively, followed by prescribed burning with a total of 539 acres of RHCA prescribed burning.
>
> The DDN (p. 4) shows in Table 1 that 46 acres of underburning will occur in Category 1, 3 and 4 RHCAs.

Please explain how these two activities, prescribed burning and underburning, will occur in RHCAs.

> INFISH (p. A-11) states for FM-1 to design fuel treatment and fire suppression strategies, practices, and actions so as not to prevent attainment of Riparian Management Objectives, and to minimize disturbance of riparian ground cover and vegetation. Strategies should recognize the role of fire in ecosystem function and identify those instances where fire suppression or fuel management actions could perpetuate or be damaging to long-term ecosystem function or inland native fish.

Prescribed burning has the potential to impact important wildlife habitats that use riparian areas as migration corridors, breeding habitats (e.g., nesting birds, fawning, and calving areas), and hiding and thermal cover.

**Remedy**

Explain where, how large, and in what pattern natural leave areas are retained for the benefit of other natural resources since these details affect how much the project will impact fish and wildlife and their habitats. Retain large patches of leave areas to limit impacts to other resources. Retain significant proportions of leave areas in areas treated with prescribed fire so that there are untreated areas for riparian, fish, and wildlife protections.

*d. RMOs and Habitat Issues*

INFISH set riparian goals to maintain or restore water quality, shade, stream channel integrity and channel processes, and instream flows to support healthy riparian and aquatic habitats.

> INFISH (Appendix E-3) states 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. Without the benchmark provided by measurable RMO [riparian management objectives], habitat suffers continual erosion.

With the degraded streams in the project area, it is critically important that none of the RMOs are impacted by harvest, thinning, and burning. The following discussions focus on shade and temperature, but the same concerns apply to lack of bank stability, increased sedimentation, and overly wide width/depth channel ratios that already occur in the project area.

**Shade**

Shade is critical in forest streams to reduce solar insolation, plays an important role in reducing high temperatures, and is one of the few factors amenable to management. We concur that topography, channel width and stream orientation can affect the amount of shade, but the 60–100-foot shading is less than the 100-200 feet most authors describe. In addition, buffer widths were established for shade and other resources such as limiting sediment going instream.

The NFCR Project (FEA p. 132) states that:

> Within the project area there are four streams with assessed water quality impairments related to summer water temperature. These include North Fork Crooked River (7.8 miles), Fox Canyon Creek (5.2 miles), Roba Creek (3.6 miles), and Dry Paulina Creek (3.2 miles). These streams are on Oregon Department of Environmental Quality's (ODEQ) 2022 Section 303(d) List of "Water Quality Limited Waterbodies."
>
> Observations from data collected from the early 1990s through present indicate that most of the streams within the project area are not meeting management objectives of 80% shaded surface or greater (Table 86, Appendix E).

Wide buffers create more shade than narrow buffers, as measured by angular canopy density (Brazier and Brown 1973 [4], Wooldridge and Stern 1979 [13], Steinblums et al. 1984 [12], Beschta, et al. 1987 [1]). However, there is a high degree of variability in this relationship, particularly at narrower buffer widths where the effect on shade is greatest. These studies also showed that 75-90% shade can be achieved with a wide range of buffer widths, ranging from 9 to 43 m. The high variability in buffer width and shade condition is a function of the many variables that influence the amount of shade produced by riparian vegetation. As described above, low-density stands with limited vertical distribution of branches and foliage may require wider buffer widths to produce the same amount of shade as high density stands.

Roon et al. (2021) [10] also assessed the effects of thinning and management on riparian areas:

> Resource managers in the Pacific Northwest (USA) actively thin second-growth forests to accelerate the development of late-successional conditions and seek to expand these restoration thinning treatments into riparian zones. Riparian forest thinning, however, may impact stream temperatures–a key water quality parameter often regulated to protect stream

> habitat and aquatic organisms...In the watersheds with more intensive treatments, thinning reduced shade, increased light, and altered stream thermal regimes in thinned and downstream reaches. Thinning shifted thermal regimes by increasing maximum temperatures, thermal variability, and the frequency and duration of elevated temperatures. These thermal responses occurred primarily during summer but also extended into spring and fall.

While the FEA states in numerous places that management activities are unlikely to increase stream temperatures, based on the scientific literature, any amount of harvest and thinning in RHCAs have the potential to reduce shade and increase temperature. Reducing shade and increasing temperatures, even small amounts, are in direct violation of INFISH standards.

**Temperature**

The only temperature data provided for the NFCR project was a long-term data set for the North Fork Crooked River where the information was collected at an upstream reach in the project area (FEA p. 133).

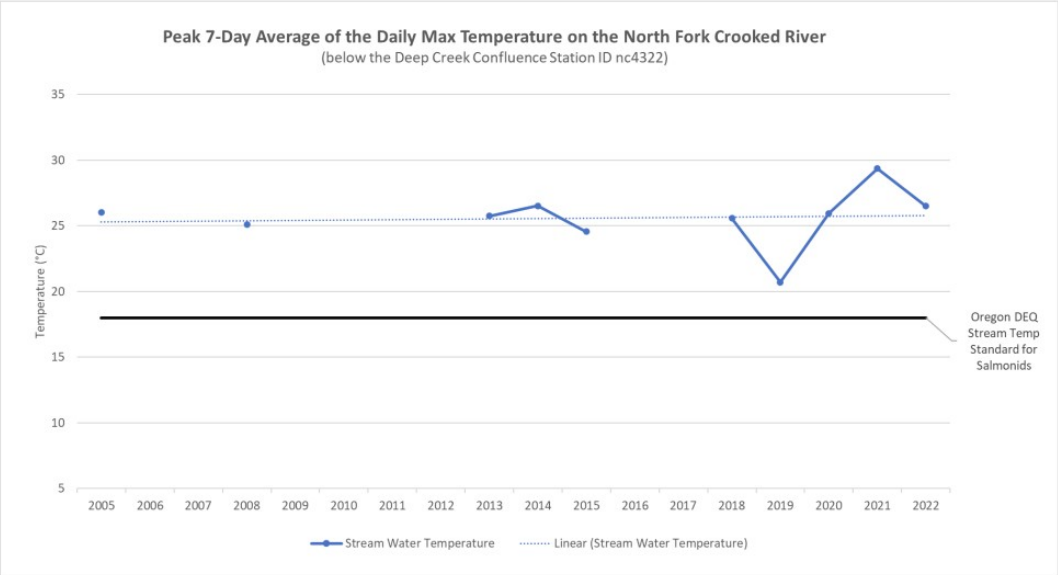


Figure 17. Available stream temperature data from the only long-term deployed data logger in the project area located in the lower North Fork Crooked River, just downstream of the confluence with Deep Creek.

The FEA (p. 132) noted that

> Temperature data was summarized from the only long-term deployed data logger in the project area located in the lower North Fork Crooked River, downstream of the confluence with Deep Creek (the main cold-water input tributary). It is deployed high up in the project area. Due to a lack of data from other reaches and streams within the project area, these data were extrapolated to represent the whole project area. Figure 17 summarizes available data from 2005 to present. Water temperature has not met INFISH standards in any of the years of available data.

We note that there is additional information from past forest management activities that had temperature data for the project area including the Fox Canyon Cluster and Westside Allotments AMPs.

The 2013 Fox Canyon Cluster Allotment Management Plan has temperature data for Fox Canyon Creek and the North Fork Crooked River:

| SITE DESCRIPTION | PASTURE | LOCAL_NAME | CONDITION | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2004 | 2005 | 2006 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fox Canyon Creek downstream of the confluence with North Fox Canyon Creek. Fox Canyon Creek R1,R2, N.F.Fox Canyon Creek R1. | Fox Canyon | FoxCanyonCr_fc4530_LTWT | Poor | | | | | | 27.3 | | | | | | | |
| Gray Prairie Creek in THREE Pasture upstream of confl. w/ NF Crooked. | Four, Five, Six | GrayCr_gr4686_LTWT | Poor | 26.61 | 25.1 | 25.6 | 25.2 | | 24.8 | **26.4** | 24.2 | 24.6 | 26.4 | 27.2 | 25.1 | 26.1 |
| Gray Creek upstream of confl. w/ Lytle Creek. | Gray Prairie | GrayCr_gr4835_LTWT | Poor | 25.1 | 23 | | | | | | | | | | | |
| Gray Creek downstream of confl. w/ Cuitan Creek. | Holding B | GrayCr_gr4991_LTWT | Poor | 18.57 | 24.1 | 24.6 | 20.5 | 25.6 | 24.4 | **29** | | | | | | |
| Lookout Creek upstream of the confl. w/ Jungle Creek | One | LookoutCr_lo4665_LTWT | Poor | | | | 19.3 | | | | | | | | | |
| Lookout Creek 1/2 mi. upstream of 4665 | One | LookoutCr_lo4720_LTWT | see pasture description | | | | 18 | | | | | | | | | |
| Lookout Creek 1/2 mi. upstream of 4720 | East B | LookoutCr_lo4760_LTWT | see pasture description | 15.68 | | 15.2 | 15 | | | | | | | | | |
| Lytle Creek at the mouth just upstream of the confluence with Gray Creek | North | LytleCr_ly4843_LTWT | Poor | 19.74 | 15.7 | | | 17.1 | 16.5 | 27.5 | 22.4 | | | | | 18.3 |
| North Fork Crooked River 1.82mi downstream of the project boundary. | Seven | NFCrookedR_nc4545_LTWT | Poor | 27.74 | 23.8 | | | | | | | | | | | |
| North Fork Crooked River 1/8 mi. upstream of NF Crooked River T22 in TWO A Pasture. | Two A, Two B, Three | NFCrookedR_nc4626_LTWT | Poor | 16.81 | 23.8 | | **20.2** | | | | | | 23.5 | | | |
| North Fork Crooked River downstream of NF Crooked River T24 | Williams Praire | NFCrookedR_nc4693_LTWT | Poor | 19.67 | 19.7 | 20.8 | 20.6 | 21 | | | | | | | | |

The following temperature data was found in the 2005 Decision Notice and FEA for the Westside Allotments including the Roba allotment.

| Stream | Maximum 7-Day Moving Average Temperature (°F) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
| **Crazy** | 64.5 | - | - | - | - | 69.5 | - | - | - | - | - |
| **Deep** | 73.5 | 73.4 | 74.9 | 74.0 | - | 73.9 | 77.8 | 70.5 | 84.3 | 80.5 | 75.9 |
| **Dipping Vat** | - | - | - | - | - | - | - | 74.1 | - | 62.3 | - |
| **Double Corral** | 71.3 | - | - | - | - | 75.8 | - | - | - | - | - |
| **Dry Paulina** | - | 68.0 | - | - | - | - | - | - | - | - | - |
| Fort | - | - | - | - | - | - | - | - | - | - | 66.9 |
| **Happy Camp** | - | - | - | - | - | - | 76.7 | - | 78.5 | 77.4 | 74.5 |
| **Jackson** | 76.7 | - | - | 77.6 | - | 77.0 | 75.6 | - | - | - | 73.6 |
| Keeton | - | - | - | - | - | - | - | - | - | - | 60.2 |
| **Little Summit** | 64.5 | 71.3 | 69.3 | 67.7 | 70.7 | 85.8 | 70.5 | - | - | 74.2 | 69.8 |
| Mac | - | - | - | - | - | - | - | - | - | - | 60.6 |
| **N. Fk. Crooked** | - | - | - | - | - | - | - | - | 80.9 | 83.3 | 78.4 |
| **Roba** | - | - | - | - | - | - | 70.9 | - | 73.7 | - | - |

While the data is scattered and dated, it shows that the many management activities in these areas have been ongoing for 30 years and have failed to restore riparian habitats with a hardwood shrub and tree component and stream conditions with temperatures that are moving toward meeting state standards.

Regardless, the FEA and Aquatics report fail to demonstrate the project will comply with state water quality standards as required under the Clean Water Act, section 313.33 U.S.C. § 1323(a).

All of the streams in the NFCR planning area exceed the 18C rearing and 13 C spawning standards despite past forest and livestock management activities.

The standard for water temperature reported in INFISH (p. A-4) is:

> No measurable increase in maximum water temperature (7-day moving average of daily maximum temperature measured as the average of the maximum daily temperature of the warmest consecutive 7-day period). < 59° F within adult holding habitat. <48° F within spawning and rearing habitats.

**Remedy**

The NFCR project has been in the NEPA process since early 2022. The ONF should have collected more stream temperature data in the project area in 2022 and 2023 to better assess current conditions and trends. In the future we expect all planned projects to gather data more strategically and frequently and report ALL of the data. We also recommend that as part of this project, like the recent Mill Creek project, that the ONF limit livestock access to streams by increasing the amount and size of exclosures, and/or more rest, deferred, and rest rotation strategies to restore streams. Do not allow permittees to use livestock exclosures. Require the permittees to gather livestock and take them to the home ranch when streams go dry, and do not allow permittees to open exclosures for livestock use.

*e. Modifying RHCAs PSZ*

Once again, like the previous Black Mountain and Mill Creek projects, the FEA uses an artificial construct to delineate areas inner and outer areas in RHCAs. For example, the FEA (p. 148) states that:

> The spatial boundary used in GIS for analyzing the effects to stream temperature in commercial thinning and noncommercial thinning units is 50 feet from Category I-III RHCAs and referred to as the Primary Shade Zone (PSZ). This boundary is used because the PSZ is a minimum distance from which a tree of a determined height on a determined slope is providing shade during the period when peak temperatures occur.

The PSZ concept is not supported in the literature by any science. This artificial construct seems to have been created to justify management activities in RHCAs.

While the Black Mountain project also used this unsupported concept, the project had a “PSZ” width of 70 feet for Category 1–3 perennial streams, while the Mill Creek project used 50 feet from streams. The NFCR FEA uses the 50-foot distance but does not provide sufficient support or evidence for the concept of a “primary shade zone” or why the 50-foot distance was selected for the project, versus 70 feet or 100 feet or whatever distance. Furthermore, RHCA widths for protection from management activities are not just based on shade but also soil disturbance, sedimentation, and other resources.

It is well established in the literature that timber harvest and thinning in riparian areas results in the reduction of shade with the amount of shading in riparian areas affecting the extent streams are warmed by solar radiation. Therefore, stream shade is key to maintaining low water temperatures. Yet,

the FEA notes that most streams in the NFCR project area fail to meet Forest Plan or INFISH standards for 80 percent shade.

Forest Plan and INFISH standards for stream temperature in many of the project area streams are often exceeded in the summer and early fall months, when temperatures frequently are above ranges considered suitable for persistence of cool-water aquatic species. The two sensitive species in the project area, Redband trout and Columbia Spotted frog, are vulnerable to habitat alteration and recognized as needing special management attention to avoid placement on Federal or State endangered species lists.

We question the arbitrary and capricious use of a PSZ to delineate management activities and find it a randomly chosen distance from steams to determine management activities inside RHCAs. We assert that any timber management or prescribed burning management activities that impact shade, bank stability, sediment, or water temperatures have a great potential to further harm riparian areas, streams, and aquatic life, and violate INFISH standards.

**Remedy**

Do not use PSZ as a tool to provide options for management activities in RHCAs. Use the RHCA buffers designated by INFISH as the primary tool to guide restoration in riparian areas.

*f. Baseline Data and Lack of Monitoring Stream Habitats*

We noted in our comments on the Draft EA that very little of the habitat data was collected in recent years. Of the 48 surveys done on a variety of streams and reaches, only 4 were conducted in the past 5 years while the remainder were dated from 1991 to 2016. In essence only 4 of the 48 stream reach surveys, or 8% of total stream reach surveys, had information on reasonably existing "baseline conditions" for riparian areas and streams in the project area. Further, most of the streams fail to meet one or more of the habitat parameters necessary for good quality stream habitat.

Despite the severe lack of data collection in the NFCR project area, the data shows that over 73% (35 of 48 stream reaches sampled in the project area over the last 30+ years) of the streams fail to meet the minimum INFISH standard. Since most of the data was collected more than 15 years ago, these conditions could have changed and likely do not reflect baseline conditions. Of the pools sampled in the same surveys less than 20% (9 of 48 reaches), were 1 foot in depth or greater while the remaining 81% of the reaches had pools less than 1 foot in depth. Between overly warm stream temperatures and lack of quality habitat, these are terrible conditions for endemic fish such as redband trout to survive.

Despite our concerns about the lack of sufficient and recent data to assess CURRENT CONDITIONS AND TRENDS, the response to our comments (FEA p. 345) states:

> The available data is sufficient and management is based on well-established principles and monitoring results. The data serves as a useful tool in evaluating the condition of streams as well as a benchmark for monitoring trends. We recognize that not all data is reflective of the last 3-5 years. Data from the 1990-2000 has been compared to current data to help determine trends. Using this information, the Forest can take action to meet Resource Management Objectives. Lack of more recent available data does not change the Forest Service's approach to land management in the project area.

This extreme lack of current data on proposed major management activities violates NEPA requirements for a "hard look" to conduct adequate environmental analyses for streams and riparian areas. The ONF appears in an endless loop of conducting treatments that are intended to restore riparian areas and streams, but these areas continue to fail to meet LRMP standards 36 YEARS AFTER THE LRMP WAS ISSUED. The extreme lack of data fails to meet NEPA compliance for assessing a baseline environmental condition from which to evaluate alternatives, understand baseline environmental conditions, and implement measures to improve the project area.

**Remedy**

The NFCR project has been in the NEPA process since early 2022. The ONF should have collected more stream habitat and temperature data in the project area in 2022 and 2023 to assess baseline conditions and trends. In the future, we expect all planned projects to gather data more strategically and frequently prior to and during the NEPA analyses.

*g. Riparian restoration floodplain and LWD treatments*

The Broads and Sierra Club urge the ONF to implement addition measures to improve highly degraded riparian areas that are in desperate need of restoration. Simply doing planned silvicultural treatments will fail to restore the riparian area and degraded stream conditions. The FEA (p. 196) noted that

> One important distinction is that the North Fork Crooked River floodplain is excluded from grazing within the project area when pastures were administratively closed to grazing. There is one authorized water gap, where livestock can access a small portion of the river and its floodplain from the West pasture of the Roba Allotment.

The FEA (p. 137) also noted that

> A 2005 assessment of the North Fork Crooked River found the lower section (from the confluence with Deep Creek down to the forest boundary) to be functioning at risk/ properly functioning with an improving trend (USDA Forest Service 2005). Subsequently, this section was closed from grazing in 2005. This improved condition is reflected in the properly functioning rating of the overall Rough Canyon Creek subwatershed.

Since grazing from livestock was excluded, the river has shown an improving trend. This was also noted in a recent BLM assessment of livestock grazing on the North Fork Crooked River on BLM-managed lands that had exclusion fencing.

The Broads and Sierra Club support the implementation of riparian exclosures on the numerous degraded streams, particularly where sensitive aquatic species have been found including redband trout, Columbia spotted frog, and western ridged mussel.

Along with dropping trees in floodplains and stream channels, we urge the ONF to support riparian restoration for hardwoods using rest from livestock grazing for a minimum of 5 years along with construction of livestock exclosures. This would ensure a higher likelihood of success. In addition, the ONF needs to take a more proactive and comprehensive approach to restore degraded riparian areas, including restoring stream channels and hardwood riparian species.

**Remedy**

Reconnect streams to their floodplains, implement more native plantings, reintroduce beavers, and most importantly, exclude cattle grazing via exclosures or extensive rest periods, where any treatments, including thinning, burning and restoration will occur. Secure funding for restoration projects and monitoring and provide a timeframe when these projects will occur. Do not fail to implement these projects in a timely manner and do not wait for the next project to come along to fix what must be done now.

*h. Aquatic species, including redband trout and Columbia spotted frog.*

Studies have documented the impacts of degraded stream channels and riparian conditions including high stream temperatures, high sediment, bank instability, lack of LWD and lack of pools on aquatic organisms. For example, high stream temperature impacts aquatic species by raising stream temperatures above the tolerable range for rearing, and increases vulnerability to disease, reduces metabolic efficiency, shifts fish species assemblages, and inhibits upstream migration.

> INFISH (p. III-13) reported that the percent of pool habitat and quality, and large woody debris recruitment in riverine systems has declined, migratory corridors blocked, and riparian vegetation disturbed greater than what is acceptable. As a result, the fish habitat carrying capacity of these streams has been diminished and a declining trend in the security of native fish populations observed.

Since the LRMP was issued in 1989, the few stream surveys and temperature monitoring indicate a lack of restoration of highly degraded streams and riparian areas.

Even more concerning is that these severely reduced populations of redband trout are at risk of extirpation during drought conditions and from climate change bringing warmer and drier conditions.

**Remedy**

Treatments in riparian areas and stream channels must minimize risk to aquatic species and restore RMOs, no reductions in shade or other RMOs are allowed. Repair the numerous causes of stream degradation identified in the Watershed and Fisheries Effects Analysis. Do more to reconnect streams to their floodplains, more native plantings, reintroduce beavers, and most importantly, exclude cattle grazing via exclosures or extensive rest periods, where any treatments, including thinning, burning and restoration will occur. Secure funding for restoration projects and monitoring and provide a timeframe when these projects will occur. Do not fail to implement these projects in a timely manner rather than waiting for the next project to come along.

## *Travel Management and Road Densities*

While we support the road closures proposed, we remain concerned about the impact of roads on the landscape. We also are concerned about changing roads from ML2 to ML2A. While it reduces the volume and frequency of traffic, ML2A roads cause all the same impacts as roads driven by the motorized public.

**Examples of our Comments to the Draft EA**

> Most of the largely degraded streams and riparian areas are a result of past timber harvest, past and ongoing livestock grazing, and high road densities (including open, closed, decommissioned and temporary roads that are still actively driven).
>
> We also support all permanent and seasonal road closures that should be physically blocked, not just administratively closed or with existing useless berms that fail to block the public members that violate closed roads.
>
> The Bitterbrush Broads and Bros partnered with several other conservation groups and conducted closed road surveys in 2021 in the Mill Creek project area. Despite denser forest and steeper topography than the Black Mountain project area, we found a substantial amount of closed roads that were driven by the public and user created roads. In the Mill Creek project area, of the 110 closed roads surveyed, 31 (28%) were closed, 66 (60%) were open and illegally driven, and 13 (12%) were not surveyed.

**Issues and Impacts**

**Road Density**

Our concerns about "open road density" remain about how they are used in the different analyses with regard to impacts on fish and wildlife species. Under the response to comments (FEA p. 347-348), the response goes into detail regarding the 4 analyses of roads impacts to wildlife using HEI, core wildlife habitat, elk security analysis, and temporary road disturbance. When the LRMP was issued in 1989, all roads in the landscape were considered open whether they were used by the public or not. It wasn't until the Travel Management Rule was implemented well over 20 years later in 2011 that some roads were designated open while others were designated closed largely through the MVUM maps. The use of only "open" roads in the HEI analysis is inappropriate because it should disclose the HEI with all roads that are physically driven by any motorized vehicle, not just designated "open" roads. We support the core wildlife habitat and elk security analysis that more accurately portray roads that are driven by motorists and their impacts, regardless of the open or closed road designation.

We appreciate and support the road closures that the ONF has implemented in recent years. However, our field work in planned project areas continue to demonstrate that roads that were closed in the past or decommissioned or have a gate, only last so long until motorized users break through the barriers. In our field reviews of both the Mill Creek and Black Mountain project areas, in both cases we found almost 2/3 of the designated ML1 (and even some of the decommissioned roads) were open and driven by the public. Even more concerning is viewing both projects using Google Earth software, there are many more miles of user-created roads that are unaccounted for in any analysis. The only recent ONF project that indicated there was a problem with user-created roads is the Summit OHV project that indicated over 700 miles of user-created OHV trails in the proposed project area. Therefore, there are 2 serious problems with road violations, the motorized users of closed and decommissioned roads, and the user-created roads that are unaccounted for in the analyses.

The FEA (p. 349) Response to Public Comments acknowledged that road closures have not been successful in many cases.

> The MVUM is provided to the public so they are aware of where they can drive motor vehicles. It is acknowledged that illegal use does occur, road closures can be breached by illegal motorists or degrade over time and through pressure from OHVs.

Working with ODFW and the Blue Mountain Elk Initiative, we support the continuation of road closures in the forest. However, it's not a "one and done" situation. It will take continued vigilance, compliance and enforcement through prosecution of offending individuals, the use of strategically placed game cameras to catch violators, and work by employees and members of the public to report noncompliance. Failure to do so simply supports our concerns regarding road use, extensive habitat fragmentation, and wildlife disturbance.

While we support the ONF proposal to decommission about 9.6 miles and close about 6.15 miles of road (DDN p. 3), we are extremely concerned about the reopening of 34.48 miles from ML 1 (closed) to ML2A (open for administrative use only). In addition, the DDN (p. 3) also reports that there will be 12.6 miles of temporary roads on existing disturbance and 2.29 miles of temporary roads that are a new disturbance. So, there will be a huge increase in the road network and use by motorized vehicles by over 43 miles. That is a huge increase of impacts to natural resources including all the reasons stated above to fish and wildlife species and their habitats. That is a massive increase in road miles that will cause soil disturbance and compaction, altered hydrology and sedimentation to Category 1 to 4 streams, wildlife disturbance and harassment, habitat fragmentation, noise, and impacts to water quality.

We stand by our comments on the DEA, based on our ground surveys in the Black Mountain (2020) and Mill Creek (2021) project areas (Appendix 1). While ONF may administratively define open and closed roads, both the Great Old Broads and the ID Team found in the Mill Creek project that "roads were never effectively physically closed," per the ID Team analysis. As noted in our Mill Creek Closed Road Survey Report, "Motorized roads and trails cause forest fragmentation, destroy habitats, and cause disturbance while also providing avenues for the spread of invasive plants, human-caused fire starts, trash, poaching, and increased stream peak flow events which can result in increased sediment loads and degraded stream channels. Habitat disturbance and destruction is further complicated by the impacts of livestock grazing, particularly in riparian areas. None of these things contribute to a healthy forest ecosystem." (Appendix 1 for our "Surveys for Maintenance Level 1 Closed Roads in the Ochoco National Forest Mill Creek Vegetation Management Project Area: What Did We Learn?".)

**Temporary Roads**

Regarding temporary roads, they should also be used in any analysis. We acknowledge per the FEA (p. 348) that

> Temporary roads are not intended for public use and are signed by the operators actively implementing in an area under contract to keep the public from using them.

However, in our exploration of the ONF, we have found many formerly "temporary" roads used by the public because they were inadequately closed or ripped to prevent use. Temporary roads, whether used in the past for previous projects, or new temporary roads have all the same impacts as any motorized use, including impacts to habitat fragmentation, alteration of native vegetation, expansion of nonnative invasive species, and increased sedimentation to streams and alteration of hydrology of watersheds by increasing channels and runoff. The Botany Report acknowledges many of these impacts (Botany Report p. 11), even if the FEA does not (underlined areas emphasize these long-term impacts):

> The impact area of temporary roads is about twelve feet in width. In the short-term, new temporary roads would remove native vegetation, expose mineral soil, and compact soils directly under the road treads, rendering habitat unsuitable for sensitive plant species. Where temporary roads are within or adjacent to sensitive plant populations or habitat, exposed soils could contribute to soil erosion, increases in sediment input to streams and wetlands, and potential for invasive weed infestation. While the intent is to restore temporary roads to a productive condition, long-term impacts persist in less resilient areas. Restoration methods can bury nutrient rich topsoil and expose mineral soil, mixing up the soil horizons, mycorrhizae, and seed bank. The plant community that returns to the temporary road may not match the cover and native species diversity of the surrounding undisturbed vegetation, making the area less suitable for sensitive plants. These areas are also at greater risk of invasive plant introduction and spread. Temporary roads are revegetated with a native seed mix and further access is prevented, thus limiting some of these negative impacts after successful revegetation. Long and short-term impacts associated with new temporary roads would also apply to temporary roads constructed on existing disturbance. Reusing decommissioned roadbeds does not allow for native plant communities to be fully restored on the landscape, especially if decommissioning does not include restoration of the road corridor to the natural surroundings. The edge effects into the forest canopy continue in perpetuity, changing the microclimate of the habitat by increasing light and temperature and reducing humidity.

Temporary roads have all the same impacts on wildlife, streams, and riparian areas as any other road with motorized vehicles and occur not only when roads are newly constructed, but as indicated by the Botany Report, cause impacts long after the project activity is done. It is our experience that some "temp" roads are never completely closed and are sometimes used, particularly by off highway vehicles. Figure 3 is a "temp" road from the Wolf project (2014) area that we drove by in spring 2024 and is still easily visible and driven.

Figure 1. A newly created "Temporary road" for the Wolf project (2014) area, 10 years after construction, and years after timber harvest occurred.

**ML2A (administrative use only)**

We disagree with the concept of changing almost 35 miles of roads in the project area to ML2A. While in theory it sounds like it might provide better protection for wildlife habitat, it essentially allows a ML2 road with the additional designation of administrative use, to remain on the landscape with all the same problems and impacts, simply with less volume and frequency of use. The ML2A designation will be used by forest staff, timber purchasers, contractors, livestock permittees, adjacent landowners, and many others. As pointed out in the JGSC comments to the DEA,

> Administrative Maintenance Level 2 roads, "administrative use only road (e.g., gated road)", are also driven legally at levels not reported or monitored, by ONF personnel, grazing allotment holders, adjacent landowners, timber purchasers and contractors, and others. Illegal use is also commonplace. This usage causes wildlife disturbance and ongoing erosion of the landscape, and must be considered in the overall analysis, including in road density reporting. In effect, ML 2A roads are open roads.

Yet, the FEA (p. 72) makes a flawed assumption about disturbance impacts from a distance and equates the impacts of an ML2A road with that of a non-motorized trail:

> Areas within 200 m of an open road or motorized trail were excluded from consideration as well as areas within 100 m of a non-motorized trail or administrative use only road (e.g., gated road) as these areas are more likely to have moderate to high levels of human disturbance.

There is no scientific foundation that gives a smaller disturbance impact between ML2 and ML2A roads, given all the species and habitat issues that remain. Reallocating a road from ML2 to ML2A may reduce the volume and frequency of use but has all the same impacts as any ML 2 road. These include an array of negative impacts such as fragmentation of native wildlife habitats, increased sediments to streams, noise pollution, and meanwhile creates a caste system of users and nonusers.

Wisdom et al. (2005) noted that in low traffic volumes (< 2 vehicles in 12 hours), elk moved 869-880 m, while in high traffic volume (>4 vehicles per 12 hours), elk moved 1103-1560 m. These movement distances by elk in response to motorized vehicles are substantially higher than the 100 m and 200 m distances referenced in the FEA. In other words, while animals like elk may move greater distances with more traffic volume, essentially any traffic volume fragments habitat, and causes disturbance to wildlife.

We recommend that the ONF, rather than changing a select subset of roads from ML2 to ML2A, simply retain closed roads with a ML1 designation and retain the absolutely essential roads as ML2. It simplifies the compliance and enforcement issue, allows some minimum number of roads for public access by motorized users, and does not create a caste system of allowed and not allowed users. Some of our JGSC and Broads members are former agency personnel and experienced this type of caste system of use and found it abused by various folks that had access.

**Remedy**

Re-evaluate the open road density in the context of the Travel Management Rule and include closed and decommissioned roads as “open” for analysis of accurate road densities. Evaluate how this project’s roads are consistent with the 2015 Ochoco Travel Analysis Report and comport with the minimum road system. Conduct an authentic tabulation and road density analysis of closed roads used by motorized vehicles along with those administratively and/or physically open and closed for impacts analyses.

Comply with the road density standards in the LRMP for general forest, and in winter range areas. Do not change roads from ML2 to ML2A, but simply close and physically block the roads to ML1 that need to be closed for the minimum road system and retain a subset as ML2 open roads.

## *HRV/Reference Conditions*

The DDN continues to state that the ONF is using HRV as a goal for a desired condition. We again point out that the best available science concludes that this should not be used as a goal, only as a weak guide in models that include current and projected changing climatic conditions.

We noted in our Draft EA comments:

> While 61651 aims to restore forest structure to those calculated for the HRV, this 30 year old concept has been discounted by the majority of researchers and the best available science, if only because of the current radically changing conditions on this planet. For just one example, see this USDA reference by Millar: https://srs.fs.usda.gov/pubs/47361 ([48]). The ONF 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.

That USFS report by Millar [8] in the above quote states on p. S28, "As a means of developing reference prescriptions and management targets, HRV is generally inappropriate…". Yet this is what ONF is doing in this project. While ONF argues that the "Viable Ecosystems Management Guide (DRAFT)" [11] is a definitive guide, we and other groups presented many scientific reports in Draft EA comments that preclude this assumption, including studies by Forest Service scientists.

We suggest the ONF re-read our comments from the Draft EA with an open mind for the findings of the best available science.

**Remedy**

To address our concerns and this complaint, the ONF must provide the public the model used and projections for future conditions of the forest. Based on those projections, and consulting with organizations and scientists both within and outside of the FS, develop management plans that focus on the continuity of the natural forest ecosystem, the benefits of ecosystem services and recreation, the role of the forest in the ecoregion and larger regional integrity of nature, and lastly on resource extraction. As heard elsewhere, "If you manage for a forest you can get timber. If you manage for timber you cannot get a forest."

## *Undeveloped Lands*

The FEA identified 7 polygons as undeveloped lands as per the Forest Service definition of such. This definition is in simple terms, polygons of 1000 acres or more that are generally free of developments.

As such, undeveloped lands are valuable areas of natural plant succession, wildlife habitat, biodiversity, and ecosystem services. If only as educational areas that demonstrate what minimal or no management let natural processes flourish, these areas are best left without any treatments by this project.

The FEA declares that there is no guidance to manage undeveloped lands (p. 204), and that it is "outside the scope of this analysis to apply new management direction or to set the area aside" (p. 359). This sounds like dodging responsibility. It is not beyond the scope of analysis to evaluate the environmental impact of leaving these lands unmanaged. While we, the public, have seen this as a preferred alternative, the ONF should have conducted this while conducting the EA and included it as an option.

**Remedy**

To address our concerns and complaint, the ONF must not treat these special roadless undeveloped lands. We strongly support the decision made in the Mill Creek project to eliminate many of the undeveloped lands from roads and silvicultural treatments and request the same with the NFCR project.

## *Economics*

The economics section of the FEA is limited to timber resource extraction and associated products. It fails to include the large and growing economic importance of forest recreation, including hunting, fishing, mountain biking, equestrian, camping, wildlife viewing and birding, and hiking. The huge importance of ecosystem services is also missing from the analysis. Clean water for residents, wildlife, fish, and irrigation is extremely important for the tri-county area described in the analysis.

The FEA points out that the "local communities have experienced periods of economic hardship due to local, national, and global market depressions and volatility" (p. 165). But while focused on the local timber markets, the EA leaves out the growth in other jobs. As we see in Figure 2, the trend of declining timber jobs in Crook County is greatly offset by the growth in non-timber jobs.

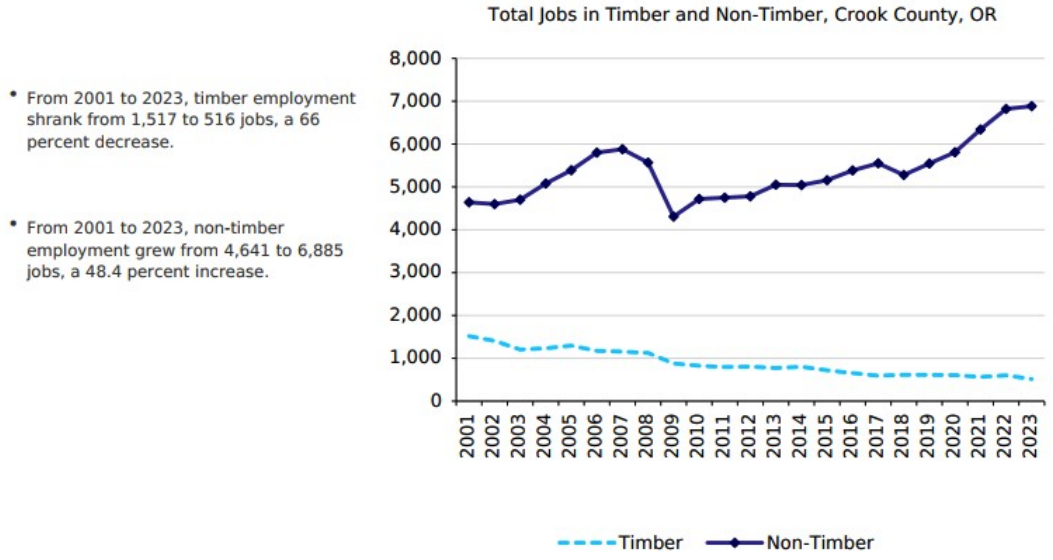


Figure 2: Timber and Non-Timber Jobs, Crook County, 2001-2023. Data from US Dept. of Labor; chart from https://headwaterseconomics.org/eps.

While timber jobs are important, resource extraction jobs including timber are dependent upon larger, global economic conditions and historically, these economies change over time.

The 110 jobs or so the FEA reports will be supported if the ONF could provide 10 MMBF or so consistently every year could be an important base for the tri-county area. However, wildfire, drought, climate change, and global timber prices are all factors that affect harvest levels. More consistent benefits could be obtained by transitioning to an economy that benefited from other ecosystem services, biodiversity, and recreational activities.

We also note that the ONF has not provided a projection of how it plans to consistently provide 10 MMBF per year, from what areas of the forest, what rotation schedule would be used, and how it would manage this for forest health in addition to timber production. Such a plan must also include contingencies for wildfire, protection of migration corridors, recruitment of old-growth, and more.

**Remedy**

To address this complaint, ONF must make public any timber harvest quotas or pressure it is under for resource extraction, including quotas from Federal offices, and how those are distributed across the forest project areas. Such data must be included in project documents.

## *Cumulative Effects*

The cumulative effects analysis of 61651 is limited to the project area. As stated on page 18, "The geographic scope for direct, indirect and cumulative effects is the project area." This is not adequate given the current landscape disturbance regimes across the whole forest that are cause by the ONF, the timber industry, and other human activities. The cumulative effects analysis needs to not only look at other projects within this project area, but at adjoining areas with projects that also affect wildlife migration routes, riparian disturbances, wildlife disturbance, and human activities. This broad landscape continuity and cross-boundary effects are clearly implied as stated on page 3:

> "This project borders vegetation management projects that we either implemented recently or are presently implementing: Black Mountain (signed 2019), Gap (2016), Wolf Creek (2014), and Jackson (2012). This project would create landscape scale continuity of more resilient forests in this part of the Ochoco National Forest."

The FEA oddly fragments cumulative effects analyses into each resource area which disregards how connected actions are interrelated and one resource affects others. These activities are designed to affect ecosystem processes and landscapes using timber harvest. Cumulative effects of past and present timber harvest, livestock grazing, and roads have created the cumulative impact of degraded streams and riparian areas, disconnected and fragmented fish and wildlife populations, and reduced productivity of native species. These management activities do not operate in a vacuum but interact and cumulatively cause greater harm than each one would independently. As the FEA "relies on current environmental conditions as a proxy for the impacts of past actions" (p. 17), the current degraded conditions of forest health demonstrates the cumulative failure of past actions.

We also encourage ONF to look at how 61651 affects big picture measures, such as animal migration, climate change, species of conservation concern, elk security habitat, recreation, and overall economic benefits to local communities. All of these measures and more are affected by how ONF manages North Fork Crooked River, Mill Creek, Black Mountain, and all the other project areas.

**Remedy**

To address this complaint, ONF must look at the big picture as well as at the project scale and move with the precautionary principal for any actions it prescribes. While the DDN states that the cumulative effects analyses are adequate (p. 13), our comments on the Draft EA and this complaint point to serious weaknesses.

## *Climate Change*

The DDN claims that the ID team reviewed scientific literature to support the purpose and need of this project (p. 13). As our comments on the Draft EA pointed out, our reviews of scientific literature reached conclusions that somewhat differ. We believe the literature strongly points to the need for the ONF to manage for natural carbon storage, both in standing trees (live and dead) and in soil building downed wood. While the DDN states that the effects of Alternative 2M will not be highly controversial (p. 13), comments from many organizations point to the comments on the Draft EA that show otherwise.

**Remedy**

To address our concerns and this complaint: ONF must have a balanced analysis of how its actions affect climate change. ONF must not publish misleading and biased statements without qualifications. ONF must accept responsibility, respond to, and implement actions that complement national and global efforts to counter anthropogenic climate change. ONF must respond to its duty to protect its citizens and future generations from climate change and the loss of biodiversity by providing management actions that do this.

In practice, this means that above ground carbon stores, both standing and downed wood and soils, must be protected and retained to improve forest health, water retention, soil building, and biodiversity. The DDN has done some of this by removing most commercial logging from riparian areas and by not removing trees greater than or equal to 20" DBH.

## *Biodiversity*

**Examples of our comments to the Draft EA**

> Good management of our public lands that belongs to all Americans is essential for our twin crises of climate change and loss of biodiversity.
>
> The ONF is reminded to implement, per Executive Order 140721, measures that reduce the timber harvest and carbon emissions and loss of carbon sequestration caused by this project. Instead, we urge the ONF to minimize timber harvest and support the benefits of carbon sequestration and storage, biodiversity and the full range of ecosystem benefits for the long-term health of our ecosystems.
>
> 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, water quantity and quality, and many fish and wildlife species that used large old trees for part or all of their life history needs.

If HRV is the template to "restore" forests to historic conditions, the forest is more than just tree density, species, and structure. It is even more important to restore biodiversity, riparian areas, floodplain connectivity, soils, and shrub and herbaceous vegetation for long term ecosystem sustainability.

These undisturbed lands are important for providing natural habitats, biodiversity, moderating climate impacts, drinking water, and restoring aquifers. Undeveloped lands and IRAs are critically important and comprise a very low percentage of FS lands. Law et al. (2021) reports that these areas have "crucial biodiversity and carbon benefits", "currently provide clean drinking water for millions of people, support salmon populations and wildlife, and reduce isolation between protected areas". They also recommend that undeveloped lands provide the "potential to meet preservation targets by protecting uninventoried roadless areas (e.g., ~2 Mha in Oregon), many of which are candidates for protection and contiguous with IRAs or existing protected areas". In this case, the undeveloped areas proximity provides great potential multiplier benefits by its proximity to the NFCR Wilderness Study Area.

Resilience is very 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 influences by the geologic conditions of each site and microsite

The natural carbon cycle that has developed over the eons allows for biomass accumulation, soil creation, plant succession, and a complex food chain, along with carbon sequestration and healthy biodiversity. This cycle is disrupted in unnatural ways by the interventions proposed in this project. This work is a poor approximation of the natural fire cycles and the ecological processes of a healthy forest. This project must account for how it disrupts ecological systems, wildlife habitat, and biodiversity in ways that natural disturbances do not.

**Issues and Impacts**

Implementation of this project will have a long effect on the ecosystem for many years after the work is completed. We appreciate that ONF has reduced the acreage in the 2M Alternative, and we appreciate that ONF is considering many species of concern in managing this project. We remain concerned and object to the focus on resource extraction and lack of full disclosure of the full impact of this disturbance upon the ecosystem, the food web, ecosystem services, and alternatives that seek to maintain the integrity of the natural forest over the very long term and large spatial scale.

In our comments and in this objection, we frequently mention biodiversity as an important aspect of a healthy ecosystem that needs to be addressed. In the FEA, biodiversity is mentioned only twice, and is treated as a secondary factor, when conserving for Birds of Conservation Concern, "elements of biodiversity would also be conserved" (FEA p. 91). Even in the Consideration responses to comments that mention biodiversity, ONF chose to ignore this important biological concept.

**Remedy**

The ONF must address biodiversity impacts as a separate topic in its action alternatives.

## *Overall Complaint*

ONF does not provide the resource and reference documents it uses as part of the project documents, such as the ONF Forest Plan, the Viable Ecosystems Guide, and other primary documents used in determining project purpose and actions. At a minimum, ONF should provide website access (links) to all documents referenced. The public is under enough time constraints without the additional burden of trying to track down these documents.

**Request for Meeting to Discuss Resolution**

The Great Old Broads for Wilderness, Bitterbrush Broadband, and the Juniper Group of the Oregon Sierra Club request a meeting to discuss the issues raised in this objection and potential resolutions.

**SUMMARY.** The Juniper Group of the Oregon Sierra Club and the Bitterbrush Broadband of the Great Old Broads for Wilderness thank you for the opportunity to object to the NFCR Forest Resilience FEA and DDN. We look forward to hearing from you.

Sincerely,

*Amy M. Stuart*

/s/ Amy Stuart, Co-Leader
Central Oregon Bitterbrush Broads and Bros, Great Old Broads for Wilderness
Prineville, Oregon
amystuart63@gmail.com

*Mathieu Federspiel*

/s/ Mathieu Federspiel, Juniper Group Executive Committee
Oregon Chapter Sierra Club
http://bit.ly/junipergrouphome
Bend, Oregon
mathieuf.sc@gmail.com

## *Bibliography*

This bibliography is provided both for references cited in quotes from previous comments and for references cited directly in this document.


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## *Appendices*

As requested by the DDN, directly referenced documents are included in the electronic submission. This also benefits other members of the public who read this complaint, by not requiring them to search for these documents. This would be a good practice for the Forest Service to follow in the documents it provides with this and every project.

**Appendix 1**

GOBW Road Survey, "Surveys for Closed Roads in the Ochoco National Forest Mill Creek Vegetation Management Project Area: What Did We Learn?", submitted file via electronic portal: Surveys for Closed Roads in the Mill Creek Vegetation Management Project Area April 1, 2024.pdf.