March 24, 2022

Shelby Livingston, Undersecretary
Matthew Bottill, Branch Chief
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Dear Ms. Livingston and Mr. Botill,

As previously noted in comments to earlier ARB presentations on the forest component of the NWL (Natural and Working Lands), ARB staff and contractors seem to be drawing conclusions from their data points that are only on reserved forest lands with no sustainable forest management. While reserved forest area is key to the 30*30 strategic goals, they are not necessarily the most effective climate mitigation strategy when consumption of energy and products by society is also considered. Since the names of the CARB staff and their chosen contractors are never mentioned anywhere in the July 2021, December 2021 or March 2022 public presentations, it is impossible to understand the claim on slide 28 that purports to "Compare CARB modeling with independent modeling' where both trends show declining stocks. It would appear that the most recent presented CARB data and the supposed independent data have the same authors. If the CARB authors had looked at the state-funded assessment of forest carbon stocks commissioned and published by the California Board of Forestry and Fire Protection (Christensen et al. 2021), they would have seen that the only management regime that matched that CARB pattern of declining carbon stocks is 'USDA FS Reserved' lands where no sustainable harvesting (and legally required reforestation) occurs.

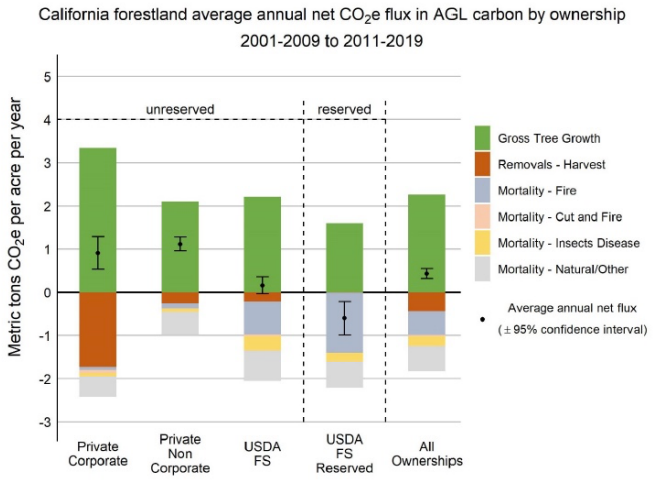

Figure 4.4a. Average annual net CO2e flux per acre in aboveground live tree carbon pool from growth, mortality and harvest by ownership and land status of California's forests (MT CO2e/acre/year), 2001-2009 to 2011-2019. The "all ownerships" category includes all other state and federal agencies managing fewer overall acres of forest land in California. The error bars represent the 95% confidence interval of net change. Figure derived from Appendix 2, Table B12.

From Christensen et al. 2021

In the future, it would be valuable for ARB staff and their consultants to look at truly independent (and more accurate) estimates of forest carbon stocks. This would be doubly valuable for ARB given the numerous high profile published articles on ARB's 'ghost credits' in ARB's forest offset portfolio. If ARB actually believes that forest carbon stocks are declining, it is confusing that forest offsets for reserve-like forest units make up that vast majority of offsets they approve.

While slide 27 claims to show 'Results-Forests: Above and Below Ground Biomass and Harvested Wood Product Carbon', there is absolutely no information on how carbon will be tracked in harvested wood – especially if it is used for energy that replaces fossil fuels. The E3 presentation that preceded the CARB NWL presentation did mention the future importance of biomass-based Sustainable Aviation Fuel (SAF) as a key component of California's project low emission strategy. In addition, the State of California is actively promoting the expansion of mass timber buildings to replace the construction of new emission-intensive cement-based large buildings. However, ARB's seeming focus only on terrestrial carbon in their NWL accounting neglects the climate-benefiting potential of harvested carbon used for fuel and buildings.

It is unclear why ARB, its contractors, and the other listed supporting agencies continue to use an accounting system for forests and forest products that is at odds with the accepted and recently published IPCC guidelines. ARB accounting of forests and forest products simply does not align with US EPA accounting that is done to current IPCC standards. IPCC standards require tracking forest-based carbon through the whole supply chain (forest, initial use, eventual landfill or burning) and not just in-forest carbon stocks. This goes against the IPCC reporting standard that the US EPA (U.S. Environmental Protection Agency 2020) meets in their annual reports.

Recent IPCC documentation is quite clear on the problem of forest carbon sink saturation as well as the benefits when carbon is transferred into harvested wood products. The following quote summarizes some key points.

"B 5 4 Sustainable forest management can maintain or enhance forest carbon stocks, and can maintain forest carbon sinks, including by transferring carbon to wood products, thus addressing the issue of sink saturation (high confidence). Where wood carbon is transferred to harvested wood products, these can store carbon over the long-term and can substitute for emissions-intensive materials reducing emissions in other sectors (high confidence). Where biomass is used for energy, e.g., as a mitigation strategy, the carbon is released back into the atmosphere more quickly (high confidence). (Figure SPM.3) {2.6.1, 2.7, 4.1.54.8.4, 6.4.1, Cross-Chapter Box 7 in Chapter 6} (p 21 in IPCC 2019).

Under IPCC accounting where the climate benefits of products are counted and assumed to be potentially increase with technological innovations and better prices (Hepburn et al. 2019, Smith P. et al. 2016, Smith P. et al. 2019), the potential climate benefits of more managed forests are even better. Recently published research for California provides a good estimate of

additional potential benefits from using more harvested carbon in building materials (Cabiyo et al. 2021). Utilizing these potential pathways toward more wood used in buildings (and therefore less emission producing cement and steel) would have added benefits of reduced overall emissions. It would also sync well with the very well documented higher levels of annual carbon sequestration in privately managed forests compared to the federal forests that have much higher carbon inventories on forests with similar site quality.

Basically, the IPCC measures forests like they measure coal plants – with annual emissions or reductions – rather with carbon stocks. Adding both wood products (and the substitution benefits that come with using more advanced technologies) and the well-known problem of carbon saturation (and potential major losses from the increasing wildfires we are experiencing) would significantly increase the policy relevance of this effort. ARB's scoping efforts would be improved if they used the more detailed forest carbon accounting publications produced annually by the California Board of Forestry and Fire Protection to meet the requirements of AB 1504.

Sincerely

/s/

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cc. Edith Hannigan, Executive Officer, California Board of Forestry and Fire Protection

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