Sierra Forest Legacy

Protecting Sierra Nevada Forests and Communities

August 31, 2015

California Air Resources Board
Attn: Mr. Michael Tollstrup
PO Box 2815
Sacramento, CA 95812

RE: Comment Letter on Climate Change Pillar Symposium on Natural and Working Lands

Sierra Forest Legacy is a coalition of over 80 conservation organizations started in 1996 with a focus on science-based management of national forests lands in the Sierra Nevada.
First, we sincerely appreciate all the work that has gone into AB32 implementation, the Forest Carbon Action Plan, the Short-Term Climate Pollutant planning effort and the Greenhouse Gas Reduction Fund.

One concern that we share with our coalition partners and with the Forest Service and academic research community is the ability of land managers to utilize the key ecological disturbance processes (natural ignitions and prescribed fire) for multiple natural resource benefits. These benefits include **increased forest resilience in a changing climate, increased forest carbon stability, and public health benefits related to lower wildfire emissions:**

- A resilient forest can "accept" natural disturbances and remain relatively unchanged and recognizable as a particular forest type, over time;
- Carbon stability represents the equilibrium reached during longer-term restoration efforts in the ongoing fire cycle of carbon sequestration and emissions in a fire-adapted ecosystem such as the Sierra Nevada; and
- Public health benefits are realized when prescribed fire is used, and managers are able to "choose" dispersion patterns, and emission output level, rather than letting uncharacteristic wildfire "choose" the timing of these mega-fire events for us.

California is a strongly fire-associated and fire-adapted landscape. In the early 1800's the fire resilient landscapes of California were burning 1.8 million ha (4.45 million acres) annually (Stephens et al. 2007[1]). The level of natural fire is the natural force we are vainly trying to suppress. It is critical to understand the ecological role and importance of fire in these strongly fire adapted environments. The current science strongly suggests a key tool to limit the extent and intensity of uncharacteristic fire is to use fire more aggressively as a resource management tool. In the past, it was fire that limited fire extent and severity in the low- and mid-elevation forests of the Sierra Nevada. California's diverse vegetation types have evolved with much more frequent fire (e.g., mean fire return interval 8-12 years in Sierra Nevada mixed conifer forests). Today, with increasing forest fuel build-up and aggressive fire suppression, fires are larger and impossible to control under extreme weather conditions**.** The King Fire and Rim Fire provide

[1] Stephens, S.L., R.E. Martin, and N.E. Clinton. 2007. Prehistoric fire area and emissions from California's forests, woodlands, shrublands and grasslands. *Forest Ecology and Management.* 251:205-216.

examples of the new "megafires" that will continue to persist in our forests if we continue with current forest management practices of fire exclusion and suppression.

Part of forest planning and implementation of restoration efforts on public land is the use of prescribed fire (and natural ignitions) along with mechanical treatments to limit uncharacteristic wildfires. However, as noted by one of the speakers at the webinar (Nick Goulette), more than two-thirds of the federal lands in California cannot be mechanically thinned largely due to steep slopes and the remote nature of the landscape to existing roads. In addition, increased use of prescribed fire is necessary to reduce the occurrence of large-scale, high-severity "megafires," which often burn uncharacteristically outside the historic scale of severity and intensity for these forest types. While some high-severity fire is normal in a low-mixed severity fire system such as the Sierra Nevada, we are seeing an increasing trend of larger-scale, high severity-dominated fires which can be attributed to three critical factors: (1) fire suppression or fire exclusion, (2) climate warming and extended fire seasons making it more critical that fire use be significantly expanded to increase forest resilience, and (3) past management (over a century and a half of logging large, fire resilient old growth trees in the Sierra Nevada). Even today when scientists compare numbers of large trees >24 diameter from the 1930s (Wieslander Vegetation Type Map data) to today's forest structure (Forest Inventory Analysis) there remains a significant deficit (41-60%) in large trees across most elevations and latitudes in the Sierra Nevada Bioregion (Dolanc et al. 2014).[2] These past and on-going actions continue to negatively burden societal efforts to stabilize forest carbon and reduce CO_2 emissions in the short and longer term.

We cannot simply log our way to resilience and carbon stability in the Sierra Nevada. In a recent research paper published in the Journal of Forestry (North et al. 2015[3]) the author's report that approximately 10.7 million acres of national forest ownership in the Sierra Nevada in California contain roughly 58 percent productive forest land, with 25 percent of those acres available for mechanical treatment. In other words, if we can only restore 25 percent of the Sierra Nevada using mechanical treatments which then need fire as a follow-up treatment to maintain lower fuels benefits, the other 75 percent will either be "managed" by unplanned and insuppressible wildfire or the thoughtful, science-based use of natural ignitions and prescribed fire. Further, we must also consider the ramifications of the thousands of acres of homogenous tree plantations in the Sierra Nevada, which are prone to high-severity fires.[4] Twenty-three thousand acres of fire prone plantations burned in the King Fire.
http://www.capradio.org/articles/2015/08/04/timber-plantations-can-make-california-wildfires-worse/

In conclusion—the strategies discussed at the Symposium show positive movement toward reducing GHG emissions and identifying ways to adapt to the impacts of climate change. However, it is critical to re-think the key role of prescribed fire and use of natural ignitions for multiple resource benefits which support ecological resilience, carbon stability, and minimize impacts to public health.

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[2] Dolanc, C.R., Safford, H.D., Thorne, J.H., Dobrowski, S.Z. 2014. Changing forest structure across the landscape of the Sierra Nevada, CA, USA, since the 1930s. Ecosphere 5(8):101.

[3] North, Malcolm; Brough, April; Long, Jonathan; Collins, Brandon; Bowden, Phil; Yasuda, Don; Miller, Jay; Sugihara, Neil. Constraints on Mechanized Treatment Significantly Limit Mechanical Fuels Reduction Extent in the Sierra Nevada. *Journal of Forestry.* Volume 113, Number 1, January 2015, pp. 40-48(9).

[4] Capitol Public Radio interview regarding the King Fire August 4, 2015

Sincerely,

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