Sierra Forest Legacy
Protecting Sierra Nevada Forests and Communities

May 26, 2016

Sent via internet to: http://www.arb.ca.gov/lispub/comm/bclist.php

Clerk of the Board
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Comments on Proposed Strategy and Draft EA for addressing Short-lived Climate Pollutants in California.

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-lived Climate Pollutant planning effort and the Greenhouse Gas Reduction Fund. We agree with ARB that the issue of wildfire and fire use in forest management is complicated and we appreciate the ARB's sensitivity to the inherent complexity of this issue pertaining to black carbon and smoke emissions due to the nature of living in a strongly fire adapted landscape (most of California) inhabited by 39 million people.

Sierra Forest Legacy staff attended the SLCP scoping session focused on the concept paper and the Short-lived Climate Pollutant Reduction Strategy draft plan workshop in Sacramento at CAL EPA on 10-13-15. We also attended and commented at the public workshop on the Short-lived Climate Pollutants on April 26, 2016. Our past letters (8-31-15; 10-30-15) and public comments are hereby incorporated in this comment letter on the Proposed Strategy and Draft EA. Sierra Forest Legacy is limiting our comments on the section of the Proposed Strategy related to black carbon emissions from prescribed fire and wildfire in California (Pages 48-57).

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 benefits. The use of natural or planned ignitions is fundamentally tied to specific landscapes, their fire regimes and fire frequencies, in other words, natural ecosystem function. These benefits include increased forest resilience in a changing climate, increased forest carbon stability, and public health benefits related to lower wildfire emissions: Key points include:

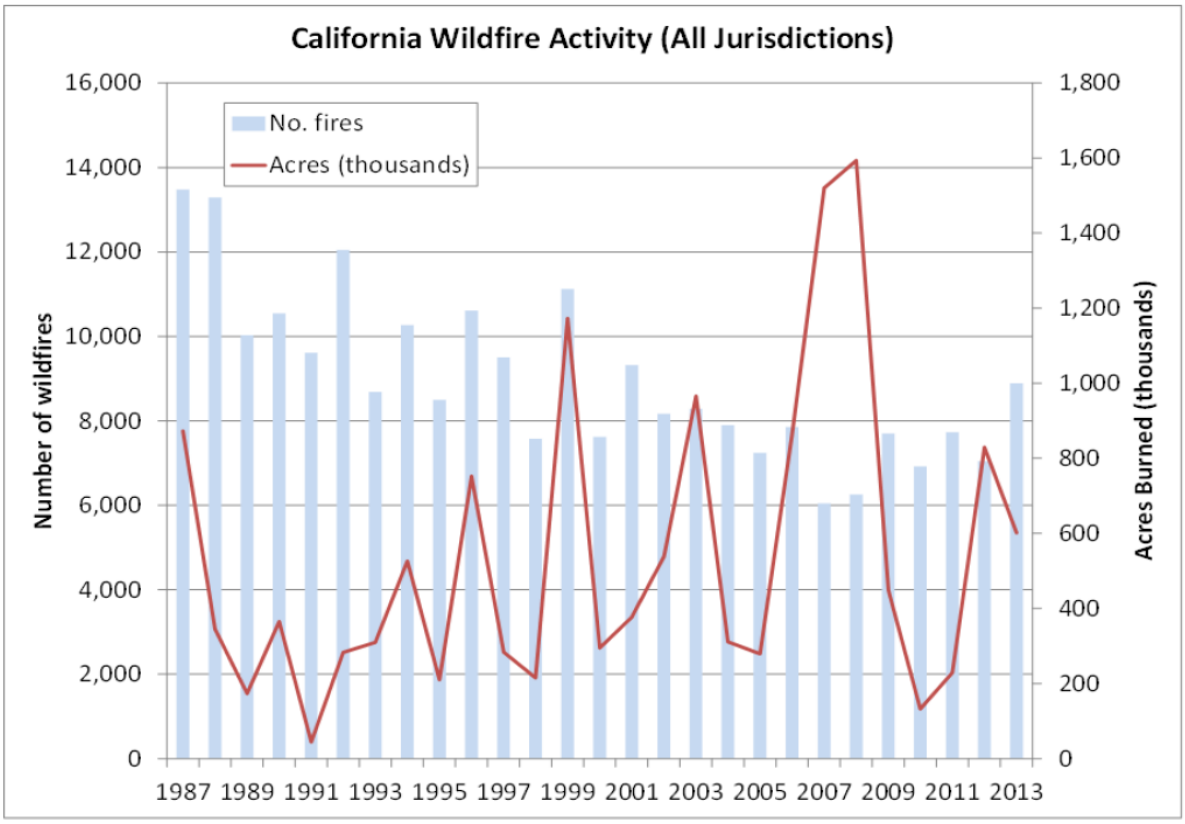
- A resilient forest can "accept" natural disturbances and remain relatively unchanged and recognizable as a particular forest type, over time;

- 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.

Specific Comments

I. Need to Improve the Characterization of Wildfire and Black Carbon Accounting.

Figure 4: Wildfire Activity in California.[90]



California's black carbon inventory uses the 10-year average from 2001-2011 of PM2.5 emissions from wildfire to represent average conditions and avoid large year-to-year variations in the inventory. Based on these methods, a typical recent wildfire year would account for two-thirds of the State's black carbon emissions in 2013 (Figure 5). The frequency of large fire events and the associated emissions will likely increase in the future, due to climate change, heavy fuel loading, historic fire suppression practices, and development in forested areas.[91,92]

[90] http://calfire.ca.gov/communications/downloads/fact_sheets/AllAgenciesAcres&Fires.pdf

The approach identified in **Figure 4: Wildfire Activity in California** (above) mischaracterizes the black carbon inventory in several ways. First, and most important, the graph in Figure 4 fails to identify an ecological baseline of black carbon as a part of natural ecosystem function in California's various vegetation types. ARB should not rely on the simple metrics like number of fires and acres burned but instead should provide an ecologically accurate estimate of fire and black carbon that distinguishes ecologically beneficial acres of fire from fire in California that is uncharacteristic of proper ecosystem function. The ARB should use the best available scientific information (BASI) to identify the fire regimes, fire frequency and fires that are within the Natural Range of Variation (NRV) and fires that are outside that range and then build a data set of the level of uncharacteristic fire to which you would attribute a climate negative.

Second, due to a century of fire exclusion and suppression the ecosystems of California are burdened by a level of fire return interval departure (FRID) that clearly point to a serious fire deficit in much of the California landscape. While the evening news focus tends to be on the spectacular and damaging fire, Californians rarely see or hear about the need for fire in California's diverse ecosystems. For example: an increase in wildfire and prescribed fire acres would be very positive for longer term forest resilience and forest carbon stability. Fires which are outside the NRV, on the other hand, can destablize forest carbon. Therefore, a graph such as Figure 4 that relies on a simple characterization of total areas or number of fires to discuss the California Black Carbon Inventory, but fails to dicuss both the nature (severity, veg type, fire regime) of these fires and the need for fire on significant portions of the landscape is misleading, and does not conform to a commitment to sound science or CEQA's requirement for detailed information that is needed to make an informed decision.

Third, p.49 suggest large fire events and associated emissions "will likely increase in the future" due to climate change, heavy fuel loading, fire supression practices and development in forested areas. This statement feels like passive resignation when, in fact, the SLCP strategy should be calling out for:

- Using fire to limit heavy fuel loading across the landscale. Understanding that only 25% of the Forest Service landscape is accessable to mechanical treatments (North et al. 2015) and that fire with appropriate mechanical treatments, that target ladder fuels to break fuel and fire continuity with larger trees, is exactly the right thing to support with state policy and state funding.
- Relaxing fire supression efforts in wildlands when there is little risk to people and when there a high degree of confidence within the FLMs and state fire cadre commuity that managed ignition use is the right choice, judged event by event.
- Limit new development in fire prone landscapes with high and very high fire hazard ratings. County development approvals should contain a state stipulation that the majority of fire-fighting costs will be born by the counties making the new approval. Cal Fire will have its hands full protecting life and property with the current level of development in at-risk communities.
- Tree mortality issue discussed on p-51 and elsewhere but the Strategy fails to state that fire supression and exclusion of fire is the root of these increasingly larger landcapes of dead trees.

Finally, once the level of black carbon is identified that is attributable to "uncharacteristic fire" then a scientifically accurate discussion about mitigation of fire effects that are outside of NRV

should begin. The key mitigation effort should include significant increases in fire use and should be careful not to malign managed natural ignitions that are used for resource benefit. Absent major increases in fire use (North et al. 2012) and given the valid constraints on mechanical treatments (North et al, 2015) forest carbon stability in California is unlikely.

II. The Focus of GHG Funding and other revenue sources

GHG and other funding should support true sustainable measures of resource management including, extending increased fire use throughout California and support a level of biomass wood utilization that is ecologically-scaled for each forested landscape and which should be designed for combined heat and power orientation or other new uses like bio-char. These plants should be built with state-of-the-art equipment (BACT) and focused on providing community-based power. Finally, as we mentioned at the recent public hearing for the SLCP Strategy, GHG funding should be primarily focused on the treatment of surface and ladder fuels which are by far the greatest contributor to fire behavior (80-90% contribution to fire behavior). Breaking the surface and ladder fuel connection to larger, over-story tree crowns is costly but the most effect work to be done. This focus solves two problems by removing the fire hazard and removing the generally uncharacteristic smaller tree densities that relate to climate/water stress and tree mortality.

III. SLCP EA Comments

The EA (p. 4-5) fails to consider the use of natural ignitions to increase the pace and scale of forest restoration treatments. The use of managed fire is a major tool for federal land managers (FLMs) and should not be arbitrarily excluded from the discussion of fire mitigation tools solely on the basis that state agencies are currently not allowed the beneficial use of managed natural ignitions. For the past 20 years fire scientists in California and throughout the West have been calling out for increased use of wildfire for multiple resource benefits. Several of the authors listed below (Hurteau et al. 2014; Hessberg et al. 2016, in press; Meyers 2015; Marlon et al. 2014; North et al. 2012; North et al. 2015 in *Science;*Parks et al. 2016; and Stephens et al. 2007 plus several score of fire science papers call out for increased fire use (prescribed and natural ignitions) so it would be legally inadequate not to address and analyze this issue as part of the environmental review. Increased fire use is fundamentally tied to forest resilience, carbon stability and to lowered emissions by preventing mega-fires in the future.

The EA fails to consider the environmental consequences of barriers to increased burning. While we are making collaborative progress in our Fire MOU Partnership with Cal Fire and others, smoke regulation and the nexus with ecologically relevant fire use is yet to be resolved. Ecologically relevant fire use (fire need) in California should be fully disclosed using the BASI and thresholds set for fire use to judge progress on lowering SLCPs, especially large mega-fires. The issue of understanding and disclosing fire regime and fire frequency in California's vegetation is critical to a sound environmental analysis and critical to informing decision-makers and the public with an accurate and science-based perspective.

Finally, I understand the $140 million in the Governor's budget to support Cal Fire's forest health and resiliency program (SLCP Strategy, p. 54) did not fair well in the California Senate this week. This fact suggest the EA does not have a stable funding structure to analyze emissions reductions or to pursue many necessary aspects (including use of woody biomass) of the SLCP Strategy. Stability in this area is critical to a valid CEQA analysis.

Thank you for this opportunity to comment.

Sincerely,

Craig Thomas, Conservation Director
Sierra Forest Legacy
P.O. Box 244
Garden Valley, CA 95633
craig@sierraforestlegacy.org
(916) 708-9409

References

Hessburg, P.F., Spies, T.A., Perry, D.A., Skinner, C.N., Taylor, A. H., Brown, P.M., Stephens, S.l., Larson, A.J., Churchill, D.J., Povak, N. A., Singleton, P.H., McComb, B., Zielinski, W.J., Collins, B.M., Salter, R. B., Keane, J.J., Franklin, J.F., Riegel, G. 2016. Tamm Review: Management of mixed-severity fire regime forests in Oregon, Washington, and Northern California. *Forest Ecology and Management 2016 (in press).*

Hurteau, M.D., Westerling, A.L., Wiedinmyer, C., Bryant, B.P. 2014. Projected Effects of Climate and Development on California Wildfire Emissions through 2100. *Environ Sci. and Technol.* 48:2298-2304.

Meyer, M.D. 2015. Forest fire severity patterns of resource objective wildfire in the southern Sierra Nevada. *J. of Forestry 113(1):49-56.*

Marlon, J.R., Bartlein, P.J., Gavin, D.G., Long, C.J., Anderson. R.S., Briles, C.E., Brown, K.J., Colombaroli, D., Hallett, D.J., Power, M.J., Scharf, E.A., Walsh, M.K. 2012. Long-term perspective on wildfires in the western USA. *PNAS online 2-14-14*

North, M., Collins, M., and Stephens, S. 2012. Using fire to increase the scale, benefits, and future maintenance of fuels treatments. *J. For.* 110(7):392–401.

North, M., A. Brough, J. Long, B. Collins, P. Bowden, D. Yasuda, J. Miller, and N. Sugihara. 2015. Constraints on mechanized treatment significantly limit mechanical fuels reduction extent in the Sierra Nevada. *J. Forestry* 113(1):40-48.

North, M.P., Stephens, S.L., Collins, B.M., Agee, J.K., Aplet, G., Franklin, J.F., Fule, P.Z. 2015. *Science* Insight Vol. 349:6254.

Parks, S.A., Miller, C., Abatzoglou, J.T., Holsinger, L.M., Parisien, M.A., Dobrowski, S.Z. 2016. How will climate change affect wildland fire severity in the western US? *Environ. Res. Lett*, 11 (035002).

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(3):205-216.