

Sierra Club

Sequoia Task Force

Recommendations for The Giant Sequoia National Monument Plan January 7, 2002

I. Overview

These recommendations are proposed by the Sequoia Task Force of the Sierra Club as a vehicle to clarify for the Forest Service and other publics the issues that concern the Task Force and to provide solutions to addressing these management concerns. **Our recommendations are driven by the expectation that the management plan for the Giant Sequoia National Monument must meet fully the letter and intent of the Proclamation (3 CFR 7295 (2000)).**

II. Protection

A. The Proclamation intends that the lands within the Giant Sequoia National Monument are to be managed for the protection of **all** the biological, ecological, geological and historical objects within the boundary. The following list of objects identified for protection is taken verbatim from the Proclamation itself.

- “The rich and varied landscape”
- “Scientific and historic resources,”
- “Magnificent groves of towering giant sequoias,”
- “A great belt of coniferous forest, jeweled with mountain meadows”
- “Bold granitic domes, spires, and plunging gorges,”
- “An extraordinary number of habitats,”
- “Spectrum of ecosystems,”
- “Diverse array of plants and animals,”
- “Limestone caverns,”
- “Unique paleontological resources,”
- “Many archaeological sites,”
- “Historic remnants of early Euro-american settlement,”
- “Exemplary opportunities for biologists, geologists, paleontologists, archaeologists, and historians,”
- “Habitats for an extraordinary diversity of plant species and communities,”
- “Rare plants,”
- “More than 200 plant species endemic to the southern Sierra Nevada mountain range,”
- “Plant communities ranging from low-elevation oak woodlands and chaparral to high-elevation subalpine forest,”
- “Numerous meadows and streams,”

- “Interconnected web of habitats for moisture-loving species,”
- “Essential habitat for wildlife, ranging from large, charismatic animals to less visible and less familiar forms of life, such as fungi and insects,”
- “Massive conifers arrayed in a complex landscape mosaic,”
- “Pacific fisher,”
- “Great gray owl, American marten, northern goshawk, peregrine falcon, spotted owl, and a number of rare amphibians,”
- “California condor,”
- “The physiography and geology of the monument domes and spires,”
- “The magnificent Kern Canyon,”
- “Remnants of volcanism,”
- “Limestone outcrops, remnants of an ancient seabed,”
- “Caves,”
- “Subfossil vegetation entombed within ancient wood rat middens in these caves,”
- “Paleontological resources found in meadow sediments,”
- “Archaeological sites such as lithic scatters, food-processing sites, rock shelters, village sites, petroglyphs, and pictographs.”

It is clear that the Proclamation fully recognizes the breadth of habitat types and includes all species contained within the Monument boundary and directs the development of a Plan "to implement the purposes and provisions of this proclamation" including "protecting the objects identified."

B. “Protection of Monument objects” means protection from significant human interference in the natural processes that created and sustained these objects for eons. Protection of these natural processes such as fire regimes, movement of species in response to climate change and natural cycles of life and death, will result in changes over time of the protected Monument resources but also will result in their continuing in perpetuity.

C. Any management activities(projects) shall be for the long term benefit of all aspects of the Monument, and not for a specific object to the detriment of other protected objects. A conservative approach which emphasizes the use of the least invasive methods to achieve management goals will be applied. Such an approach would include strategies that minimize ground disturbance and emphasize the use of natural processes (e.g. wildfire, natural reseeding, plant succession). Further, the Plan shall recognize that the natural processes operating within the Monument must be protected and allowed to continue their effects on the land if the long term protection of the objects is to be achieved.

III. Strictures on Management Decisions:

The Proclamation lays down several fundamental strictures on management options available to the agency in the carrying out its duty to protect.

A. Tree Removal: Most relevant in terms of formulating a Management Plan is the strong presumption against the use of logging as a management tool in the Monument area: “[r]emoval of trees, except for personal use fuel wood, from within the Monument area may take place only if clearly needed for ecological restoration and maintenance or public safety.” The Proclamation thus broadly distinguishes this Monument from non-Monument national forests where tree removal is done for a variety of reasons and requires a less compelling showing of need.

USFS must substantiate proposed projects that include tree removal with site specific scientific findings.

As discussed above, the Proclamation states that “[r]emoval of trees, except for personal use fuel wood, from within the Monument area may take place only if clearly needed for ecological restoration and maintenance or public safety.” Thus, the Forest Service may not remove trees from the Monument area without:

1/ A finding that it has no other alternative available for accomplishing site specific restoration or safety goals.

2/ Scientific verification that tree removal will accomplish the goals in question. (The Forest Service cannot simply rely upon the Sierra Nevada Forest Plan Amendments).

3/ A separate finding of “clear need” specific to the Monument, based on a factual inquiry concerning the alternatives to and efficacy of any such undertaking.

4/ Additionally, the Forest Service must consider the effects of that management on the Monument’s specific purposes, including any effects on the objects of scientific interest the Monument was designed to protect. These objects are listed on page one of these Recommendations. The Forest Service must find that the health and protection of these species and resources are being advanced by the proposed project.

B. Other Strictures:

1. New Roads: No new roads or trails will be authorized within the Monument except to further the purposes of the Monument.

2. Timber Base: No portion of the Monument shall be considered to be suited for timber production, and no part of the Monument shall be used in a calculation or provision of a sustained yield of timber from the Sequoia National Forest.

3. Vehicle Use: Vehicles may not go cross-country: Motorized vehicle use will be permitted only on designated roads, and non-motorized mechanized vehicle use will be permitted only on designated roads and trails

4. Hunting and Fishing: Monument designation does not change the jurisdiction of the State of California with respect to fish and wildlife management.

5. Grazing Permits: Monument designation does not change the laws, regulations, and policies pertaining to administration by the Department of Agriculture of grazing permits.

6. Water Rights: Monument designation does not affect valid existing water rights.

7. Special Use Permits: The Monument designation does not affect existing special use authorizations. Several private camp permits already have been renewed with the full support of the Sierra Club.

C. Requirement for Consultation and Guidance.

The Proclamation requires consultation with the Secretary of the Interior, through the Bureau of Land Management and the National Park Service, in developing any management plans and any management rules and regulations governing the Monument. This consultation should be formal and result in a written finding by the Department of the Interior.

The Proclamation requires the Scientific Advisory Board to provide scientific guidance during the development of the initial management plan. “Guidance” requires more than mere reaction to plans and proposals originating within the Forest Service. The Proclamation anticipated a time of transition for Monument managers who were formerly highly trained in timber management; thus such guidance was required. The Scientific Advisory Board must, as it deems necessary, take the initiative in providing such guidance regardless of whether or not the Forest Service has specifically asked for such guidance.

IV. Project Implementation:

Service contracts will be the primary vehicle for implementing vegetation management projects to ensure that the economics of commercial product generation does not drive management actions. Consistent with the Proclamation direction on removing the Monument lands from the timber base, management activities will not be driven by the generation of commercial products. Project design and implementation will not be linked to the economic value of the wood products that may be generated. The dependence of local industries on wood products will not be used to drive the development of management projects.

V. Relationship to Other USFS Plans

The Proclamation also requires that management of the Monument shall “implement the purposes and provisions of this proclamation,” and that though the National Forest status of the area is to be preserved, “the National Monument shall be the dominant reservation.”

Thus, regardless of the existence of other Plans, such as the Sierra Nevada Framework to which the Monument Plan may be tiered, the mandates of the Proclamation take precedence. The Giant Sequoia National Monument Plan must contain self sufficient

guidelines. The Proclamation objectives are unchangeable whereas the regulations and politics that influence the Regional Framework and Forest Plan are subject to a wide variation of management objectives. Not only does the currently existing Framework have objectives that are significantly different than the Monument, the Monument Plan cannot rely on the sufficiency or the consistency over time of the Framework to meet Proclamation requirements.

VI. Management Areas - Zones

The groves are not to be considered a separate management area. Prior to human intervention, the Monument landscape evolved over thousands of years into a mosaic that can not be reflected by subdividing that landscape into multiple zones for varying management schemes -- except for those areas intensively used by humans where human safety and use supersedes ecological requirements. Rather than constrain the management of the Giant Sequoias to small watersheds where they exist today, our vision promotes integrating the management of the groves with the surrounding landscape. This more accurately reflects the true integrated relationship of all of the Monument's resources.

The management of the entire Monument should be partitioned into two management zones:

1/ The Human Interface Zone focuses on developed areas with the objective of protecting public health and safety and property in a manner that minimizes adverse impacts to species and ecosystems. Developed areas are those lands inside the Monument which are dedicated for use as campgrounds, interpretive trails, trailheads, and lands currently under special use permit by organizations and businesses, and includes up to 200 feet of additional land directly adjacent to these areas. This zone also includes Monument lands which are directly adjacent to structures on private lands. Portions of some Sequoia groves are in this zone.

This area would be managed according to the fuel reduction strategy discussed below. Trees larger than 12 inches DBH that pose an imminent and direct health and safety risk or are within 150 feet of a structure may be removed to achieve safety or fuel objectives. Where not in conflict with fuel objectives, such material should remain on or near the site to provide large woody debris to increase habitat value.

The Human Interface Zone provides many recreational and interpretive opportunities discussed in a section later in this document.

2/ The General Forest Zone focuses on the natural environment and restoration of ecosystem processes, variability, and functions. The majority of the Monument lands are in the General Forest Zone.

Some of the land in the General Forest Zone needs restoration as defined in the section below. The use of prescribed fire will be emphasized as the restoration tool.

The General Forest includes an extensive trail system and excellent opportunities for dispersed recreation consistent with protecting and restoring the natural environment. Recreational opportunities are discussed in the Recreation Section of this document. Generally, the removal of trees is limited to trees less 12 inches DBH and the Forest Service must meet the requirements, discussed above, showing any such removal is “clearly needed.” In particular, the downing of trees to maintain road safety in the General Forest Zone will be limited to instances where the hazard is imminent and the risk to the public is demonstrable. For instance, roads that receive a low level of use will not be a priority for the downing of hazard trees. Hazard trees shorter than the distance to the road will not be considered imminent hazards.

VII. Restoration

There are two primary past human activities which have resulted in the need for restoration of some of the lands within the Monument in the General Forest Zone. 1/ extensive land and ecosystem disruption from logging tens of thousands of forest acres in various intensities ranging from clearcut logging to thinning, and 2/ approximately 60 years of fire suppression which has disrupted the natural fire regime in some of the Monument’s vegetation strata.

Restoring natural processes such as plant succession and periodic fire will be emphasized in the management strategy. A restoration strategy shall:

- A. Develop long term objectives to restore the natural variability of the landscape to all areas including heavily harvested areas (e.g. plantations and cut over stands) and unharvested areas;
- B. Use the least invasive methods possible to achieve these objectives;
- C. Restore periodic, low intensity fire to the landscape;
- D. Include a ‘Prescribed Natural Fire’ policy based on clear and objective criteria including weather conditions, slope, aspect, proximity to structures and other elements;
- E. To the extent possible, allow burned areas to heal naturally, to go through the natural stages of succession, and allow the burned trees to either survive or eventually decay and be returned to the forest nutrient cycle;
- F. Not interplant seedlings in openings and not use toxic chemicals such as strychnine or herbicides to manipulate natural responses to forest events;
- G. Result in increasing the resiliency of habitats to catastrophic losses due to wildfire, insect outbreak and disease;
- H. Restore water quality and habitat quality in degraded aquatic habitats;

- I. Restore the natural variability and heterogeneity of forest structure to reflect the mix of species present prior to logging particularly on lands that are planted plantations;
- J. Protect and restore habitat quality for sensitive species including fisher, marten, and California spotted owl as well as for other species;
- K. Emphasize the use of natural process and prescribed fire following catastrophic events such as wildfire and insect outbreaks;
- L. In the event of uncertainty regarding impacts of potential restoration projects, err on the side of caution recognizing that full restoration of ecosystems will take generations and often cannot be assisted by human intervention.

VIII. Fire and Fuels Management

A. Fuels Reduction:

The Sierra Nevada Framework's strategy to mechanically remove trees for fuels management over a large portion of the Sierra Nevada forests shall NOT be implemented on Monument lands.

1. In the Human Interface Zone and Immediate Vicinity of Structures: In lieu of the designation and treatment of defense and threat zones indicated in the Sierra Nevada Framework, the Monument shall adopt a fire hazard reduction strategy which is limited to hand thinning and mechanical thinning where necessary in the immediate vicinity (up to 200 feet) around existing structures and 50-100 feet directly adjacent to major roads, developed campgrounds and developed public use areas. Mechanical treatments include the removal of trees and brush using hand clearing, equipment such as fellers bunchers or chippers, and focus on the smallest diameter material necessary to achieve the fuel reduction objectives. There shall be clear and specific Standards and Guidelines regarding the size of materials to be removed and/or burned in slash piles and a requirement that non-hazardous large standing and downed snags are to be left in place. Prescribed fire, burning of brush piles and mechanical reductions in fuel will be applied in a strategic manner taking into account topography, microclimate, and other local conditions.

Published scientific studies support the removal of built-up fuel within the immediate vicinity of existing structures to prevent the spread of fire to the structures. We believe that limited mechanical thinning within 200 feet of existing structures is a sound and prudent fire protection strategy. The National Park Service has recently proposed a similar strategy for Sequoia and Kings Canyon National Parks.

2. In the General Forest Zone: In lieu of the designation and treatment of defense and threat zones indicated in the Sierra Nevada Framework, in the General Forest Zone prescribed fire will be emphasized as the management tool. Evidence is lacking that

removing trees in the General Forest Zone will effectively reduce a fire's intensity, and hence its threat to either human safety or fundamental ecological integrity. There are virtually no peer-reviewed studies showing that, after actual application in the field, thinning of any sort reduces the intensity of subsequent fire, and there are anecdotal analyses of recent fires that suggest that treatments intended to reduce fire intensity and hazard appear to produce the opposite effects.

Additionally, logging and/or thinning have many detrimental effect on natural processes and ecosystem health and may actually increase the incidence and/or intensity of subsequent fires.

Because this issue is vital to the public, we are attaching a more detailed discussion of this issue to these Recommendations.

IX: Recreation:

Well planned recreational use fosters an appreciation of the extraordinary values of the Monument. Consistent with the proclamation, there shall be an increase and enhancement of recreational opportunities by restoring and developing recreational opportunities that complement and highlight the natural history and outstanding natural beauty of the area.

A. Recreational User Groups:

Historical non-mechanized recreational uses of the forest shall be fostered and encouraged. These uses include: hiking, picnicking, camping, fishing, hunting, climbing, recreational stock (horses, ponies, mules, donkeys, llamas, etc) riding and camping, hunting, fishing, nature study, photography, cross-country skiing, spiritual renewal, snow shoeing, caving, river rafting, and interpretive and disabled access trails. These above uses may be dispersed across the General Forest Zone.

There shall be an increase in camping facilities including the restoration of some currently closed campgrounds, enlargement of existing campgrounds, and construction of new facilities in locations appropriate to resource protection. There shall be provisions for the construction of horse camping facilities not directly adjacent to Wilderness Boundaries which shall have potable water and access to the historical trail network. In addition, campgrounds outside but near the Monument boundary, such as the abandoned Tiger Flat Campground and the Frog Meadow Campground should be developed to serve visitors to nearby areas of the Monument.

Non-motorized mechanized (bicycle) recreation shall be encouraged but limited to: 1/ trails specifically designated for their use, and 2/ roads.

Motorized Vehicles including motorcycles and snowmobiles shall be encouraged but limited to forest roads and routes designated for their use. Roads to be considered for

conversion to Motorized Vehicle Routes must have been previously designated as “Roads” on the Trail Plan Trail and Road Inventory done in the 1990’s.

B. Trails

Protection and restoration of the Monument’s unique historical trail network shall be a priority. The Sequoia National Forest 1956 Recreation Map included most of these trails. In addition to these trails, the Summit Trail and the former California Riding and Hiking Trail’s route shall be identified, protected, and restored. Trails which have been bulldozed or paved-over as roads shall be re-established as nearly as possible to their former routes and any needed relocation shall be designed to create a natural trail experience instead of merely tracing alongside the roads that replaced them. Private organizations and/or individuals may assist in the restoration of these routes. Mechanized vehicles such as bikes (bicycles or mountain bikes) are not an appropriate use of the former California Riding and Hiking Trail.

Trails designated for non-motorized bike use shall not have excessively steep slopes. Bike trails shall have signs posted about riders not using excessive speed and being able to control their vehicles for the safety of all users and for protection of the trail resource.

For winter use, some of the forest roads shall be designated for use for non-motorized winter recreation such as crosscountry skiing and snowshoeing. Other forest roads may be designated for snowmobiles. There should be an equitable allocation of resources available for use by both motorized and non-motorized winter recreation.

All trail users must respect and be responsible for the relative human danger inherent in their activities. For example, silent but fast moving bicycles can overrun hikers who don’t hear them coming; stock is often panicked and can seriously injure their riders when being suddenly confronted with a bike. Runners or joggers can likewise have the same effect on stock. Racing or running stock can be hazardous to other recreationalists including other stock users.

C. Procedure Required Before Restricting Recreational User Groups

Any proposal to close or limit a portion of Monument lands from a single user group shall be carried out only after site specific scientific data shows that significant resource damage has occurred due to the use by that user group, and there should be full public involvement in the decision. Areas closed to only certain user groups should be the smallest area possible and for the shortest length of time practical. Other solutions instead of closure shall be fully explored.

X. Interpretive Plan

A comprehensive Interpretive Plan for the Monument will be developed. The Interpretive Plan will provide experiences for visitors that link recreational activities with opportunities

to learn about the natural environment. "The Monument Plan and this Interpretive Plan shall provide for the locating and construction of interpretive signs, disabled access trails, and at least two visitor centers.

Interpretive objectives shall be to focus on:

A. A "big picture" focus in this interpretive plan to incorporate Giant Sequoias with all the associated forest ecosystems, rivers, streams, wildlife, and the geology and archeology of the Monument.

B. The natural history of the Monument lands including Giant Sequoia trees and their interrelationship with the Sierra Nevada ecosystems of which they are a part

C. The human history focusing on the progressive efforts to preserve them -- from John Muir through President Bill Clinton and major players in between;

D. Geological and Archeological, values including prehistoric human use of Monument lands by Native Americans

E. Historical uses including logging, mining, cattle and sheep grazing, and exploration.

F. A plan for a collaborative relationship with local schools, private organizations, city and county governments. Certain projects may be entered into with these groups to foster understanding of forest processes and projects.

The development of interpretive and educational materials emphasizing the relevance, fragility, and values of the area's heritage resources and ecology will include a range of techniques, including printed publications, ranger talks, walks, and slide shows, films, physical displays, and virtual exhibits on the Internet. Through this integration of interpretive and recreational opportunities, the understanding and appreciation of the Monument's natural values will be strengthened.

XI. Cultural Uses

The lands within the Monument were the tribal lands and home of countless generations of Native Americans. Many Native Americans from the Kings, Tule and Kern River drainages and elsewhere will continue their traditional uses of Monument lands for spiritual purposes as well as for the collection of materials and foods.

XII. Transportation System

The Proclamation requires that a Transportation Plan be written as a part of the Monument Plan. The Proclamation states, "No new roads will be authorized within the monument except to further the purposes of the monument." Thus, a specific finding that a

new road will further the purposes of the Monument and substantiation as to how the road will accomplish those purposes must be made.

The existing road system in the Monument is quite extensive and the need for any new roads is not expected. Currently, many existing forest roads are gated or otherwise unusable. These roads in particular will be evaluated and prioritized for decommissioning and/or conversion to non-motorized routes. The highest priority shall be placed on naturalizing those roads which are causing environmental damage and/or where road density needs to be reduced in areas important to wildlife such as fisher and marten. Existing temporary roads which are backlogged and should have already been obliterated shall be scheduled for renaturalization.

Shortly after the Proclamation was signed, Sequoia National Forest published a map of roads on which motorized vehicles could be ridden. This map should be considered as only an interim designation. The Transportation Plan should contain Standards and Guidelines for determining which roads will remain open year round, which roads will be used only during the dry season, which roads are appropriate for winter use by snowmobiles and contain criteria for closing roads.

A separate section of the Transportation Plan shall specifically address winter road and trail use. Not all Forest Roads which are found to be acceptable for summer vehicle use will also be appropriate for snowmobile use in winter; in addition, some Monument roads should be designated solely for non-motorized recreational uses such as cross-country skiing and snowshoeing. There are few trails currently designated for cross-country skiing in the Monument, but there are many miles of roads that currently are open to snowmobiling. There should be a more equitable number of miles available in winter for the non-motorized recreating public; combining motorized and non-motorized winter activities often is a safety problem and denies non-motorized users the opportunity for a more quiet natural recreational experience.

The Transportation Plan should address the need for winter public parking and snowplowing of turnouts.

No forest road which leads to a currently designated trailhead shall be closed without full public involvement and accompanied by an appealable NEPA document.

XIII. Roadless Areas:

The natural wilderness qualities and unroaded nature of roadless areas shall be maintained

XIV. Fees:

There shall not be a fee for entry into or use of undeveloped Monument lands.

XV. Scientific Study

The Plan shall allow and promote scientific research of a cooperative nature between various entities and agencies. The Forest Service shall enter into a nonjudgmental collaborative relationship with other agencies who have experience in managing Sequoia groves for protection of natural processes and ecosystems.

Such scientific studies shall include, but not be limited to:

A. Including the public in the implementation and effectiveness monitoring of Monument restoration projects to foster understanding and trust between the public and the agency.

B. Gathering of data on the forest's response to past management activities.

C. Surveying old logging units using ecosystem definitions of conditions instead of the now obsolete tree farming terms.

D. Researching the extent of artificial replanting of non-site specific sequoia seedlings both inside and outside of natural groves; reaching a determination as to which groves are still genetically 'pure' and offering possible remedies to restore the genetic integrity of other groves.

Thank you for the opportunity to submit these recommendations.

Sincerely,

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and

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We invite your comments:

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Addendum to Recommendations

Brief Research Information re: using mechanical thinning for reduction of frequency and/or intensity of wildfire.

Fire Prevention or Reduction in Human Interface Areas

Removing built-up fuels within the immediate vicinity of existing structures are supported by published scientific studies, particularly when aggressively undertaken in combination with other measures. See Cohen, 1999.¹ We are prepared to believe that it can, and that such activity can be carried out consistent with any plausible eventual outcome of the management plan process. For example, the National Park Service (“NPS”) – an agency the Forest Service must consult with before making major management decisions affecting the Monument²– recently released an Environmental Assessment that proposes limited mechanical thinning within 200 feet of existing structures. See National Park Service, Environmental Assessment, Hazard Fuel Reduction & Site Restoration, Sequoia & Kings Canyon National Parks, East Fork Kaweah Developed Areas, Oriole Lake and Silver City, Environmental Compliance Document #2001-19, at 3 (August 10, 2001). A similar project within the Sequoia National Monument might be justifiable.

Reducing Frequency or Intensity of Fires in General Forest Areas

Further away from structures, evidence is lacking that removing trees will effectively reduce a fire’s intensity, and hence its threat to either human safety or fundamental ecological integrity. Though trees unquestionably provide fuel for fires, their removal does not necessarily make the residual forest less likely to burn, for a variety of reasons. Logging opens up forest stands to the drying effects of wind and sun, which increases their flammability. Undisturbed forests, by contrast, often have cooler, moister microclimate conditions under the forest canopy. Moreover, any kind of logging can stress forest ecosystems in numerous ways, including damage to residual trees, compaction of soils so they don’t absorb water well or allow proper root growth, and spread of diseases and invasive alien plants into the forest interior. Logging also disrupts natural processes that modulate ecosystem health, for example by reducing the dead trees that house

¹ Cohen, Jack. 1999. Reducing the Wildland Fire Threat to Homes: Where and How Much? In proceedings of the Symposium on Fire Economics, Planning, and Policy: bottom lines; 1999 April 5-9; San Diego, CA. Gonzales-Caban, Armando; Omi, Philip N., technical coordinators. Gen. Tech. Rep. PSW-GTR-173. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture; at 332.

² Proclamation at 24098 (requiring the Forest Service to consult with NPS “in developing any management plans and any rules and regulation governing the monument.”).

insects and birds which control forest pests. Finally, logging equipment, loggers themselves, and others who use logging roads are all frequent causes of fire starts, through sparks, cigarettes, escaped slash fires, campfires, unmuffled exhausts, and similar incendiary sources.

Thus it is not surprising that virtually no peer-reviewed studies have ever shown that, after actual application in the field, thinning of any sort reduces the intensity of subsequent fire. Only a few empirical studies have been published that test, even on a limited basis, the relationship between thinning or fuels treatment and fire behavior. Moreover, anecdotal information and analysis of recent fires, suggest that thinning treatments have highly variable results. Indeed, despite the paucity of empirical studies, those that have been conducted tend to suggest the reverse: that treatments intended to reduce fire intensity and hazard appear produce the opposite effect. For example, in a recent study of current and historic fire behavior in the Interior Columbia Basin, Huff et al. (1995),³ found that harvesting tended to increase fire behavior. The authors concluded that “[i]n general, rate of spread and flame length were positively correlated with the proportion of area logged.... All harvest techniques were associated with increasing rate of spread and flame length, but strength of the associations differed greatly among river basins and harvesting methods.” Id. Thinned stands were positively correlated with fire intensity as measured by rate of spread and flame length.

Similarly, a study of the effectiveness of fuels treatment on previously non-harvested lands in the Bear-Potato Analysis Area of the Wenatchee National Forest, Washington, found that harvest treatments could exacerbate fire damage. In this study, the Forest Service evaluated the effects of past fuel treatments on fire severity (U.S. Forest Service 1995).⁴ Before a wildfire in 1994, approximately 2,021 acres of the fire area that had not been previously logged were treated for fuels with mechanical removal and/or prescribed burning. 43% of areas that were treated to reduce fuels experienced high mortality, compared with 37% of the areas that were not treated for fuels. Only 10% of the areas treated for fuels experienced low mortality, suggesting that fuels treatment on non-harvested lands may increase the risk of high severity fire.

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Huff, M.H., R.D. Ottmar, E. Alvarado, R.E. Vihnanek, J.F. Lehmkuhl, P.F. Hessburg, and R.L. Everett. 1995. Historical and current landscapes in eastern Oregon and Washington. Part II: linking vegetation characteristics to potential fire behavior and related smoke production. USDA Forest Service Pacific Northwest Forest and Range Experiment Station, GTR- 355. Portland, Oregon.

⁴ U.S. Forest Service. 1995. Initial review of silvicultural treatments and fire effects on Tye fire. Appendix A, Environmental Assessment for the Bear-Potato Analysis Area of the Tye Fire, Chelan and Entiat Ranger Districts, Wenatchee National Forest, Wenatchee, WA.

There is also evidence from a study conducted in the Klamath region of California that stand density reduction through harvest treatments may not result in lower fire intensity and severity. Weatherspoon and Skinner (1995)⁵ found higher levels of crown scorch in thinned stands than in adjacent un-thinned stands. Unmanaged stands had the least severe fire effects.

Recently, the Forest Service examined this question in the environmental documentation for its nationwide rule governing management of inventoried roadless areas. The agency concluded that “[w]hether timber harvesting reduces the size and intensity of a wildland fire is disputed and uncertain.” (U.S. Forest Service 2000a)⁶ page 3-91. Indeed the agency found, “timber harvest can sometimes elevate fire hazard.” Id.

The Forest Service reached these conclusions based on expert analysis. See id. at 3-1 n.1, 3-83. Its fire specialists’ review of the scientific literature, for the FEIS, revealed that while certain scientists favor thinning no consensus exists about its value, and some field studies have in fact correlated thinning with increased fire hazard. See U.S. Forest Service 2000b⁷ at 22 (“The Congressional Research Service ... noted: ‘timber harvesting does remove fuel, but it is unclear whether this fuel removal is significant;’” “Covington (1996) ... notes that, ‘scientific data to support such management actions [either a hand’s off approach or the use of timber harvesting] are inadequate” (brackets in the source)); id. at 22-23 (“Kolb and others (1994) ... conclude that ... management activities to improve forest health [such as fuel management] are difficult to apply in the field” (brackets in the source)); id. at 21 (“Fahnstock’s (1968) study of precommercial thinning found that timber stands thinned to a 12 feet by 12 feet spacing commonly produced fuels that ‘rate high in rate of spread and resistance to control for at least 5 years after cutting, so that it would burn with relatively high intensity;’” “When precommercial thinning was used in lodgepole pine stands, Alexander and Yancik (1977) reported that a fire’s rate of spread increased 3.5 times and that the fire’s intensity increased 3 times”); id. at 23 (“Countryman (1955) found that ‘opening up’ a forest through logging changed the ‘fire climate so that fires start more easily, spread faster, and burn hotter”).

Taking this body of scientific evidence into account, the Forest Service is not going to be in a position to conclude that widespread mechanical thinning and removal of trees from

⁵ Weatherspoon, C.P. and C.N. Skinner. 1995. An assessment of factors associated with damage to tree crowns from the 1987 wildfire in northern California. *Forest Science*. 41:430-451.

⁶ U.S. Forest Service. 2000a. Forest Service Roadless Area Conservation, Final Environmental Impact Statement (Roadless FEIS), Vol. 1.

⁷ U.S. Forest Service. 2000b. Forest Service Roadless Area Conservation, Final Environmental Impact Statement, Fuel Management and Fire Suppression Specialist’s Report (available online at http://www.roadless.fs.fed.us/documents/feis/specprep/xfire_spec_rpt.pdf).

the Monument area is “clearly needed” for ecological restoration and maintenance or public safety. This is all the more true given the extensive body of scientific knowledge about logging’s adverse impacts on ecological values. (Ercelawn 1999).⁸ In light of these harms, and in light of the fact that very little evidence exists to support widespread tree removal, the agency must limit any program of wholesale tree removal in response to fire threats, to the immediate vicinity of structures.

In conclusion, a review of the existing scientific literature simply does not justify widespread logging and vegetation treatments. Support does exist for some, extremely focused, removal of trees within the Monument area. Specifically, a finding that the removal of trees is clearly needed within the immediate vicinity of existing structures would likely be supportable.

⁸ Ayesha Ercelawn. 1999. End of the Road, The Adverse Ecological Impacts of Roads and Logging: A Compilation of Independently Reviewed Research. NRDC (available online at <http://www.nrdc.org/land/forests/roads/eotrinx.asp>).