



## MEMORANDUM

**TO** Oregon Global Warming Commission

**FROM** Catherine Macdonald

**SUBJECT** Natural and Working Lands Agenda Item

**DATE** 02/26/2021

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We identified six tasks associated with developing a proposed goal for natural and working lands for Governor Brown as directed in [EO 20-04](#):

- Engage stakeholders and technical experts on natural and working lands emissions and sequestration.
- Identify existing land sector inventory data and priority inventory improvements.
- Establish methods for tracking emissions and carbon sequestration from the land sector.
- Develop a baseline and a business-as-usual projection for land sector emissions (if possible).
- Identify potential policies, programs, and practices that could be advanced to reduce emissions and increase carbon storage and sequestration on natural and working lands.
- Develop and finalize proposed goals and a process for including natural and working lands for Governor Brown's consideration.

The principles we adopted last summer stated that the inventory, baseline, and projection methods and practices should be based on guidance from the Intergovernmental Panel on Climate Change (IPCC) and the best available science. As such, some of the technical issues are already answered for us. However, to complete the tasks above we will need to answer the following questions:

- (1) What is the purpose for the land sector goal?** Do we want to simply track emissions and sinks, or do we want the goal to help us evaluate the effectiveness of investment, program, and policy decisions? How we answer this will drive inventory recommendations.
- (2) What type of goal should we recommend?** Should we propose an emissions reduction/sequestration goal, an activity goal, or both? How we answer this will drive inventory recommendations.
- (3) How detailed do we want the land sector goal to be?** Should we include all lands and all activities or a subset of lands and activities? Do we want to have a single goal for the land sector or a goal for each major type of natural and working lands (forest, grasslands/shrub steppe, agricultural lands, wetlands, etc.)?
- (4) How shall we treat emissions from anthropogenic activities versus emissions from natural causes like wildfire and pests and pathogens?** The IPCC has two methods for

treatment of anthropogenic versus fluxes due to natural disturbances. However, they can be reported separately through either methodology.

- (5) What is the relationship between the land sector goal and the state’s existing emission reduction goals?** Should the land sector goal be additive to the goals for other sectors or part of meeting the state’s emission reduction goals?
- (6) How frequently should we update the goal and the inventory and what criteria should we use to inform any such change?** How we answer this will drive inventory recommendations.
- (7) What are the consequences of not meeting the land sector goal?** How do we hold ourselves accountable for achieving our land sector goal(s)? If we don’t meet the natural and working land goal(s) should we recommend requiring a reexamination of past investments, programs, and policies?

We will discuss considerations and how we might want to answer these questions at the meeting. No decisions will be made at this meeting regarding how to answer these questions.

### **Background Considerations:**

Healthy lands sequester carbon and provide significant and cost-effective opportunities to reduce GHG emissions. The Global Warming of 1.5°C Special Report from the IPCC emphasized the urgency of climate action and the important role the land sector can play as part of a comprehensive climate mitigation strategy.

Unlike other sectors, the land sector can be a carbon storage reservoir or “carbon sink” as well as a source of emissions. Natural and working lands (N&WL) carbon “stocks” (the total amount of carbon stored at any point in time) and carbon “fluxes” (the change in carbon storage between time a and time b) can be affected by both natural processes and land use and management changes. These characteristics add complexity to developing methods for land carbon inventories, establishing business-as-usual baselines and projections, and for setting emission reduction and sequestration goals.

The IPCC has developed guidelines for inventorying land sector stocks and fluxes. The EPA follows the IPCC methods to assess U.S. land sector emissions. For more details on inventory methods and considerations, the current IPCC guidelines can be referenced in their Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (2019).

The national land sector inventory produced by the Environmental Protection Agency (EPA) and their partner agencies has a much higher degree of uncertainty (-26% to 34%) than the other combined sectors (-2% to 5%) at the 95 percent confidence interval. The EPA and their partner federal agencies are working to reduce the level of uncertainty in the land sector inventory. And there is interest from key stakeholders to further improve U.S. Department of Agriculture’s Forest Inventory and Analysis Program and Natural Resource Conservation Service’s Natural Resource Inventory. In addition, the land sector sink varies year to year (-10 to 9) more than emissions from the other sectors combined (-3 to 2).

Thirteen states have produced inventories for natural and working lands. Of these, six states use the State Inventory Tool (with some customization with state specific data) and seven have used state specific data sets and other tools. We will do an assessment of how other states have addressed some of these questions to inform our recommendations.

The World Resources Institute's (WRI) [Mitigation Gold Standard](#) (2014) report provides additional considerations for national and subnational GHG accounting and reporting that are summarized in the following tables from their report.