Sierra Nevada
Forest Protection Campaign

October 10, 2017

(Legal Notice published 8/25/17 in the Mountain Democrat; 45 day objection period fell on 10/917, a federal holiday which rolls over to 10/10/17 (36 CFR §218.6 (a)).

Randy Moore, Regional Forester (Objection Reviewing Officer)
USDA, Forest Service Region 5-PSW
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Vallejo, CA 94592

Attn: Power Fire Reforestation Project, Amador Ranger District, Eldorado National Forest
Sent via internet: objections-pacificsouthwest-regional-office@fs.fed.us

Sierra Forest Legacy files this objection to the Power Fire Reforestation Project ROD and FEIS with solid standing as an objector having commented on project scoping and commenting on the DEIS. We have also traveled with the Forest Service on a specific Power Fire reforestation site visit to the project area plus additional trips to the area our own.

We have been involved in the Power Fire Landscape decision-making since the fire event in 2004.

Sierra Forest Legacy objects to the following issues in the Power Fire Reforestation ROD and FEIS and include specifics tied directly to previous comment letters. Finally, we include specific remedies to resolve the objections to the decision.

I. Statement of Reasons for Objection:

A. Failure of the FEIS to adequately address and take a "hard look" at a reasonable range of alternatives in violation of NEPA at 40 CFR § 1502.14

(i) The Forest Service did not accurately or adequately address using low-ground pressure mulching masticators to address the issue of shrub competition in the Power Fire landscape for managing reforestation.

In Appendix B-3 (Response to Comments) We commented in the DIES That the Amador Ranger District should consider the purchase and use of small Bobcat-type mulching machine masticators to use continually for control of unwanted levels of shrubs in the Power Fire Reforestation effort. The Forest Service replies in FEIS Appendix B-5 that you own such tools or contract for there use on the forest.

Stating that the Forest Service owns such small mulching equipment is that saying you own a masticator *T870* (and other types of larger equipment is not the same as regularly using it to limit brush fields in young plantations. We did not mean for use only in site prep but instead as we stated in our DEIS comment letter page (7) request that you consider utilization these machines for regular maintenance of brush fields in planted areas, fuel break maintenance, fire line construction and other uses. The mulching masticator would replace herbicide use, chop and lay the mulched material in the surface (in finer pieces that a larger drum or disc head machines that throw larger pieces of material) and allow for safer reintroduction of fire in these areas. These photos from the Power Fire Reforestation Draft ROD p.9 are good examples of where such a use, that we asked you to specifically consider, could be applied.

The Forest Service offered no specific examples of the use described in our comment letter. Showing a picture of a brush field (Draft ROD p.9) but failing to describe actual use of low ground pressure mulching masticators (operationally and economically) to <u>regularly manage</u> the shrub fields is an arbitrary and meaningless response to our concerns. NEPA requires the Forest Service "rigorously explore and objectively evaluate" of all reasonable alternatives 40 CFR §1502.14 (a). Since you own such equipment and are willing to spend $4-5 million dollars on multiple chemical applications over several years, you should consider and trial other approaches. It would be hard to explain why our suggested approach (mastication followed by fire) isn't reasonable or feasible.

Shrubs, treated with mastication will lose carbohydrate storage capabilities, chips will cover the ground and limit unwanted seedlings and soil erosion (FEIS p. 159) and eventually shrubs fail to thrive and will be over-topped by conifers in a much shorter timeframe that the 50-100year (no action) alternative.

(ii) Forest Service failed to address the economic issues raised in our comment letter (FEIS p. 169-171)

The FEIS economic analysis never offered an economic comparison of reforestation with herbicides to reforestation with mulching machines and fire. You might not like the idea, in part, because the ENF has been strongly (and mistakenly) adverse to increased fire use but this resistance causes "blindness" to reasonable suggestions because ENF leadership can't imagine the Sierra Nevada National Forests with an active, science-based fire regime as an operational reality and the desired condition for this landscape. It is arbitrary to dismiss our alternative ideas (regularly maintain planted areas with a mulching masticator followed by fire) without analysis and without a trial for some reasonable period which you have had years to explore.

B. Forest Service acted in an arbitrary manor by failing to take a "hard look" at recent scientific information regarding practices of using fire in younger plantations in nearby by Sierra Nevada forests. It is arbitrary to dismiss our comments and recommendations for pruning and early fall fire applications as a reasonable and feasible alternative for Power Fire Reforestation.

(i) Big Creek Fire reforestation on the Sierra National Forest (Rojas example) of fall burning in young, 6 to 10-year-old plantations with little mortality.

Big Creek Plantation Establishment and Management
Photos and notes from Dinkey LPWG trip on 11-2-16

Big Creek fire (1994) was about 5,600 acres and about half of it was planted using a variety of approaches (i.e., planting density, arrangement, release, follow up maintenance, etc.).

Some highlights of the management approach (in order of application):

- Spacing was either 16-18 feet or 20 feet (the wide spacing was to limit need for pre-commercial thinning)
- Release was hand (on shrubs that were seeders) or chemical (shrubs that were sprouters)
- Three seedlings were planted at each point
- Two of three seedlings were cut at years 3-5
- Pruning occurred at years 6-10 and removed 2-3 whorls (up to 50% of crown)
- First burn was in fall after buds dormant and after pruning
- Plan is to apply next disturbance at years 20-25 (that would be about now)

For the Big Creek units, not all of the above were applied in all locations. None of the treatments since planting used mechanical treatment

Trees per acre:

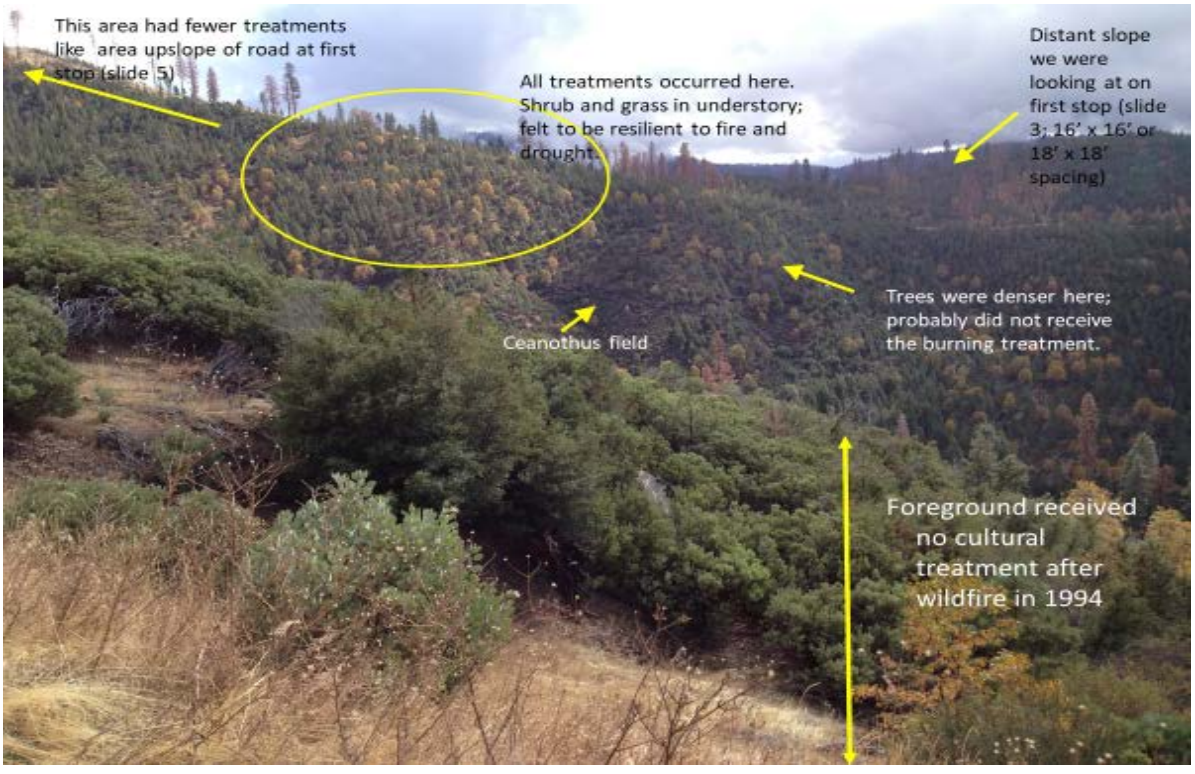
For 20' x 20' spacing there would be about 100 planting locations per acre with three trees per location; this yields 300 TPA. Two of the three saplings at each location will be cut at years 2-3 leaving 1 tree per location or about 100 TPA

For a 18' x 18' spacing, there are about 133 planting locations with the post-lopping density being 133 TPA

For a 16' x 16' spacing, there are about 169 planting locations with the post-lopping density being 169 TPA

The chart below gives some details about the management practices.

time	Tree height	Fire hazard/risk losing	Treatment	Rx fire	Cost/Revenue structure	
Post mortality			1 to 5 years	Apply for site prep possible		1994
0			Adequate site prep	Pine fall only	325 Stand initiation	
1	0.5	Mod-High	Plant-release 16'x16"	Pine fall only	525 Stand initiation	1997
2	1	Mod-High		Pine fall only	Stand initiation	1998
3	2.5	Mod-high	Release multi spot plant late in period	Pine fall only	Stand initiation	1999
4	3.5	Low		Pine fall only	250 Stand initiation	2000
5	5	Low		Pine fall only	Stand initiation	2001
6	5.5	Mod		Spring low or fall	Stand initiation	2002
7	7.5	Mod		Spring low or fall	180 Stand initiation	2003
8	9	Low	Prune 1/3 to 1/2 apply fire	Spring low or fall	90 Stand initiation	2004
9	10.5	Low		Spring low or fall	Stand initiation	2005
10	12	Low		Spring low or fall	Stand initiation	2006
11	13.5	Low		Spring low or fall	Stand initiation	2007
12	15	Low		Spring low or fall or summer night	Stand initiation	2008
13	16.5	Mod		Spring low or fall or summer night	Stand initiation	2009
14	18	Mod		Spring low or fall or summer night	Stand initiation	2010
15	19.5	Mod		Spring low or fall or summer night	Stand initiation	2011
16	21	Mod		Spring low or fall or summer night	Stand initiation	2012
17	22.5	Mod		Spring low or fall or summer night	Stand initiation	2013
18	24	High		Spring low or fall or summer night	Stand initiation	2014
19	25.5	High		Spring low or fall or summer night	Stand initiation	2015
20	27	Low-mod	Apply Rx fire, or tractor pile, or cut and hand pile shrubs and most understory - consider pruning	Spring low or fall or summer night	Stand initiation	2016
21	28.5	Low-mod		Spring low or fall or summer night	90 Stand initiation	2017
22	30	Low-mod		Spring low or fall or summer night	Stand initiation	2018
23	31.5	Low-mod		Spring low or fall or summer night	Stand initiation	2019
24	33	Low-mod		Spring low or fall or summer night	Stand initiation	
25	34.5	Low-mod		Spring low or fall or summer night	Stand initiation	
25-45		Low	Rx fire		90	
45-55		Low	Commercial thin + Rx fire		Stem exclusion begins	



The three slides above are from a presentation by the forester on the Sierra National Forest of work implemented and monitored at the site of the 1994 Big Creek Fire. Looking closely at slide 2 shows an approach of early, successful fall fire use in young plantations six-to-ten years old. This effort included a combination of pruning lower whorls and late-season fall burning.

The Forest Service suggestion that under-burning young plantations is not a feasible approach is arbitrary and fails to address existing practices that use fire in plantations in early stage development on Forest Service reforestation projects in the Sierra Nevada.

(ii) Second example of successful prescribed fire in young plantations: UC California Blodgett Research Forest (Bellows et al. 2016) example: The study was conducted on UC's Blodgett Research Forest within the footprint of the perimeter of the Eldorado National Forest. The study examined, *Damage and mortality patterns in young mixed-conifer plantations following prescribed fire in the Sierra Nevada, California* and looked at the effects of pruning (or not), fuels reduction (raking near trees) and prescribed fire in stands younger than 30 years old for the first time. The plantations were 13 years old. Fall prescribed fire applied to pruned <50% crown volume plantations showed that prescribed fire can be successfully applied to younger stands (13-14 years old).

From the Discussion section of the paper:

4. Discussion

For numerous reasons, there is a widespread reluctance to use prescribed fire as a tool for building resilience across many forest types (Ryan et al., 2013a, 2013b). In young stands perceived to be vulnerable to even low intensity fire, this reluctance is even more common. Our study demonstrates that it is feasible to conduct prescribed burns in young Sierra Nevada mixed-conifer plantations without high levels of mortality, but factors of mortality are likely different compared to mature stands. While mortality is not always an undesirable outcome, especially in high density stands where fire may be used as an alternative to pre-commercial thinning, it is often of concern where the long-long term objective is to promote large and fire resistant trees as quickly as possible. As the application of prescribed fires is expanded to landscape levels, it may not be necessary to exclude young stands from low intensity prescribed fires depending on their age and size. Introducing fire early is also consistent with the pre-suppression fire regime of the mixed conifer forest. In the forest surrounding our study area, for example, median point fire return interval is 9–15 years. At least some, if not most, young stands likely experienced fire prior to the era of fires suppression. While our study demonstrated the feasibility of burning in young stands (especially if burned during the fall), a high degree of variability in burn effects on damage and mortality should be expected, potentially to an even greater extent compared to mature stands.

It is arbitrary and a violation of NEPA's requirements for "high quality and accurate scientific information" (40 CFR §1500.1(b) for the Eldorado National Forest to suggest that fire cannot be applied early on in the establishment of young stands in the Power Fire Reforestation project. NEPA also requires that the Forest Service rigorously and objectively analyze a reasonable range of alternatives. It is arbitrary and a violation of NEPA to dismiss our reasonable and feasible recommendation of early fire applications in the Power Fire Reforestation Project.

II. Remedies to Resolve Objection

A. Remedy for issue A (i) -- Fully operationalize the regular use of one or more mulching masticators on a quarter of the project acres for 5-to-10 years either to "rescue" at risk seedlings or maintain successful plantation trees, followed by fire. Regular mulching, as needed, will wear down the carbohydrate stores in sprouting species and fire following these treatments will allow for forests to re-establish. This is a reasonable and economically feasible idea that the Forest Service failed to adequately address in the NEPA process or in the Response to Comments and it should be rigorously implemented on a significant number of acres to be able to compare with other approaches.

B. Remedy for issues B (i) and (ii)—Since the Amador Ranger District Leadership has delayed fire reintroduction in the Power Fire landscape for 13 years it is time to re-establish early fire use in the reforestation of the Power Fire area as a part of this FEIS/ROD. Recent work on the Sierra NF at Big Creek and at UC's Blodgett Research Forest has demonstrated that early fire reintroduction is a reasonable and feasible option which should be applied in this project. You have skilled fire staff to do this work. When coupled with mulching mastication to keep fuel heights low it is an economically feasible approach on the 3,500 acres to be reforested. We request you reconsider your position on the early use of fire in this project, given the results elsewhere in the Sierra Nevada.

We remain strongly opposed to the use of chemicals in forest management as such uses promote, homogenous, depauperate landscapes and thwart the reintroduction of fire as a primary management tool and critical ecological process. It violates the important concept of ecological integrity in the 2012 Forest Planning Rule to continually recreate conditions that do not represent natural forest evolution over time.

"Stocking Standards, what do they even mean in an era of climate change?" Cindy West, USFS Washington Office at the recent Climate Hub conference at McClellan, CA.

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