



April 7, 2017

Members of the California Air Resources Board

Subject: Comments on January 20, 2017 Draft of the 2017 Climate Change Scoping Plan Update (submitted online)

Thank you for the opportunity to review and offer our perspective on the **2017 Draft of the 2017 Climate Change Scoping Plan Update** (January 20, 2017). As we stated in our comments on the 2030 Target Scoping Plan Update Concept Paper, we appreciate your commitment to integrating the forestry sector and natural environment into the state's GHG reduction strategies.

The forests of California are a powerful carbon storage asset, and play a critical role in the state's ability to meet its ambitious climate change goals by sequestering and storing more carbon. At the same time, investments in forest health provide important co-benefits including increased drinking water quality and yield, enhanced habitat for endangered species, access to spectacular recreational resources, and protection of vital economic drivers including tourism. However, without public investment in their further protection and restoration, forest conditions and associated ecosystem services will decline over time.

We request that the Draft Scoping Plan clearly prioritize natural landscape investments with a science-based framework to protect and restore ecosystems with the highest likelihood of carbon capture and storage. Specifically, we suggest the following:

- Prioritize protection and restoration of acres with the highest potential to store carbon for the long term by making clear the important role of California's redwood forests in solving climate change. Section B. Updated Climate Science Supports the Need for More Action notes the relevance of tropical forests, stating they are "central to solving climate change." However, recent scientific evidence shows that the coast redwood forest ecosystem continues to sequester carbon rapidly even as climate changes (Sillett et al. 2015), stores more carbon aboveground than any other forest on Earth (Van Pelt et al. 2016), and can store significantly more carbon if restored (Madej et al. 2013). We request that this updated data be included in this section of

the Draft Scoping Plan in order to better make the case for protecting and restoring California's carbon-sequestering powerhouse, the redwood forest.

- Prioritize investments in restoration implementation, not simply restoration plans. The “high-level objectives to reduce GHGs in the natural and working lands sector” should include the investigation and design of funding structures—traditional and innovative—to support restoration forestry, not only to maintain forests as net carbon sinks to but to reduce black carbon emissions from wildfires. Potential additional or supporting actions for the Natural, Working, and Agricultural Lands sector must include the investigation and establishment of sustainable funding sources for restoration forestry, as the Draft Scoping Plan does for the Waste Management sector and other sectors. Restoration forestry has high potential to significantly accelerate carbon sequestration in young and degraded forests. Research clearly shows that larger trees sequester carbon faster than younger trees (Sillett et al. 2010), so stimulating the growth of small trees now will produce higher carbon stocks faster and help the State achieve its GHG reduction goals sooner. There is urgency to increasing the pace of forest growth for carbon storage and for the numerous other benefits associated with forest restoration including expanding habitat for endangered species and improving water quality. We recommend that the Scoping Plan include policies to encourage restoration on private land and financing mechanisms to pay for restoration on the state's public lands. Within the land owned by the state and thus within direct state control, there is a critical need and opportunity to restore the coast redwood forest and increase carbon storage capacity. California State Parks owns more than 100,000 hectares of the coast redwood ecosystem and more than 70% of this forestland was once harvested and is in need of restoration.
- Prioritize the protection of forests to prevent conversion and loss of associated ecosystem carbon storage. There is urgency to protect redwood forests because of their high carbon sequestration potential, and high risk for conversion. More than 70% of the coast redwood ecosystem is privately owned and conversion threats from development, vineyards, and marijuana agriculture are increasing.

We would also like to reiterate our comments in response to the following question in the Scoping Plan Concept Paper: **For the forest sector, are we comfortable with policies that may result in some near-term carbon loss, but ultimately support more resilient and healthier forests in the longer timeframe?** We think that the state should pursue policies that will result in more resilience and healthy forests in the long-term. In the coast redwood and giant sequoia forests, there are phenomenal carbon storage opportunities that can only be realized through improved forest management techniques that by necessity lower carbon stocks temporarily. Here is

some more detailed information about the long-term carbon storage potential of giant sequoia and coast redwood:

- **Giant sequoia groves in the Sierra Nevada boast remarkable aboveground carbon stocks of more than 1,500 metric tons in live trees per hectare** (Robert Van Pelt, Redwoods and Climate Change Initiative). More than 80% of this carbon resides in giant sequoia wood and bark alone. Yet, decades of fire exclusion threaten the regeneration of giant sequoia and growth of the largest trees on Earth. In the absence of fire, dense stands of other conifers (primarily white fir) thicken beneath the canopy of ancient giant sequoia, increasing risk of crown fires and reducing giant sequoia access to water and nutrients through belowground competition. Mechanical thinning of sub-canopy trees or prescribed burning removes some forest carbon temporarily, but stimulates giant sequoia growth and seedling establishment which results in more vigorous and resilient forest stands (York et al. 2010; York et al. 2011).
- **Old-growth coast redwood forests in Northern California contain more than 2,000 metric tons of carbon per hectare** which is more than twice the carbon stocks found in other forests world-wide (Van Pelt et al. 2016). Individual large coast redwood trees can contain more than 200 metric tons of carbon per tree and sequester carbon faster than smaller trees (Sillett et al. 2015), but unfortunately more than 95% of the coast redwood range (600,000 hectares) has been cut at least once and most of the large redwoods are gone. Today young, dense stands of harvested coast redwood forest face impediments to recovery (e.g. stagnated growth from competition) that limit their ability to realize their carbon storage potential. Restoration forestry reduces tree competition and accelerates stand growth (Lindquist 2004; O'Hara et al. 2010; Oliver et al. 1994), setting carbon-limited young forests on a trajectory to more quickly sequester carbon and enhance habitat quality for numerous species. The ecological gains from such restoration forestry significantly outweighs the temporary carbon losses associated with its implementation.

We greatly appreciate the opportunity to provide comments on the Draft Scoping Plan, and to voice our support for robust policies and funding for forest protection and restoration as a critical strategy for reaching the state's ambitious 2030 GHG reduction goals.

Sincerely,



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