

# LOS PADRES FORESTWATCH

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July 6, 2005

Project Leader  
Pine Mt. Recreation Area Project  
Mt. Pinos Ranger District  
34580 Lockwood Valley Road  
Frazier Park, CA 93225

Re: Scoping Comments – Pine Mt. Recreation Area Project

Dear Project Leader:

Los Padres ForestWatch is a non-profit 501(c)(3) organization dedicated to protecting and restoring the natural and cultural heritage of the Los Padres National Forest through community involvement, legal advocacy, and science. We support efforts to improve ecosystem health and protect communities from wildfires, and work to ensure that fuel management activities are undertaken with minimal impacts to water supplies, sensitive species, and other forest resources.

We would like to submit the following comments on the Pine Mountain Recreation Area Project (“Project”). Please respond to these substantive comments in your preparation of the Environmental Assessment (EA) for this Project. In the event that the agency decides not to prepare an EA, please address the issues raised in this letter in any Decision Memo to avoid a finding that the agency’s decision is arbitrary and capricious. In addition, we request that the Forest Service send us any further decisional documentation for this Project as soon as it is available.

ForestWatch does not oppose the purpose and need of this Project. However, we believe that forest health can be successfully achieved using alternative methods that have fewer impacts on watersheds, recreation, sensitive species and habitats, and cultural resources. Moreover, we are also concerned that the agency is undertaking similar projects across the entire national forest that, taken together, will result in significant cumulative impacts to forest resources. Thus, we urge the Forest Service to prepare an EA to analyze a full range of alternatives, to provide for additional public input, and to ultimately result in a better project with fewer impacts to important forest resources.

**I. The Project Does Not Qualify for a Categorical Exclusion, Therefore the Forest Service Must Prepare an Environmental Assessment or Environmental Impact Statement.**

According to the scoping letter, the Forest Service is currently analyzing this Project as a categorical exclusion (CE). The National Environmental Policy Act (NEPA) defines CEs as “a category of actions which do not individually or cumulatively have a significant effect on the human environment...and for which, therefore, neither an environmental assessment nor an environmental impact statement is required.” 40 C.F.R. § 1508.4. However, the Project does not qualify for a CE, and even if it did, the presence of several “extraordinary circumstances” still requires the preparation of an EA.

First, the Forest Service has identified several types of activities that qualify for a CE. For this project, the following CE applies:

10. Hazardous fuels reduction activities using prescribed fire, not to exceed 4,500 acres, and mechanical methods for crushing, piling, thinning, pruning, cutting, chipping, mulching, and mowing, not to exceed 1,000 acres. Such activities:
  - a. Shall be limited to areas:
    - (1) In the wildland-urban interface; or
    - (2) Condition Classes 2 or 3 in Fire Regime Groups I, II, or III, outside the wildland-urban interface

Forest Service Handbook § 1909.15.31.2.10. This Project does not qualify for this CE, nor any other CE for that matter, because it is not in the “wildland-urban interface” and may not be within any of the specified condition classes and fire regime groups. Thus, the Forest Service cannot legally claim that this project is categorically excluded, and must instead prepare an EA.<sup>1</sup>

Second, this CE only applies to projects that are identified through the collaborative framework outlined in “A Collaborative Approach for Reducing Wildland Fire Risks to Communities and Environment 10-Year Comprehensive Strategy Implementation Plan.” FSH 1909.15.31.2.10.b. To show that the agency has complied with this requirement, please explain the steps taken to collaborate with ForestWatch and other interested groups in the initial development of this Project.

Third, projects under this CE “shall not include the use of herbicides or pesticides.” FSH 1909.15.31.2.10.e. As part of this Project, the Forest Service is proposing to use the fungicide Borax/Sporax. Fungicides such as Sporax are a type of pesticide. The Environmental Protection Agency defines pesticides as “Substances intended to repel, kill, or control any species designated a ‘pest’ including weeds, insects, rodents, *fungi*, bacteria, or other organisms. The family of pesticides includes herbicides, insecticides, rodenticides, *fungicides*, and bactericides.” See <http://www.epa.gov/pesticides/glossary> (emphasis added). Thus, because the Project includes the use of pesticides, and because pesticides may cause significant impacts to human health, water supplies, and wildlife, the Forest Service cannot claim a CE for this project and must instead prepare an EA at a minimum.

In addition, the Forest Service may only claim a CE for this Project if there are no “extraordinary circumstances.” Specifically, the Forest Service Handbook states that “[a] proposed action may be categorically excluded from further analysis and documentation...*only if* there are no extraordinary circumstances related to the proposed action.” Forest Service Handbook 1909.15.30.3.1 (emphasis added); *see also* 40 C.F.R. § 1508.4 (requiring agencies to “provide for extraordinary circumstances in which a normally excluded action may have a significant environmental effect.”) Under the handbook,

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<sup>1</sup> If the agency believes that the CE applies, then please provide supporting documentation, as well as analysis in the Decision Memo, of the following criteria used to determine the appropriate condition class and/or fire regime group for the Project area: whether the fire regime in the Project area is within its natural historic range, and if not, the degree of alteration; an analysis of the risk of losing key ecosystem components; the extent that fire frequencies have departed from natural frequencies, and the number of return intervals of departure, if any; whether this departure has resulted in changes to fire size, intensity and severity, and landscape patterns, and if so, the extent of those changes; the degree of alteration of vegetation and fuel attributes from natural (historic) range; the extent of alteration of species composition and structure from their historic range at patch and landscape levels; population trends of non-native species and the potential risk for these populations to expand following wildfire; extent of alteration of hydrology and soils from historic ranges; and the extent of alteration of insect and disease populations from their natural (historic) range.

Resource conditions that should be considered in determining whether extraordinary circumstances related to the proposed action warrant further analysis and documentation in an EA or an EIS are:

- a. **Federally listed threatened or endangered species** or designated critical habitat, species proposed for Federal listing or proposed critical habitat, **or Forest Service sensitive species.**
- b. Flood plains, **wetlands, or municipal watersheds.**
- c. Congressionally designated areas, such as **wilderness**, wilderness study areas, or national recreation areas.
- d. Inventoried roadless areas.
- e. Research natural areas.
- f. American Indians and Alaska Native religious or **cultural sites.**
- g. Archaeological sites, or historic properties or areas.

Forest Service Handbook 1909.15.30.3.2. There are several sensitive species within the project area, and we believe that potential impacts to these species is an extraordinary circumstance warranting preparation of an EA. The potential presence of California condor roosting sites in the Project area, in and of itself requires preparation of an EA due to the high risk of extinction that this species continues to face, along with the enormous sums of public funds spent to recover the bird. In addition, the project area contains the headwaters of several municipal watersheds and several cultural sites, and is located immediately adjacent to the Sespe Wilderness and other inventoried roadless areas. The scoping letter fails to disclose whether any of the project area falls within the Sespe Wilderness, and the Proposed Action Map does not even indicate the wilderness boundary. Due to these extraordinary circumstances, the Forest Service must prepare an EA to assess the degree of the potential effect of the Project on these resource conditions.

We recognize that many elements of the Project will benefit forest health if performed properly. However, we also note that NEPA applies to *all* significant effects, even beneficial ones. Specifically, the regulations implementing NEPA state that “effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.” 40 C.F.R. § 1508.8. Thus, even though this Project may result in some beneficial effects, this does not absolve the Forest Service of its obligation to undertake a legally adequate environmental review.

## **II. The Project Must be Consistent With the Forest Plan**

The National Forest Management Act requires the Forest Service to ensure that all actions undertaken on the forest comply with the current Forest Plan. Please ensure that the Project is consistent with all applicable management standards and guidelines of the current Forest Plan. We hope the agency pays particular attention to the following provisions:

- a. Best Management Practices – 4.3.2.5.2 (“Methods and techniques for applying the BMP will be identified during project level environmental analysis and incorporated into the associated implementation documents.”);
- b. Cumulative Impact Watershed Assessments – 4.3.2.5.3 (“Excessive surface disturbance of watersheds and resulting on-site and off-site soil and water deterioration will be precluded by conducting cumulative watershed impact assessments on Order III and greater drainages at the time the project environmental analysis is prepared and documented in appropriate project records.”);

- c. Soil Productivity – 4.3.2.5.5 (“Soil productivity will be maintained during vegetation type conversions by conducting such conversions on areas with stable slopes under 40%, moderate to high soil productivity, high soil stability and low rockiness, as defined in the Forest Soil Resource Inventory or on-site evaluations.”);
- d. Prescribed Burns – 4.3.2.5.6 (“The quantity of vegetation to be retained during prescribed burns will be specified in the project environmental analysis. Soil erosion hazard and slope stability hazard will be two of the primary factors evaluated.”);
- e. Sensitive Plant Species – 4.3.2.6.3,4,5 (“Plan vegetation management practices to protector enhance populations of Sensitive or Special Emphasis plant species,” and “Emphasize Sensitive and Special Emphasis plant species habitat protection and improvement in resource management and fire suppression activities,” and “Prevent the destruction or adverse modification of habitat determined to be essential for Sensitive or Special Emphasis plant species.”);
- f. Riparian Areas – 4.3.2.7.3 (“Vegetation management shall be restricted to no more than 30% reduction in the riparian ground cover that would naturally occur at any given time within the project area.”);
- g. Perennial/Intermittent Streams – 4.3.2.7.11 (“Perennial and intermittent streams will be protected by limiting management activities within the Streamside Management Zone.”);
- h. Snags Per Acre – 4.3.2.10.3 (“An average of at least 1.5 snags per acre will be retained throughout treated compartments in the conifer forest type (of these, 1.2 snags per acre should be 15-24 inches dbh and greater than 20 feet tall; 0.3 snags per acre greater than 24 inches dbh and greater than 20 feet tall.”);
- i. Woody Debris – 4.3.2.10.4 (“Maintain down logs and woody debris for wildlife. An average of 5 or more down logs per acre at least 13 inches in diameter and 20 feet in length should be retained in forested areas.”);
- j. Spotted Owl – 4.3.2.10.15 (“Protect all Spotted Owl territories: a. All identified Spotted Owl nest sites will be protected with a buffer zone around each and excluding activities within this zone which would cause destruction of their nesting habitat (tree canopy)... b. In known Spotted Owl and raptor nesting and roosting core areas retain more than 60% over-story canopy closure and 60 to 80% closure in the mid-story; and, c. Retain at least 40% over-story canopy closure in foraging areas.”);
- k. Sensitive Species – 4.3.2.10.16 (“Identify essential habitat for all Sensitive and Special Emphasis species and prescribe measures to prevent the destruction or adverse modification of such habitat. Apply management prescriptions (Habitat Management Plans) which will provide high and medium capability habitat sufficient to maintain or enhance the above species.”);
- l. Cultural Resources – 4.3.2.15.3 (“All project impact areas will be inventoried prior to implementation to allow identification, protection, and mitigation of any significant cultural properties. The consultation process mandated by Federal regulations (36 CFR 800) will be completed early in the planning for individual projects.”);
- m. Road Obliteration – 4.3.2.18.5 (“Obliterate any Forest Development Roads that become unnecessary for the protection and management of the Forest. Such roads are returned to a near-natural appearing condition compatible with the surrounding terrain.”); and

n. All Management Guidelines and Management Standards that apply to all relevant Management Areas in the project area, including areas 4b, 10b, and 64 (if applicable).

In addition, please explain *how* the Project is consistent with the Forest Plan in any environmental document prepared for the Project.

### **III. The Scoping Letter Provides an Inadequate Project Description and Thus Prevents the Public From Submitting Meaningful Comments on this Proposal**

The scoping letter for the Project does not contain the level of detail required by NEPA and Forest Service directives implementing NEPA. Because of this lack of detail, interested agencies and the public cannot formulate meaningful comments on this proposal.

First, NEPA requires scoping to be an “early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action.” 40 C.F.R. § 1501.7. Forest Service directives emphasize the importance of scoping in achieving NEPA compliance, stating that:

The *most important* element of the scoping process is to *correctly identify and describe* the proposed action. Elements of the proposed action include the nature, characteristics, and scope of the proposed action, the purpose and need for the proposed action, and the decision to be made.

Forest Service Handbook 1909.15.11.2 (emphasis added). An adequate project description assists the public and interested agencies in identifying issues and providing meaningful comments. To this end, the General Counsel of the Council on Environmental Quality has concluded that

Scoping cannot be useful until the agency knows enough about the proposed action to identify most of the affected parties, and to present a *coherent proposal* and a suggested initial list of environmental issues *and alternatives*. Until that time there is no way to explain to the public or other agencies what you want them to get involved in.

Council on Environmental Quality, *Memorandum for General Counsels, NEPA Liaisons and Participants in Scoping*, dated April 30, 1981, pp. 4-5.

The scoping letter for this Project fails to present such a “coherent proposal.” Instead, the proposed action is described in vague terms. For example, the letter proposes selective thinning and understory thinning, but fails to adequately define these activities and the exact locations where each activity will occur. The letter proposes to reduce tree densities to “desired” density or species mixtures but fails to quantify and describe the desired density and species diversity to be achieved by this project. Thus, the public cannot comment on whether the desired conditions are appropriate and whether the Project contains adequate and appropriate methods to attain these desired conditions. Moreover, the letter fails to specify the duration of the project and at what time of year it will be implemented. Finally, the letter uses vague terms such as “where needed,” “smaller/younger,” “larger trees,” and “hazard and diseased trees” without defining these terms.

An appropriate scoping letter contains “a brief information packet consisting of a description of the proposal, an initial list of impacts and alternatives, maps, drawings, and any other material or references that can help the interested public to understand what is being proposed.” *Id.* at 5. This Project’s scoping letter falls far short of this guidance. For example, the letter is missing an initial list of

impacts and alternatives. Thus, the public does not know what the main issues are surrounding this proposal, and thus cannot frame appropriate comments.

We urge the Forest Service to re-issue a scoping letter that complies with NEPA and Forest Service directives. An adequate scoping letter is particularly important in cases where CEs are involved, because the scoping letter is the only document the public sees before a decision is made. This will enable the public to participate meaningfully in the scoping process.

#### **IV. The Forest Service Must Initiate Formal Consultation to Fulfill its Responsibilities Under § 7 of the Endangered Species Act.**

The Endangered Species Act (ESA), 16 U.S.C. §§ 1531 *et seq.*, requires the Forest Service to consult with the U.S. Fish and Wildlife Service (FWS) to insure that the Project “is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical] habitat.” 16 U.S.C. § 1536(a)(2).

#### **V. The Project Will Result in Significant Cumulative Impacts**

To comply with NEPA, the Forest Service must analyze all impacts of the Project, including cumulative effects. See 40 C.F.R. §§ 1508.9(b), 1508.8. A cumulative impact is defined under NEPA regulations as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions.... Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” 40 C.F.R. § 1508.7.

Please analyze the following related past, present, and reasonably foreseeable future project that, combined with this Project, may result in significant impacts:

- Frazier Mountain Vegetation Management;
- Figueroa Mountain Vegetation Management;
- Organization Camps Project;
- Brazil Ranch Vegetation/Fuels Management
- Defensible Fuels Profile Zones, Monterey Ranger District;
- Santa Cruz Prescribed Burn;
- Tepusquet Prescribed Burn;
- Sierra Madre Fuel Modification Area;
- Frazier Park Community Defense Zone;
- Lake of the Woods Community Defense Zone;
- Fremont Fuel Break;
- Gaviota Fuels Treatment Project;
- Mountaintop Community Defense Zone;
- Ojai Community Defense Zone;
- Alamo Mountain Prescribed Burn Project;
- Pine Mountain Club Defensible Fuels Profile Zone;
- Pine Mountain Club Vegetation Management;
- Laguna Fuels Project;
- Painted Cave Prescribed Burn;
- Rice-Willis Prescribed Burn;
- Ongoing vegetation clearing along Forest Service roads; and

- Other projects.

Moreover, we note that the Forest Service cannot impermissibly segment its “forest health” program into smaller, individual projects in order to avoid a finding of significant impacts. “Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.” 40 C.F.R. § 1508.27(b)(7). We believe that the Forest Service must prepare a programmatic environmental document governing “healthy forest” projects across the entire forest, and then tier individual projects to that analysis.

## **VI. The Forest Service Should Analyze the Following Issues in Determining Whether the Project Will Result in Significant Impacts**

Based on our review of this and other similar projects in the area, we do not believe that a CE is appropriate for this project and that an EA should be prepared to fully disclose and analyze potentially significant impacts. We note that the proposed Project meets several of the tests of significance established by the Council on Environmental Quality in its implementing regulations for NEPA, such as proximity to cultural resources, ecologically critical areas, wilderness areas, impacts on species and habitats, cumulative impacts, and the degree to which the effects of the project are “highly controversial.” *See* 40 C.F.R. § 1508.27(b).

This Project is especially significant because the impacts to the environment are highly controversial. 40 C.F.R. § 1508.27(b)(4). “Highly controversial” in the NEPA context applies to a substantial dispute as to the size, nature, or effect of an action. Wetlands Action Network v. United States Army Corps of Eng’rs, 222 F.3d 1105, 1122 (9<sup>th</sup> Cir. 2000). The scientific literature on fuel reduction effectiveness and large tree cutting (as cited below) has shown there to be sufficient dispute as to the size and nature of the environmental impacts of this Project.

### **A. Tree Size**

Since one of the stated purposes of this Project is to “preserve old growth pine stands,” we believe that thinning should focus on the smallest trees that have established due to recent planting or fire suppression. The agency should leave a healthy canopy of medium and large trees that are valuable for wildlife habitat and as future sources of large snags and large down wood. Please identify and avoid *all* old-growth trees in the project area. Survey for California spotted owl sites and establish appropriate buffer zones.

We note that the proposed action allows cutting of trees up to 30 inches diameter (dbh). However, the proposal fails to justify the cutting of large trees. There is no science that would support the cutting of large trees to reduce fuels and change fire behavior that we are aware of. In fact, cutting of large trees is generally considered contrary to fuels reduction or forest restoration. Perry et al. (2004) state that “cutting larger trees in a stand is likely to create future problems and *should not be done if long-term landscape health is the primary objective*,” (emphasis added).

Recent fuel reduction modeling done by researchers at the University of Washington and published by the Rural Technology Institute provides some important lessons for the agency’s fuel reduction efforts, including this project:

1. Thinning trees smaller than 12 inches can help reduce fire risk. In stands that currently have moderate-to-high fire risk due to fire suppression, removing half the basal area by thinning from below resulted in greatly reduced fire risk.

2. The ingrowth must be treated in order to retain the fuel reduction benefits of the original thinning. If ingrowth is not treated, the model clearly showed that thinning is worse than doing nothing at all. This is because thinning stimulates ingrowth of vegetation that can act as ladder fuels. The bottom line is that the agency must:
  - a. Disclose whether and how ingrowth will be treated;
  - b. Disclose the cumulative effects of such treatments;
  - c. Disclose the uncertainties of future funding and the consequences if the ingrowth is not treated;
3. Removing trees over 12 inches can actually make fire risk worse than doing nothing at all. In stands starting with moderate and high fire risk, removing trees over 12 inches and leaving trees under 12 inches resulted in much higher fire risk in 20 years. While this is not a typical treatment on federal forest lands, the lesson is that large trees should be retained, because they are fire resistant and they help suppress ladder fuels, and maintain more favorable fuel conditions below the canopy (e.g., moist, cool, less windy).

C. Larry Mason, Kevin Ceder, Heather Rogers, Thomas Bloxton, Jeffrey Comnick, Bruce Lippke, James McCarter, Kevin Zobrist, Investigation of Alternative Strategies for Design, Layout and Administration of Fuel Removal Projects; Rural Technology Initiative; July 2003; [http://www.ruraltech.org/pubs/reports/fuel\\_removal/](http://www.ruraltech.org/pubs/reports/fuel_removal/) See especially RTI Appendix pages B-13, 14.

We suggest that a diameter limit be placed on trees to be cut, and recommend a 12-inch diameter maximum. The best available information indicates fire hazard can actually be increased by the removal of trees that form the canopy (generally over 12 inches in diameter). The best available information indicates that the existence of brush and trees under 12 inches tend to contribute most to fire hazard (by increasing ground and ladder fuels) whereas retention of trees over 12 inches dbh can actually reduce fire hazard. This is because brush and small diameter trees tend to have their canopies (i.e. flashy fuels) close to the ground where it can carry flames into the canopy, while trees larger than about 12 inches tend to have fire resistant bark, greater “ground to crown” distances, and the canopy of the larger trees provides shade which maintains fuel moisture, reduces wind speed, and suppresses the growth of ladder fuels, which results in reduced fuel hazard and reduced costs of maintaining favorable fuel conditions. *Id.* If the agency proposes to remove trees more than 12 inches dbh, please provide a sound scientific basis for a different diameter limit.

Numerous credible investigators have consistently recommended retention of all large trees in restoration projects. (Allen et al. 2002; DellaSala et al. 2004; Dombeck et al. 2004 and others). We urge the Forest Service to leave in place *all* trees over 12" dbh.

**B. Fire Hazards** – We support the use of prescribed fire, and, if necessary, careful thinning and removal of small diameter material and flammable brush in ecologically appropriate locations in order to help restore fire regimes. We urge the agency to prioritize such activities in the wildland-urban interface.

We have concerns about heavily thinning the overstory canopy in an effort control crown-to-crown fire spread. The most significant effect of this type of heavy thinning is to increase the warming and drying of ground fuels and to increase the growth of ladder fuels, both of which significantly detract of the risk reduction objectives and are expensive to treat. “Thinning opens stands to greater solar radiation and wind movement, resulting in warmer temperatures and drier fuels throughout fire season.... [T]his openness can encourage surface fire to spread...” (USDA Forest Service. *Influence of Forest Structure on Wildfire Behavior and the Severity of Its Effects*, November 2003, <http://www.fs.fed.us/projects/hfi/2003/November/documents/forest-structure-wildfire.pdf> ). Please address all effects of thinning, including tendencies to reduce *and* increase fire hazard.

There is a lack of empirical evidence supporting the proposal that mechanical fuels reduction – either thinning dense stands or a combination of thinning and fire – will reduce the severity of wildfire (Carey and Schumann 2003; Graham et al. 2004:23) and the Forest Service must disclose this uncertainty. A report prepared for Congress by the General Accounting Office states: “We do not presume that there is a broad scientific consensus surrounding appropriate methods or techniques for dealing with fuel build-up or agreement on the size of areas where, and the time frames when, such methods or techniques should be applied.” (US GAO RCED-99-65. 1999:56). Much of the evidence of fuels treatment efficacy is restricted to anecdotal observation and computer simulations (Omi and Martinson 2002:1; Graham et al. 2004). The single empirical study on the effects of thinning showed that fire severity was reduced on only one out of several study sites (Pollet and Omi 2002). The Forest Service is required by NEPA to disclose and discuss this “responsible opposing view.”

In fact, there is scientific evidence that thinning can make the fuel hazard worse instead of better. For example,

Opening up closed forests through selective logging can accelerate the spread of fire through them because a physical principle of combustion is that reducing the bulk density of potential fuel increases the velocity of the combustion reaction. Wind can flow more rapidly through the flaming zone. Thinned stands have more sun exposure in the understory, and a warmer microclimate, which facilitates fire (Countryman 1955).

...  
[F]uel reduction activities – particularly mechanized treatments – inevitably function to disturb soils and promote the invasion and establishment of non-native species. Pile burned areas associated with the treatments are also prone to invasion (Korb et al. 2004). Annual grasses can invade treated areas if light levels are high enough, leading to increased likelihood of ignition, and more rapid spread of fire, which can further favor annual grasses (Mack and D’Antonio 1998). This type of feedback loop following the establishment of non-native plants may result in an altered fire regime for an impacted region, requiring extensive (and expensive) remedial action by land managers (Brooks et al. 2004).

Odion, Dennis. 2004. Declaration in NWEA v. Forest Service, citing Countryman, C. M. 1955. Old-growth conversion also converts fire climate. U.S. Forest Service Fire Control Notes 17: 15-19.

Theoretically, fuel treatments have the potential to exacerbate fire behavior. Crown fuel reduction exposes surface fuels to increased solar radiation, which would be expected to lower fuel moisture content and promote production of fine herbaceous fuels. Surface fuels may also be exposed to intensified wind fields, accelerating both desiccation and heat transfer. Treatments that include prescribed burning will increase nutrient availability and further stimulate production of fuels with high surface-area-to-volume ratios. All these factors facilitate the combustion process, increase rates of heat release, and intensify surface fire behavior.

...  
Thus, treatments that reduce canopy fuels increase and decrease fire hazard simultaneously. With little empirical evidence and an infant crown fire theory, fuel treatment practitioners have gambled that a reduction in crown fuels outweighs any increase in surface fire hazard....

Omi, P.N., and Martinson, E. J. 2002. Effect of fuels treatment on wildfire severity. Final report. Western Forest Fire Research Center. Submitted to the Joint Fire Science Program Governing Board  
<http://www.cnr.colostate.edu/frws/research/westfire/FinalReport.pdf>

After conducting a thorough literature review of available science on the effects of forest thinning, the Forest Trust found that:

- Although the assertion is frequently made that simply reducing tree density can reduce wildfire hazard, the scientific literature provides tenuous support for this hypothesis.
- The literature leaves little doubt, however, that fuel treatments can modify fire behavior. Thus, **factors other than tree density, such as the distance from the ground to the base of the tree crown, surface vegetation and dead materials play a key role. Research has not yet fully developed the relationship among these factors in changing fire behavior.**
- The specifics of how treatments are to be carried out and the relative effectiveness of alternative prescriptions in changing wildfire behavior are not supported by a significant consensus of scientific research at this point in time.
- Substantial evidence **supports the effectiveness of prescribed fire**, a treatment that addresses all of the factors mentioned above. Significantly, several empirical studies demonstrated the effectiveness of prescribed fire in altering wildfire behavior.
- By contrast, we found a limited number of papers on the effects of mechanical thinning alone on wildfire behavior. The most extensive research involved mathematical simulation of the impact of mechanical thinning on wildfire behavior. However, the results of this research are highly variable.
- A more limited number of studies addressed the effectiveness of a **combination of thinning and burning** in moderating wildfire behavior. The impacts varied, depending on the treatment of thinning slash prior to burning. Again, **crown base height appeared as important a factor as tree density. The research community is still building a scientific basis for this combination of treatments.**
- **The proposal that commercial logging can reduce the incidence of canopy fire was untested in the scientific literature. Commercial logging focuses on large diameter trees and does not address crown base height – the branches, seedlings and saplings which contribute so significantly to the “ladder effect” in wildfire behavior.**
- Much of the research on the effectiveness of fuel treatments uses dramatically different methodology, making a comparison of results difficult. To provide a basis for analysis, we structured our review of the literature into four general groupings: observations, case studies, simulation models and empirical studies. Empirical studies provide the strongest basis for evaluating treatments whereas personal observations are the least reliable.
- **We found the fewest studies in the most reliable class – empirical research. We found the greatest number of studies in the least reliable class of research – reports of personal observation. Several other reviews of the literature confirm this finding, stating that the evidence of the efficacy of fuel treatment for reducing wildfire damage is largely anecdotal.**
- The **results of simulation studies are highly variable**, in terms of such factors as fire spread, intensity and the occurrence of spotting and crowning.
- Scientists recognize **that large scale prescribed burning and mechanical thinning are still experimental and may yet reveal unanticipated effects on biodiversity, wildlife populations and ecosystem function.**

Henry Carey and Martha Schumann. Modifying WildFire Behavior – The Effectiveness of Fuel Treatments — The Status of Our Knowledge. April 2003;  
<http://www.theforestrust.org/images/swcenter/pdf/WorkingPaper2.pdf>

The proposed action fails to acknowledge the paucity of scientific support for thinning and clearing to reduce fuels and reduce fire effects and fails to recognize that thinning often increases fine fuel loads while removing the large logs that are relatively less prone to burn. Thinning also increases wind and light penetration of the canopy and causes fuels to dry out which make them more prone to burn and increases the time it takes woody material to decompose. Removing medium and large trees also removes shade and resource competition that helps suppress the growth of ladder fuels such as small trees and brush.

In light of the conflicting science on the benefits of forest thinning, please discuss these potential impacts in any environmental assessment or decision document.

### **C. Soils & Slopes**

Due to the significant impacts associated with heavy machinery on soils and erosion, we believe that the Forest Service should rely solely on hand-thinning. No heavy machinery should be used, unless restricted solely to classified roads. Soil compaction caused by heavy machinery significantly reduces an area's growth and regrowth capabilities.

The use of the term "temporary travelway" is inappropriate. Regardless of what the Forest Service calls them, these roads qualify as "new road construction" under the Forest Service's own regulations. Specifically, "new road construction" is defined as "activity that results in the addition of forest classified *or temporary* road miles." 36 C.F.R. § 212.1.

The Forest Service cannot minimize the impacts of roads simply by dubbing them "temporary," because even temporary roads can have significant impacts. "Accelerated surface erosion from roads is typically greatest within the first years following construction although in most situations sediment production remains elevated over the life of a road. Thus, even 'temporary' roads can have enduring aquatic impacts." Moreover, "the assumption that road obliteration or BMPs will offset the negative impacts of new road and landing construction and use is unsound science since road construction has immediate negative impacts and benefits of obliteration accrue slowly." See Beschta, R.L. et al. 2004.<sup>2</sup> Please describe the nature of these new *roads* that will be created by this Project, and how the agency intends on closing and rehabilitating them. Since the Project apparently will continue indefinitely into the future, when does the agency propose to close and rehabilitate such roads?

Avoid increased mortality of residual trees due to pathogens and mechanical damage to boles and roots. (Filip 1994, Hagle & Schmitz 1993). Avoid damage to soil integrity through increased erosion, compaction, and loss of litter layer. (Harvey et al. 1994, Meurisse & Geist 1994). In addition, please address soil compaction mitigation and true soil restoration immediately after activities are completed.

Identify steepness of all slopes in the Project area. Explain how thinning will differ to account for differences in slope incline. Prohibit thinning and other disturbance on steep slopes (30% or greater, regardless of distance thinned) and in riparian areas. Unless treated, soil compaction and disturbance resulting from thinning can disrupt soil structure, harming tree growth and regeneration. Evaluate soil and nutrient loss associated with the Project.

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<sup>2</sup> Beschta, R.L., Rhodes, J.J., Kauffman, J.B., Gresswell, R.E., Minshall, G.W., Karr, J.R., Perry, D.A., Hauer, F.R., Frissell, C.A., 2004. Postfire management on forested public lands of the Western USA. *Conservation Biology*, 18: 957-67.

Pile burning may cause patches of extreme soil heating to the point where soil characteristics are changed. What is the extent of these patches across the Project area? Piles result in heavy, localized impacts to soil quality.

#### **D. Cultural Resources**

Please explain the methods used to survey for such sites, and describe attempts to consult with tribes and other interested parties in accordance with the National Historic Preservation Act. Even if cultural sites have not been documented on the site to date, we believe that the Forest Service should still require an on-site monitor in the likely event that items of cultural significance are found during Project implementation. In addition, the agency should *avoid* damage to these sites altogether if they are found, mere flagging is not sufficient. The scoping letter should also set forth specific protection measures to be adopted and how the agency intends on following through to ensure that these measures are in effect throughout the duration of the Project.

In addition, the scoping letter states that monitoring will only occur “post project” to determine the effectiveness of the protection measures. The agency should retain monitoring by a certified archaeologist *during* – not after – the implementation of all Project activities. In addition, the agency should consult with the State Historic Preservation Officer in accordance with the National Historic Preservation Act.

#### **E. Water Quality**

The State Water Resources Control Board has identified vegetation removal for fuel reduction activities as one of the main causes of water pollution in the Los Padres. Reduce creation of sediment that may eventually be delivered to streams and harm fish. (Grant & Wolff 1991, Beschta 1978). Identify all perennial and intermittent streams in the Project area. Document impacts to water quality and channel stabilization. Avoid or restore skid trails, which tend to channelize runoff and contribute to erosion, sedimentation, and gullying.

The scoping letter states that the Forest Service will implement Best Management Practices (BMPs). Please identify which BMPs will be implemented as part of this Project, and how they will be specifically applied to this particular Project. We agree with the 100-meter buffer, but believe it should apply to all wetlands, not just streams and riparian areas. The 100-meter buffer prescription does not indicate whether it is measured from top of bank or edge of riparian vegetation; we recommend the latter.

Analyze whether thinning and clearing will actually increase erosion, and evaluate how long before any long-term water quality benefits are seen.

#### **F. Plant & Wildlife Species**

Identify and survey for all endangered, threatened, rare, sensitive, and at-risk species and all other species of concern. Identify other wildlife species that occupy or use the Project area.

Retain sufficient densities of large trees and woody debris to sustain viable populations of cavity-nesting and woody debris dependent species. (DellaSala et al. 1996). Maintain habitat quality for sensitive species associated with cool, moist microsites or closed canopy forests. (FEMAT 1993, Thomas et al. 1993). Please focus on species that are most likely to be adversely affected by thinning and clearing – in most cases that is wildlife associated with relatively dense, closed-canopy forest conditions and those associated with snags and dead wood.

Logging almost always opens up the forest canopy, reduces vegetation cover, and reduces the current and future abundance of dead standing trees and down wood. Adverse effects are therefore likely to occur for species associated with these habitat conditions. Laudenslayer, W.F., P.J. Shea, B.E. Valentine, P.C. Weatherspoon and T.E. Lisle, tech. coords. Proceedings of the symposium on the ecology and management of dead wood in western forests. 1999 Nov 2-4, Reno, NV. US Department of Agriculture, Pacific Southwest Research Station, Gen. Tech. Rep. PSW-GTR-181, Albany, CA. <http://www.fs.fed.us/psw/publications/documents/gtr-181/>

Consider and disclose the effects of thinning on birds associated with coniferous forests. Research by Stewart Jones at the Southern Oregon University revealed that “many birds declined” after the thinning. The ornithologists found the declines “surprising” and said the results are “directly applicable to the kind of forestry practices they’re talking about now,” i.e. thinning to reduce fuels.<http://www.mailtribune.com/archive/2003/0917/local/stories/18local.htm>

### **G. Natural Range of Variability**

Swanson et al. (1994) contend that managing an ecosystem within its range of variability is appropriate to maintain diverse, resilient, productive, and healthy ecosystems for viable populations of native species. Using the historical range of variability, they believe, is the most scientifically defensible way to meet society’s objective of sustaining habitat and maintaining forest health. Patrick Daigle and Rick Dawson, Extension Note 07; *Management Concepts for Landscape Ecology* (Part 1 of 7). October 1996, citing Swanson, F. J.; Jones, J. A.; Wallin, D. O.; Cissel, J. H. 1994. *Natural variability--implications for ecosystem management*. In: Jensen, M. E.; Bourgeron, P. S., tech. eds. *Eastside Forest Ecosystem Health Assessment--Volume II: Ecosystem management: principles and applications*. Gen. Tech. Rep. PNW-GTR-318. Portland, OR: U.S. Dept. of Agriculture, Forest Service, Pacific Northwest Research Station: pp 89-106.

The scale of determining the historic range of variability is critical. The scoping letter for this Project states that the Project area poses a risk of fire effects “outside of the historic fire regime.” Please discuss the historic range of variability for the Project area, including the frequency and intensity of fires, and discuss how the historic range was calculated (was it 50 years, 200 years, 500 years, etc.).

### **H. Benefits of Insects & Disease**

Consider the beneficial effects of insects and disease, for example: the value of mistletoe brooms as wildlife structures; the value of root rot in creating pockets of down woody debris, enhancing biodiversity, and creating gaps with complex canopy architecture; the value of bark beetles as food sources for diverse wildlife and as vectors of sapwood decay fungi rendering the tree more suitable for wildlife habitation.

Native insects work to thin trees, control crowding, reduce stress and lessen competition for water and nutrients, the researchers found. Some levels of insect herbivory may even be good for trees and forests, and in the long run produce as much or more tree growth. According to Scott Black of the Xerces Society (pers. comm. March 15, 2005):

[T]hese insects are native and are very important. Bark beetles help decompose and recycle nutrients, build soils, maintain genetic diversity within tree species, generate snags and down logs required by wildlife, and provide food to birds and small mammals. By feeding upon dead or dying trees, wood borers and bark beetles provide food to insect gleaning species of birds (such

as woodpeckers), create snags that may be utilized by cavity nesting birds in the future and overall are invaluable catalysts in forest evolution.

There is very little evidence (or no) real evidence that logging can control insects. There are very few peer reviewed studies that have looked at this. Cronin (et al 1999), had notable quote: “*Even more striking is the paucity of studies that have examined the consequences of human intervention on pest movement patterns. In fact, we know of no studies that have experimentally evaluated the effects of management strategies on the dispersal of insect pests in forest systems*”

Thinning is often recommended to control outbreaks of bark beetles but there is little direct evidence that this works. Most of this is based on the fact the tree vigor increases and the trees are able to ward off infestation by insects. Some scientists have suggested caution in using thinning to control bark beetles as geographic and climactic variables may alter the effect. (Hindmarch and Reid 2001). Hindmarch and Reid (2001) found that thinned stands exhibited a higher attraction rate of mates by males of *Ips pini*, while females had longer egg galleries, more eggs per gallery and higher egg densities. Warmer temperatures in thinned stands also contributed to a higher reproduction rate. The number of males and females setting on logs was also higher in thinned stands. However, pine engravers in Arizona responded differently to thinning (*see* Villa-Castillo and Wagner 1996).

There is even less evidence that we can control insects once an outbreak starts. Citing several sources (Hughes and Drever (2001) assert that the weight of opinion seems to be that most control efforts to date have had little effect on the final size of outbreaks, although they may have slowed beetle progress and prolonged outbreaks in some cases.

Bark beetles are always widespread and quite common. Even if we can control them in a “stand” of trees it is likely to have little impact on infestation on a landscape scale. According to Wilson and Celaya (1998), removal of infested trees may provide some protection to surrounding trees, but these insects [Western pine beetle] are very common, so removal of a few infested trees is not a guarantee of protection.

See Cronin, J.T., P. Turchin, J.L. Hayes and C.A. Steiner. 1999. Area-wide efficacy of a localized forest pest management practice. *Environmental Entomology* 28(3): 496-504. Hindmarch, T.D. and M.L. Reid. 2001. Forest thinning affects reproduction in pine engravers (Coleoptera: Scolytidae) breeding in felled lodgepole pine trees. *Environmental Entomology* 30(5): 919-924. Hughes, J. and R. Drever. 2001. Salvaging solutions: science-based management of British Columbia's pine beetle outbreak. Report commissioned by The David Suzuki Foundation, Vancouver, B.C. Wilson Jill, and Celaya, Bob. 1998. Bark Beetles Biology, Prevention and Control. [http://www.for.nau.edu/usfs/r3\\_fpm/bbpaper.html](http://www.for.nau.edu/usfs/r3_fpm/bbpaper.html)

Since logging is likely to have many adverse impacts on soil water and wildlife habitat, and since is not likely to have much beneficial effects on insect pests, we urge the agency to reconsider one of the stated purposes of this Project to control insects. Thinning activities attracting beetles to the area through the release of terpenes from fresh wood chips, slash, or wounded green trees. If insect attack is a concern, the agency must consider and disclose the factors that tend to attract insects and determine whether thinning will make things better or worse.

## **I. Consider a True Forest Health Alternative**

The proposed action relies on a worst-case scenario of catastrophic fire. The document lacks any recognition that during favorable conditions of weather and fuel moisture (such as during this year of near-record rainfall) a low-severity or mixed-severity fire could occur in the project area and such as fire would likely accomplish much of what this project is attempting to accomplish without all the adverse consequences from ground disturbance.

The agency should consider a scenario involving favorable fire weather: relatively high fuel moisture, relatively low wind speed, relatively low humidity, relatively low air temperature, etc. If the agency describes the effects of extreme fire behavior they must disclose that even the treated stands will likely experience stand replacing fire during extreme fire weather conditions (hot dry, windy).

We ask that you consider a forest health alternative in the EA. This alternative would consider other methods for thinning, including by hand and done over a longer period of time, the obliteration of unused or defunct roads on or near the Project area that are no longer needed for forest management, removal of invasive plants, and not cutting large (> 12" dbh) trees. It would also incorporate other recommendations included in this comment letter to reduce or eliminate impacts associated with the Project. Such an alternative would truly address forest health issues without the incidental, yet serious, damage caused by an intensive thinning and clearing operation. Also consider performing a controlled prescribed burn at the right time of year without thinning.

## **J. Frequency of Treatments**

Does the agency plan to reenter these stands at some point in the future? The scoping letter states that the agency may need to reenter every 10 years, but does not disclose whether such reentry is part of this Project and does not describe the extent of reentry. What is the trigger mechanism that would require reentry and re-thinning? Please provide specific thresholds that would require the Project to be reinitiated in the future. If this Project is indefinitely continuous, please analyze how that continual disturbance will affect landslide risk, erosion, habitat, water quality, and recreation opportunities.

The State of Oregon has proposed the following methods to determine the frequency of future fuel reduction treatments:

A key element in prioritizing areas for retreatment is having managers specify *desired* fire behavior (e.g. flame length, rate of spread) for a given set of fuel moisture and weather conditions, such as “average worst fire condition”, by geographic regions of the state. Average worst fire condition is defined as the number of days during the fire season in which seasonal dryness and wind exceed the 90th percentile for cumulative weather observations for the past decade. In other words, this would be the point where fire conditions are classified as “very high.” Naturally, this would vary across the state due to differences in prevailing climate. For example, this may range from as little as 7 days in the Coast Range to 47 days in eastern Oregon.

Thus, managers might specify a desired flame length in treated areas of 2-3 feet under the average worst fire conditions. When fuel conditions change over time enough to support flame lengths greater than 3 feet, retreatment is triggered and the site is prioritized for re-treatment. The retreatment trigger point can be estimated using existing fire behavior models. For areas adjacent to the WUI, the maximum desired flame length should be less than 4 feet because greater flame lengths are too intense for direct attack by firefighters with hand tools (Schmidt et al. 2002).

Fuel accumulation rates and the length of time to reach the trigger point vary by plant association group, so it can be difficult to pinpoint the number of years before re-treatment is necessary. The Forest Vegetation Simulator (FVS, Stage 1973; Wykoff et al. 1982) can be used to project stand development and fuel accumulation following fuels treatments, and model output can be fed into a variety of fire behavior subroutines (e.g., Fire and Fuel Extension to FVS (Reinhardt and Crookston 2003)) to provide managers

with an estimate of when re-treatment would be necessary. After specifying desired fire behavior, several model runs can be conducted for various plant association groups (ponderosa pine, lodgepole pine, mixed conifer) and for different desired fire behavior parameters.

Institute for Natural Resources. 2004. *Report of the Forest Fuels and Hazard Mitigation Committee to the Oregon Department of Forestry Oregon Fire Program Review*. December 10, 2004. Oregon State University, [http://inr.oregonstate.edu/download/white\\_paper\\_final.pdf](http://inr.oregonstate.edu/download/white_paper_final.pdf)

Please base this Project on the “average worst fire condition,” and estimate the number of years before retreatment will be necessary.

### **K. Maintain Sufficient Canopy Structure**

Retaining more canopy can result in cooler ground temperatures and increased soil moisture. Responsible opposing experts say that reducing ground fuels and ladder fuels should be the first priority and reducing canopy fuels a lesser priority. (e.g. Jim Agee. Risk Assessment for Decision-making Related to Uncharacteristic Wildfire, Conference Portland, Oregon Nov 17-20, 2003 [http://outreach.cof.orst.edu/riskassessment/presentations/ageej\\_files/v3\\_document.htm](http://outreach.cof.orst.edu/riskassessment/presentations/ageej_files/v3_document.htm))

Scientists have emphasized a three-step approach to fuel reduction that places reduced emphasis on canopy fuel reduction.

Thus, Van Wagner’s (1977) relationships suggest that fuel management prescriptions can limit crown fire activity by first reducing surface fuels to limit fireline intensity, then thinning the smallest trees or pruning to elevate the base of aerial fuels from the ground surface. A final measure may involve crown thinning (removal of some canopy level trees) to make difficult the transition to active crowning.

Finney and Cohen. 2003. *Expectation and Evaluation of Fuel Management Objectives*. USDA Forest Service Proceedings RMRS-P-29. [http://www.fs.fed.us/rm/pubs/rmrs\\_p029/rmrs\\_p029\\_351\\_366.pdf](http://www.fs.fed.us/rm/pubs/rmrs_p029/rmrs_p029_351_366.pdf)

Modeling shows that canopy fuel reduction is accomplished at the expense of increasing surface fire intensity.

Modifying canopy fuels as prescribed in this method may lead to increased surface fire intensity and spread rate under the same environmental conditions, even if surface fuels are the same before and after canopy treatment. Reducing CBD to preclude crown fire leads to increases in the wind adjustment factor (the proportion of 20-ft windspeed that reaches midflame height). Also, a more open canopy may lead to lower fine dead fuel moisture content. These factors increase surface fire intensity and spread rate. Therefore, canopy fuel treatments reduce the potential for crown fire at the expense of slightly increased surface fire spread rate and intensity.

Scott, Joe. 2003. *Canopy Fuel Treatment Standards for the Wildland-Urban Interface*. USDA Forest Service Proceedings RMRS-P-29. 2003. [http://www.fs.fed.us/rm/pubs/rmrs\\_p029/rmrs\\_p029\\_029\\_038.pdf](http://www.fs.fed.us/rm/pubs/rmrs_p029/rmrs_p029_029_038.pdf)

If canopy coverage is decreased through thinning, evaluate whether the understory will receive too much sun and dry out. If so, how would this change vegetation types and distribution on the forest floor, and whether these conditions would actually result in an increased fire risk. Define the term “over-crowding.”

**L. Transporting Logs, Slash, Vegetation, and Equipment**

Evaluate the frequency and duration of impacts caused by the movement of equipment, materials, employees, and vegetative matter to and from the Project area. Assess and mitigate impacts to water quality, recreation, sensitive species, invasive weeds, and soils.

**M. Contracting**

Will the Forest Service be contracting out any portion of the implementation of this project? If so, please establish monitoring criteria and standards and guidelines to ensure compliance with the Decision Memo, environmental documents, Forest Plan provisions, and federal laws. If a contractor has been selected before the decision is made, please identify the contractor’s name and contact information.

**N. Current Conditions**

What is the current tree density in the Project area? How many snags per acre? This information is valuable to determine the extent of the agency’s proposed activities from current conditions. The

public needs to know what the current conditions are in order to determine how the proposed action attempts to change them.

**O. Invasive Species**

Describe the measures to be taken to mitigate the entrance of invasive species caused by newly-opened areas and travel on equipment. What are the invasive species the agency is most concerned with in this area? Consider removal of invasive species already present as part of the Project.

## **VI. Conclusion**

Thank you for considering these comments. Due to potential impact of this and other similar projects, along with the presence of extraordinary circumstances, we believe that the Forest Service should proceed with the preparation of an EA. This will ensure compliance with NEPA and will provide the public with an adequate analysis of impacts, mitigation measures, and alternatives.

Sincerely,

/s/

Jeff Kuyper  
Executive Director

