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June 9, 2022

Drew Stroberg
Goosenest Ranger District
37805 Highway 97
MacDoel, CA 96058

Submitted via project webpage

Dear Mr. Stroberg:

The following are my comments on the Antelope and Tennant Fire Recovery Project (61649).

This project includes twelve types of treatments. My comments pertain to Treatment 1, Roadside Hazard Tree Removal, and Treatment 12, Water Systems Repair and Replacement.

Treatment 1, Roadside Hazard Tree Removal

Treatment 1 proposes to cut dead and dying trees along Forest Service system roads. The proposal states that "Approximately 352 miles of open, public roads and 68 miles of groomed snowmobile trails were impacted by the wildfires", though it is unclear how many of these roads will actually be treated, and whether the snowmobile trails will also be treated.

Public Safety Benefit is Not Demonstrated

The Klamath National Forest has a long history of large fires. It is only very recently that roadside hazard tree removal has become a major part of fire recovery projects. Previously, if these trees were not part of a timber salvage cut unit or were not obvious hazards, they were simply left to fall naturally, and this did not create a significant safety hazard. Most of the trees fell during the winter when the roads were rarely usable, and any trees that fell across frequently travelled roads were cleared in the spring or early summer; maintenance level 2 roads were often not cleared at all. Occasionally signs were posted at Forest access points warning the public of the potential danger, and this was more than sufficient to prevent injury or fatality.

As a tour around the backcountry of the Klamath National Forest will easily confirm, many areas of the Forest have been significantly affected by fire and have not had roadside hazard tree projects performed. Statistically, the hazard is greater to the crews that would do the roadside falling during project implementation than to the general public if the hazard trees were not removed. Of course, obvious hazard trees, such as severely damaged, leaning trees along maintenance level 3, 4 and 5 roads and in other high use areas such as campgrounds should be removed, but wholesale clearing along hundreds of miles of roads, regardless of use levels or actual hazard, is simply not warranted statistically. While Smith and Cluck's guidelines may be appropriate to assess potential tree mortality, they do not have anything to say about risk analysis, so the connection between the Purpose and Need regarding human safety and the Roadside Hazard Tree Removal component of the Proposed Action has not been demonstrated; in other words, it has not been shown to what statistically measurable extent

safety will be improved by implementing the project. See the attached declaration from Dr. Travis Heggie, former public risk management specialist for the National Park Service, regarding the vanishingly small risk to the public from falling trees on public lands. As Dr. Heggie states, “When fallers cut a tree, the chance they are in the potential kill zone is a 100% certainty. When extreme weather or other natural forces cause a tree to fall, the odds that anyone is in the potential kill zone are minimal.”

Necessary Analysis of Transportation Management is Missing

Roadside hazard tree removal is a significant component of this project, but a discussion of Transportation Management is missing. While limited hazard tree removal could be considered maintenance and thus not subject to environmental analysis, the scope of this project, potentially covering hundreds of miles of roads and thousands of acres, demands a detailed analysis. Table 2 of the proposal includes a detailed listing of pertinent Forest Plan goals sorted by Management Area, but there is nothing there regarding Transportation Management. The following Forest Plan management area guidelines should be included and considered in the analysis:

- *MA5-54: Review existing road and facility use to determine if the road or improvement meets the need for which it was constructed. If the development is no longer necessary, plans for removal or rehabilitation efforts should be developed.*
- *MA7-14: Develop facilities or trails to promote recreational use of SIAs. Facilities may include buildings, information displays, road construction or improvement, restrooms or parking areas.*
- *MA7-15: Maintain facilities and trails at a level appropriate to the degree of the desired recreational use.*
- *MA14-11: Develop a transportation management schedule that effectively and efficiently provides the necessary access to the area while meeting the desired road density objectives. Roads, not part of the long-term transportation needs, should be closed, stabilized and returned to a natural state. Gate roads that have only seasonal value to control access into the area.*
- *MA14-12: Provide vegetative screening along major roads when they occur next to forage habitat.*
- *MA16-11: Develop a transportation management schedule that effectively and efficiently provides the necessary access to the area while meeting the desired road density objectives. Roads that are not part of the long-term transportation system should be closed, stabilized, and returned to a natural state. Gate roads that have only seasonal value to control access into the area.*
- *MA16-12: Provide vegetative screening along major roads when they occur next to forage habitat.*
- *MA17-5: Develop a transportation network that effectively and efficiently allows the transport of commodities to available markets. The system should be economical, safe and environmentally sensitive.*

- *MA17-6: Maintain surplus or infrequently used roads in a self-maintaining condition (Level 1) to reduce watershed and wildlife impacts and to reduce road maintenance costs.*

Neither were the following three Forestwide Standards and Guidelines discussed in the proposal. The first guideline, from the Aquatic Conservation Strategy, may or may not apply, but this is impossible to determine from the proposal, as it is not specified whether any key watersheds as defined by the Forest Plan ("A watershed containing habitat for potentially threatened fish stocks or species") exist within the project area:

- *6-24: Reduce existing system and nonsystem road mileage through decommissioning of roads. Road closures with gates or barriers do not qualify as decommissioning or a reduction in road mileage. If funding is insufficient to implement reductions, there will be no net increase in the amount of roads in Key Watersheds. That is, for each mile of new road constructed, at least one mile of road should be decommissioned, and priority given to roads that pose the greatest risks to riparian and aquatic ecosystems.*

Current road density is not discussed in the proposal, and it is impossible to determine what the appropriate road density is, or whether the existing condition meets the standard, assuming there is one:

- *6-30 Establish acceptable road densities based on watershed size, landscape stability and the ability of distinct topographic areas to deliver sediment to the stream.*

The Klamath National Forest has not conducted the Subpart A roads analysis mandated by the Travel Analysis Process. This analysis is intended to inform NEPA project analyses, such as this one, to identify and achieve a sustainable National Forest road system. During previous environmental analyses of various proposals, the Klamath has maintained that roads analysis is beyond the scope of individual NEPA project analyses, but this assertion is not supported by the Forest Plan:

- *20-1: Transportation planning shall be an integral part of Ecosystem Analysis at the landscape/watershed level and of environmental analysis at the site level. Planning efforts should include a review of the existing Road Management Objectives (RMOs) and proposals for the development of new roads. Develop RMOs through an ID team. Place needed non-system roads in the Forest road system. Non-system roads shall be "put to bed." Direction for transportation planning is found in FSM 7710, Transportation Planning Handbook, Forest Service Handbook (FSH) 7709.55. The analysis should:*
 - 1. Identify and evaluate alternative transportation systems and routes,*
 - 2. Identify short- and long-term need and purpose for each road, and*
 - 3. Document decisions relating to road location, design, operation, and maintenance standards for each road in a RMO.*
 - 4. Evaluate the risk of spread of Port-Orford-cedar root disease through road upgrades, seasonal closures, permanent closures, maintenance and decommissioning or obliteration.*

A transportation planning analysis would determine which roads are needed; those roads that are determined to be unnecessary would not have to be treated, other than to decommission them. This could result in considerable long-term savings and would accomplish a long overdue nationally mandated analysis in the project area. While a transportation planning analysis of the project area could be time consuming, this would not preclude the immediate abatement of imminent and obvious hazards along maintenance level 3, 4 and 5 roads and other highly trafficked areas while the analysis was taking place. The Forest has the authority to temporarily close roads with a Forest order if it is determined that significant unabated hazards exist.

There are many unauthorized routes in the project area, and the proposal does not address their disposition. It would be appropriate to decommission these roads as a part of the project. Effective road decommissioning can be difficult in the gentle terrain present in much of the project area, but the presence of heavy equipment needed for implementation of other aspects of the project and the availability of a nearly unlimited supply of coarse woody debris would make this an appropriate and effective addition to project activities.

Treatment 12, Water Systems Repair and Replacement

Treatment 12 proposes to repair and replace, where necessary, components of the Little Horse Peak Water System and the Kelly Pass Water System. The document provides no description of the purpose of these water systems, nor does it justify the need to repair them. The only information given is that the systems consist of 14 miles of something, presumably pipelines.

Without any further information, it is impossible to determine whether these water systems are necessary to the management of the Forest, whether the benefit they provide is worth the cost of repair, whether there are less expensive or more appropriate means to provide these benefits, and whether, if they are repaired, they will be protected from destruction by the next fire that comes along. Since these water systems were damaged by the fire, this would be an appropriate time to conduct an analysis to determine whether they should be rebuilt, and if so, to what standard and extent.

Thank you for this opportunity to comment.

Jeff Stone

Jeff Stone

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**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF OREGON**

FOREST SERVICE EMPLOYEES FOR	)	Case No. 6:21-cv-01228-MC
ENVIRONMENTAL ETHICS,	)	
	)	
Plaintiff,	)	
vs.	)	DECLARATION OF TRAVIS W. HEGGIE,
	)	Ph.D., FFTM RCPS (Glasg)
DAVID WARNACK, Willamette National	)	
Forest Supervisor, and U.S. FOREST	)	
SERVICE,	)	
	)	
Defendants.	)	
	)	
	)	

Pursuant to 28 USC § 1746, I, TRAVIS HEGGIE, declare as follows:

1. My name is Travis W. Heggie. I am an expert in injury and disease prevention.

My expertise and research specifically concentrate on the health, safety, and legal aspects of the travel, tourism, outdoor recreation, and hospitality industries. My research is primarily published in the Wilderness and Travel Medicine research literature and I sit on the Editorial Boards for the Journal of Travel Medicine, Travel Medicine and Infectious Disease, and the International Journal of Travel Medicine and Global Health. Professionally I am the former Public Risk Management Specialist and Tort Claims Officer for the National Park Service and the former Director of the Great Plains Injury Prevention Research Center. I am a Fellow of the Royal College of Physicians and Surgeons of Glasgow (Faculty of Travel Medicine) and Chair of the Expedition and Wilderness Medicine Special Interest Group in the International Society of Travel Medicine.

2. At present I am a Professor in the School of Human Movement, Sport, and Leisure Studies at Bowling Green State University in Ohio and an adjunct Associate Research Professor with the College of Public Health, Medical, and Veterinary Sciences at James Cook University, Australia. I am an Australian-American Fulbright Scholar. I hold a Ph.D. from Texas A&M University (Recreation, Park and Tourism Sciences) where I completed a dissertation titled, "The Epidemiology and Etiology of Visitor Injuries in Hawaii Volcanoes National Park." I hold an M.S.

degree in Geosciences (Biogeography / Forestry emphasis) from Texas A&M University where I completed a thesis titled, "Rainforest Composition & Succession on a South Pacific Island (Island of Tutuila, National Park of American Samoa)." I hold a B.A. with Highest Honors in Geography and Environmental Science from the University of Hawaii at Hilo.

3. I have been asked by Forest Service Employees for Environmental Ethics for my expert opinion on risks of injury or death facing visitors to national forests from live, dead, and dying trees. I have reviewed the Forest Service's proposed action challenged in this case and photographs of some of the trees the Forest Service proposes to log. I am also generally familiar with western Oregon and its national forests, including the Willamette National Forest.
4. Risk is a part of human life; no person can live in a totally risk-free environment. Any individual could be struck by lightning or hit by a falling tree. However, because the odds of being hit by a falling tree are so miniscule, trees are not generally considered to be hazardous let alone a recreational hazard. It is an inescapable fact of entropy that all trees fall down at some point during their existence. Most trees that fall down are alive when they fall; the remaining trees are dead when they fall. Across all federal lands in the United States, one percent (one person per year) of fatalities suffered by the visiting public are caused by

falling trees. In contrast, logging and cutting down trees (whether dead or alive) is one of America's most dangerous professions. When fallers cut a tree, the chance they are in the potential kill zone is a 100% certainty. When extreme weather or other natural forces cause a tree to fall, the odds that anyone is in the potential kill zone are minimal.

5. In recreational areas such as national forests, falls while hiking or climbing are the leading cause of backcountry deaths (40%). Avalanches account for 15%, drowning incidents account for 10%, and heart attacks account for 10%. National Park Service ("NPS") statistics demonstrate a similar pattern. NPS units, like national forests, are very safe recreational areas. For example, the NPS human mortality rate is 0.1 deaths per 100,000 recreational visits. This is much lower than the mortality rate of the overall U.S. population (844 deaths/100,000 people). Motorized vehicle crashes (26%), drowning (23%), and hiking / climbing incidents (16%) are the leading causes of unintentional deaths in NPS units. This trend has been consistent since at least 1999. Dying or being injured by a tree is so rare as to not even warrant a separate statistic in NPS reporting. This is notwithstanding the fact that there are millions of dead and dying trees across our national parks. Dead trees are found along trails and roads. They are found

in the backcountry where people hike, drive, and snowmobile. Moreover, they are found in the front country where people walk, picnic, camp, and sightsee.

6. An example of NPS management post-fire comes from the 1988 Yellowstone Fire, which burned across 800,000 acres in Yellowstone National Park impacting one-third of the park's total land area. Following the fire, NPS removed few of these dead trees. Tree removal was limited to campgrounds, trees in close proximity to visitor centers, and trees in high-visited areas such as geyser viewer sites. With about 4 million visitors annually, Yellowstone dwarfs the Willamette National Forest's public visitation record. Yet notwithstanding Yellowstone's millions of dead trees and millions of visitors, the odds of dying from being hit by a tree at Yellowstone are miniscule. Not zero, but very, very small.

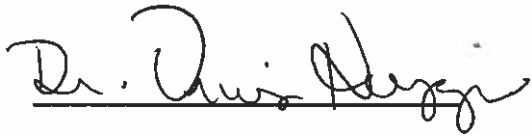
7. The Forest Service's logging decision challenged in this case relies on an internal handbook called "Field Guide for Danger-Tree Identification and Response along Forest Roads and Work Sites in Oregon and Washington." This handbook is primarily authored by tree disease specialists; none of the authors is an expert in outdoor recreation, visitor safety, or in risk analysis.

The handbook is a sufficient tool to diagnose tree diseases. However, the handbook is of no use in evaluating safety risks to people from falling trees. The

handbook includes no data or research (nor does it cite any data or research) regarding public safety risks from trees.

8. In my expert opinion, the handbook's fundamental failing is illustrated by this key statement: "In this guide, a danger tree or hazard tree is any tree or its parts that will fail because of damage, defect, or disease and cause injury or death to people or property." As I stated above, all trees, whether by virtue of "damage, defect, or disease" or by virtue of wind, snow, earth movement, or gravity, or a combination of the above, will fall over. No tree stands forever. A bona fide risk assessment combines the falling potential of a tree with the likelihood that someone is under a tree, in the strike zone, when it falls. The handbook fails to do this analysis.
9. In summary, outdoor recreational visitor safety data are very clear. Tree falls pose an extremely low risk to public safety. Logging the trees proposed by the decision challenged here is not going to improve public safety in any measurable degree. The public safety risk from falling trees is already so low that it cannot practically get any lower. There may be other reasons to cut down these trees, but public safety is not a rational justification supported by any data or facts.

I declare under penalty of perjury that the foregoing is true and correct. Executed
this 16 day of September, 2021 in Bowling Green, Ohio.

A handwritten signature in black ink, appearing to read "Travis W. Heggie", written over a horizontal line.

Travis W. Heggie