Pew

December 01, 2023

Ms. Catherine Macdonald, Chair
Oregon Climate Action Commission
550 Capitol St. NE
Salem, OR 97301

RE: Comments from The Pew Charitable Trusts on the Institute for Natural Resources' Roadmap to Enhance Carbon Capture and Storage and Reduce Greenhouse Gas Emissions on Oregon's Natural and Working Lands

Submitted via email: oregon.GWC@oregon.gov

Dear Chair Macdonald and Commissioners:

Thank you for the opportunity to comment on the Institute for Natural Resource's (INR) Roadmap (Roadmap) for implementation of the Natural and Working Lands Proposal (NWL Proposal) adopted in 2021 by the Oregon Climate Action Commission (Commission). The Roadmap is the culmination of the NWL Project, a grant-funded project led by INR. The Pew Charitable Trusts (Pew) was a member of the committees for the blue carbon sector and we appreciate all the work conducted to reach this point.

The Roadmap is an important step in developing a methodology for establishing a state-wide inventory of net sequestration in Oregon's NWL; developing practices and activity-based metrics to increase net sequestration in NWL; defining a scope of work to evaluate technical assistance capacity and training needs; and identifying community impact metrics to evaluate the benefits and burdens upon communities.

Pew's main interest relative to the Roadmap is to elevate the critical role that healthy coastal, tidal, and subtidal landscapes play in capturing and storing carbon, and to advance science-based approaches for including these "blue carbon" habitats in key strategies and programs needed to achieve the Commission's net goal for sequestration and storage in the state's NWL. On a per acre basis, blue carbon habitats can store up to 10 times more carbon[1] in the soil than forests, while also protecting frontline communities from sea-level rise and flooding, filtering water, and providing vital habitat for salmon and other wildlife.[2] By ensuring robust implementation of climate-smart management practices, the Commission can build a strong foundation for Oregon to leverage the greenhouse gas (GHG)

[1] The National Oceanic and Atmospheric Administration (NOAA) Fisheries Service: Coastal Blue Carbon (https://tinyurl.com/y6a2zkgs)
[2] https://www.pewtrusts.org/en/research-and-analysis/fact-sheets/2022/05/9-ways-estuaries-enhance-oregons-coastal-communities

mitigation potential of its blue carbon resources and advance the suggested strategies in the state's 2021 Climate Change Adaptation Framework to support ocean health and blue carbon ecosystems.[3]

Pew urges the Commission to consider the recommendations below with respect to the INR Roadmap's proposed blue carbon practices, activity metrics, plan for development of the state's NWL inventory, and Tribal Nation engagement.

Blue Carbon Practices

The blue carbon 'recommended' practices included in the INR Roadmap are sound and science-based. While the blue carbon 'emerging' practices are not recommended *at this time* because of critical science gaps, we urge the Commission to regularly review research advancements and data refinement to move additional blue carbon practices into implementation. The Pacific Northwest Blue Carbon Working Group (PNWBCWG) and the Oregon Coastal Management Program (OCMP) are working together to refine and curate improved data.

Pew recommends the Commission consider developing a schedule to routinely review and incorporate any new data for these practices. For example, although the carbon sequestered and stored in kelp forests and seaweed beds cannot yet be formally measured and accounted for, it is expected that scientific understanding of the carbon cycling in these systems may progress to a level where they can be formally incorporated into Intergovernmental Panel on Climate Change GHG Accounting Guidelines and therefore managed for their mitigation contribution.[4]

Co-benefits

As the Commission considers how to proceed, we recommend that the NWL practices advocated for by both the technical team and advisory committee members are incorporated, as long as there is research to support that the practice is carbon positive. Unlike other traditional GHG sectors, like transportation, where there may be substantial risk that state investments will not meet their intended GHG emissions reductions, **there is no downside to maintaining or restoring natural lands or implementing sustainable working lands practices**. The benefits of working lands practices have been sufficiently demonstrated by USDA's Natural Resource Conservation Service and Oregon's Soil and Water Conservation Districts and the thousands of working lands participants in federal programs.

We recommend that the Commission ensure that other ecosystem benefits besides carbon sequestration are formally tracked and valued. For example, conservation and protection of coastal blue carbon habitats offer other benefits of value to coastal communities such as flood protection, improved water quality, and habitat for economically important fisheries.

[3] 2021 State Agency Climate Change Adaptation Strategy. Natural World Section; See pg. 27 "Engage in collaborative groups such as the Pacific Northwest Blue Carbon Working Group to better understand, manage, and protect blue carbon ecosystems. Blue carbon ecosystems not only provide for carbon sequestration they also provide a range of social, economic, and environmental benefits, such as fish rearing sites and buffers against sea level rise." https://www.oregon.gov/lcd/cl/pages/adaptation-framework.aspx

[4] Schindler Murray, L., Milligan, B. et al. 2023. "The blue carbon handbook: Blue carbon as a nature based solution for climate action and sustainable development." Report. London: High Level Panel for a Sustainable Ocean Economy.

California can serve as an example for how to integrate co-benefits that contribute to coastal resilience, as shown by recently enacted legislation (AB1757) that requires the state's Natural Resources Agency to develop an ambitious range of targets for natural carbon sequestration and natural climate solutions that support both the reduction of GHG emissions and climate adaptation and resilience. To implement the law's requirements, California convened an Expert Advisory Committee to recommend targets, inclusive of co-benefits, for each NWL sector. An expert advisory committee may be helpful to state agencies as they work to set activity targets.

Other Natural Lands: Freshwater Wetlands

We also recommend the inclusion of freshwater wetland protection into NWL practices. Peatlands and forested freshwater wetlands in particular store significant amounts of carbon, both of which are present in Oregon and greatly diminished from historic extent. Research indicates that, due to the sheer area of inland wetlands, these habitats in the U.S. store nearly twelve times the amount of carbon as coastal wetlands do.[5] Given that freshwater wetlands are also more likely to emit methane, not all freshwater wetland restoration efforts would result in a net greenhouse gas reduction, but protecting these habitats and building resilience to climate change is important not only to ensure carbon sequestration services continue, but also to avoid further emissions through habitat degradation and loss. Intact freshwater wetlands also contribute to wildfire resilience in forested areas and provide flood control benefits.[6] Despite the existence of regulatory protections, such as the state's "function based wetlands compensatory mitigation framework," Oregon's freshwater (and coastal) wetlands still face threats. Although Oregon lacks information on the full historic extent of these habitats, making their inclusion in a GHG inventory difficult at this time, the most efficient and cost-effective strategy for Oregon is to consider protecting all remaining freshwater and coastal wetlands from further degradation and loss.

Community Impact Metrics

We appreciate the work to include community impact metrics. As the Commission considers how to track and measure impacts of NWL interventions on public health and wellness, we encourage it to assess studies conducted by the California Air Resources Board (CARB) for its 2022 Climate Change Scoping Plan, which outlines a sector-by-sector roadmap for the state to achieve carbon neutrality by 2045. In this study, CARB modelled public health benefits related to two natural and working lands strategies – urban greening (e.g., increase in tree canopy) and impacts on extreme heat, and forest/grasslands resilience to catastrophic wildfire and impacts on air quality.

GHG NWL Inventory Development

Although the INR Roadmap proposes two options for developing a NWL GHG inventory (basic versus advanced), we recommend that the state consider a hybrid approach based on data availability for key landscape types. Given already-compiled blue carbon data in the

[5] A.M. Nahlik and M.S. Fennessy, "Carbon storage in US wetlands," *Nature Communications* 7, no. 1 (2016): 13835, https://doi.org/10.1038/ncomms13835.

[6] J. Endter-Wada, K.M. Kettenring, and A. Sutton-Grier, "Protecting wetlands for people: Strategic policy action can help wetlands mitigate risks and enhance resilience," *Environmental Science & Policy* 108 (2020): 37-44, https://www.sciencedirect.com/science/article/pii/S1462901119309463.

white paper titled "Incorporating Coastal Blue Carbon Data and Approaches in Oregon's First Generation Natural and Working Lands Proposal," the Commission could recommend an advanced approach for coastal habitats and other sectors with more refined data, such as forestry. Other NWL sectors, such as croplands and rangelands—where data on sequestration rates is not as developed—could utilize a basic approach for inclusion into the NWL inventory. If the state chooses to pursue a hybrid approach, it will be imperative to be transparent about methods and data sources used, as well highlighting which sections of the inventory should be improved in future years.

Thanks to the Department of Land Conservation and Development's Oregon Coastal Management Program (OCMP), which funded coastal habitat extent work via the Coastal Zone Management Act, and the Institute for Applied Ecology (IAE) and the Pacific Northwest Blue Carbon Working Group (PNWBCWG), which diligently inventoried coastal habitat extent and researched coastal carbon cycles, sequestration, and emission rates over the last decade, coastal Oregon has advanced data available to contribute to the state NWL Inventory.

The OCMP has stored the blue carbon data necessary for the state NWL inventory in a newly created blue carbon data portal so that refinements to foundational habitat extent, habitat change over time, and carbon data can be easily accessed. The OCMP, IAE, PNWBCWG, and other experts, funded through a grant from the Oregon Watershed Enhancement Board, are working toward the development of a blue carbon calculator so that restoration practitioners and land managers can calculate blue carbon potential at the project level in coastal areas. The Commission should capitalize on this work, which leads the country in blue carbon data, making Oregon a model for other states working toward their own blue carbon GHG inventories. Other NWL sectors could duplicate the calculator, as data refinement allows, to estimate emissions and removals as a result of land management actions.

We also recommend that Oregon explores the extent to which spatial land cover datasets for forests overlap with coastal wetlands, to avoid double counting as well as to ensure accurate accounting of carbon stocks and sequestration rates. This issue was brought to our attention in a similar effort we have engaged in with researchers in North Carolina to develop the state's first coastal wetland-specific greenhouse gas inventory. Through this effort, the workgroup has identified appreciable spatial overlap in lands classified as forest as part of the U.S. Forest Service's Forest Inventory and Analysis (FIA), which is the land representation used to delineate forest land, and lands classified as forested, scrub/shrub, and emergent palustrine wetlands as part of NOAA's Coastal Change Analysis Program (C-CAP) spatial layers, the land representation used to delineate wetlands. The Environmental Protection Agency (EPA) is aware of this issue and is currently working on a harmonized land representation at the national scale that is expected to be complete by 2025.

Tribal Engagement

Achieving robust, sustainable, and meaningful NWL goals demands the incorporation of Indigenous practices. HB 3409 requires the Commission to "establish a process for consultation with representatives of federally recognized Indian tribes in this state to advise the commission on the performance of its duties …. including the identification of

opportunities to support indigenous practices and knowledge from tribal nations to sequester and store carbon on natural and working lands." We strongly support the Commission's plans to treat Tribal Nation engagement as a separate process in its work plan. To do so, we recommend the Commission begin engaging Tribes now to determine interest, capacity constraints for participation, and what shape meaningful Tribal consultation and inclusion of indigenous expertise and knowledge may take for these sovereign entities relative to the state's NWL goals. As the Commission works to further develop community impact metrics and selects a contractor, we strongly encourage the Commission to also contract with an indigenous group or consultant who can help develop the best approach for inclusion of Tribal land management and stewardship. Tribally-affiliated organizations with climate programs, like The Affiliated Tribes of Northwest Indians, may also provide direction and guidance helpful to the Commission in this matter.

The 2021 NWL proposal identified four broad strategies, listed below, with ten supporting elements to achieve the outcome-based goals. Pew recommends these areas be prioritized for investment as the Commission considers how to allocate funds in the newly created Natural Climate Solutions Fund. We put forward the additional recommendations below:

Position the state to leverage federal lands and investments in climate-smart natural and working lands practices

Given the unprecedented funding for coastal resiliency from the Infrastructure Jobs and Investment Act and Inflation Reduction Act, the Commission should encourage state agencies involved in NWL implementation develop a coordinated plan to leverage federal dollars. For example, practices outlined in the Roadmap, in combination with a blue carbon inventory, can create the foundation for coastal wetland projects put forth in Oregon's Priority Climate Action Plan under the EPA's Climate Pollution Reduction Grant program. In such a plan, we recommend the state develop a project pipeline so there is a master list of shovel-ready projects from which to select when funding becomes available. As part of this effort, the state could help support communities and project proponents in determining "shovel-worthy" projects.

Investigate options and create a sustained source of state funding to increase sequestration in natural and working lands

Pew was pleased to see the passage of HB 3409, which will create a permanent fund for the state's natural climate solutions efforts. Given that the Oregon Department of Land Conservation and Development (DLCD) administers the state's Coastal Management Program, we recommend that DLCD be a part of the NCS Fund meetings, in order to coordinate and identify opportunities to leverage the state's federally funded Coastal Zone Management Act program to advance blue carbon sector goals. As the Governor's office works to compile and coordinate needs and opportunities for development of this Fund, it is critical that all NWL sectors are represented at these meetings.

Fund and direct the agencies to take actions to advance natural and working lands strategies

We recommend that the Commission and state agencies request additional capacity to accelerate the outcomes of NWL goals and the work of the inter-agency group facilitated by

Department of Energy to implement NWL work. The following planning exercises may help align agencies and outcomes, and help prioritize needs relative to the aims set forth in HB3409 for ensuring diverse participation, equitable benefits, and expanding use of NCS in the state:

- Create a strategy to secure funds across agencies (federal and private).
- First identify, then use, criteria to prioritize existing agency programs that can advance natural climate solutions (NCS) strategies and practices and identify if new programs need to be established.
- Create criteria by which to assess equitable benefits of climate mitigation during implementation.
- Create a strategy to ensure diverse participation, including but not limited to identifying and then removing barriers for Tribal Nations; identifying resources that provide incentives for landowners to participate, and creating an approach to strengthen engagement and technical assistance to Tribal Nation and environmental justice communities.
- Create a land acquisition strategy with land management partners including land trusts, Tribal Nations, and land holding state and federal agencies.
- Create a strategy for deploying NCS in and around urban/built environment.
- Identify co-benefits related to each NCS strategy/practice and create a methodology to account for and track co-benefits.

Invest in improvements to Oregon's natural and working lands inventory

Investing in "science to policy" networks will help create a solid foundation the state can draw on for future improvements to the NWL inventory and fill data gaps mentioned in the INR Roadmap. For example, eelgrass habitats are an integral blue carbon ecosystem, but the state lacks data on the area extent of these habitats over time. To facilitate their inclusion into future updates of the NWL inventory, the state should invest in regular mapping of areal extent of eelgrass beds (as well as marshes, swamps, and kelp forests) and develop regionally specific estimates for biomass carbon stocks. Groups like the PNWBCWG, a coalition of blue carbon researchers in the region that continually struggle to find consistent funding and who provided much of the data and mapping for the blue carbon inventory, are well positioned to fill these data gaps. Utilizing existing data and expertise from the PNWBCWG and looking to other states who have done this successfully (see North Carolina as an example) can help the state create a path forward for successful inclusion of eelgrass beds into the state's NWL inventory.

Existing State Agency Programs, Co-Benefits, and GHG Reduction Goals

Leveraging existing state agency programs to achieve climate goals can streamline efforts and maximize efficiency. State agencies possess established infrastructures, expertise, and resources, enabling them to swiftly integrate climate-related initiatives into their ongoing operations. By building upon existing programs, governments can avoid duplicative efforts and unnecessary bureaucratic hurdles, as well as maximize limited resources, thus accelerating the implementation of climate actions. Additionally, leveraging these programs fosters collaboration and coordination among different sectors and stakeholders, promotes a more cohesive and holistic approach to climate challenges, and allows for the identification and optimization of co-benefits across various sectors, creating a more comprehensive and impactful response to climate change. Ultimately, utilizing existing state agency programs enables governments to demonstrate a commitment to sustainable

practices and climate action, inspiring broader public engagement and support, while yielding tangible and measurable results in the pursuit of a more sustainable future.

Existing Agency Programs to Leverage

The Natural Climate Solutions provisions within HB3409 directs agencies to prioritize existing programs.[7] Most, if not all, existing programs were established based on what the INR Roadmap has considered co-benefits of carbon sequestration on NWL. The table provided in the appendix describes existing agency programs that can be leveraged to achieve the state's Natural Climate Solutions goals. Note that some of these may need updated governance structures to improve collaboration to fully serve this purpose. This aligns with the recommendations of Oregon's Climate Adaptation Framework, which the NWL work should leverage more, including government structures that will be developed in support of adaptation.

We summarize state agency programs (grant programs or implementation programs) whose outcomes include NWL Practices or Emerging Practices described by the Technical Advisory Committee or Stakeholder Advisory Committee. At this time, only state agency programs are included in the summary; however, it is important to note that special districts, extensions, and federal agency partners, particularly the Natural Resource Conservation Service, may also have programs that can be leveraged for this purpose or are already part of a given state agency program. In Oregon, each of these agency programs operates within the overarching framework of land use planning. Each agency coordinates with DLCD regularly to ensure they are adhering to the statewide land use planning goals, which ultimately guides land cover change over time.

The table presents a non-exhaustive list of existing agency programs. Often an agency program services more than one natural and working lands sector, so that distinction is not made.

Conclusion

We applaud Oregon for its comprehensive efforts to address the climate crisis, including elevating the role of NWL in reducing and avoiding emissions and advancing community and ecological resiliency. Developing a robust GHG inventory and climate-smart management practices for Oregon's NWL will require partnerships spanning local, regional, state, and federal agencies, Tribes, and constituencies, and we commend the Commission for recognizing the critical role that coastal wetlands can play in this effort. This work is actively being leveraged and incorporated into coastal management effort via local updates to estuary management plans, as well as state-led resilience action plans that identify nature-based solutions to increase community and coastal resilience. Both of these efforts provide an opportunity for agencies and communities to elevate protection and enhancement of estuarine ecosystem services and advance adaptation, resilience, and greenhouse gas mitigation goals. Given its remit under the National Coastal Management Program, DLCD will be critical in advancing the blue carbon portion of the NWL inventory and implementation of climate-ready practices.

[7] HB 3409; Section 54 (3)(b) "Incentivize and implement natural climate solutions by: (b) Prioritizing the use of existing programs;"

Thank you for the opportunity to actively participate in the Stakeholder Advisory Committee and to comment on the INR Roadmap. Pew looks forward to working together to advance science-based policies in support of Oregon's coastal habitats.

Sincerely,

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Appendix

	Water Quality and/or Quantity	Adaptation to Climate Effects	Community Protection from any Hazard	Habitat and Biodiversity	Natural Resource Dependent Economies	Cultural Services
Department of Land Conservation and Development						
Green Infrastructure Grant Program (established by 2023 legislation)	X	X	X	X	X	X
Oregon Coastal Management Program	X	X	X	X	X	X
Local Natural Hazard Mitigation Planning		X	X	X		X
Transfer of Development Rights to Protect Farm and Forestland	X	X	X	X	X	X
Department of Forestry						
Urban Tree Program (established by 2023 legislation)		X	X	X		X
Forest Conservation Tax Credit Program	X	X	X	X	X	
Small Forestland Investment in Stream Habitat Program	X	X	X	X	X	
Department of Environmental Quality						
Clean Water State Revolving	X	X		X	X	X

	Water Quality and/or Quantity	Adaptation to Climate Effects	Community Protection from any Hazard	Habitat and Biodiversity	Natural Resource Dependent Economies	Cultural Services
Fund						
Nonpoint Source Implementation 319 Grants	X	X		X	X	X
Outstanding National Resource Waters Designations	X	X	X	X		X
Oregon Watershed Enhancement Board						
Coastal Wetlands Grants	X	X	X	X	X	X
Forest Collaborative TA Grants	X	X	X	X	X	X
Oregon Agricultural Heritage Program	X	X		X	X	
Land Acquisition Grants		X	X	X		X
Restoration Grants	X	X	X	X	X	X
Oregon Department of Fish and Wildlife						
Fish Screening and Passage Grant Program	X	X	X	X	X	X
Western Oregon Stream Restoration Program	X	X	X	X	X	X
Riparian Tax Incentive Program	X	X	X	X		X
Wildlife Habitat		X		X		X

	Water Quality and/or Quantity	Adaptation to Climate Effects	Community Protection from any Hazard	Habitat and Biodiversity	Natural Resource Dependent Economies	Cultural Services
Conservation and Management Tax Incentive Program						
Oregon Department of State Lands						
Submerged Lands Enhancement Fund	**X**	**X**		**X**	**X**	**X**
Oregon Department of Transportation						
Forthcoming Wildlife-Vehicle Reduction Program, ORS 366.161		**X**	**X**	**X**		**X**