OBAMA-BIDEN TRANSITION PROJECT

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NRDC
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NATURAL RESOURCES DEFENSE COUNCIL

October 6, 2008

Secretary Mike Chrisman
Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

Re: Fuels management, thinning and GHG emissions

Dear Secretary Chrisman,

The confluence of a number of devastating forest fires and the development of the AB32 Scoping Plan have put the issue of the potential role of fuels management measures in California's climate policy front and center. Because of your agency's responsibilities for affected resources in California, we are writing to offer our perspective on this important issue.

As described below, we believe that thinning and other fuels management measures are unlikely to provide a significant climate benefit in terms of reduced net emissions of greenhouse gases. Fuels management projects immediately adjacent to structures are necessary for protection of life and property. Across the landscape, however, the evidence does not support giving them credit for bankable climate benefits.

More generally, we believe that California's forest sector climate strategy should emphasize measures that are well-established and noncontroversial such as afforestation, conservation, and urban forestry. The State's strategy should include an effort to resolve key scientific and management issues about fuels management, but should not rely on it to provide net climate benefits, until and unless the evidence shows that is defensible.

Fuels thinning within a few hundred feet of homes and other buildings is an exceptional case. We know that it helps structures survive wildfire, and that it can be maintained over time without additional burning and the associated carbon emissions. NRDC's work with former California State Fire Marshall Ron Coleman details how this can be done, looking at a characteristic Sierra Nevada community.[i] Utilizing the necessary by-products of this thinning for energy production will normally provide real, additive climate benefits relative to burning in place to the extent that the bio-mass energy production displaces more fossil fuel than is used in transporting and processing the waste biomass.

Fuels management thinning more distant from communities and their built infrastructure presents a very different carbon picture. In the first place, this thinning is done in the hope of moving forests from infrequent severe fires back to frequent lower intensity ones.[ii] However, the little work that has been done comparing overall carbon emissions from long and short

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interval fire regimes suggests that total CO_2 emissions from several lighter burns exceeds what a single more intense one produces.[iii]

Second, thinning reduces standing biomass, and therefore carbon, in the forest. Over time, some grows back. But average carbon sequestered in a thinned forest is very likely to be much less than in an unthinned one.[iv] And third, because forest thinning is relatively remote, substantial carbon is emitted from thinning operations, and then from transporting and processing the associated biomass.

The upshot is that forest thinning away from communities has three carbon strikes against it. It likely increases fire emissions over time; it reduces sequestered carbon; and use of thinning by-products as a source of renewable fuels causes substantial fossil fuel emissions. To offer a net climate benefit, the energy produced would have to displace enough fossil fuel to more than offset these three negative effects.

The case for biomass sourcing from general forest thinning is further weakened by its speculative impact on future forest wildfire behavior. While thinning is widely believed to reduce subsequent fire intensity, the evidence so far is mixed at best. As Forest Service researchers reported in 2006, "information comparing fire behavior and fire effects on treated versus untreated forest stands following wildland fire remains largely anecdotal."[v] The only study we are aware of that systematically reviewed fire behavior on comparable thinned and unthinned stands in the Sierra Nevada found that, "[t]hinned areas predominantly burned at high severity, while unthinned areas burned predominantly at low and moderate severity."[vi]

This is a very complicated and important issue, and we strongly support the development of a science-based program to reduce catastrophic fire and its associated impacts.[vii] **The important point for purposes of the AB 32 Scoping Plan is that given current knowledge, thinning away from homes cannot be generally assumed to provide climate benefits, and in all events does not hold the key to community safety.** Considering it as a climate mitigation strategy, therefore, has to await future research. If we eventually learn how to use widespread thinning to reduce fire intensity reliably, AB 32 credit for the activity will only be justified if its harmful side effects on climate are outweighed by measureable benefits.[viii]

We look forward to discussing this issue further and appreciate the opportunity to engage in a dialogue with you and your staff.

Thank you again.

Sincerely,

Niel Lawrence

Peter Miller

Helen O'Shea

Sami Yassa

cc via e-mail: Mary Nichols, Chairman, CARB
James Goldstene, Executive Officer, CARB
Chuck Shulock, Chief, Office of Climate Change, CARB

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[i] See Amy Mall & Franz Matzner, 2007, Safe At Home, NRDC, NY, NY, online at www.nrdc.org/safeathome.

[ii] As a pre-eminent group of forest ecologists wrote to President Bush several years ago: "Whatever restoration measures are undertaken, preventing the re-emergence of fire problems will require a commitment to manage with fire rather than simply trying to exclude it in the future." Christensen, N, et al. 2002. Letter to President George W. Bush. Available online at: http://docs.nrdc.org/land/lan_07062801g.pdf.

[iii] See Matthew Hurteau & Malcolm North, 2008, Fuel treatment effects on tree-based forest carbon storage and emissions under modeled wildfire scenarios. Frontiers in Ecology and the Environment e-View. doi: 10.1890/080049. Hurteau and North modeled carbon impacts from various hypothetical thinning and fire regimes. Their Figure 1 projects that a single wildfire once in a hundred years in an unthinned Sierra Nevada mixed conifer forest would emit about 400 tons of carbon/hectare (scenario "a"). In a thinned forest with prescribed burns every 20 years (scenario "d"), total emissions from all fires would be around 500 tons/hectare. More generally, Hurteau and North find that in every case they analyzed, "prescribed-burn treatments [have] higher totals then their unburned, paired treatment." (p.3)

[iv] See id., Figure 1. Hurteau and North's non-thinning scenarios "a" and "b" both average over 350 tons C/ha over the 100-year analysis timeframe while the thinning scenarios "c" through "f" average at most 301 tons C/ha. (personal communication with M. Hurteau).

[v] Cram, D.S., T.T. Baker, and J.C. Boren. 2006. Wildland Fire Effects in Silviculturally Treated vs. Untreated Stands of New Mexico and Arizona. Research Paper RMRS-RP-55. Fort Collins, CO. U.S. Forest Service, Rocky Mountain Research Station. p. 1.

[vi] D.C. Odion. 2006. Fire Severity in mechanically thinned versus unthinned forests of the Sierra Nevada, California. In: Proceedings of the 3rd International Fire Ecology and Management Congress, November 13-17, 2006, San Diego, CA. Online at: www.emmps.wsu.edu/2006firecongressproceedings/Extended%20Abstracts%20PDf%20Files/Poster/hanson.pdf.

[vii] For a detailed discussion of this issue and the current state of empirical evidence bearing on it, see: Testimony Of Nathaniel Lawrence, Natural Resources Defense Council, On S. 2593, The Forest Landscape Restoration Act, Before The Committee On Energy And Natural Resources Of The United States Senate, On April 1, 2008, available online at: www.docs.nrdc.org/land/lan_08040101A.pdf.

[viii] Similarly, the use of thinnings for wood products could potentially reduce the net emissions to atmosphere. However, production of wood products incurs substantial emissions from harvest, transport, and processing losses, probably on the order of 40%. Moreover, the emissions from decomposition of discarded wood products are significant and have to be accounted for as well.