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September 14, 2015

Mike Miles, Chairman
Forest Practice Committee
State Board of Forestry and Fire Protection
P.O. Box 944246
Sacramento, CA 94244-2460

RE: Comments Regarding Greenhouse Gas Emissions Evaluation for Technical Rule Addendum No. 2 Draft Pleading

Dear Chairman Miles and Forest Practice Committee Members:

These comments are submitted on behalf of the Environmental Protection Information Center (EPIC) in response to the Board of Forestry and Fire Protection (Board) solicitation of input regarding the proposed rulemaking language contained in the August 25, 2015 version of Technical Rule Addendum No. 2 (TRA #2) pertaining to the evaluation of Greenhouse Gas Emissions. EPIC appreciates the opportunity to provide comments.

General Comments Regarding Technical Rule Addendum No. 2

At the outset, it must be noted that Technical Rule Addendum No. 2 contains no actual mandates or enforceable requirements. Thus, there is a general lack of meaningful measures and standards. In the context of analysis of potentially significant adverse impacts related to Greenhouse Gas Emissions, the proposed language in TRA #2 merely calls for RPFs to "*consider* the factors set forth herein…" There is a crucial need for the Board to build actual requirements and enforceable standards into the TRA #2 and cumulative impacts evaluation process. Lacking such requirements and standards, the suggestive evaluations set forth in TRA #2 amount to very little more than a paper exercise with little to no value insofar as actual protection of environmental values.

Greenhouse Gas Emissions and Cumulative Effects

The presumption built into the proposed rulemaking language for TRA #2 that "cumulative GHG impacts" only occur when "the effects of two or more activities ... combine to produce a significant increase in GHG emissions" is invalid. Current science establishes that

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current levels of Greenhouse Gas Emissions (GHG) already exceed safe levels, are adverse and are impacting our long-term continued survival. Given the magnitude of the existing problem, it is not legitimate to try and trivialize project impacts by focusing only on the relative amount of GHG emissions when compared to the existing problem.

This approach was rejected long ago in *Kings County Farm Bureau v. City of Hanford,* when the court held that the "significance of an activity depends on the setting." 221 Cal.App.3d 690, 718

> "The EIR's analysis uses the magnitude of the current ozone problem in the air basin in order to trivialize the project's impact. In simple terms, the EIR reasons the air is already bad, so even though emissions from the project will make it worse, the impact is insignificant. . . The significance of an activity depends upon the setting. (CEQA Guidelines, 14 CCR § 15064, subd. (b).) The relevant question to be addressed in the EIR is not the relative amount of precursors emitted by the project when compared with preexisting emissions, but whether any additional amount of precursor emissions should be considered significant in light of the serious nature of the ozone problems in this air basin."

Thus, proposing to limit the analysis of GHG emissions to the individual project area (defined as "logging area plus the haul route") is an invalid strategy for effective evaluation and adequate mitigation of GHG emissions related to logging plans in California. Any activity which has GHG emissions adds to the already adverse situation. The proposed rulemaking language for TRA #2 fails to acknowledge this state of reality, which is key to any consideration of cumulative impacts.

Greenhouse Gas Emissions from Forestry and Global Climate Change

According to data contained in California Forest and Rangeland Greenhouse Gas Inventory Development—Final Report (Battles et al. 2014), anthropogenic activities have contributed significantly to increases in atmospheric Greenhouse Gases:

> Greenhouse gas (GHG) emissions from motor vehicles, power plants, deforestation, and other human activities have increased carbon dioxide (CO2) to its highest concentrations in the atmosphere in 800,000 years. As a result of these emissions, global average surface temperature have increased (mean ± 90% CI) by 0.9 ± 0.3 ºC from 1901 to 2012. These changes in climate have in turn substantially impacted species and ecosystems in the United States and around the world. (Battles et al. 2014; internal citations omitted).

Deforestation has been ranked as the second-most contributor to global GHG emissions behind fossil fuel combustion. In California today, our forests are storing less carbon than in the past. According to Battles et al. 2014, between 2001 and 2008, the total carbon stored in the forests and rangelands of California decreased from 2,600 million metric tons of carbon (MMTC = 106 MgC) to 2,500 MMTC. Aboveground live carbon decreased ~2% and total carbon decreased ~4%. The majority of this decline in carbon storage (61 %) can be attributed to a loss in carbon density, which is largely related to tree-size. According to McIntyre et al. (2015), tree density in forested regions in California increased by 30 % between the 1930's and 2000's, whereas forest biomass has declined, as evidenced by a 19 % reduction in basal area. (McIntyre et al. 2015). According to McIntyre, these changes reflect a demographic change in forest

structure, i.e., the number of large trees have declined, whereas the number trees of a smaller size have increased. (*Ibid*.).

Forest management activities in California have traditionally focused on cutting and removal of the largest, oldest trees due to the value and quality of the wood products these trees produce. Nowhere is this trend more evident than in our backyards, the coastal redwood forest. Pre-European settlement, the original coast redwoods covered an estimated 2 million acres, and was filled with trees up to 25 feet wide, 300 feet tall, and up to 2,000 years-old. Today, only approximately 5 % of the original old-growth coastal redwood forest remains, while 1,256,000 acres, or 77 % of the range of the coast redwoods is privately owned and managed, largely for timber production. (Save the Redwoods League 2015). The legacy of historic and contemporary forest management over the last 150 years in the coastal redwood region has left a landscape with far fewer large, old trees than were historically extant, and has replaced them, by and large, with young, small, densely-packed forest stands as described in McIntyre (2015). As described herein, these more-numerous smaller trees do not result in the same amount of biomass available in a forested area as do large, fewer larger, older trees. What's more, according to McIntyre et al. (2015), reduced forest biomass resulting from less large, old trees also has the additive consequence of reduced above-ground carbon storage. (McIntyre 2015).

The loss of these large, old trees from our forested landscapes in California is having a significant adverse impact on forest ecology, species' range, movement, and population viability, and on the ability of our forests to sequester carbon. Any meaningful assessment of cumulative impacts related to GHG Emissions must necessarily include an evaluation of the influence of harvesting of large, old trees and the implications of such.

Comments Specific to Proposed Rulemaking for GHG Evaluation in TRA #2

At this stage, we present three points of discussion pertaining to the proposed rulemaking language for GHG evaluation as articulated in the August 25, 2015 version of the TRA #2 pleading. These are: 1) the proposed language fails to take into account all the possible sources of GHG emissions attributable to forestry operations; 2) the analysis area articulated for evaluation of GHG emissions is far too limited; and 3) the reliance on "fuels treatments" as a feasible mitigation measures for GHG effects is not grounded in science or reality.

1. ***Proposed Rulemaking Fails to Account for all Possible Sources of GHG Emissions resulting from Forestry Activities***

The proposed rulemaking language contained in TRA #2 for evaluation of cumulative GHG effects resulting from forest management fails to take into account the myriad of sources of GHG emissions likely to occur as a result of these activities. In the draft pleading, in the Appendix to Technical Rule Addendum No. 2, Item (G), on pages 25-26, occurs a list of five (5) activities associated with timber management that may result in GHG emissions and result in a significant adverse cumulative effect. This list is, at best, incomplete.

The proposed language fails to take into account several key sources of GHG emissions resulting from forest management activities. These include, but certainly are not limited to: tree cutting and removal, log hauling, log milling and manufacturing, transportation of finished wood products to retail outlets, type, location, and method of post-use disposal of finished wood products, loss of above-ground carbon storage in decomposing biomass on the forest floor, and

of course, soil disturbance related to harvesting and removal of trees, and subsequent site preparation activities.

The built-in presumption that harvested and manufactured forest products continue to sequester carbon dioxide does not appear to hold any water. Harmon et al. (1994) studied this question utilizing historic data and modeling in Washington and Oregon. The results of Harmon et al. (1994) indicate that despite the huge mass of carbon harvested historically in those two states, only approximately 23 % is still currently sequestered in manufactured wood products. Of this amount currently stored, Harmon et al. (1994) found that the majority of the stored carbon was actually in the form of wood products decomposing in landfills after disposal.

Thus, the proposed language contained in TRA #2 fails on several accounts. First, it fails to actually consider all potential sources of GHG emissions resulting from forestry operations, and second, it fails by its unfounded reliance on the assumption that manufactured wood products will continue to store harvested carbon into the future. The science simply does not bear this out.

2. ***The Analysis Area for Evaluation of GHG Impacts is Too Small***

The Assessment Area for GHG impacts articulated in the proposed rulemaking (Appendix to Technical Rule Addendum No. 2, Section (G), Line 4, page 26 of pleading) is simply too small. Here, the proposed rulemaking articulates an Assessment Area for GHG impacts as the "logging area" and the "haul route." This area is inconsistent with the Assessment Area for most other resources of concern articulated in TRA #2. For example, for the analysis of watershed resources, the Assessment Area is the Planning Watershed scale. For biological resources, the Assessment Area is generally the planning watershed, plus a 0.25-mile additional assessment. There seems to be no basis in science or otherwise for the development of a GHG Assessment Area at the "logging area" scale. This scale, at a minimum, will fail to capture past, current, and reasonably foreseeable future projects which may combine with, or exacerbate, the GHG impacts of a given proposed project. Given that the TRA #2 language currently fails to consider all the potential sources of GHG emission from a given discrete project, it is simply inadequate to then rely on a small assessment area such as is proposed here.

3. ***Reliance on so-called "Fuels Treatments" for Fire Prevention as Mitigation is Baseless***

The proposed TRA #2 language at page 25, line 18, identifies wildfire risk reduction through fuels treatments as a possible feasible mitigation measure to offset GHG emissions resulting from forest management activities. There are several reasons why the proposition that wildfire risk reduction via fuels treatments does not actually pencil out from a carbon balance perspective.

First, there is the obvious factor that so-called "fuel treatments" are most commonly accomplished using silvicutural methods, i.e. more logging, which, as articulated above, will result in releases of carbon into the atmosphere. Campbell et al. (2011) studied this question, and found high levels of GHG (carbon) release associated with "fuel treatment" activities. Secondly, Campbell et al. (2011) document only modest differences in combustive loss of GHG in high and low-severity fire areas where "fuels treatments" is meant to influence this factor. Finally, Campbell et al. (2011) document a low likelihood that many forested areas treated for "fuels

reduction" will actually be exposed to wildfire. Thus, any potential beneficial effects of "fuels treatments" for wildfire hazard reduction are speculative at best.

On the other hand, the proposed rulemaking language for TRA #2 does not require consideration of potential increases in fire risk that may result from a given proposed silvicultural system or logging activity. As noted elsewhere in these comments, the proposed language in TRA #2 fails to account for the impacts of activities that may actually occur under a proposed THP or other project. Clearly, the silvicultural system to be applied can influence both GHG emissions as well as wildfire risk. The proposed language contained in TRA #2 fails to account for these factors.

Conclusion

The proposed language for evaluation of GHG impacts currently contained in the August 25th draft of TRA #2 fails on several fronts, as articulated herein. The fact remains that cumulative impacts resulting from GHG emissions related to forest management activities in California already exist, and that the limited evaluation suggested in the current version of TRA #2 will not likely capture all the new sources of GHG emissions that can result from further logging. EPIC recommends that the Forest Practice Committee revisit the language of TRA #2 pertaining to GHG to build in a more uniform and required evaluation criteria, and a more realistic set of factors which must be used to evaluate the actual impacts of logging operations on GHG emissions.

Please do not hesitate to contact me should there be any questions.

Sincerely,

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Citations

Battles, J.H. California Forest and Rangeland Greenhouse Gas Inventory Development—Final Report. Prepared for California Air Resources Board. January 30, 2014.

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Save the Redwoods League. 2015. http://www.savetheredwoods.org/