

Southern Oregon Climate Action Now

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Amendments to DEQ administrative rules at OAR 340, Divisions 12, 215, 253, and 272 related to Greenhouse Gas Reporting and Third-Party Verification

We write on behalf of the 1500 Southern Oregonians who are Southern Oregon Climate Action Now, the 300 plus who are Our Family Farms, the 3,000 members of KS Wild, and the 250 agriculture stakeholders engaged in the Oregon Climate and Agriculture Network to comment on the invitation regarding the Oregon Department of Environmental Quality (DEQ) proposed amendments to its administrative rules at OAR 340, Divisions 12, 215, 253, and 272. These relate to Greenhouse Gas Reporting and Third-Party Verification, subjects about which we have considerable interest. We write specifically to request that the Oregon Department of Environmental Quality develop protocols for assessing the Greenhouse gas (GHG) flux in forest and agricultural lands and practices, Oregon's working and natural lands.

Justification:

The 2018 Intergovernmental Panel on Climate Change urged setting a target global temperature increase of just 1.5°C (2.7°F) above pre-industrial levels. This is necessary if we are to avoid the array of serious tipping points that would pose, at minimum, a threat to life as we know it. In order to achieve this goal, we must make substantial reductions in greenhouse gas

emissions between now and 2030 such that we achieve emissions 45% below the 2010 level (or 40% below 1990 for Oregon). By 2050, we should achieve net zero emissions, meaning that our emissions of GHGs should be no greater than the capacity of our natural systems to capture and sequester them. In terms of actual emissions, this means that we have a global budget of just 580 Gigatons of CO₂ for a 50% chance of restricting warming to 1.5°C or a budget of 420 GT for a 66% chance of achieving the same target. Therefore, we must track how our natural systems release, capture, and store CO₂ in order to evaluate if we are meeting those targets.

For many years, encouraged recently by the 2015 Paris Agreement (UNFCCC 2015), state, provincial, and national jurisdictions across the globe have sought programs that aim to reduce emissions. This has presented itself in Oregon in the form of programs demanding clean fuels and the conversion of coal-fired power plants to low and zero GHG emission alternatives. In addition, legislative efforts have been undertaken to establish an economy-wide state program to substantially reduce emissions. Undoubtedly such proposals will return, and ultimately a program will be established.

Regrettably, though reasonably, statewide targets have always been expressed in terms of 'regulated emissions' stemming from transportation, utilities, industry and commerce. This is reasonable because the global climate crisis demands that we undertake emissions reductions immediately and as dramatically as possible. It is also reasonable because addressing currently regulated emissions will be easier than demanding protocols be established immediately to evaluate those not currently assessed fully. Of critical concern to us, there is evidence that two important components of Oregon's GHG flux are not assessed at the individual operation level under the protocols included within the assessment of 'regulated emissions.' These absent protocols comprise the emissions and carbon capture and sequestration, both actual and potential, of Oregon's natural and working lands, particularly our forests and agriculture lands.

In terms of forest systems, evidence recently provided by Law *et al.* (2018) suggests that the CO₂ equivalent emissions resulting from current forest management practices are greater than those from the regulated emissions assigned to the transportation sector. Basic methods have been developed to quantify emissions and carbon capture from forest management. With such high carbon sequestration potential in Oregon, accounting for forest sector capture, sequestration, and emissions is needed for Oregon to meet climate goals. Carbon capture and sequestration potential in Oregon forests offers a substantial counter to the statewide emissions of GHGs if these were accurately assessed, and practices were promoted to encourage expansion of such capture and sequestration.

The best way to store the most carbon in forests is to protect mature and old growth forests and trees that are the least likely to burn and increase the length of harvest rotation of industrial forests. This is especially true in Western Oregon where forests have among the

greatest potential for carbon storage of all forests globally, exceeding that of tropical rainforests. Public forests in the Pacific Northwest have shifted from a net source to a net sink of carbon under the Northwest Forest Plan (1994–Present) due to reduced logging and forest regrowth (Krankina *et al.* 2012). While wildfire mitigation can release carbon in the short term, fire resilient forests will store more carbon than they release, even when burned. DEQ should develop a method for allowing the simple accounting of carbon sequestration and loss in the forest sector, together with its ascription to individual forest operations, in administrative rules at OAR 340.

There are many examples in the United States and abroad of carbon accounting in forest settings. The U.S. Forest Service has developed the Forest Inventory and Analysis (FIA) program that enables an accurate accounting of carbon. Law *et al.* (2018) as well as Woodall *et al.* (2015) utilize methods employing the FIA data to inform a forest carbon accounting framework including carbon stocks and stock change. States such as California have also developed forest carbon accounting, and they use this accounting as a part of their carbon offsets (see California Air Resources Board Compliance Offset Protocol U.S. Forest Offset Projects).

Similar assessments of our agricultural systems suggest that conventional (industrial) agriculture is a leading source of both GHG emissions and soil degradation. In 2017, 53.5 Gigatonnes of greenhouse gases were emitted globally (UNEP 2018). Meanwhile, the World Resources Institute identifies 2010 emission from agriculture at 12 gigatonnes, and anticipated this to rise to 15 gigatonnes by 2050 (WRI 2018). This suggests that agriculture is responsible for some 20% to 25% of annual global greenhouse gas emissions. Techniques that minimize agricultural GHG emissions, promote capture of atmospheric carbon and soil health characteristics, known as regenerative agriculture, could contribute vastly to improving our statewide GHG balance, and improve soil health and fertility across the state. While DEQ currently assesses some components of agricultural emissions (DEQ 2018), the full spectrum of losses and gains are not currently assessed. To be useful, these also need to be accountable to each agricultural operation. There are no DEQ defined methodologies for capturing and measuring soil carbon increases. Australia, on the other hand, has a mature program involved to financially incentivize farmers to practice regenerative farming. That program provides descriptions with many options to capture atmospheric carbon dioxide with detailed methods for farming practices and soil carbon measurements being established in a precisely regulated, monitored, and measured system (Australia Government, 2018). Net capture of 0.5 tons of soil carbon per acre and more are readily achievable with various agricultural practices. (Toensmeier, 2016. Appendix C, and page 31). Based upon Our Family Farms calculations, if such a program were instituted in Oregon and only 20% of Oregon's 16 million farm acres were

enrolled in a carbon sequestering program, carbon capture could offset the entire estimated agricultural emissions of 6 million tons as CO₂e (DEQ, 2018).

The Request:

We urge the Oregon DEQ to develop protocols to include a more accurate assessment of the GHG flux in forestry and agricultural activities. This is urgently needed in order to (a) account for these sectors in our statewide efforts to reduce emissions and promote carbon capture and sequestration, and (b) offer recommendations as to how to reduce emissions and promote sequestration.

Please contact us with any questions or clarifications regarding this comment. We look forward to working with the DEQ to ensure adequate accounting of GHGs in Oregon.

Sincerely,

A photograph of four handwritten signatures in black ink. From left to right, they are: Alan Journet, Joseph Vaile, Peggy Smith, and Megan Kemple. The signatures are written in a cursive, flowing style.

Alan Journet*, Co-facilitator, Southern Oregon Climate Action Now

Joseph Vaile, Climate Program Director, KS Wild

Peggy Smith, Chair of the Board, Our Family Farms

Megan Kemple, Director, Oregon Climate and Agriculture Network

* Questions/communications: alan@socan.eco

References:

Australian Government, 2018. **Measurement of soil carbon sequestration.**

<http://www.environment.gov.au/system/files/consultations/072b4825-ec0f-49d9-991e-42dfa1fbae3/files/supplement-soil-carbon-agricultural-systems.docx> - Click on The Supplement to Carbon Credits, see section 3.0

California Air Resources Board, **Compliance Offset Protocol U.S. Forest Offset Projects**, Last reviewed October 28, 2019.

https://ww3.arb.ca.gov/cc/capandtrade/protocols/usforest/usforestprojects_2015.htm

DEQ 2018. Appendix A and B: **Oregon's Greenhouse Gas Emissions through 2015: An assessment of Oregon's sector-based and consumption-based greenhouse gas emissions**

<https://www.oregon.gov/deq/FilterDocs/OregonGHGreportAB.pdf>

Forest Climate Action Team. 2018. **California Forest Carbon Plan: Managing Our Forest Landscapes in a Changing Climate.** Sacramento, CA. 178p. <http://resources.ca.gov/wp-content/uploads/2018/05/California-Forest-Carbon-Plan-Final-Draft-for-Public-Release-May-2018.pdf>

IPCC 2018 Special Report: **Global Warming of 1.5 °C.** United Nations Intergovernmental Panel on Climate Change. <https://www.ipcc.ch/sr15/>

Krankina, O.N.; Harmon, M.E.; Schneckenger, F.; Sierra, C.A. 2012. **Carbon balance on federal forest lands of western Oregon and Washington: The impact of the Northwest Forest Plan.** For. Ecol. Manag. 286, 171–182

<https://www.sciencedirect.com/science/article/abs/pii/S0378112712005129>

Law, B, et al. 2018. **Land use strategies to mitigate climate change in carbon dense temperate forests.** Proceedings from the national Academy of Science.

<https://doi.org/10.1073/pnas.1720064115>

Toensmeier, E 2016. **The Carbon Farming Solution.**

<https://www.chelseagreen.com/product/the-carbon-farming-solution/>

UNEP 2018 **Emissions Gap Report.** United Nations Environment Programme.

<https://www.ipcc.ch/site/assets/uploads/2018/12/UNEP-1.pdf>

UNFCCC 2015 - Paris Agreement, United Nations **Framework Convention on Climate change**

https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf

Woodall, Christopher W.; Coulston, John W.; Domke, Grant M.; Walters, Brian F.; Wear, David N.; Smith, James E.; Andersen, Hans-Erik; Clough, Brian J.; Cohen, Warren B.; Griffith, Douglas M.; Hagen, Stephen C.; Hanou, Ian S.; Nichols, Michael C.; Perry, Charles H.; Russell, Matthew B.; Westfall, James A.; Wilson, Barry T. 2015. **The U.S. forest carbon accounting framework: stocks and stock change, 1990-2016.** Gen. Tech. Rep. NRS-154. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station.
https://www.fs.fed.us/nrs/pubs/gtr/gtr_nrs154.pdf

WRI 2019 **Creating a Sustainable Food Future:** World Resources Institute Report. https://wri-food.wri.org/sites/default/files/2019-07/creating-sustainable-food-future_2_5.pdf