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PROTECTING NATURAL RESOURCES

September 26, 2019 *Submitted via Forest Service Web Form*

Plan Team Leader
Forest Plan Revision – Sequoia and Sierra National Forests
Pacific Southwest Regional Office
1323 Club Drive
Vallejo, CA 94592

Subject: Sequoia ForestKeeper Comments re: Sequoia and Sierra National Forest Revised Draft Plan and Revised Draft Environmental Impact Statement (RDEIS)

These comments are submitted on behalf of Sequoia ForestKeeper, its Board of Directors, staff, and members regarding the RDEIS and revised draft Forest Plans for the Sequoia and Sierra National Forests. We submit these comments as a supplement to our August 25, 2016 DEIS comments, which are in the administrative record and which we incorporate here by reference and as Exhibit A (without attachments). In as much as the issues in those comments have not been addressed in the RDEIS, we suggest that the Forest Service revisit those comments and address the issues we raised in those comments.

In summary, the RDEIS continues to suffer from scientific inaccuracies, lack of detailed analysis, and requires major revisions and additions.

The draft plans, as represented by Alternative B of the RDEIS, should incorporate significant increases of recommendations for Wilderness, from the hundreds of thousands of acres that are eligible, and should include many of the areas detailed for recommendation in Alternative C.

The RDEIS's analysis of carbon emissions from wildfires, thinning to reduce fire impacts, and carbon sequestration is woefully incomplete and unsupported by recent relevant scientific reports, which have found that the analysis greatly overstates the emissions from wildfire and fails to account for emissions from proposed thinning treatments to reduce wildfire emissions.

We urge you to consider the following detailed comments.

A. Include Additional Wilderness Recommendations in Alternative B for Sequoia National Forest.

We were pleased to see the recommendation for an addition to the Monarch Wilderness – South on the Sequoia National Forest as a part of Alternative B; however, many more areas should be included as recommended wilderness in Alternative C. We believe the most important areas to include as recommendations for Wilderness on the Sequoia National Forest, include all the following areas from Alternative C:

a. Domeland Wilderness Additions
b. Golden Trout Wilderness Additions
c. South Sierra Wilderness Additions
d. Jennie Lakes Wilderness Addition
e. Slate Mountain Wilderness
f. Stormy Canyon Wilderness
g. Oat Mountain Wilderness
h. Cannell Peak Wilderness

All of these areas are pristine, rugged, remote, and there is little or no conflict or opposition from interested parties and the public for including them in the Alternative B recommendations. These areas already function as de-facto Wilderness and should be formally recommended and then designated. Moreover, there are no management or resource issues that would preclude them from being managed as Wilderness.

B. The RDEIS's Assertion and Methodology that More Thinning Would Increase Overall Carbon Stocks, Sequestration, and Stability is Unsupported by the Analysis and Recent Scientific Findings.

In our initial DEIS comments, we found that while the analysis did acknowledge short-term decreases in carbon storage from fuel treatments and thinning, it made the assertion that these would result in long-term increases in carbon stocks and increased carbon stability, but without an adequate basis. Then and now, the analysis fails to explain how more thinning for fuel reduction results in greater carbon stability and greater carbon sequestration when, in fact, recent scientific studies indicate that carbon releases from fuel reduction treatments may greatly exceed carbon releases from wildfires. Moreover, these recent scientific studies suggest that the proposed fuel reduction thinning treatments could result in forests becoming carbon sources rather than forests that sequester carbon.

The RDEIS carbon analysis is woefully incomplete and therefore inconclusive. The analysis, conducted by Westerling (2017), admits that there is no accounting of the amount of carbon released from fuel treatments and thinning, which makes meaningless the overall analysis and claims of carbon stability and sequestration increases. This is an important point, because the plans include specific goals to increase long-term carbon storage, sequestration, and stability, which cannot be achieved without a full accounting of the carbon released from fuel treatments and thinning. In addition, NEPA requires the Forest Service to ensure the scientific accuracy and integrity of the analysis, and without this additional analysis, the Forest Service violates NEPA.

In an attempt to achieve the carbon goals, the RDEIS includes carbon emissions as one of the primary management indicators. The RDEIS, under "Fire Trends," states:

> The primary indicators measured in this analysis are burned area, large fire size (>494 acres), and smoke and carbon emissions. Smoke and particulate emissions are described in "Air Quality" and carbon emissions are described in the carbon supplemental report.

RDEIS, p. 71 (emphasis added). Thus, to ensure carbon emissions is a meaningful indicator, the analysis must accurately portray the potential carbon losses from fuel or restoration treatments and wildfires. But the current analysis fails to provide an accurate primary indicator for carbon emissions without further analysis and corrections, since it is based on incomplete modeling.

In the analysis, the RDEIS asserts that if Alternative B's "restoration treatments across substantial parts of the Sequoia and Sierra National Forests, about 30 percent of the plan area," were implemented,

> carbon sequestration would increase in thinned areas that contribute to increased growth rates and survivorship in montane and upper montane forests. Carbon sequestration would also increase in areas burned by stand-replacing fires where reforestation activities occur. Overall carbon stocks would be about 30 to 40 percent higher under alternative B, compared with A, due to lower rates of carbon emissions (see "Carbon supplemental report").

RDEIS, p. 258; *see also* pp. 265-66, 271 (making similar claims for thinned areas in Alternatives C and D, respectively).

The analysis concludes that

> Alternative D, followed by alternative B, would have the greatest positive impact on long-term carbon storage, sequestration, and stability [because these] alternatives have the greatest proportions of vegetation restoration that would decrease the likelihood of large, high-intensity fires and increase the resilience of vegetation to fires. This would result in less tree mortality and greater retention of forest carbon stocks.

RDEIS, p. 279.

These assertions, however, are based on Westerling et al. (2015), citing Hurteau et al. (2014), which used an outdated fuel model that may have exaggerated the amount of carbon released during wildland fires, compared to the amounts actually measured and presented in more recent and various other scientific studies that specifically addressed these issues.

Moreover, the analysis is incomplete and does not provide an adequate carbon accounting because, as Dr. Westerling admits,

> this analysis does not account for the carbon removed or released by fuels treatment. A comprehensive assessment of the net C benefit from fuels treatments must consider tradeoffs between emissions from treatments versus reduced emissions from wildfire.

Westerling et al. (2017)—Supplemental Analysis to the Final 2015 Report: Changing fire, fuels and climate in the Sierra Nevada [Westerling et al. (2015)], prepared specifically for the Sierra

and Sequoia DEIS and plan revisions (provided as Exhibit B). It should be noted that the analysis also does not include an accounting of the carbon releases into the atmosphere from the fuels required for felling, loading, and hauling of felled trees to the sawmill or biomass facility, which contribute to the overall carbon releases from fuel treatments. All of these carbon releases must be considered in the analysis for this plan revision and for all projects that require movement of personnel, equipment, and resources.

The failure to account for carbon removed or released by fuel treatments makes the overall carbon analysis fatally flawed.

In the most recent analysis of carbon releases from wildfires, Stenzel et al. (2019) (Exhibit C) found that only about 5% of the carbon, on average, is released during a wildfire versus older fuel models, which predicted a reduction of 50-80% of fuel volume by weight after a wildfire. Moreover, as Westerling (2017) states, the amount of carbon removed from forest thinning must be accounted for to determine whether the fuel reduction thinning is worth the cost of potentially hindering greater carbon sequestration without fuel reduction thinning.

In other words, the aggressive fuel reduction thinning activities proposed in Alternatives B, C, and D, by failing to account for carbon removed by those activities (which are likely significant) combined with an overstatement of the amount of carbon that is released during wildfires, undermines the accuracy and integrity of a primary indicator for these forest plans. This, in turn, hinders the plan's goals to ensure increased long-term carbon stocks, sequestration, and stability.

The scientific conclusions in Stenzel et al (2019) are supported by other scientific findings not consider in the RDEIS analysis, which found that "conventional fuel-reduction treatments usually remove more C from a forest stand than would a wildfire burning in an untreated stand." Campbell et al. (2011) (Exhibit D). The Campbell review "reveal[ed] high C losses associated with fuel treatment, only modest differences in the combustive losses associated with high-severity fire and the low-severity fire that fuel treatment is meant to encourage, and a low likelihood that treated forests will be exposed to fire." *Id.* As an example, the study found that in a mature, fire-suppressed ponderosa pine forest, "protecting one unit of C from wildfire combustion typically came at the cost of removing three units of C in treatment." *Id.*

That conclusion is also supported in a larger literature review on the subject, in which the authors concluded:

> Thinning forests to reduce potential carbon losses due to wildfire is in direct conflict with carbon sequestration goals, and, if implemented, would result in a net emission of CO2 to the atmosphere because the amount of carbon removed to change fire behavior is often far larger than that saved by changing fire behavior, and more area has to be harvested than will ultimately burn over the period of effectiveness of the thinning treatment.

Law and Harmon (2011) (Exhibit E) (Forest sector carbon management, measurement and verification, and discussion of policy related to mitigation and adaptation of forests to climate change. Carbon Management 2011 2(1)).

Mitchell et al. (2019) (Exhibit F) also found that "reducing the fraction by which C is lost in a wildfire requires the removal of a much greater amount of C, since most of the C stored in forest biomass (stem wood, branches, coarse woody debris) remains unconsumed even by high-severity wildfires."[1]

Therefore, any scientifically-defensible carbon analysis in the RDEIS must consider and account for the amount of carbon proposed for removal, resulting from fuel reduction and other vegetation treatments, and compare those losses to the correct amount of carbon released from wildfires, rather than relying on outdated models that can grossly overstate wildfire carbon releases. Otherwise the indicator of carbon emissions will be meaningless, and the goals of increased carbon stocks, sequestration, and stability cannot be met.

C. Because the Plans Include Specific Goals to Increase Long-term Carbon Storage, Sequestration, and Stability, the Plans Must Provide for and Maintain a Forest Carbon Sequestration Budget, as well as Specific Forest Plan Level Monitoring.

A Forest Carbon Sequestration (or Storage) Budget is necessary and would provide a means to accurately account for carbon losses and gains from natural growth, wildfires, and management activities. Such a budget is necessary to meet the plans' strategic and stated desired conditions and goals to help ensure climate stability and increase long-term carbon storage and sequestration. Moreover, the Forest Plans should add specific Forest Plan Level Monitoring for carbon gains and losses. Desired Conditions/Goals state:

> 10 Terrestrial ecosystems provide a variety of benefits that improve people's economic, social, and physical wellbeing (clean water, forest products, livestock forage, ***carbon sequestration and storage***, energy generation, recreational opportunities, landscapes with scenic character and scenic integrity, cultural uses, and biodiversity).

Sequoia NF Revised Draft Forest Plan, Chapter 2. – Forestwide Desired Conditions and Management Direction, p. 26 (emphasis added);

> 03 National forest uses such as recreation, forest products, ***carbon sequestration***, power generation and water production are provided in an ecologically sustainable way that also contributes to economic and social sustainability in local communities.

Id., p. 85 (emphasis added); and

[1] *See also* Mitchell et al. (2009) (Exhibit F), concluding that "fuel reduction treatments should be forgone if forest ecosystems are to provide maximal amelioration of atmospheric CO2 over the next 100 years"; *accord* Depro et al. (2007) (Exhibit G), stating: "Our analysis found that a 'no timber harvest' scenario eliminating harvests on public lands would result in an annual increase of 17–29 million metric tonnes of carbon (MMTC) per year between 2010 and 2050—as much as a 43% increase over current sequestration levels on public timberlands and would offset up to 1.5% of total U.S. GHG emissions."

> Carbon stability was a focus of analysis; this is because managing for long-term carbon stability, within a carbon carrying capacity, is a forestwide desired condition. Carbon stocks and sequestration both depend on the carbon carrying capacity, and, consequently, are highly related to the carbon stability of an ecosystem.

RDEIS, p. 229.

Thus, the desired conditions and goals of ensuring carbon stability, storage, and sequestration must include some way to measure the current carbon resources and budget for carbon losses and gains from various naturally-cause and management-related effects. Since the plans are specific to each national forest, this measuring of the current carbon resources and accounting should take place at the national forest level.

To do this, we urge that the Forest Service add a Monitoring Program under Chapter 4 of each forest plan, titled "Carbon Storage and Sequestration," which can be added after the section titled "Climate Change and Other Stressors":

Carbon Storage and Sequestration

The plan monitoring program includes monitoring questions and associated indicators to determine whether naturally-caused and management-related changes to the plan area result in changes to carbon stability and provide for an accounting of carbon storage and sequestration.

Table XX. Monitoring questions and associated indicators that measure changes in carbon stability and provide an accounting of carbon stored and sequestered resulting from natural or management events.

Code	Selected Desired Condition and Objective or Other Plan Component	Monitoring Question	Associated Indicators
CS01	**TERR-FW-DC-10 –** Terrestrial ecosystems provide carbon sequestration and storage.	What is the current amount of carbon stored or sequestered on the national forest, and to what extent does a natural event or management action cause a change in stored or sequestered carbon on the national forest?	• Baseline amount of carbon stored in vegetation and soil at the time of the plan decision. • Add amount of additional carbon sequestered from natural growth on an annual basis, added to baseline. • Subtract amount of carbon released from a specific wildland fire event (~5% of baseline for area burned). • Subtract amount of carbon removed from the forest during a management action (100% of portion burned at biomass facility; 70% of portion used for sawtimber).

D. The Vegetation Management Direction in the RDEIS and Draft Plans with Regard to Fire and Fuel Reduction is Unjustified.

The Forest Service has not collected carbon baseline data or current fuel loads that would justify the levels of treatment in any of the alternatives. Instead, the RDEIS selects arbitrary treatment thresholds (15%, 30%, and 60%) to anticipate the effects of the various alternatives.

NEPA requires that the agency analyze impacts in comparison to an accurate determination of baseline data, such that the Forest Service adequately and accurately describes the "affected environment." 40 C.F.R. § 1502.15; *see also Half Moon Bay Fisherman's Marketing Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988). Under NEPA's implementing regulations: "If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement." 40 C.F.R. § 1502.22.

The Forest Service has not collected the necessary carbon baseline data or current fuel loads that would justify the management direction for any of the Alternatives. The agency does not have a map of fuel loadings or fire behavior. This is a glaring omission especially in light of the fact that other agencies have implemented rigorous fire-relating mapping and analysis efforts. For example, CalFire's Very High Fire Hazard Severity Zone mapping process is a standard to which this planning effort should strive. Moreover, mapping biomass in the Sierra Nevada using lidar has been shown to be suited for biomass estimation through a priori species stratification, while also providing information on canopy state, such as stress with many potential applications in carbon dynamics, ecological and habitat studies. *See* Swatantran et al. (2011) (Exhibit H).

If you the Forest Service does not know the current conditions and how far away they are from desired conditions, it is impossible to compare management direction in different alternatives. Because one of the goals for managing forest areas is to restore natural fire regimes and characteristic vegetation structure and compositions, it is important to know the extent to which prescribed fires and wildfires deviate from those regimes. Only if a map of the vegetation types or fuel types or fire regimes were included in the plan could a commenter offer input regarding the compatibility of different fire regimes.

The Forest Service has not claimed that it could not assess current fuel loads because of financial hardship. 40 C.F.R. § 1502.22. Therefore, without this baseline carbon or fuel load data the entire analysis of fire and fuels is legally inadequate. *See Half Moon Bay*, 857 F.2d at 510.

E. The DEIS' Analysis Regarding the Wildland Urban Intermix is Flawed in Several Key Areas.

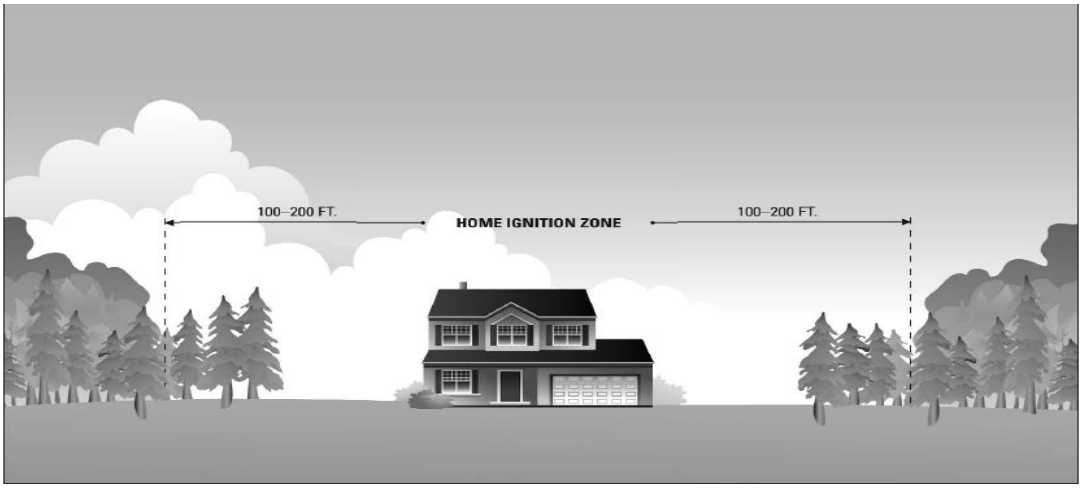
The size of the Community Wildfire Protection and General Wildfire Protection Zones are not scientifically defensible.

The RDEIS and draft Management Plans have extremely large Wildfire Protection Zones for Alternatives B & D. These zones account for a significant portion of each plan area.

Alternatives C & E provide smaller WUI Defense Zones, which have been replaced by very large Protection Zones in Alternatives B (or D), the Forest Service's preferred alternatives. But the size of the Zones in Alternatives B & D is not defensible, since there is little scientific support provided for their size, just as there is little or no support for the smaller WUI Defense Zones.

In the paper Wildland Urban Interface Problem: A consequence of the fire exclusion paradigm (Forest History Today, Fall 2008),[2] Jack Cohen states,

> We cannot assume a direct causal linkage between extreme wildfires and WUI fire disasters. An examination is required as to how homes ignite and cause WUI fire disasters . . . WUI fire disasters principally depend on home ignition potential. . . . Research shows that a home's ignition potential during extreme wildfires is determined by the characteristics of its exterior materials and design and their response to burning objects within one hundred feet (thirty meters) and firebrands (burning embers). . . . Computational modeling and laboratory and field experiments that describe the heat transfer required for ignition have shown that the large flames of burning shrubs and tree canopies (crown fires) must be within one hundred feet to ignite a home's wood exterior. Actual case examinations find that extreme wildfire behavior does not occur within most residential areas; rather, most destroyed homes ignite from smaller flames and directly from firebrands. . . . Thus, given an extreme wildfire, the home ignition zone principally determines the potential for a WUI fire disaster. . . . Vegetation fuel reduction treatments, as reported in the Healthy Forests Report of May 2007, also indicate a wildfire modification and control approach that does not address a home's ignition potential. Agency WUI fuel treatments largely do not address home ignitability but rather areas outside the home ignition zone. Fuel treatments in the vicinity are expected to protect homes by creating conditions that enable successful fire suppression.



[2] Cohen, Jack. 2008. Wildland Urban Interface Problem: A consequence of the fire exclusion paradigm (Forest History Today, Fall 2008),

"The home ignition zone principally determines a home's ignition potential. The zone includes the home in relation to its surroundings within 100–200 feet of the home."

The emphasis on the ignition zone has also been adopted by the National Fire Protection Association (NFPA). NFPA is sponsoring courses nation-wide as a means to effectively prevent structure loss from wildfire. CalFire has endorsed this concept. CalFire limits the distance required for defensible space to 100 feet and Los Angeles County requires 200 feet. San Diego County is being sued for requiring 500-feet of fuel management as measured from the structure because it is considered excessive.[3]

CalFire went through a detailed process of mapping Very High Hazard Severity zones in 2007. These areas considered vegetation type, structure density, ember distribution, and potential fire behavior. The approved maps also incorporated the comments of local jurisdictions and stakeholders.

Real life experience has actually demonstrated that this more limited fuel treatment zone produces desired results. During the Angora Fire in the Lake Tahoe area, the areas treated were not large (and certainly not even close to the 1.5-mile wide or 7920-feet wide area endorsed under the Revised Draft Management Plan) yet the fuel treatments were effective. Schmidt et al (2010) reported that, "In most cases, crown fire behavior changed to surface fire within 50 meters of encountering a fuel treatment."[4] The effectiveness of treatments is based on changed fire behavior characteristics.

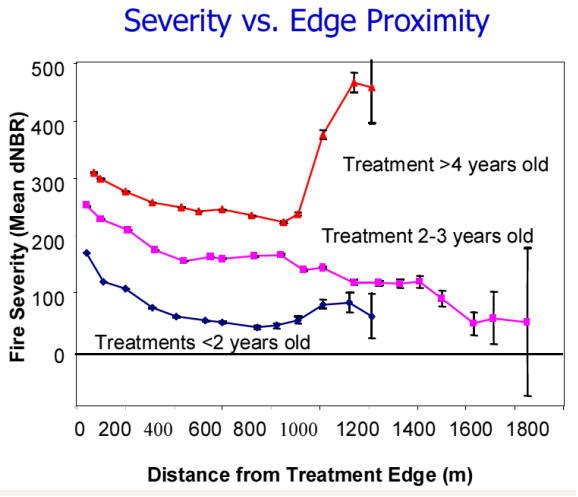
Similarly, Schroeder and Walkinshaw (2006)[5] made a presentation in the 2006 Fire Behavior and Fuels Conference reporting that a crown fire in a jack pine stand "settled down" within 4 minutes of crossing into treated stands to become a surface fire, with a distance of less than 50 meters.

Treatments not only lower fire severity in the area treated but there is also a "halo" or shadow of lower severity due to treatments. However, the halo is not wide, and the effect does not extend into 1.5 miles wide WUI areas, and certainly not the much larger zones proposed for Alternatives B & D. The ameliorated fire behavior effect spans as much as a several hundred feet from the treatment areas; the intervening space burns as if treatment never took place as shown in the figure below (Finney 2010).

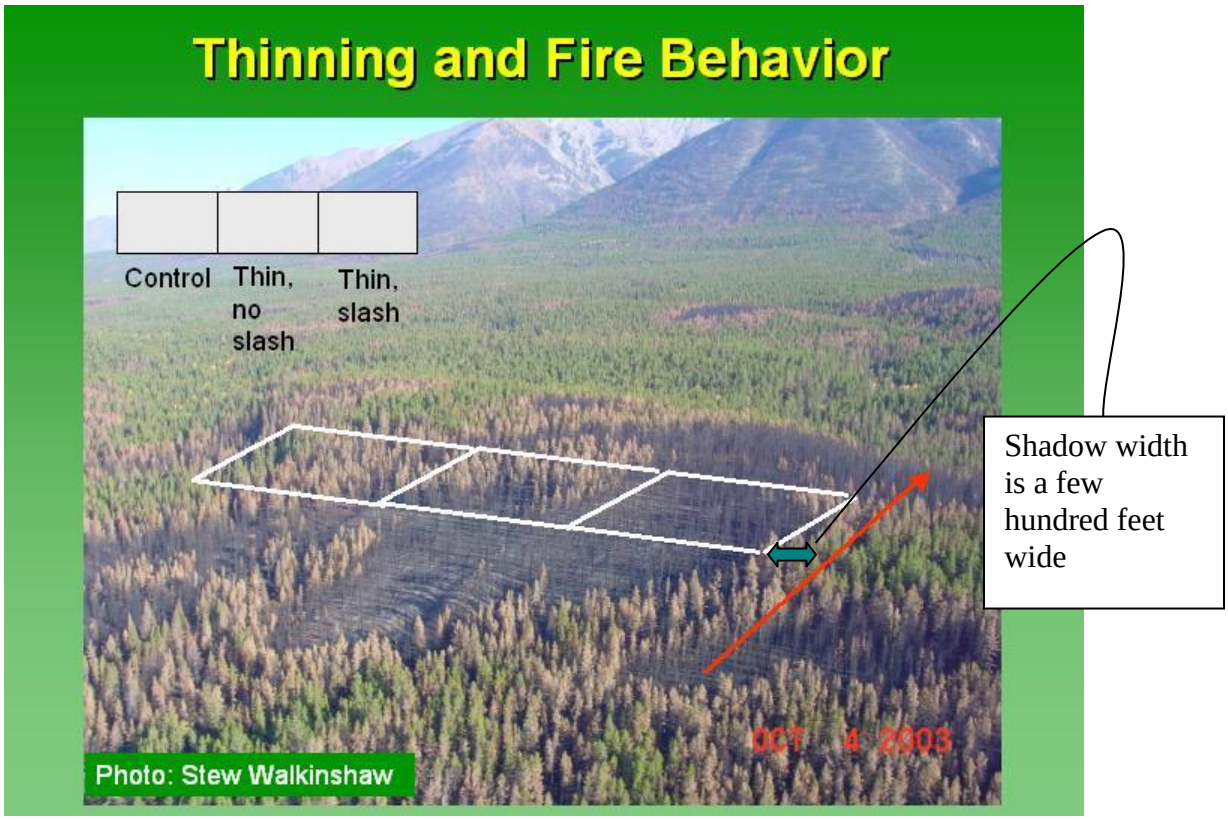
[3] http://www.californiachaparral.com/images/Brush-clearing_for_fire_safety_faces_a_battle_FINAL_with_Comments.pdf

[4] David Schmidt, The Nature Conservancy and USDA Forest Service; Hugh Safford, USDA Forest Service and University of California, Davis; Chris Carlson, University of Montana. Effects of Fuel Treatments on Fire Severity During the 2007 Angora Fire. Pre-and Post Wildfire Conference, University of California Cooperative Extension, February 10, 2010.

[5] Schroeder, David and Stew Walkinshaw 2006. A case study test of fuel management effectiveness against crown fires. Pg 8-4 In: Fuels Management-How to Measure Success: Conference Proceedings. 29-30 March 2006, Portland, OR. RMRS-P-41



The following picture (Schroeder 2003)[6] indicates the narrow shadow of treatments. The dark brown color indicates where fire consumed the tree crowns. Lighter color crowns are where fire scorched but did not consume the crowns (with a lower fire intensity).



[6] Schroeder, David. 2003. Thinning and fire behaviour at Fairholme Prescribed Burn (Banff) Alberta Forest Protection Division Fuel Modification Overview, FERIC Fuel Modification Workshop. Hinton Training Centre, October 7, 2003. http://fire.feric.ca/36232003/WorkshopPresentation.htm.

Insurance companies have been taken to task for requiring excessive fuel treatments on those properties insured. If an insurance company wants to have a fuel treatment zone that is over 100 feet, it is required that a fire department confirms the need for this excessive treatment.

The previous photo indicates that a treatment that is a few hundred feet wide is sufficient to adequately modify fire behavior near structures.

All of this evidence undermines the Forest Service's designation of a WUI that is 7920-feet wide (1.5 miles) in Alternatives C & E, and undermines the even larger zones proposed for Alternatives B & D. The Forest Service needs to reexamine the size of its Wildfire Protection Zones in light of this scientific research.

<u>The Forest Service Should Promote Treatments Immediately around Structures.</u>

The Forest Service should focus fuel reduction treatments in developed areas immediately around structures. Instead, the Plan ignores the location of structures; for instance, if a structure is placed well inside the private property boundary. The desired fire and fuels condition states treatments will be focused on developed areas within these zones. However, the standards and guidelines do not mention developed areas, so it is a nonbinding goal. There are also no criteria in the guidelines for how to handle developed areas (what constitutes a developed area, what percentage of area should be treated, where these treatments should be located in relation to area). This leaves the possibility that the agency would treat the entire area, or a smaller proportion than effective. Without standards and guidelines placing restrictions on management activities, roadless and backcountry areas are also open for potential treatment.

The placement of treatments well away from structures makes treatments less effective. The agency should revise how the Wildfire Protection or WUI zones are delineated to include the distance from a building as a criterion.

It is a well-known fact that protection of structures is largely the responsibility of the landowner with the structure. Cohen (2008) comments, "Because this principally involves the home ignition zone, and the home ignition zone primarily falls within private ownership, the responsibility for preventing home ignitions largely falls within the authority of the property owner. Preventing wildfire disasters thus means fire agencies helping property owners mitigate the vulnerability of their structures."

Stephens and Collins (2006)[7] state:

> With the financial resources and emphasis on treating lands in the UWI provided in the National Fire Plan and Health Forests Restoration Act, many areas of federal lands that are adjacent to homes are being treated to reduce hazards. However, as the UWI continues to expand in the many areas throughout the U.S., costs of providing pre-fire protection (fuel reduction activities) and protection from encroaching wildfires are exacerbating already increased wildfire-related expenditures. As budgets at the federal and state level are unable to keep up with these increasing costs, more responsibility is being placed on local governments and fire services to provide wildfire protection. . . . While the federal wildland side of the UWI has begun to take steps to reduce fire hazards, the private side has not kept up. Fuel treatments along the UWI will be effective in reducing structural losses only if they are used in combination with combustion-resistant homes that have defensible space from wildland and domestic vegetation

If the immediate area around the structure (the ignition zone, or defensible space zone) is not created and maintained, and if the structure itself is ignition-prone, treatments further away are not effective.

This fact was painfully realized in last year's Camp Fire, in which most of the town of Paradise burned. While there were fuel treatments in and around the town of Paradise, they were completely ineffective in preventing the fires from spreading through the community, because most of the houses were ignition-prone.

[7] Scott L. Stephens and Brandon M. Collins. 2007. Chapter 3 – Fire policy in the urban wildland interface in the United States: What are the issues and possible solutions? In Living on the Edge: Economic, Institutional and Management Perspectives on Wildfire Hazard in the Urban Interface. Advances in the Economics of Environmental Resources, Volume 6, 1-10. Elsevier, Ltd.

Burned homes in Paradise after the Camp Fire (2018), surrounded by green, unburned trees

Camp fire, showing devastation of homes in the Kilcrease Circle community of Paradise, a contrast to the green mature forest, with little or no scorching, which surrounds this neighborhood. The homes here were not burned by high-intensity crown fire, but rather were burned when embers driven on the winds landed on flammable homes followed by home-to-home ignitions. Courtesy Satellite image ©2018 DigitalGlobe, a Maxar company/Handout via REUTERS, Nov. 17, 2018.

For more on the Camp Fire and why the Forest Service can't chainsaw its way out of the fire and fuel problem, see https://www.buzzfeednews.com/article/peteraldhous/logging-forest-california-wildfires, which includes a video with Jack Cohen explaining the issues.

Eliminate the Proposal for a System of Strategic Fuel Breaks, Which do not Work

It is also troubling to see that the Forest Service continues to promote a system of strategic fuel breaks along ridges, which have never been proven to work. As such, they create a false sense of security with the public, similar to the fuel reduction treatments discussed in the previous sections. Instead, the Forest Service should invest in assisting homeowners and owners of structures in the WUI in creating defensible space in the 100-200 ft. home ignition zone to allow firefighters, who could possibly, but not necessarily, be available with water and equipment, to protect structures from non-extreme wildfire events, similar to the Camp Fire, discussed above.

F. The Goals, Desired Conditions, Standards, and Guidelines need to be adjusted to be consistent with the best available science.

Scientific reports state that logging or removal of any trees over 10 inches in diameter, where appropriate, is not needed for fuel reduction or forest restoration. Removal of trees of any size over 10 inches is only done for commercial reasons, that is, the larger trees are merchantable. But removal of these larger trees actually sets back restoration goals and objectives, reduces stored carbon, and does little to advance fuel reduction or may, in fact, increase fine fuels that increase fire risks and severity. Thus, we urge the adoption of the following.

Surface and Ladder Fuels – We urge the Forest Service to revise the following objective and guideline:

> Objective: Revise TERR-FW-OBJ-01 to say: "Prioritize wildland fire use (allowing more mixed-intensity wildland fires from lightning strikes to occur, particularly in more remote forests."
>
> Guideline: Revise to say: "Wildland fire use will be the priority for management, especially in more remote forests. Where vegetation management does occur for fire management purposes, such activities shall only involve removal of surface and ladder fuels less than 10 inches in diameter."

Old Forest – We urge the Forest Service to revise the following guideline:

> Revise guideline TERR-OLD-GLD-01 to include a statement that large trees should not be removed.

Burned Forests and Complex Early Seral Forests

We urge the Forest Service to include a guideline in the forest plans stating that removal of dead and dying trees should not occur, except in narrow circumstances where public life and property are at imminent risk.

We also urge the Forest Service to include a guideline stating that post-disturbance restoration projects should be designed such that recovery of economic value is not among the purposes of projects.

California Spotted Owl, Fisher, Goshawk, Yellow-Legged Frogs, and Great Grey Owls

We urge the Forest Service to include a guideline in the forest plans stating that the removal of trees larger than 10 inches in diameter is prohibited in California Spotted Owl PACs or Home Range Core Areas (HRCAs) surrounding PACs, as well as habitat for Pacific fishers, Northern goshawks, yellow legged frogs, and great grey owl.

G. Increase the Forests' Capacity for Additional Prescribed Burning and Wildland Fire Use

We urge the Forest Service to include a plan to increase the capacity to burn across the two forests. This plan should include engaging the network of agencies and stakeholders to create an environment that fosters the collaborative management of fire for resource benefits, including investments in social and financial resources to support a reduction in fire suppression and an increase in the use of prescribed and managed fire necessary to achieve desired conditions for ecological restoration and public health and safety.

The Forest Service should work with the California Air Resources Districts and adjacent land management agencies to identify methods to reduce costs and increase effectiveness in restoring fire to the landscape. The Forest Service should plan prescribed and managed fire projects over large landscapes to increase efficiency and readiness and apply ignitions when environmental conditions are appropriate.

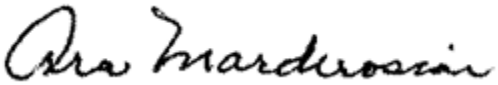
The plan should strive to build a broad base of support for the increased use of managed wildfire and prescribed fire for resource benefits through intensified outreach and education efforts. The plan should include outreach to air regulators, air quality scientists, interested stakeholders, and public officials to facilitate information exchange, outreach and education efforts, and joint media response efforts focused on presenting the "net gain" in public benefits from expanded fire use.

And the implementation of prescribed fire need not wait for thinning. In fact, the notion that dense, long-unburned forests must be "thinned" through logging operations prior to reintroducing fire is simply not scientifically supported, and is directly contradicted by a wealth of scientific data (Keifer 1998; Stephens & Finney 2002; Fule et al. 2004; Schwilk et al. 2006;

van Mantgem et al. 2011, 2013, 2016).[8]

For Sequoia ForestKeeper,

René Voss – Attorney at Law



Ara Marderosian, Executive Director
Sequoia ForestKeeper

[8] Fulé, P.Z., Cocke, A.E., Heinlein, T.A., Covington, W.W., 2004. Effects of an intense prescribed forest fire: is it ecological restoration? Restoration Ecology 12, 220–230.

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