October 30, 2017

Shelby Livingston
Branch Chief, Climate Investments Branch
California Air Resources Board
1001 I Street
Sacramento, CA 95812

RE: Comments from The Nature Conservancy on the October 13th Natural and Working Lands Workshop

Dear Ms. Livingston:

The Nature Conservancy appreciates the opportunity to provide comments in response to the October 13th natural and working lands workshop. We commend CARB and partner agencies for their ongoing commitment to include the state's natural and working lands in its overall climate goals, as their management, health, conservation and restoration will influence whether these resources act as a net sink or source of greenhouse gas (GHG) emissions over time. We offer the comments below to support the state's continuing effort to ensure that natural and working lands help meet the state's 2030 and longer-term climate goals.

We commend ARB for contemplating inclusion of a GHG goal for natural and working lands in the 2030 scoping plan and strongly encourage ARB to set a more ambitious cumulative goal of 125 – 150 MMTCO2e

It is important to set a *quantitative* mitigation goal for NWL, like those of other sectors, so progress toward ameliorating climate change can be effectively assessed over time. Proxies, such as acres protected or restored, while helpful, are not a substitute for quantifying either carbon removed from the atmosphere or emissions avoided. Setting a quantitative goal will also facilitate more parity with other sectors and promote action, accountability, and the delivery of additional incentives (e.g., Greenhouse Gas Funds) to land managers and owners.

We encourage CARB to establish an ambitious 2030 cumulative goal for natural and working lands, and based on recent analysis, believe a range of 125 to 150 MMTCO2e is defensible based on recent analysis. Our scientific analysis of the GHG reduction potential of natural and working lands suggests that the state's natural and working lands - its forests, rangelands, wetlands and agricultural lands – can achieve this goal by 2030 through existing and new programs that support actions such as improved forest management, forest and rangeland conservation, wetland restoration, and compost applications,

among others.[1] Existing and potential new programs that could support these activities and positive climate outcomes include, but are not limited to, the Wildlife Conservation Board's conservation easement and new climate adaptation programs, the California Department of Fish and Game's wetland restoration program, Cal Fire's Healthy Forest, Forest Legacy and Urban and Community Forestry programs, the Strategic Growth Council's Sustainable Agricultural Land Conservation program, the Resource's Agency's Urban Greening program, the Department of Food and Agriculture's Healthy Soils program, climate mitigation under CEQA, and Sustainable Communities Strategies across the state.

In addition to the CALAND scenarios, we strongly encourage CARB and partner agencies to consider additional analysis underway across the state that will inform potential GHG reduction opportunities from natural and working lands

We support the ongoing effort to develop GHG reduction scenarios for natural and working lands through the CALAND model and look forward to the upcoming workshops and opportunities to provide constructive input. In addition to the information that it ultimately developed through the CALAND model, we also encourage CARB and partner agencies to consider other research efforts that are underway to estimate GHG reduction potential, including research being led by the Stanford University's Woods Institute for the Environment, as well as The Nature Conservancy in collaboration with the US Geological Survey. These concurrent efforts, and potentially others, can help corroborate scientific findings and fill data gaps, among other things – helping to build a robust source of data to inform future climate goals and actions for natural and working lands in California.

We support the development of an implementation plan for the natural and working lands sector and suggest that the strategies (and by extension, the design and schedule of the workshops) be informed by ongoing statewide analyses that identify opportunities for GHG reductions and other important co-benefits

We support the development of an implementation plan for natural and working lands to help the state meet its climate goals. It will be important for the implementation plan process to track closely with the development of the statewide analysis, which should determine opportunities for GHG reductions across the state. Doing this should advance alignment between the scenarios and GHG goals and the activities that may be implemented on the ground. The statewide analysis, to the extent it is spatially explicit, should also help inform and prioritize where there are opportunities to optimize GHG reductions and other co-benefits around the state. In other words, it would be helpful to have the statewide analysis (or analyses) inform the kinds of activities and locations of activities to optimize GHG reductions and other benefits versus presupposing the activities that should be implemented before a

[1] Cameron, D.R., D.C. Marvin, J.M. Remucal, M.C. Passero. 2017. Ecosystem management and land conservation can substantially contribute to California's climate mitigation goals. *Proceedings of the National Academy of Sciences*, in press.

statewide analysis is done. Therefore, it would be helpful to organize and design the implementation plan workshops with key milestones associated with the statewide analyses so they can inform each other.

Separate woody from non-woody crops in the agriculture classifications

Woody and non-woody crops should be separated in the agriculture classifications, as the carbon implications for each may be significantly different. There are multiple data sources that could be used to make this distinction, including Landfire and CropScape. While both datasets could be improved for woody crops, using them and making a distinction between woody and non-woody is better than combining into one category. Data from the Department of Water Resources may be another good option as they just released their LandIQ agriculture map for 2014 and it has >95% accuracy for woody crops (though may not be the proper year). The Nature Conservancy is also getting close to finalizing woody, non-woody, and rice crop layers in 5 year increments from 1985-2015.

The approach in CALAND to run the model based on 940 land types removes within unit variation, which may influence outcomes

There are some limitations to running the CALAND model based on the 940 land cover categories rather than a pixel-based model. While doing so may reduce model complexity and computational intensity, it removes the within unit variation – heterogeneity that has the potential to have a great effect on the outcome. While we understand these 940 land cover categories are stratified to reduce the within unit variation, there will still be significant residual variation that the stratification does not capture. Consequently, this is not a true spatially explicit model. We recommend that these limitations be explained or at least demonstrate how the "lost" variation within these land cover categories will not have a major effect on the outcome.

Clarify forest management activities and anticipated reductions, as some of them may be redundant or reductions may be achieved in other sectors

It is a little challenging to comment on the proposed management activities in the September 22 "CALAND Model Development and Next Steps" handout, as the assumed reduction benefits are unclear. For example, the section outlining different forest management activities to model (i.e., clearcut, partial cut, fire fuel reduction, understory treatment and forest biomass utilization) does not specify whether the intended reductions are avoided biological emissions, reduced energy emissions, or increased carbon sequestration. Consequently, when reviewing these activities, they appear to be redundant and/or potentially seeking to quantify reductions in other sectors (e.g., energy). One option is to add additional columns to this table specifying the intended reduction outcome (e.g., avoided emissions, increased sequestration, and sector). This would help clarify which activities are missing or what may be redundant. It may also inform the limitations of the analysis in the event certain assumed reductions may be quantified or rely upon data in other sectors.

We reiterate our support for this important work and look forward to providing feedback as this effort progresses. In the meantime, if you have any questions, please contact Michelle Passero at MPassero@TNC.org or Dave Marvin at David.Marvin@TNC.org.