

To: Work Group on Agriculture, Forests, Fisheries, Rural Communities, and Tribes
From: Sustainable Northwest, Pinchot Institute for Conservation, Ecotrust, The Nature Conservancy, and The Climate Trust
Re: Oregon Carbon Pricing Policy: A Role for Natural and Working Lands
Date: November 6, 2017

The value of natural and working lands to Oregon's environment, economy, and communities cannot be overstated. Not only are they the economic engine for Oregon's rural communities, they have the potential to make a significant contribution to reducing and mitigating climate change. Carbon pricing legislation, such as Senate Bill 1070, represents an important opportunity to address challenges facing rural Oregon and its landscapes, reduce atmospheric greenhouse gas (GHG) emissions and adapt rural communities and economies to the unavoidable impacts of climate change.

Not only does a unique opportunity and diverse natural infrastructure exist, but there is a pressing *need* to harness our natural and working lands to reduce greenhouse gases. While there have been significant advances in emission reduction technologies and clean energy, meeting our reduction goals without natural climate solutions will be extremely challenging and potentially have negative economic consequences. Recognition of and investment in these resources can expedite the emission reduction process, mitigate unintended economic effects, and support equitable participation and benefits for rural communities. Working lands represent nearly 20% of our emissions budget and activities to sequester carbon are relatively inexpensive, with the potential for significant additionality.

Despite this urgency and the integral role that natural and working lands play in Oregon's carbon cycle (see Appendix B), they are underrepresented in Senate Bill 1070. To achieve ecosystem and community resilience and a comprehensive climate smart economy, investment in natural and working lands must be defined and included in carbon pricing legislation.

Why invest in natural and working lands?

- ✓ **Achieve additional GHG emission reductions from uncovered sectors**
Although working forests and agricultural lands are not covered sectors in carbon pricing legislation, they are nonetheless some of the largest carbon sinks in Oregon and have tremendous potential for increased mitigation. Farms, forests, and ranches can adopt climate smart practices that both store carbon in biomass and soils, help these lands adapt to the effects of climate change, and improve productivity. SB 1070 can also encourage offset protocols that encourage aggregation allowing smaller landowners to pool their parcels into a single project and take advantage of economies of scale.

- ✓ **Leverage federal match funding**
Land management planning and conservation practices are often supported through the Conservation Title of the Farm Bill. Accessing these federal programs and funding often requires a source of non-federal match, including state investments. A new source of non-federal funding could significantly leverage Oregon's slice of the Farm Bill, benefiting family owned forests, farms, and ranches, and the natural-resource based economy as a whole.

- ✓ **Provide overlapping conservation benefits and values**
Revenues from an Oregon GHG pricing policy can be invested in ways that not only enhance carbon sequestration and storage, but provide ancillary benefits to water resources, air quality, and wildlife. Proactive, voluntary approaches are also more cost-effective to the state and landowners, as front-end investments are less expensive than future regulatory actions that may be required to recover from environmental emergencies or compliance obligations.
- ✓ **Drive innovation and new markets**
As climate smart practices are adopted, new business opportunities emerge to promote water efficiency, innovation in forest products, and ecosystem service payments. Furthermore, family-owned working forests, farms, and ranches face unique financial and management challenges. Increasingly, these lands are being sold out of family ownership or developed—eroding certainty about the natural resource and climate related benefits they will provide. New revenue models can provide alternatives to the sale and development of these landscapes that would result in release of captured carbon and the elimination of future sequestration potential.
- ✓ **Improve climate resiliency**
Not only do natural and working lands store and sequester carbon to help slow future changes in climate, they can also provide adaptation services to help mitigate effects that cannot be prevented. Carbon pricing policies and strategic investments can support existing and promising mechanisms to make the state’s communities and lands resilient to climate change. This includes water storage and delivery, wildfire risk reduction, and wildlife habitat enhancement.
- ✓ **Support equitable program design and benefits**
Rural and tribal natural resource communities are some of the first demographics to feel the effects of climate change and climate change policies, and will be perhaps the most significantly impacted due to short and long-term changes in the geographies where they reside and corresponding effects on livelihoods. Investments in natural and working lands can help equitably distribute the benefits of a cap and trade system to underserved rural, resource dependent communities. Strategic investments can promote adaptation, sustain natural resource economies, and generate new revenue and value streams to support transition to climate smart practices.

The role for Oregon natural and working lands in cap and invest

Climate smart investments in natural and working lands emphasize synergies between increasing productivity and incomes, while implementing climate change adaptation and mitigation through traditional and innovative strategies. In forestry and agriculture, the approach relies on management practices that increase net carbon stores while improving overall ecological health. ***Incentive-based emission reductions can work in conjunction with an offset program, allowing for a broader base of participation from a range of landowners.*** Offsets provide a suite of benefits and outcomes that have been extensively documented, but must be carefully planned. To this end, it is important that SB 1070 promotes aggregation of smaller lands into larger offset projects and is designed to maintain transparency and safeguards equivalent to those for larger offset projects. Such policies can help smaller lands overcome

barriers associated with offset project development and achieve economies of scale. In addition to promoting policies that enable smaller landowners to participate in the offset market, climate smart natural and working lands incentive payments and other direct investments can help family forests and farms on considerably smaller acreages, and distribute returns across Oregon's agricultural and forest sectors. **This paper focuses predominantly on opportunities for investments of program revenue derived from the sale of emission allowances, with offsets addressed sufficiently elsewhere.**

At the state level, California is aggressively pursuing a strategy of incentive payments via its Healthy Soils Initiative. California, however, through its offset invalidation requirements has created an impediment to small landowners from entering the offset market by preventing aggregation. Oregon can avoid a similar outcome, by ensuring invalidation is not a part of SB 1070's policy on offsets. At the Federal level, the U.S. Department of Agriculture (USDA) has advanced this approach through its Building Blocks for Climate Smart Agriculture and Forestry in the 2015 Climate Action Plan. Measurable goals tied to each building block are linked to key actions and specific conservation practices and corresponding Farm Bill programs identified by the USDA Natural Resource Conservation Service (NRCS) and USDA Forest Service.

A more robust and inclusive Oregon legislative package would include explicit recognition of the climate change mitigation benefits and the need for adaptation on Oregon's natural and working lands, accompanied by appropriate programmatic investments. Authorizing and guiding language in statute would be fairly general (see Appendix A), but the corresponding rulemaking process would articulate a suite of natural resource related program priorities and investments.

Examples of eligible projects could include:

- Direct practice or performance payments to forest and agricultural landowners for implementing actions that reduce and sequester greenhouse gases and achieve climate smart conservation. These could be termed lease agreements or practice specific actions similar to the California Healthy Soils Initiative or USDA NRCS programs.
- Fund conservation easements to maintain working forests, farms, ranches, and the diverse conservation and habitat benefits they provide.
- For acres in exiting federal USDA NRCS conservation programs, enroll those acres into a new Oregon direct payment program to maintain sequestered carbon and climate benefits after NRCS enrollments expire.
- Ecologically based forest restoration and watershed improvements to reduce wildfire risk to communities and carbon emissions across ownerships.
- Natural and built water storage and delivery mechanisms (piping and improved irrigation), to respond to shifting precipitation patterns and impacts to ecosystems and agriculture.

Distribution of Revenue

Auction program revenues could be invested in natural and working lands in one or a combination of ways:

Option 1: Investment of program revenue could adhere to the existing committee and grant structure as detailed in SB 1070. In this case, eligible projects would submit a grant request to the Climate Investment Fund or Just Transition Fund for review by the appropriate committee. Funds would be awarded based on competitive project selection.

Option 2: Program revenue could be directly appropriated to corresponding state natural resource agencies for new projects or investment in existing agency programs that accomplish the intent of the legislation. This would be similar to the structure of the California Greenhouse Gas Reduction Fund. The benefit of this approach is better utilization of existing agency programs and staff capacity to achieve direct and ancillary carbon and climate related benefits. It could also reduce program implementation costs, achieve efficiencies in administration, capture existing technical assistance capacity in project development and implementation, help facilitate leverage with federal resources, and establish greater agency alignment to achieve comprehensive state climate goals.

Integration and monitoring: Regardless of the revenue distribution mechanism, it is recommended that during rulemaking, existing program statutes be reviewed for amendment to improve their integration with Oregon carbon and climate policy, and ensure appropriate use of carbon pricing program revenues. Expenditure of carbon pricing revenue should be guided by transparent criteria and consistent processes for prioritizing emission reduction projects and practices; delineating payment amounts, timing, and mechanisms; as well as monitoring and quantifying the impacts of funded projects.

Policy Recommendations

To unlock the full potential of Oregon's natural and working lands in carbon pricing legislation, **we recommend that no less than 15% and up to 25% of program revenues should be set aside after other constitutionally and statutorily mandated allocations are satisfied.** If permissible, an allocation of transportation funds to facilitate adaptation and fish passage would also accomplish natural resource goals. These funds would be designated to assist rural communities, Tribes, and small landowners in natural resource dependent geographies. Practices would harness these unique assets to address carbon sequestration, climate adaptation, and climate friendly market-based innovation that maintains working lands, diversifies revenue streams, and sustains ecosystem services.

A dedicated revenue set aside is particularly important in the case of natural and working lands, as priorities for investment include management practices that maintain and increase carbon sequestration. To accomplish long-term benefit and project scale, multiple year projects and landowner agreements are likely needed. Without a dedicated funding source, there will not be sufficient certainty to enter into contractual arrangements.

Appendix A details specific statutory amendments to SB 1070 to include references to natural and working lands and other suggested changes pertaining to program governance. We recommend consideration of these proposed changes in addition to the options and policy proposals described above.

APPENDIX A: Proposed Edits/Specific Questions relative to SB 1070:

Preamble Section:

Page 2, line 16, Insert the following –

“Whereas, greenhouse gas reductions from emissions sources and sinks can help address climate change and its impacts to human communities and ecosystems; and

Whereas, the state has a vested interest in protecting human communities, Oregon’s economy and natural and working lands from the unavoidable impacts of climate change and ocean acidification; and”

Rationale: Clarifies that atmospheric greenhouse gases can be reduced through increased sequestration as well as avoided emissions;

Section 1: Greenhouse Gas Definitions:

Page 3, Line 21 – Add the following definitions:

“Greenhouse gas reduction” includes the removal of carbon dioxide from the atmosphere through carbon sequestration as well as reduced or avoided emissions of greenhouse gases. (source: California AB 1608)

“Working lands” means lands used for farming, grazing, or the production of forest products.

“Natural lands” means lands consisting of forests, grasslands, deserts, freshwater and riparian systems, wetlands, coastal and estuarine areas, watersheds, wildlands, or wildlife habitat, or lands used for recreational purposes such as parks, urban and community forests, trails, greenbelts, and other similar open-space land. For purposes of this paragraph, “parks” includes, but is not limited to, areas that provide public green space.

Rationale: Provides additional language to further clarify that atmospheric greenhouse gases can be reduced through sequestration as well as avoided emissions; provides definitions of natural lands and working lands consistent with California laws.

Greenhouse Gas Cap and Investment Program

Section 6: Statement of Purpose:

Page 4, Lines 1-3 – Modify to read: “and to promote adaptation and resilience of this state’s **natural and working lands**, communities and economy in the face of climate change **and ocean acidification**.”

Rationale: Strengthens the purpose statement, to include adaptation of natural and working lands in addition to communities and our economy and recognizes that increased greenhouse gases in the atmosphere result in both climate change and ocean acidification. The bill’s purpose should be to promote adaptation to all three critical elements and both impacts.

Sections 7 and 8: Rules Adoption and Implementation Oversight

Page 4, (1) – The Environmental Quality Commission should be directed to do additional research to inform rulemaking. In addition to the leakage study Section 10 (2), an analysis of the differential impacts to rural and low-income Oregonians should be done to guide rulemaking.

Page 4, Line 15-17 – Include **the Department of Forestry and the Department of Agriculture** to the list of agencies to be consulted by the Environmental Quality Commission in developing rules

Page 4, Line 44, Add (H) – **One member who represents a land conservation organization**

Rationale: Inclusion of these agencies and organizations can provide important input to rulemaking and program oversight relative to impacts to and the role of natural and working lands and the design of any new offset protocols.

Carbon Pollution Market Section 10:

Page 8, Line 31 – Modify (D) to read, “...to covered entities ~~that include, but are not limited to covered entities~~ that are part of an emission-intensive, trade-exposed industry;

Rationale: Targets allowances to the entities most exposed to leakage.

Page 8, Line 36 – Strike ~~three~~ and replace with **multi-**.

Rationale: Adds flexibility in the legislation to allow the state to set/modify rules as needed through time.

Page 9,

Line 16 Insert **and** immediately after the semicolon (“;”):

Line 18 (ii) – Strike out the semicolon (“;”) and insert in its place the following:
“any other greenhouse gas emissions reduction that otherwise would occur.”

Lines 19 and 20 (iii) – Delete.

Rationale: The proposed changes to the language on additionality is intended to better align SB 1070 with the language of California’s AB 32 and of the other jurisdictions in the Western Climate Initiative.

Section 14:

Page 12, Line 21 - 24 – We support prioritizing investment of auction proceeds in impacted communities as defined in Section 9 (12). However, we would like a better understanding of the geographic extent of the impacted communities to help evaluate whether the proposed percentages make sense. Further, it might make sense to state that spending funds in impacted communities is a priority of the program in the bill and

establish percentages during rulemaking to avoid unintended consequences and allow for efficient adaptive management.

Rationale: This change would facilitate adaptive management of the program to achieve the best outcomes for Oregon.

Page 12, Line 35 & 36 – Modify 4 (c) to read

To the maximum extent feasible and practical give funding preferences to projects that will result in

- (A) the greatest greenhouse gas emission reductions; and
- (B) co-benefits including but not limited to reducing risks resulting from climate change and ocean acidification and improving the resilience of natural and working lands.

Rationale: Better reflects the dual purpose of the legislation as stated.

Section 16:

Page 13, Line 29 – 33 – As stated in comments above, we support prioritizing investment of auction proceeds in impacted communities as defined in Section 9 (12). However, we would like a better understanding of the geographic extent of the impacted communities to help evaluate whether the proposed percentages make sense. Further, it might make more sense to state that spending funds in impacted communities is a priority of the program in the bill and establish percentages during rulemaking to avoid unintended consequences and allow for efficient adaptive management.

Rationale: This change would facilitate adaptive management of the program to achieve the best outcomes for Oregon.

Page 14, Line 29 – Modify (1) by adding the following statement to the end of second sentence

“including, but may not be limited to, renewable energy, carbon sequestration in natural and working lands, weatherization, energy efficiency, climate resilience and water conservation.”

Rationale: Ties the Oregon Climate Investment Fund to the purposes of the legislation and clarifies the kinds of projects that would achieve the purposes.

Page 14, Line 20 – Insert a new:

(3)(d)(l): “Natural resources and carbon sequestration.”

Rationale: Adds an important area of expertise to the grant committee.

Page 14, Line 39 – Insert a new (5)(h): “Enhance the resilience of natural and working lands”

Rationale: Adds an important outcome/criterion to the grant evaluation program.

Section 20:

Page 16, Line 39 – Insert a new:

(2)(g): “Natural resources management.”

Rationale: Adds an important area of expertise to the grant committee and ties the Just Transition Fund to the purposes of the legislation.

Section 25:

Page 20, Lines 28 & 30 – Correct from ~~(3) to (4)~~ to **(5) and (6)**

APPENDIX B: Overview of Climate Change Projected Impacts on Natural and Working lands and the Contribution of Working Lands to Oregon’s Carbon Balance.

The climate of the Pacific Northwest is expected to become warmer, particularly in the summer, with little change in total annual precipitation. The seasonal distribution of precipitation is expected to shift, resulting in drier summers and wetter fall and winter periods. Overall variability in precipitation and temperature is expected to increase but with fewer cold temperature extremes.

A general increase in water stress due to warmer conditions, with no net increase in precipitation, is expected to be offset somewhat by enhanced productivity due to increasing atmospheric CO₂ concentrations. However, forest and agricultural systems are expected to become increasingly water-limited with droughts occurring over larger areas and becoming more severe. The fertilization effects of CO₂ are only available in the presence of sufficient soil moisture. Water stress in forests can lead to reduced growth rates, increased mortality from insects and disease, and increased wildfire risk. Climate change is expected to double the average annual burned area throughout the Northwest, as well as increase average fire intensity. Increasing fire frequency and severity, in combination with increased temperatures, are expected to affect profound shifts in the geographic extent of certain ecosystems.¹ Increased mortality in some areas may increase harvest pressures in others to maintain log supplies, potentially decreasing terrestrial carbon stores.

Seasonal changes in precipitation and temperature may have as much effect on working lands systems as mean shifts in regional temperature and increased weather variability.² In Oregon, most of the state has warmed by about two degrees (F) over the past century. Snowpack is melting earlier in the year, and the flow of meltwater into streams during summer is declining. In the coming decades, coastal waters are expected to become more acidic, streams will be warmer, wildfires may be more common, and some rangelands may convert to desert.³

Forest Carbon Balance

Climate change related impacts also affect the state working lands’ ability to sequester carbon and mitigate further climate change. According to the Oregon Global Warming Commission’s Forestry Task Force, the state’s forest net gain 30 million metric tons of CO₂e per year, which is equal to roughly 50% of the state’s annual emissions. Despite this sizable contribution, studies indicate that; overall, Oregon’s forests may be as much as 50% below their ecological carbon storage potential.⁴ For instance, carbon stocking on private non-industrial forests in the Coast Range of Oregon average 107 metric tons of CO₂ equivalent per acre in above ground biomass.⁵ These forests are on average between 20-59 years old. On public lands, where forest stands

¹ EPA 2016. What Climate Change Means for Oregon. Retrieved from:

<https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-or.pdf>

² Creighton, J., M. Strobel, S. Hardegree, R. Steele, B. Van Horne, B. Gravenmier, W. Owen, D. Peterson, L. Hoang, N. Little, J. Bochicchio, W. Hall, M. Cole, S. Hestvik, J. Olson, 2015: Northwest Regional Climate Hub Assessment of Climate Change Vulnerability and Adaptation and Mitigation Strategies, A. Perry, Ed., United States Department of Agriculture, 52 pp.

³ EPA 2016. What Climate Change Means for Oregon. Retrieved from:

<https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-or.pdf>

⁴ Smithwick, E. A. H. (2001). *Potential carbon storage at the landscape scale in the Pacific Northwest, USA* (Doctoral dissertation).

⁵ USDA Forest Inventory and Analysis Program/OR Global Warming Commission Forestry Taskforce.

average between 60 and 199 years, the average is 278 mtCO₂e.⁶ Much of this unrealized potential could be achieved through improved forest management practices and extending harvest rotation.

Agriculture Carbon Balance

Agricultural activities account for around 8% of the state's emissions at roughly 5 million metric tons of CO₂e per year.⁷ In contrast to other sectors, most agricultural greenhouse gas emissions are from methane and nitrous oxide rather than carbon dioxide. Slightly more than 2 million MTCO₂e is from methane that results from enteric fermentation (i.e. digestion of feed from livestock). About 2 million MTCO₂e is from nitrous oxide, estimated from nitrogen-based fertilizers used for soil management. The Agriculture Technical Committee of the Oregon Global Warming Commission (OGWC) recommended four priority strategies to reduce agricultural emissions and increasing carbon storage in the sector: 1) Increase Nutrient Use Efficiency 2) Increase Carbon Sequestration in Crop Management 3) Develop Manure to Energy Methods 4) Proactively Prepare for and Adapt to Climate Change Impacts on Water Supply.

⁶ Pinchot Institute analysis of USFS FIA Carbon Storage Data

⁷ Oregon Greenhouse Gas Emissions and Recent Climate Change Developments. Bill Drumheller Interagency Sustainability Coordinators Network (ISCN) January 8th, 2014. Retrieved 8/10/17 from: <http://www.oregon.gov/das/Financial/CapFin/Documents/Drumheller%20climate%20change.pdf>