



**P.O. Box 897
Big Bear City, CA 92314
Tel: 530-273-9290**

March 11, 2016

Teresa Benson, District Ranger
Hume Lake Ranger District

Dear Teresa,

On behalf of the John Muir Project, Center for Biological Diversity, and Sequoia ForestKeeper, I am submitting the following scoping comments on the proposed “Rough Fire Initial Reforestation Project”, which proposes to artificially plant up to 500 acres of ponderosa pine and sugar pine seedlings in the Rough fire area. We incorporate by reference all of the comments that I submitted to you previously via email messages regarding this project (as well as the verbal comments conveyed to you in person by myself and Christy Sherr at your open house on this project), such that all such messages should be treated as part of these comments, including our concern that this proposal is being made during winter, before the first post-fire growing season and before we even know where and how much natural tree regeneration will occur this year.

As an initial matter, Christy Sherr of JMP and I hiked through many of the high-intensity fire patches in the area proposed for planting and found that most of the area currently mapped by the Forest Service as having experienced high-intensity fire, based on the preliminary/immediate post-fire satellite imagery, is comprised of pines with live green crown on the tops of the trees and pines with brown needles throughout the crown, indicating live pines, most of which will flush and produce new green needles in April and May and survive long-term if not cut down, as I mentioned in my previous email messages (see Hanson and North 2009, which I submitted to you earlier). For this reason, the conclusions made in the proposed project regarding fire severity, and proximity of seed sources, are based on incorrect and premature assumptions. Moreover, the assumptions in the proposal regarding the lack of potential for natural conifer regeneration more than 50-100 meters into the interior of high-intensity fire patches is inconsistent with current data (seeds survive in cones deep into high-intensity fire patches, e.g.), which I have gathered in the Rim fire (see attached figures), and Glassman et al. (2015) found that the ectomycorrhizal fungi spore bank community, which is inextricably linked to potential for natural post-fire pine regeneration, “largely remains intact” in large high-intensity fire patches in the Rim fire (see attached). Further, as I discussed in my previous email comments to you, your scoping letter is incorrect in stating that NFMA requires you to plant trees after fire. There is no such requirement in NFMA, nor does the scoping notice specifically identify any such provision of this statute.

In addition, the proposal is not consistent with the Monument Plan, as discussed below:

Rough Fire Planting Compliance with the Giant Sequoia National Monument Management Plan

Because the Rough Fire Planting proposal is located in the Giant Sequoia National Monument, it must comply with the 2012 Monument Management Plan. The following provisions from the plan apply to the project:

Strategies for Ecological Restoration

10. Promote heterogeneity in plantations and young stands by encouraging more diversity in species composition and age. Reduce stand density in young stands and encourage shade-intolerant species such as giant sequoia, pine, and oak.
11. Improve stand resilience and health by *varying spacing of trees* both inside and outside of giant sequoia groves.
12. *Encourage natural regeneration of tree species*, including giant sequoia. In areas where natural regeneration is not likely, use planting as determined in site-specific project analysis.

Monument Plan, p. 45 (emphasis added)

These provisions do not support an approach focused on ensuring consistent pine, or conifer, distribution, and clearly support: a) succession of native oak species; b) patches of complex early seral forest without trees—at least during early successional post-fire stages; c) natural regeneration of “tree” (i.e., not just conifers, or just pines) species; and d) allowing natural tree regeneration to occur, based upon current evidence, rather than prematurely assuming that it will not be likely in certain places, contrary to existing evidence.

In other words, the strategy to promote heterogeneity in existing plantations and the currently proposed planting area should encourage tree species diversity, variable spacing, and natural generation. And the strategy requires that the Forest Service plant only if natural generation is unlikely, based on a site-specific analysis, which infers the collection of site-specific data about natural regeneration.

As already stated in previous e-mails and other correspondence, we believe it is too early for an analysis to determine whether planting is necessary or even advised in the project area because the data to determine natural regeneration cannot yet be collected. Based on the field visit on March 2, 2016, we found that it was too early to determine whether areas that burned at high severity would naturally regenerate, since seedlings generally do not sprout until after April at the elevations where the Forest Service proposes planting. And since the Monument Plan calls for encouraging natural regeneration as the first priority, absent site-specific data to prepare a sufficient project analysis, the proposal planting in the Rough Fire high-severity burn areas is both premature and inconsistent with the Monument Plan.

I enjoyed our conversations at your open house on March 2nd, but I do feel compelled to correct some misimpressions that appear to be driving this planting proposal. First, shrubs do not grow to several feet in height, and form continuous coverage, by the second spring post-fire in high-intensity fire patches in the Sequoia National Forest (I have surveyed nearly every significant fire

on the Sequoia over the past 16 years, and base this statement on many hundreds of field hours of observations), and the shrubs are not 8 feet tall and continuous in the high-intensity fire patches of the Rim fire, rather, shrubs are only about 2-3 feet tall in the great majority of the high-intensity fire patches in Rim fire, and occupy less than half of the surface area in most such areas. This, again, is based on many site visits and surveys by me in these patches in the Rim fire in 2015 and 2016. Nor is it accurate that conifers do not naturally regenerate in areas of high shrub cover; in fact, my research finds that they often grow under, and through, the cover of shrubs, protected from too much baking sunlight, as well as herbivory. The scoping letter does not point to any scientific sources finding that shrubs preclude natural tree regeneration.

While the proposed timing of planting during the spring season might be best for the survival of planted trees, this could also occur a year from now after the Forest Service collects the necessary data for its analysis. Instead, a premature planting before adequate data about natural regeneration could result in a failure to meet the plan's strategy for heterogeneity and diversity, whereas waiting just one season, until the spring of 2017, would make it possible to meet the plan's requirements. Waiting another season may also make planting unnecessary in many areas now proposed for planting, thereby reducing taxpayer costs while promoting diversity and heterogeneity.

Standards and Guidelines

5. Plant all regeneration areas requiring reforestation except where natural seeding is prescribed. Regeneration by natural seeding will be applied primarily in the true fir type.

6. Both natural and artificial regeneration shall be used as appropriate.
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10. In order to maintain forest diversity, particularly within the mixed conifer forest type, reforestation and timber stand improvement prescriptions shall generally emulate desired species composition. Variation from this guideline will be the exception and will be discussed in an environmental document.
* * *

20. Continue to plant a modest mix (5-10 percent) of sugar pine along with other mixed conifer species. This may mean collecting seed from non-tested trees in order to maintain a sugar pine seedbank. With resistant stock this percentage could be increased.

Monument Plan, pp. 82-84.

In other words, planting is allowed, except where natural regeneration can occur, as is appropriate, which again infers a site-specific analysis based on actual data about regeneration, as stated in the plan's strategy section. Moreover, tree species diversity must be maintained in the mixed conifer forest types, unless there is some reason for an exception, and planting must

include a mix of tree species, including oak, which only suggests about 5-10 % of sugar pine, although this can be increased if seeds come for stock that has been tested for disease resistance.

While the Monument Plan standards permit planting, in some limited circumstances, planting is not yet appropriate since it is too early to determine whether planting is necessary, as discussed above, because natural regeneration can, and likely will, occur in the many areas proposed for planning in the project area.

Furthermore, the proposal to plant only sugar and ponderosa pines in mixed conifer forest sites will not ensure that the standard for diversity will be met. The combination of Standards 10 and 20 requires that “reforestation...shall generally emulate desired species composition” using “sugar pines along with other conifer species.” The mix of conifer types in the area proposed for planting must be documented, and other tree species based on that data, in addition to sugar and ponderosa pines, must be included for planting. But first, this should not occur until next season after the Forest Service determines whether natural regeneration is adequate based on site-specific data and analysis.

In sum, the Project, as proposed for the 2016 season, fails to be consistent with the Monument Plan’s tree species diversity and heterogeneity requirements due to the lack of site-specific data and analysis, and does not meet the Monument Plan standards for planting a diverse mix of mixed conifer species as appropriate for the area.

Finally, the proposal also incorrectly assumes that planting is needed ostensibly to facilitate future habitat connectivity for Pacific fishers. This is incorrect, and ignores the fact that I have found, in Hanson (2013) and Hanson (2015), that Pacific fishers actively use even interior areas of large high-intensity fire patches for foraging—especially females—provided that these areas were dense, mature/old forest before the fire, and have not been logged after the fire (see attached). In other words, dense, old forest provides not only suitable habitat, but also connectivity, both in its unburned and post-fire states.

Sincerely,

Chad Hanson, Ph.D., Director and Staff Ecologist
John Muir Project

and

Rene Voss, Attorney
On behalf of Sequoia ForestKeeper