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Comments: "Salvage logging of large snags and down boles does not contribute to recovery of late-successional forest habitat; in fact, the only activity more antithetical to the recovery process would be removal of surviving green trees from burned sites. Large snags and logs of decay resistant species, such as Douglas-fir and cedars, are critical as early and late successional wildlife habitat as well as for sustaining key ecological processes associated with nutrient, hydrologic, and energy cycles."-Dr. Jerry Franklin, 1/20/04. "When wildfires do occur on federal lands they create an opportunity for development of high-quality early successional ecosystems. Intensive salvage operations and associated site preparation and tree planting are not appropriate if a management goal is to utilize such events to provide for early successional ecosystems. Salvage and related activities can greatly reduce the potential for full development of early successional ecosystems by removing important legacies, eliminating important constituent species, and abridging the duration of early successional development."-Dr. Jerry Franklin and Dr. Norm Johnson, 2/15/12. Dear Forest Service Planners, On behalf of the Klamath Siskiyou Wildlands Center (KS Wild), the Environmental Protection Information Center (EPIC), the Klamath Forest Alliance (KFA), and the Mt. Shasta Bioregional Education Center (MSBEC) thank you for the opportunity to provide comments regarding the Antelope and Tennant Salvage Logging Project Environmental Assessment (EA). Snag Retention within Logging Units Based on the content of the Antelope Tennant Forest Service salvage logging scoping proposal that was released last year, our organizations were under the impression that the agency intended to retain an average of 10-14 snags per acre to provide for forest structure, wildlife habitat and nutrient cycling within the conifer plantations that will develop after the proposed salvage logging. While we appreciate the agency's discussion with us regarding this issue after the EA was released for commenting, we are not able to locate anything in the EA or supporting documents addressing the rationale for the dramatic decrease in snag retention that occurred between the scoping notice and the release of the EA. The primary reference that we are able to locate in the Administrative Record regarding the significant reduction in snag retention is located at page 35 of the Scoping Outcome Summary in which the Timber Products Company complains about the initial snag retention proposal and suggests reducing the retention standard to 5 snags per acre- the very minimum level to barely, potentially, meet the standards and guidelines contained in the Klamath National Forest Management Plan. It is likely within the Forest Service's authority to retain the very bare minimum snag retention numbers allowed by the Forest Plan even though that plan recommends a range of retention that is better reflected in the agency's scoping proposal. However, it is arbitrary and capricious of the KNF to propose a moderate level of snag retention in the project scoping notice and then significantly reduce that retention level at the behest of the timber industry in the EA without addressing and analyzing the reason for the change and the environmental tradeoffs involved. The EA is simply silent as to the reason for the dramatic reduction in snag retention. The single action alternative developed by the Forest Service provides the decision maker and the public with a "take it or leave it" approach in which the tradeoffs of implementing the greater (but still moderate) snag retention levels that were proposed by the agency in its scoping document are neither disclosed nor analyzed. Restoration and Public Involvement Due to the abbreviated nature of the EA, it is difficult for the public to fully assess the direct and cumulative impacts of the proposed logging, road construction and plantation establishment activities. The project map on the Forest Service web site currently provides few details regarding site-specific timber sale activities. For instance, we are unable to determine the location (and hence the impacts) of proposed new logging roads and log landing sites. Please note real restoration is more than just logging. Activities such as log landing establishment, timber yarding and timber haul and machine piling do little to restore the watershed, soil and wildlife values of post-fire forests. While we support restoration activities such as meadow enhancement and the utilization of prescribed fire, the Antelope Tennant project appears to focus primarily on post-fire salvage logging and green tree mistletoe logging on approximately 20,000-acres. Much of the logging will be ground-based and facilitated by new logging road construction. We respectfully urge the KNF to more fully engage in the stated restoration objective for the project rather than focusing primarily upon logging activities. Beschta and the Range of Action Alternatives The Antelope and

Tennant Salvage Logging EA does not provide the public or the Forest Service decision maker with a reasonable range of action alternatives that illuminate the tradeoffs associated with controversial post-fire logging activities such as road construction, logging, yarding, snag removal and log landing establishment. Rather than develop and consider a range of action logging alternatives designed to achieve the project's "restoration" purpose and need, the EA contains a single proposed action to the exclusion of alternative Forest Service post-fire management strategies that have been successfully implemented elsewhere in the region. The KNF's "Scoping Outcome Summary" makes reference (at page 4) to the alleged consideration of an action alternative based upon the peer-reviewed studies by Beschta et al 2004 that were submitted by our organizations along with our scoping comments of June 16, 2022. Over the past 18 years the Beschta recommendations have served as the basis for successful post-fire management proposals on dozens of Forest Service and Bureau of Land Management landscapes and have provided a useful comparison point for analysis for many public land managers. Yet page 4 of the Scoping Outcome Summary indicates that the KNF refuses to analyze or develop any action alternative intended to meet the project's restoration purpose and need "in detail" other than the inevitable proposed action. This subverts the very purpose of NEPA. The public commenting and agency analysis process codified by NEPA is not intended to justify land management decisions that have already been made - rather the NEPA process is intended to inform the public and the decision maker of environmental impacts and tradeoffs through consideration of a reasonable range of alternatives in order to foster informed decision making and transparent management of public lands. Please note that while in the Scoping Summary the KNF clearly stated its refusal to develop and analyze an action alternative based on the Beschta publications, the EA itself fails to even include the publications in its bibliography. Hence the agency has not considered the best available science in violation of NEPA and NFMA. Please note that as reflected in the peer reviewed Beschta publication that was submitted by our organizations to the Forest Service during the scoping period (but that does not appear in the EA bibliography) the best available science indicates that the purpose and need of post-fire restoration is best met by implementing project activities that avoid ground-based salvage logging, road construction and cattle grazing.

EIS and Significance In our review of a multitude of post-fire logging proposals over the past 20 years this is the first draft Finding of No Significant Impact (FONSI) that we have read that does not attempt to address the "significance factors" that determine when an agency action involves actions - such as thousands of acres of logging and miles of new road construction - that necessitate completion of an Environmental Impact Statement (EIS) as opposed to an EA. The draft FONSI contained in the Antelope Tennant salvage logging EA consists of conclusory statements unsupported by analysis or data. Simply declaring that approximately 20,000 acres of logging and 8 miles of road construction will not result in significant impacts to the environment does not satisfy NEPA's "hard look" requirements or address the EIS significance factors identified by the Council on Environmental Quality (CEQ). 20,000 acres of proposed logging and 8 miles of logging road construction will directly and cumulatively result in significant impacts to the environment. Please note that "even age" logging is proposed to remove mistletoe habitat in the remaining unburned green forest stands, that hazard tree logging is proposed within the Callahan Flow Inventoried Roadless Area, that ground based machine piling is proposed on recovering post-fire soils and that dozer and tractor soil ripping may occur on an undisclosed number of acres at undisclosed locations. Finally, please note that the project area is "highly susceptible" to invasive plant species infestations and that the proposed action involves significant and widespread ground disturbance. These significant impacts and actions necessitate completion of an EIS prior to the logging and road construction occurring.

Address Logging Slash The intent of snag/tree retention is to provide the habitat, hydrological and soils benefits of large diameter coarse woody debris. Please ensure that the project does not result in the creation and retention of large amounts of logging slash throughout treated areas. We are concerned about the agency's ability to conduct needed follow-up pile and prescribed fire treatments.

Mistletoe Logging The benefits of dwarf mistletoe as wildlife habitat and a food source are well known. Not only does the presence of mistletoe contribute to stand diversity through the creation of gaps, structural irregularity and contribute to the accumulation of snags and down wood, it also serves as habitat for a variety of mammals, birds and arthropods. In particular, in the Siskiyou Mountains, large Witch's brooms serve as nest platforms for spotted owls and raptors.

-Sterling Sweeper EA page 3-9. Medford District BLM Please note that mistletoe provides many of the stand benefits (diversity, gaps, irregularity, snags and down wood) that silvicultural prescriptions are often designed to achieve. Hence the project restoration purpose and need might be better met by retaining, rather than removing, mistletoe infected

trees. The KNF analysis of mistletoe fails to convey needed quantitative and qualitative information. How many mistletoe trees will be logged? Where are they located? What is the environmental baseline? How many wildlife species will be impacted by mistletoe removal? The required analysis is largely absent from the EA. Mistletoe does not inhibit forest health. Mistletoe does reduce the growth rate of the host trees, but that is only a forest health problem if one believes that fiber production is the sole measure of forest health. Mistletoe creates complex habitat structures such as brooms and snags and is a natural and vital part of the ecosystem. According to the Big Butte Springs EIS (a project on the High Cascades District of the Rogue River-Siskiyou National Forest), "dwarf mistletoe provides a source of vertical and horizontal diversity through gap creation, and production of snags, brooms and down woody material. Many species of mammals, birds, and invertebrates can take advantage of the favorable structure mistletoe infection provides, while other species use dwarf mistletoe plants or host tissues associated with infection for food." DEIS II-46. These habitat benefits provided by mistletoe-infected trees, increase, rather than decrease, the value of residual mature trees in forest stands. Please see: <http://www.fs.fed.us/r6/rogue-siskiyou/projects/planning/big-butte-spring.shtml> Additionally, logging practices often contribute to the spread of dwarf mistletoe. When soils are disturbed and ground cover is removed during logging operations, stand densities increase because pine seedlings readily germinate and grow on bare mineral soil. Such disturbances are particularly prevalent when heavy machinery is used to remove trees. Logging may increase mistletoe in the remnant stand, rather than decrease it. Many mistletoe seeds that infect host trees do not readily produce aerial shoots; these are known as "latent infections" (Knutson and Tinnin 1980). After thinning, 90 percent of all latent infections will appear within five years (Shea 1964). To suppress mistletoe, further logging would likely be necessary after this entry, which is a foreseeable cumulative impact that must be disclosed in the forthcoming NEPA analysis. Mistletoe seed production will increase after the proposed entry with improved nutrition of the infected leave trees that do not now display symptoms of infection. More open stands will promote regeneration, and the new trees can become infected by the mistletoe seeds dropped from infected leave trees. Moreover, increased mortality can occur in the remaining overstory trees; some heavily infected trees are not able to adjust to release from competition (Knutson and Tinnin 1980). Our organizations request that the agency please read and respond to the following mistletoe science: Conklin, David A., Dwarf Mistletoe Management and Forest Health in the Southwest USDA Forest Service, Southwest Region. <http://www.forestpests.org/diseases/pdfs/dwarfmistletoe.pdf> Pennings, Steven C., and Ragan M. Callaway. 2002. Parasitic plants: parallels and contrasts with herbivores. *Oecologia*. <http://biology.umn.edu/Callaway/Lab/Full/text/papers/and/abstracts/oecologia2002/parasitic/plants.htm> Geils, Brian W.; Cibrian Tovar, Jose; Moody, Benjamin, tech. coords. 2002. Mistletoes of North American Conifers. Gen. Tech. Rep. RMRS-GTR-098. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 123 p. http://extension.usu.edu/forestry/Reading/Assets/PDFDocs/RMRS_GTR_098.pdf Bennetts, Robert E., Gary C. White, Frank G. Hawksworth, and Scott E. Severs. 1996. Dwarf Mistletoes: Biology, Pathology, and Systematics. The Influence of Dwarf Mistletoe on Bird Communities in Colorado Ponderosa Pine Forests. *Agriculture Handbook* 709. USDA Forest Service, Washington, DC. Mar 1996. Maloney, P.E.; Rizzo, D.M. 2002. Dwarf mistletoe-host interactions in mixed-conifer forest in the Sierra Nevada. *Phytopathology*. 92(6):597-602. Hawksworth, F. G. 1985. Insect-Dwarf Mistletoe Associations. P. 49-50, In, *Proceedings Of The 36th Annual Western Forest Insect Work Conference*, Boulder, Colorado. March 4-7, 1985. Northern Forestry Centre, Canadian For. Service, Edmonton, 54p. The sources referenced above indicate that: 1. While dwarf mistletoe has traditionally been viewed as a forest pest because of reducing in timber volume, these sources suggest that in areas where management goals are not strictly focused on timber production, control of dwarf mistletoe may not be justified, practical, or even desirable. The data suggests that dwarf mistletoes may have positive influences on wildlife habitat. Consequently, they suggest that eradication efforts be reconsidered given that dwarf mistletoes have been a part of these forest ecosystems for thousands of years. 2. Forest insects and pathogens are increasingly being recognized as important agents in shaping the structure and composition of forests. Mistletoes affect the forest canopy, landscape pattern, and tree species mix. 3. These plants are integral part of forested ecosystems and have existed as part of the coniferous forests of North America since the Miocene. 4. Dwarf mistletoe is important to the ecology of these systems. The fruit, foliage and pollen of dwarf mistletoe are a food source for numerous bird, mammalian and insect species. Dwarf mistletoe alter the growth patterns of infected

trees, creating structural complexity within forests in the form of witches' brooms and snags, both which are used by numerous wildlife species for nesting, roosting and cover.⁵ The witches' brooms and higher snag densities in infected areas enhance habitat values for birds and other wildlife. In considering the beneficial aspects of dwarf mistletoe infection, it seems reasonable to assume that it is the large infected trees, particularly those with large witches' brooms, which have the greatest ecological value.⁶ Land use activities (grazing, logging, and fire suppression) have encouraged the spread of dwarf mistletoes. Many of the silvicultural challenges created by these parasites are exacerbated by ecologically insensitive land management policies such as fire suppression, livestock grazing, and inappropriate silvicultural techniques.⁷ In general, dwarf mistletoe only becomes a problem when land managers attempt to create highly productive forests or tree farms to grow timber far in excess of historical production rates.⁸ Probably the most significant forest health problem in the Northwest is that there are too many fiber plantations, primarily small and medium-sized trees, over vast areas. Thus, efforts to improve forest conditions should focus on areas that can benefit the most from thinning.⁹ The damaging effects of mistletoe can best be minimized, and their ecological benefits maximized, by recreating forest stands with age, size and density distributions similar to the original, presettlement forests.¹⁰ There is an urgent need for the Forest Service to reevaluate its current strategy for managing dwarf mistletoe, and to adopt an integrated ecosystem perspective that manages for forest ecosystem integrity, rather than waging a war against dwarf mistletoe.¹¹ An integrated management strategy that restores some of the fundamental components and processes that historically existed in these systems would largely eliminate the mistletoe problem. All components need to be incorporated into an overall management plan for any one of them to work correctly. Such an integrated strategy would include the following fundamental components: 1. No cutting of large diameter trees and snags. 2. Thin understory trees to create stand structure and densities that approximate presettlement conditions. 3. Reestablish regular ground fires in order to minimize seedling survival and to prevent the accumulation of fuel. 4. Reduce livestock densities to a level that will allow a relatively continuous ground cover of herbs and grasses to develop where light, soil and moisture conditions would normally support such vegetation. Once forests are thinned and opened up, they will simply return to their pre-thinning densities if livestock remain to prevent the reestablishment of ground cover.¹² In none of the aggressively treated research plots was dwarf mistletoe eliminated. After treatments had reduced the parasite to undetectable levels, populations inevitably began to rise in these experimental areas.¹³ Foresters are often surprised to see considerable infection in treated areas thought to be rid of dwarf mistletoe.¹⁴ When stands are opened up by selective harvest or thinning, dwarf mistletoes are stimulated. Latent infections are more apt to develop shoots; existing shoots grow more rapidly and produce more seed. This is probably a result of both improved tree vigor, which provides more water and nutrients to the parasite, and increased light. Unlike many forest insects and pathogens that are often associated with weak or slow-growing trees, dwarf mistletoes actually do better on vigorous trees.¹⁵ Dwarf mistletoes are well-adapted for survival and are remarkably persistent. They infect all ages and sizes of trees; moreover, a very significant proportion of infected trees have no visible shoots. Although these parasites spread slowly, trees grow slowly. Dwarf mistletoe populations can double several times during the length of a rotation.¹⁶ Dwarf mistletoes tend to do better on vigorous trees. Since a primary goal of silviculture is to promote vigorous trees, it can indirectly promote the parasite.¹⁷ Because of the typical patchy, concentrated distribution of the parasite, the removal of all visibly infected trees usually results in stands having understocked areas that contain mostly small trees. Except in very lightly infected stands, this type of treatment can greatly alter stand structure and have significant visual impact. Moreover, even when attempts are made to remove all infected trees, considerable infection remains in most treated areas, due to latent infection. Follow-up treatments (before the next scheduled entry) are often difficult to justify economically, except in very young stands. While cutting all visibly infected trees can provide better disease control than a less vigorous approach, the practice can fall short when other factors, especially aesthetic and ecological ones, are considered.¹⁸ The most vigorous dominant and codominant trees should be retained. Selection of "leave trees" should be based on overall tree qualities rather than just mistletoe. A lightly infected dominant or codominant tree is usually a better choice for retention than an intermediate or suppressed tree without visible infection.¹⁹ Entering a stand to remove only the more heavily infected trees is usually not an effective way to manage dwarf mistletoe or to improve forest conditions. In most cases, stand infection levels would rebound to even higher levels before the next entry and become progressively more severe over time. Infection should generally be reduced as much as possible without

sacrificing the best trees in the stand.²⁰ Group selection has also been perceived and used recently as a tool for treating dwarf mistletoe. However, its efficacy for control of mistletoe is largely untested, and opinions and perspectives vary.²¹ The creation of small openings can be very favorable to dwarf mistletoes over the long run, leading to heavy losses. In many cases, the regeneration that develops within the openings will be exposed to infected trees on the edges, and, in some cases, from infected trees within the openings. The parasite can penetrate small (1- to 4-acre) openings relatively quickly.²² Underburning may well be a good ecological approach for managing dwarf mistletoes on many ponderosa pine and mixed conifer sites. Often a combination of mechanical thinning and burning can be used to reduce infection levels and improve overall stand conditions. Fire can be used to help maintain infection at or below a desired level, perhaps allowing longer intervals between mechanical treatments. Significant amounts of crown scorch are probably needed to provide a controlling effect.²³ Prescribed fire will be more effective in reducing infection levels when crews can "shape" the fire (increase intensity) within infected areas. Fires covering relatively small areas (certainly no more than a few hundred acres at a time) should provide better results than larger fires, since crews generally have more control over coverage and intensity.²⁴ Mistletoe presence, incidence, and severity may not be good indicators themselves of wildlife habitat value. Wildlife species are probably responding in a complex way to special features such as brooms and snags, to vertical crown structure, to canopy gap pattern, and other factors affected by mistletoes.²⁵ Mistletoes possess aesthetic, scientific, and intrinsic values.²⁶ Forests are not only managed for the resources they produce but also to sustain and protect forest health and ecosystem values. Dwarf mistletoes are important disturbance agents with distinct ecological functions. They contribute to natural diversity structurally and biologically.²⁷ An important consideration in the design of a silvicultural entry is whether dwarf mistletoe treatment is necessary. In many cases the presence of dwarf mistletoe poses no threat to stand objectives.²⁸ Because the spread and intensification of dwarf mistletoe in uneven-aged, multistory stands can be quite rapid, management of these stands is a serious challenge.²⁹ Larger trees often tolerate more dwarf mistletoe infection without deleterious effects.³⁰ One of the major challenges for management of infested uneven-aged stands is the dispersal of dwarf mistletoe seed from infected overstory trees to the understory. Although the predominant opinion has been that dwarf mistletoe intensifies rapidly after a partial cutting or disturbance such as windthrow.³¹ In view of the uncertainties and potential adverse effects from selection and partial cutting in infected stands, use of the appropriate criteria for selecting and retaining trees is especially important.³² Where wildlife habitat is an important consideration, it may be desirable to maintain or encourage features resulting from mistletoe infections, such as snags and "witches' brooms". The same factors that can be manipulated to reduce mistletoe spread, intensification, and effects can also be used to enhance these processes and produce a continuing supply of dead and diseased trees.³³ From certain perspectives and in some situations, dwarf mistletoe infestations have beneficial impacts for associated species and communities. In old-growth forests, dwarf mistletoes may exert a different set of effects on infected trees and display different dynamics. Special management strategies and silvicultural treatments for infested stands are required where the objectives are to maintain and enhance wildlife habitat, old-growth character, and other ecosystem values.³⁴ Greater bird diversity is associated with increased mistletoe infestation (24 of 28 species positively associated); the key limiting resource for the birds in this situation may be snags. Parker (2001) reports a similar study in a northern Arizona ponderosa pine forest. He finds, however, a more complex situation with four species positively associated with mistletoe (cavity-nesting birds), five species with a negative association (avoiding infested areas), and seven with no relation (indifferent). Fairweather (1995) and Parks and others (1999b) describe mistletoe control treatments in which infected trees were killed but left standing for woodpeckers and other cavity-nesting animals. Although these snags are used, they remained standing for only a few years. Studies of broom use by wildlife include work by Parks and others (1999a), Hedwall (2000), and Garnett (2002). These studies identify which birds and mammals use "witches' brooms", how they use it (for nesting and roosting), and what kinds of brooms are preferred. This information is useful to determine if retaining certain brooms is a potential benefit for a favored species. Information still lacking is knowledge of how the number and distribution of snags and brooms relates to levels of mistletoe infestation and to wildlife populations and the dynamics (rates of generation and loss) of these features.

Machine Piling, Dozer Firelines and Tractor Soil Ripping

The EA and the project design features that it contains appear to allow heavy equipment on recovering post-fire soils (and within mistletoe green tree logging units) throughout the 20,000-acre logging area with very

few restrictions or sideboards. Additionally, the location, impacts and alternatives to widespread ground-based heavy equipment use throughout the project area is not quantified, documented or analyzed. Please note that Forest Service project planners in the Six Rivers National concluded that: "Machine piling/burn piles would increase ground disturbance and soil displacement when the machine turns." - Little Doe and Low Gulch Timber Sale DEIS p 110. In response to a request from the timber industry (American Forest Resources Council) to allow machine piling in logging units, federal timber sale planners on the Medford District BLM responded as follows: [Timber Industry] Comment 4: We asked that BLM provide some flexibility in how fuels would be treated by focusing on the desired goals. The BLM has restricted fuels treatments to hand piling and burning. Contractors could use light weight equipment to treat fuels without detrimentally compacting soils. [BLM] Response: The commenter has not provided details on methodology or supporting science that would support the claim that machine piling could be done without detrimentally compacting soils in excess of RMP standards for percent area compacted by current activities. Resource management plans call for limiting compaction in harvested areas in order to minimize soil productivity losses. Therefore, no additional use of mechanical equipment for fuels reduction was proposed, as ground-based logging would compact up to 12 percent of the harvest units. This is particularly important in the Cottonwood planning area as the majority of soils contain high rock content. It was identified that ripping the soils in this area would bring rocks and cobbles to the surface. The priority was given to minimizing the soil area compacted instead of trying to mitigate the effects. Additionally, the harvest prescription resulting in relatively few trees per acre being cut minimizes the slash, and consequently, also reduces the need for mechanical fuel treatment. Medford BLM Cottonwood Project EA Appendix A, Response to Comments. Page 3-2 Manual piling is a reasonable alternative to the avoidable impacts associated with machine piling while mechanical piling is often recognized as an outdated practice that has disproportionately harmful impacts on watershed and soil resources. Please see: Evelyn Bull et al. Trees and Logs Important to Wildlife in the Interior Columbia River Basin PNW-GTR-391 (1977). BLM, USGS, Biological Soil Crusts: Ecology and Management (Technical Reference 1730-2(2001) (Available from BLM Publication Management Distribution Service, Bldg 41, E-16(BC-650B) Denver, CO 80255 We further encourage the agency to examine the soil compaction monitoring reports from 1985 through 1997 on the Payette National Forest. While the Payette contains different ecotypes and soil types than does the Antelope and Tennant project area, the monitoring reports clearly show long-lasting and significant soil damage from tractor piling activities. Similar monitoring in the Idaho Panhandle (Jerry Niehoff) and the Kootenai National Forest (Lou Kuennen) demonstrates significant impacts to soils. We also encourage the agency to review the findings of Geppert, R.R., Lorenz, C.W., and Larson, A.G., 1984. Cumulative Effects of Forest Practices on the Environment: A State of the Knowledge. Wash. For. Practices Board Proj. No. 0130, Dept. of Natural Resources, Olympia, Wash. Our organizations remain convinced that manual piling is far preferable to tractor piling. Manual piling has none of the negative impacts to soils associated with tractor piling, provides an increased opportunity for local employment and significantly reduces long-term damage to soil health and productivity. Hence manual piling would better achieve the stated forest restoration purpose and need for the project. Please further note that the proposed machine piling violates NFMA requirements that a given logging system cannot be chosen because of dollar value alone. There is no other justification for implementing the proposed tractor piling provided in the administrative record other than economic considerations and many reasons why the use of such systems is not appropriate. The EA does not analyze or disclose the impacts to soil resources from utilizing bulldozers to establish fire lines when implementing prescribed fire prescriptions, nor does the EA disclose where this activity will occur. Similarly, the EA is silent as to the impacts of ground-based scarification and soil ripping conducted by heavy equipment in post-fire forest ecosystems. New Logging Road Construction Our June 16, 2022 scoping comments contained numerous references to scientific peer-reviewed studies and articles that argue against the construction of new "temporary" logging roads as a form of post-fire forest recovery. The EA largely failed to acknowledge or respond to those scoping comments and literature references. Beschta et al. (1995) warned that even temporary road construction should be prohibited on burned landscapes. Existing roads in the watershed are experiencing significant slumping and failure that contributes directly to sediment loading. Commercial landings, log decks, and hauling have similar direct impacts on soil and hydrological values. The Flounce Around EA (a 500 acres matrix salvage timber sale in the Medford District Butte Falls Resource Area) acknowledges that: "Many of these roads were previously closed or had little traffic but were opened up during the suppression effort of the Timbered Rock wildfire in the adjacent Elk Creek

watershed in the summer of 2002. As a result, many of these high gradient access roads have not been re-blocked and winter traffic has destroyed many of the designated road drainage (i.e. water bars, water dips and culverts). This has caused damage to the road surfaces creating road related erosion (rill, gullies) and subsequent sedimentation of the nearby stream channel."-Flounce Around EA

The Antelope-Tennant salvage logging EA does not disclose if similar impacts occurred during fire suppression activities at the Antelope and Tennant fires. The EA also did not disclose the cumulative and synergistic impact of tractor fire line construction.

Emergency Situation Determination

We are hopeful that everyone involved in this planning process wants similar outcomes- namely healthy fire-resilient forest stands that provide wildlife habitat, watershed values, recreational opportunities and carbon sequestration. For that reason, conservation organization has supported projects like Six Shooter and Harlan that seek to bring this planning area back towards a more natural and resilient condition. We are concerned that the KNF is proposing to fast-track up to 20,000-acres of logging and 8 miles of road construction in the Antelope-Tennant project area through utilization of an Emergency Situation Determination (ESD). In our pre-scoping comments of April 2022 we requested that the agency engage in a targeted and careful approach to post-fire logging. We repeat that request now. Please avoid the significant deleterious impacts associated with extensive utilization of ground-based post-fire logging on thousands of acres and the construction of 8 miles of new logging roads.

Conclusion

Please note that there is almost universal agreement that salvage logging does not leave watersheds and forests in a healthier, more resilient state, and that the timber volume gained via salvage is neither predictable nor sustainable. We believe that post-fire ecosystems have more to offer than simply another opportunity for salvage logging and plantation forestry. Thank you for considering our concerns and input in this planning process.