

Current Climate Change Policy Direction and Business Practices within ODF Divisions

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Climate change is a complex and uncertain issue. The ultimate result of a warming climate are not well known at the ground level and informed decisions have to be made with the information that is available, with the understanding that new decisions will need to be made as more certain information emerges.

In 2015, the Board adopted a set of recommendations regarding integration of climate change into the agency's business. In 2019, the Board reaffirmed its interest in elevating climate change policy with respect to its purview and statutory authority. This white paper includes a synopsis of the Board recommendations relative to each ODF Division and catalogues the work to incorporate climate practices into the agency's business.

Board of Forestry

2015 Recommendations adopted by the Board

- When updating the current Forestry Program for Oregon (2011), or developing a new policy document, the Board should consider whether
 - Objectives that mention climate change should remain as is or if they should be modified.
 - The issue of climate change and forest policy should be expanded.
- Climate change should be explicitly considered to the best extent of the available science in the Board's regular business issues.

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Private Forests

2015 Recommendations adopted by the Board

- During review of the Forest Practices Act (FPA) take predictions of future streamflow events into account.
- Promote larger scale provenance research and monitoring to inform policy on assisted migration.
- Continue work with Pacific Northwest (PNW) research station to monitor insect activity and forest mortality, encourage PNW Research Station to employ full time Entomologist and Pathologist.

Implemented Business Practices

Landscape Scale Data Collection and Assessment of Forest Health

Forest Health Program and Forest Health Assessment – Climate change and associated impacts on forest are realized in the course of drought, disease, and mortality events. Actively assessing forests with a focus on identifying flux is fundamental to assessing areas and impacts of climate change. The Forest Health Program actively assesses forest health on private and public lands through aerial and ground surveys. This work informs and identifies changes and trends on forest lands related to insects, disease, invasives, drought, and mortality. This work supports development of information requisite to understanding and identifying tree species health and migration interests.

Climate Change Driven Technical Advice and Training – Information is assessed and utilized to provide technical advice and training to agency personnel, research partners, professional foresters, and landowners.

Collaborative Information Collection and Development – The forest health program actively collaborates with PNW research station, Oregon State University, stewardship foresters and others in the course of collection, evaluation, and dissemination of information and associated training and support. Collectively this work, in conjunction with other data gathering efforts, promotes ongoing research and evaluation both within ODF and in conjunction with other agencies (ODFW, DLCD, OGWC, USFS) and research partnerships (SOD, species, stream). These relationships allow:

- Active evaluation of forest health and stress events precipitated and or exacerbated by climate change.
- Direction and feedback on rules, resource outcomes, agency training and views, and support to stewardship foresters, landowners, and other forest interests.

<https://youtu.be/9nNMv7Iik2o> - Aerial Survey Video

<https://youtu.be/wHZ1G5wH4r8> - Christine Buhl Drought/Insect Video

<https://www.oregon.gov/ODF/Documents/ForestBenefits/Drought.pdf> - ODF Drought Publication

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Seed Orchard and Seed Bank

Climate and Condition Adapted Tree Species – The J.E. Schroeder Seed Orchard is one of the primary sources of seed for growing Oregon's forests. The seed Orchard actively considers changing conditions by focusing on developing seed that will flourish depending on growing region and other conditions.

Seed production actively considers adaptability and changing conditions as seed is developed and provided to promote conservation and forest production. Among the unique seed sources produced are the Willamette Valley strain of Ponderosa pine or Valley Pine. This species is particularly suited to any type of soil in the Willamette Valley wet or dry and can persist on the landscape despite change. Other adapted seed examples include genetically improved Western Hemlock and regionally adapted Douglas-Fir.

Adaptive Evaluation and Development of Species – Ongoing evaluation of seed progeny sites permits ongoing evaluation of seed and species resilience and adaptability. Present focus of progeny sites is limited in diversity of species evaluated, could be broadened to include other species including Valley Pine. Progeny program provides improved ability to discern species adaptability by discerning strong performing and disease resistant species.

Rapid Response to Changing Conditions – The organization and collaborative nature of the seed orchard permits rapid development and delivery of different species as conditions shift. This is critical in a period of shifting zonal conditions and necessary species adaptability.

Collaborative – The orchard works in a cooperative manner and operates as part of a collaborative network of partners including:

- ODF State Forests Division
- Oregon State University
- Bureau of Land Management
- Industrial forests
- Oregon Seed Bank

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State Forests

2015 Recommendations adopted by the Board

- Consider climate change implications in forest management plans.
- Review planning in the case of severe weather events that may be attributable to climate change.
- As revenues increase expand research and monitoring to increase the capacity to monitor regeneration success, changes in species composition, tree growth and mortality, plant phenology, and extent of pest and pathogens on State-owned forest land.
- Continue collaboration with state and federal programs to assist in adaptation planning and strategy development.

Implemented Business Practices

Greatest Permanent Value

Guiding Principles – Guiding State Forests is the statutory obligation requiring that Board of Forestry lands are managed to provide the “greatest permanent value” to the state. Within this construct, climate change is an active element of operational planning as it relates to fulfillment of the principle elements of GPV rule:

- Sustainable and predictable production of forest products and revenues
- Properly functioning aquatic habitats for salmonids and other native fish and aquatic life
- Habitats for native wildlife
- Productive soil and clean air and water
- Protection against floods and erosion.

As climate change entails long term ecosystem uncertainties, managing for resilient forests coupled with active monitoring is paramount to meeting GPV and associated suite of goods indefinitely. Accordingly, climate change is ongoing element of active and planned SF operations in multiple arenas but not limited to:

- Inventory and stocking relative to species zonal adaptability and resilience
- Reforestation planning for composition and landscape diversity
- Directed fuels reduction in climate stressed regions
- Monitoring to identify stressors, inform management, and evaluate operational hypotheses
- Assess waterway sensitivity to better prioritize and inform buffer and restoration decisions

The present Revised Forest Management Plan (RFMP) process includes climate change as a guiding principle, incorporating and further developing these and other climate change operational elements.

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Protection

2015 Recommendations

- Integrate climate adaptation into future planning and budgeting
- Monitor changing fire risk and monitor the duration of fire season
- Coordinate with National Fire Plan
- Build upon current work to inform future assessments
- Explore funding opportunities for climate change preparedness planning

Implemented Business Practices

Guiding Mission

Adapting to Environmental Change – Adapting to environmental change is a guiding mission of Protection. This is an active response to climate change, ecosystem uncertainty, and an active element of operational planning, assessment, and action.

Assessment, Coordination, and Mitigation

Planning and Budgeting Adaptation – Protection conducts an annual protection adequacy evaluation to assess existing capacity necessary to meet existing and emerging demands to inform operational planning and needs. Relative to these evaluations, the division has developed policy packages in each of the last two biennial sessions seeking resources necessary to address increasing severity of fire risk and season duration.

Monitoring of fire risk, severity, and duration – Protection actively tracks and assesses the nature and change of fire season duration, weather, drought, risk, intensity, and other climate related factors to inform operational planning.

Coordination – Coordination and collaboration relative to assessing, assisting, and addressing climate change occurs across multiple platforms and entities including climate and fire analysis in conjunction with agency, university, and federal partnerships. Participation in the National Fire Plan and Cohesive Wildfire Strategy along with an ongoing commitment to supporting increasingly frequent coordinated response resource events. Increasingly utilization and coordination with the National Guard through training and capacity planning has become an increasingly important element of planning and operations.

Mitigation and Management – Restoration, fuels reduction, and Rangeland Protection Associations (RPA) development along with funds directed at improving watershed restoration and health are targeted proactive responses to changing landscape conditions, realized through annual grant requests and expenditures of awards.

Increasing Capacity Commensurate with Change

Incident Management Team Formation – Tracking and evaluating the increasing frequency, duration, and severity of wildfire coupled with ongoing capacity assessment underlines the necessity of additional resources to adequately respond to increasing threats. Active efforts to adequately address these present and future needs presented by climate change has been addressed and informed the agency initiative relating to formation of an additional Incident Management Team.

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Partnership and Planning

2015 Operational Recommendations

Engage with Climate Organizations and Research – Active collaboration, support, and participation with Oregon Global Warming Commission, Oregon Climate Change Research Institute (OCCRI), Forest Service, Bureau of Land Management, US Geological Survey, AFWG and others on climate change research and adaptation policies with regular reporting to the Board of Forestry on significant developments.

Participate with interagency climate change efforts to ensure ongoing dialogue and partnership. Specifically:

- Receive information and updates on progress of the various efforts to develop climate change policies in Oregon.
- Provide participants information about progress that ODF and Board of Forestry make regarding climate change adaptation and forest carbon management.

Develop integrated, long-term, large-scale climate change monitoring. Explicitly consider early-warning indicators of species responses, including range shifts, population status, and changes in ecological systems functions and processes.

- Integrate relevant recommendations from case studies produced for the Olympic National Forest, the North Cascades Region, Washington, and the Blue Mountains Adaptation Partnership into agency planning. Participate in these efforts in the remaining regions of the state.
- Cooperate with Forest Service researchers to integrate large fire modeling projects conducted in partnership through OCCRI and Forest Service within a climate change context. Highlight the need for studies on the interaction between fire, insects, and climate change on the potential for ecosystem loss/change.
- Maintain and provide a bibliography of scientific publications for identifying relevant adaptation options and posting on the Department’s climate change website.
- Continue to provide new information on climate change to the agency (i.e., transfer information into the operating divisions), and provide liaison support by engaging with issues from other ODF programs.

Implemented Business Practices

Cooperation and Collaboration with External Partners

The Partnership and Planning Program has often taken a lead agency role in matters relating to climate change in Oregon and in the Pacific Northwest. The Program has been active through collaboration and dynamic partnership across State, Federal, Academic, and other Climate and Carbon focused entities and organizations. Several examples of these working relationships and ongoing efforts include:

- Active participant in the Oregon Global Warming Commission, providing technical support to the Commission’s 2018 Forest Carbon Task Force, drafting portions of the “Roadmap to 2020,” and

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providing logistical support for other Commission work and projects. Most recently, Partnership and Planning also provided multiple reviews of the Commission's "Forest Carbon Accounting Project Report 2018."

- Informed and drafted a key section of HB3543 (2007) which established the Oregon Climate Change Research Institute (OCCRI) and Global Warming Commission.
- Provided significant input and preparation of Oregon's 2010 Climate Change Adaptation Framework and the 2019 revision of the Framework.
- Collaborated with USFS Pacific Northwest Research Station researchers to model the climatic suitability of large wildfires for Oregon and Washington. Models developed were instrumental to estimating how much the suitability of large forest wildfires will increase through this century. This work continues to inform and guide fire and climate strategy in regional climate and carbon planning.
- Coordination with the Governor's Office of Carbon Policy to create accounting of forest carbon data and direct development of the Oregon Forest Ecosystems Carbon Report to inform state policies. This work has involved the USFS Forest Inventory and Analysis and PNW Research Station and generated new and ongoing working relationships with Western states and British Columbia.
- Near completion on a carbon analysis of Oregon's Harvested Wood Products and Sawmill Energy Reports to further inform carbon analyses and state policy. This work has engaged the offices of the USFS Forest Inventory and the Bureau of Business and Economic Research at University of Montana.
- Staff within Partnership and Planning are currently working with USFS FIA Program to study the dynamics of tree species in Oregon using re-measured inventory plots. This research will provide an unprecedented evaluation of how tree species in Oregon are responding geographically to changes in climate. The final analysis will be completed in 2021.
- Work to integrate climate change in to the revision of the forest action plan due out in 2020 as a guidance document for the Departments programs, particularly in Private Forests, and restoration work of the other divisions.

Board of Forestry and Climate

- Developed Strategy G of the 2003 Forestry Program for Oregon with the goal of "enhancing carbon storage in Oregon's forests and wood products." Drafted the 2011 FPFO update for Goal G to "improve carbon sequestration and storage and reduce carbon emissions in forests and wood products."
- Drafted both the Climate Change section of the "Emerging Issues Workplan" and the "History of climate change policy in Oregon."

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- Ongoing support and staffing for the development of indicators reflecting changes in the geography of individual trees and other forest vegetation.
- Provided multiple presentations to the Board regarding the climate and carbon. Several examples include:
 - 2010 Climate Change Adaptation Framework
 - Emerging Issues Workplan
 - Global Warming Commission's Roadmap to 2020 and Forest Carbon Taskforces
 - Climate change and the geography of tree species.
 - Analyses and reports for Oregon Forest Ecosystems Carbon, Harvested Wood Products Carbon, and sawmill energy.