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November 21, 2016

Mary D. Nichols, Chair
Members of the Board
California Environmental Protection Agency
Air Resources Board
1001 I Street
Sacramento, CA 95814

**Re: Public Workshop on the 2030 Target Scoping Plan Update: GHG Policy Scenarios, Natural & Working Lands, and Public Health Analysis**

Dear Chair Nichols, Members of the Board, and staff,

Thank you for holding the public workshop on November 7th to discuss the 2030 Target Scoping Plan Update. Our comments primarily focus on natural and working lands portion of the workshop. There is broad consensus that natural and working lands are an essential part of meeting the state's climate goals for GHG mitigation as well as adaptation. Harnessing the carbon potential of natural and working lands in our climate policy also has synergistic benefits for rural employment[i], wildlife adaptation, and water security.

In regards to the 2030 Target Scoping Plan Update, we recommend that:

1. **The inventory employs a consistent timeframe across all sectors and differentiates between human and natural emissions.** A consistent timeframe, going back to at least 1990, for all natural and working lands would allow for comparison between different land types. This inventory should distinguish between anthropogenic and natural emissions, allowing for an appropriate amount of "baseline fire" on the landscape within historic emissions levels. Emissions from land conversion should also be included in the inventory.

2. **Clearly defined and enduring climate goals are established for California's landscapes.** Lands that synergistically advance sequestration, adaptation, and mitigation goals should be prioritized for protection. Enhanced forest management actions should achieve enduring gains, with the restoration of landscapes secured by binding commitments.

3. **Successful offsets continue to be part of the solution to harness market forces for carbon gains.**

4. **Options for maximizing mitigation benefits at a regional level are encouraged.**

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We appreciate your consideration of these suggestions and the progress that has already been made on the Scoping Plan Update.

**Adopt a Consistent Timeframe for Inventories Across All Sectors**
A good first step would be extending the inventories for natural and working lands back to 1990 as is done in other sectors. This should be a feasible goal for the Scoping Plan Update, as the US UNFCCC report used the 1990-2014 time period for natural working lands.[ii,iii] The current inventories reported by ARB, with forests from 2001-2010, croplands from 2007-2015, urban forests from 1995-2016, and soil carbon from 2001-2015, makes it difficult to synthesize information and compare across different landscapes.

It would be very helpful to have a better picture of the changes in the land base over time, that is consistent and comparable across various natural and working lands. Ideally, this inventory would stretch back until at least 1950 to reflect the historical changes in management practices, land use conversion, and fire regimes.

We also look forward to seeing more details on the methods used for the different landscapes. Consistent methods and common assumptions should be applied where possible across different land types. Extending the analysis to the landscapes not already represented (e.g., deserts) would also help form a clearer picture of the state's inventory. It is also crucial to separate out shrublands and forests in the inventory to differentiate between these very different land types for planning purposes, particularly given the potential differences in carbon storage.

**Differentiation Between Natural and Anthropogenic Forest-based Emissions**
On slide 16 of the ARB Natural and Working Lands inventory, wildland fire was depicted as the single largest source of emissions from natural lands, surpassing the combined total of all other sources of emissions. This graph implies that fire suppression would be a desirable way to reduce emissions, yet there is not a "no fire" alternative for California. Fire is a natural process and necessary for many ecological functions.

There is a broad scientific consensus that California's historic fire regimes were much more frequent than they are today.[iv,v,vi,vii,viii,ix,x,xi] The history of past management practices and fire suppression has in many cases resulted in overstocked, even-aged stands. There is a need to pay this "fire deficit" [xii] and use fire as a landscape tool to restore forests with larger, well-spaced trees, and a diversity of age classes and species.

The accounting for fire within the inventory could be adjusted to promote the restoration of fire in a sustainable way. Using a "fire baseline" to take into account the natural and expected levels of fire on the landscape would help differentiate between natural and anthropogenic sources of emissions. This ecological, historic baseline for fire emissions could encourage a more natural management of fire across all land ownerships and avoid perpetuating the era of fire suppression.

This would help strike a balance between the natural emissions from fire that fall within a historic range and targeting fire reduction efforts to avoid the most negative impacts of fire on our society.

**Emissions from Land Conversion Are Not Insignificant**

On the same slide 16 of natural stock-loss attribution, we were surprised to see nothing about lands lost to conversion. Between 2001 and 2011, California lost over 500,000 acres of natural land to development.[xiii] This represents a significant source of emissions – likely on the order of 10s of millions of tons of $CO_2$ – as well as lost future sequestration opportunities. Conversion should certainly be taken into account in the inventory, especially to create greater synergy with the central "protect" goal of the natural working lands platform.

**Focusing on the Protection of Natural Lands is Key**

We applaud the efforts to protect resilient natural lands as a cornerstone to meeting California's climate change goals. The state recognizes that we need to work at the landscape level to protect large, relativity intact habitats that will aid in climate change adaptation as well as mitigation. However, focusing on the front lines of conversion may not achieve this desired result as it results in a more scattered and piecemeal approach to land protection.

We need to match the tool to the desired outcome to protect large and relatively intact natural and working landscapes that provide the greatest benefits for climate change mitigation and adaptation. Therefore, we propose that the protection goal is framed, just like the goals for enhancement, in terms of acres of conserved natural and well-managed lands protected in perpetuity and managed for climate goals.

Framing the protection goal in terms of conservation rather than avoided loss also creates greater synergy with other aspects of the scoping plan as it takes time for restoration measures to achieve results. For instance, it can take as long as 50 to 60 years to achieve carbon benefits from fuel reduction treatments.[xiv] If the land is not protected for at least that time frame, then the emissions from fuels reduction may not be balanced by the anticipated long-term climate benefits, and the project could have a net negative impact. Instead, by nesting strategies under the "enhance" section with the protection of that land, it ensures that forests have the time they need to grow older trees and become resilient stores of carbon for the long-term.

While land use planning and market pressures can certainly shape landowner decisions and conversion rates, these are often short-term solutions subject to changing political and economic forces. If market incentives are to be used, the key to their success is certainty and verifiable climate benefits. Particularly with climate change, we need to set in place incentives that will endure for decades and generations to come.

Conservation easements provide an important, lasting, incentive for landowners to help achieve our climate goals by appropriately compensating the landowner for the

public benefits of avoided conversion and improved forest management. We believe that it would be effective – particularly in the long term – to directly secure the land base through conservation easements or other equally durable means.

**Enhanced Forest Management is Needed at Multiple Scales**
Building on existing well-stocked forests by establishing commitments to continue increasing carbon into the future represents one of the greatest opportunities to remove carbon dioxide from the atmosphere. Just as with a bank account, gaining the interest on a large principle (a well-stocked forest) generates far greater returns in the short term than reforestation, which is the equivalent of starting with an empty bank account. All of these activities are necessary, but actions that improve the future management of existing stocks will have the greatest impact by 2030 and 2050.

Scientists agree that more natural forests will be more resilient to climate change. For instance, increasing the species diversity, structural heterogeneity, and the number of age classes within a forest can all make it more resilient to climate change and other stressors. Improving resilience also involves ensuring a diversity of seral stages at the landscape scale that provide different habitats. Restoring managed natural fire on the landscape, where appropriate, can aid in creating a diversity of patches in the landscape and in promoting future fires of low or moderate severity. We recommend creating an integrated goal for restoring fire back on the landscape, with prescribed fire, fuels reduction, and managed natural fire presented as tools to achieve that goal.

**The Importance of Offsets as Part of the Solution**
It was concerning to hear that the post-2020 program might consider reducing the role that offsets play in meeting California's climate goals. California is positioned as a world-leader in this field. For instance, the well-established forest offset protocol now in use on over two million acres in 30 states.[xv] Assigning a monetary value to the carbon benefits of forests prompts landowners to let their forest stands grow older, reforest former forest lands, and protect lands from conversion to development. This has many benefits - in reducing the cost of program implementation, creating incentives for forest conservation, and providing many co-benefits. However, this successful program could be undermined by this suggestion as markets require certainty to be effective.

**Prioritizing local action does not always maximize benefits**
In the *Recommendations for Local Action* section of the workshop, the "recommended mitigation scheme priorities" prioritized those that were closest to the site of impact. While this prioritization has some merits, it may miss opportunities to optimize the benefits from mitigation activities. Recognizing that "good mitigation policy is good adaptation policy" and that vulnerable communities will be at the center of climate change impacts, it is crucial to maximize benefits from mitigation activities to achieve the goals set forth in SB 32.

The mitigation activity that produces the greatest climate and local benefits may not be local. Given that the costs of reducing one ton of GHG emissions can vary from $4 to $700[xvi], it might be worth looking beyond the local to achieve a greater impact for the same funds. Similarly, as air and water flow over community boundaries, the most effective solutions to reducing the pollution in the community may be by addressing point sources in an adjacent community. It is important that the recommendations for mitigation strategies look at multiple criteria, beyond proximity, in making recommendations for local action.

In this era of climate change, it is even more essential that we leverage local climate action plans cooperatively to achieve greater benefits for communities and the state as a whole. While local climate action plans can certainly devote a great deal of attention to local opportunities for mitigation, the advice from the ARB should also include exploring opportunities outside of community boundaries that will result in greater net benefits.

**Next Steps for Economic Analysis: Modeling Revenue Reinvestment**

As was suggested during the presentation, the modeling of the reinvestment of revenues will be important to the evaluation of the different scenarios proposed by the Scoping Plan Update. The existing GGRF program has resulted in substantial benefits and provides the opportunity for investment in sectors that are not otherwise covered under the cap-and-trade program such as natural and working lands.

It is important that the analysis includes the climate, economic, and social benefits of the reinvestment of revenue. This is especially true for natural lands, where investments can provide co-benefits in wildlife adaptation, job creation, and sustained rural communities. It would also be interesting to explore how a prioritization of cost-effective carbon reductions might increase the benefits of the program.

Thank you for considering these suggestions. We look forward to the discussion draft and continuing the conversation.

Sincerely,

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[ii]https://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/2016_second_biennial_report_of_the_united_states_.pdf

[iii] http://www.fs.fed.us/nrs/pubs/gtr/gtr_nrs154.pdf

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[xvi] http://www.lao.ca.gov/handouts/resources/2016/Cap-and-Trade-Report-Provides-New-Information-042016.pdf