

Appendix C

Progress on Initiatives from 2021 Multiagency OAH Report

The Multiagency Report on Ocean Acidification and Hypoxia (OAH) Programs and Needs (Feb 2021) outlines existing programs and potential new initiatives to address OAH impacts for each of 8 Oregon state agencies. This report classifies agency programs and initiatives by themes in the Oregon OAH Action Plan, including *advance scientific understanding*, *reduce causes of OAH*, *create resilience and adaptation*, *raise awareness*, and *build sustained support*. More specifically, each agency described 1) *Agency authority and nexus with climate and ocean change*, 2) *Program elements that relate to climate and ocean change*, and 3) *Opportunities for augmenting agency programs and actions (initiatives)*.

This appendix provides a brief review of the content of the [multiagency report](#), along with recent updates from each agency on progress made in launching initiatives, since early in 2021.





Oregon Department of Fish and Wildlife

Authority and nexus in climate and ocean change:

The Oregon Department of Fish and Wildlife (ODFW) manages and protects Oregon's biological resources and acts as an authority on Oregon's diverse ecosystems, habitats, harvested species, non-harvested species, and the Endangered Species Act.

Program elements that relate to climate and ocean change:

ODFW monitors Oregon's local ocean ecosystems and fish stocks, mitigates the impacts of ocean and coastal development, and addresses changing ocean conditions for fisheries and coastal communities. ODFW also communicates with the public about key ocean issues, including Ocean Acidification and Hypoxia, and coordinates adaptation and mitigation management actions in light of current and future climate changes.

Opportunities for augmenting agency programs and actions:

ODFW aims to expand monitoring efforts for shellfish, harmful algal blooms (HAB), and nearshore biological change. The agency also intends to hire a climate-resilient fisheries specialist to develop and execute resilience strategies and a Climate Change Coordinator to develop and execute communications and outreach strategies.

Progress to date on initiatives:

ODFW has made progress on all 5 initiatives listed in the Report, either in implementing new work or identifying and pursuing funding to begin the initiatives, with particular success in two initiatives related to ocean monitoring. First, augmentation of the shellfish assessment team was realized for a two-year period with funding from HB3114; the assessment team was in the field during 2022 in Tillamook Bay collecting co-located biological and oceanographic information that will be added to Oregon's long-term estuary ecology data sets. Second, ODFW has received a separate one-year grant from NANOOS, the regional ocean observing data portal, to conduct harmful algal bloom (HABs) sampling during 2023. ODFW will continue to seek long-term funding for HABs sampling, including strong potential through Recovering America's Wildlife Act (RAWA), if that passes Congress, as expected.

ODFW has also made some progress with the remaining 3 initiatives, including climate communications capacity, adding a nearshore biological change assessment team, and adding a climate-resilient fisheries management specialist. All three of these initiatives have been prioritized by the Department in strategic planning for RAWA funding and in policy option packages that will be considered by the Governor for inclusion in the Governor's Recommended Budget expected later this year. Together, these 3 initiatives would help ODFW raise awareness of climate and ocean change issues and solutions, greatly increase ODFW's ability to monitor nearshore species populations (both for documenting change and for fisheries management) and help ODFW build climate and ocean change strategies and resilience into our ocean fisheries management approach.



Authority and nexus in climate and ocean change:

The work of the Department of Land Conservation and Development (DLCD) impacts greenhouse gas emissions (GHGs) through planning, policy development, technical guidance for cities and counties, and implementing the state’s ocean resources management framework.

Program elements that relate to climate and ocean change:

DLCD provides ocean and coastal services to coastal communities through Oregon’s federally approved coastal zone management program. They also give technical expertise on transportation, growth management, natural hazards, climate change mitigation, and property rights as well as technical assistance to local governments and state agencies on urban and natural resource issues. DLCD also supports external communication, such as the Oregon Ocean Information Website.

Opportunities for augmenting agency programs and actions:

DLCD aims to assess OAH regarding the regulation and permitting of fish waste, incorporate an ecosystem evaluation framework into the Territorial Sea Plan, expand public web content about OAH, collaborate with local governments to strengthen OAH planning efforts, and revise Statewide Land Use Planning Goal to address climate change.

Progress to date on initiatives:

DLCD is participating in DEQ’s OAH Water Quality working groups to discuss the establishment of state water quality standards that will form the basis for understanding ocean water quality health thresholds. Once adopted, those health measures can be used in federal consistency reviews of water quality discharge permits into state waters. Future efforts to incorporate an ecosystem evaluation framework into the Territorial Sea Plan will be informed by such work. DLCD continues to support the OAH Council website and communication efforts, continuing to leverage shared resources of DLCD and ODFW. Numerous projects are currently ongoing in collaboration with local governments to strengthen OAH planning, including completion of the adoption of Climate Friendly and Equitable Communities development rules which strengthen Oregon’s system transportation and housing planning capacity. In 2021, DLCD coordinated the adoption of the new Oregon State Climate Change Adaptation Framework, a 10-year update that include more than 20 state agencies. A project to scope out the needs for incorporating climate change into the Statewide Land Use Planning Goals was initiated. DLCD is finalizing (after adoption by the Land Conservation and Development Commission) the Rocky Habitat Management Strategy. The Strategy recognizes the value of submerged aquatic vegetation (SAV) and limits disturbance to those habitats in the territorial sea and rocky intertidal zones via the adoption of new policies (Policies I, J, K, Q and R).

Authority and nexus in climate and ocean change:

The Department of Environmental Quality (DEQ) administers state and federal laws designed to limit air, water, and land pollution to protect public health and the environment.

Program elements that relate to climate and ocean change:

The DEQ Air Quality Division implements a variety of programs to reduce GHG emissions, communicate environment and climate science to the public, and coordinate with local, regional, and national levels to improve climate and environmental policy. The Water Quality Division has a variety of programs that support OAH monitoring, prevention and mitigation efforts, and is responsible for implementing Clean Water Act regulations to reduce pollution and establish restoration plans for waters not meeting water quality standards.

Opportunities for augmenting agency programs and actions:

DEQ aims to establish and implement a greenhouse gas cap and reduce program, develop methodology to assess marine water quality for OAH, continue the Tillamook Bay Estuarine Monitoring Project, and increase capacity for TMDL development and implementation efforts. Providing secondary co-benefits to OAH, DEQ intends to address factors contributing to disapproval of coastal nonpoint program (CZARA), improve HAB prevention and risk reduction efforts, increase capacity for issuance and enforcement of wastewater permits, maintain DEQ Laboratory Infrastructure, and re-establish an onsite septic system repair/replace loan program.

Progress to date on initiatives:

The department has made progress on multiple initiatives described in the 2021 report. DEQ established the Climate Protection Program (CPP), in accordance with Executive Order 20-04, to dramatically reduce and cap greenhouse gas emissions in Oregon over the next thirty years. Starting in 2022, the CPP sets a limit or “cap” on fossil fuel greenhouse gas emissions in residential and commercial settings using a best available emissions reduction approach. DEQ convened a technical workgroup to assist with and provide recommendations toward the development of OAH assessment methodologies. These recommendations will be used to develop a more robust assessment of marine dissolved oxygen and OA as part of the 2024 Integrated Report. DEQ was awarded a two-year Oregon Watershed Enhancement Board grant to study OAH in Tillamook Bay in coordination with Tillamook Estuaries Partnership (TEP). Collected data will be included in the Ambient Water Quality Monitoring System database, and a summary of results is set to be available in early 2023. Thanks to collaborations with the U.S. Environmental Protection Agency and TEP, long-term monitoring in Tillamook Bay will continue for the foreseeable future at the Garibaldi site. The 2021 Legislature established four new positions at the agency to develop and implement watershed restoration plans (TMDLs) for areas not meeting water quality standards. DEQ and DLCD, in coordination with other state natural resource agencies, have restarted discussions with the EPA and NOAA to address CZARA interim management measures and forestry gaps so federal agencies can approve Oregon’s coastal nonpoint program and fully restore associated grant funding. CyanoHAB monitoring and analytical testing capacity has been expanded to improve CyanoHAB detection and response efforts across the state. In partnership with Craft3, DEQ re-established the Onsite Loan Program and launched a new Onsite Financial Assistance Program that allocates funds to community partners to address failing septic systems in Oregon.

Authority and nexus in climate and ocean change:

The Oregon Department of Agriculture (ODA) Natural Resource Program is responsible for the development and implementation of management plans to prevent and control water pollution from agricultural activities and industries. They ensure cooperation from Oregon's local farmers and ranchers in order to ensure riparian and landscape conditions attain ODA's water quality standards and meet the agricultural pollutant load allocations assigned by DEQ.

Program elements that relate to climate and ocean change:

A primary initiative of ODA is to prevent and control agricultural water pollution, and is accomplished through multiple research, monitoring, and management actions. ODA completes the inspection and certification of shellfish mariculture and seafood with respect to changing ocean conditions and harmful algal blooms, considers and protects eelgrasses and native oyster beds when siting shellfish farm locations, and coordinates with multi-agency and stakeholder taskforces, councils, and groups to address ocean and climate change.

Opportunities for augmenting agency programs and actions:

ODA aims to expand research efforts to increase agricultural carbon sequestration and soil health in partnership with Oregon State University (OSU). The agency continues to implement ODA's climate change plan, expand water quality improvement work in strategic areas, improve early detection and rapid response to invasive aquatic species, and assist the shellfish industry in the development of new shellfish aquaculture sites.

Progress to date on initiatives:

Work is in progress to meet ODA's goal in the expansion of agricultural carbon sequestration and soil health. ODA entered into a contract agreement with OSU to study the Lower Umatilla Basin Groundwater Management Area (LUGBWMA), which aims to inform governing bodies of the hydrologic make-up of the LUGBWMA using existing data and its aquifer structure. ODA hired a soil health specialist to support the goals of the Fertilizer Program by supporting outcomes that reduce erosion, enhance nutrient use efficiency, promote carbon sequestration on natural and working lands, and help the agriculture industry adapt to the ongoing effects of climate change.



Department of State Lands

Authority and nexus in climate and ocean change:

The Department of State Lands (DSL) Aquatic Resource Management Program conserves, restores, and protects Oregon's state waters and the ecosystem services they provide.

Program elements that relate to climate and ocean change:

DSL implements research on coastal and estuarine regions to understand, adapt to, and mitigate OAH impacts. They support activities and initiatives that promote adaptation and resilience to OAH conditions, conduct research and education partnerships that support OAH research priorities, and develop policy to support OAH action.

Opportunities for augmenting agency programs and actions:

DSL aims to support monitoring efforts at South Slough National Estuarine Research Reserve. The goal of these efforts is to develop a further understanding of OAH causes and impacts, support visiting researchers studying submerged aquatic vegetation (SAV) and continue monitoring and mapping eelgrass in South Slough. DSL is also focused on utilizing research to improve conservation efforts for salt marshes and eelgrasses, working to understand carbon sequestration potential of estuarine habitats, incorporating best available information into current DSL policies, and continuing to provide staff resources to state-wide ocean policy management efforts.

Progress to date on initiatives:

In order to advance OAH monitoring, South Slough National Estuarine Research Reserve (SSNERR) collaborated on two OAH studies. These studies included a doctoral research project investigating the relationship between OAH and macrophytes, and a HB3114 – Oregon Ocean Science Trust (OOST) project focused on evaluating the interaction of water quality and eelgrass in Coos Bay. SSNERR is currently collaborating, providing support, and contributing data to ten research projects focused on eelgrass (*Zostera marina*) that contribute to increased eelgrass monitoring and mapping efforts. Similarly, SSNERR has conducted intertidal eelgrass abundance monitoring at four sites between 2004-2022, and is undergoing pilot projects to assess optimal eelgrass restoration methods and the feasibility of using Unmanned Aerial Vehicles (UAV) to map eelgrass beds. In collaboration with the CTCLUSI and the Coquille Indian Tribe, SSNERR conducted water quality monitoring at ten sites from 1995-2022, where a subset of the water quality network is managed through the NERRS System-Wide Monitoring Program and NANOOS. In March 2022, SSNERR also hosted an information exchange for the DSL Aquatic Resource Management Program's quarterly planning and policy meeting, which is hosted to share current reserve science and stewardship restoration project updates. DSL continues to provide staff resources to state-wide ocean policy management efforts including their work with SSNERR, hiring an Ocean Cable Policy Specialist to work with DLCD, and providing administrative support to the OOST.



Oregon Department of Forestry

Authority and nexus in climate and ocean change:

The Oregon Department of Forestry (ODF) commits to maintaining long-term water quality goals on non-federal forestland, which affects Oregon's coastal and oceanic landscape and marine ecosystems.

Program elements that relate to climate and ocean change:

ODF ensures the long-term vitality of the state's forested ecosystems through science, monitoring, and carbon mitigation and storage. They also coordinate with additional state agencies on research, policy direction, and project implementation.

Opportunities for augmenting agency programs and actions:

The goal of ODF is to complete and implement an aquatic habitat centric Habitat Conservation Plan (HCP) for State Forest lands and analyze riparian structure and function in western Oregon.

Progress to date on initiatives:

Currently, ODF is modifying Oregon's forestry rules to aid in the creation of a Habitat Conservation Plan (HCP) that will meet the issuance criteria of an Incidental Take Permit under the Endangered Species Act. Collectively, these agreements are known as the Private Forest Accord (PFA). The PFA and associated legislation came together early in the first quarter of 2022, which were documented and recorded in the PFA report. The associated legislation directed the department of forestry to adopt rules to revise the Forest Practices Act, develop an HCP, and apply for Incidental Take Permit (ITP) covering the identified aquatic species. The revised rules updating the PFA are available for public comment as of September 1st, 2022, and is open for 30 days. When the comment period closes, the rules will go before the Board of Forestry on October 26, 2022, to be considered for final adoption. ODF staff will seek approval of the draft proposed HCP by the Board of Forestry in November 2022 and then present a proposed draft to the federal agencies by December 31, 2022.

Staff will prepare the final HCP and obtain the incidental take permit no later than December 31, 2027. ODF is no longer interested in creating a Forest Carbon Offset Program, preferring to allow the private sector to continue to grow and fill that space.

Authority and nexus in climate and ocean change:

The Oregon Health Authority (OHA) seeks to understand the socioeconomic vulnerabilities associated with OAH and supports activities and initiatives that promote adaptation and resilience.

Program elements that relate to climate and ocean change:

OHA is focused on reducing climate-related health risks while promoting Oregon community resilience. They also coordinate with academic institutions and state agencies regarding OAH socioeconomic impacts.

Opportunities for augmenting agency programs and actions:

OHA aims to promote climate mitigation efforts that maximize health co-benefits, advance equitable climate adaptation through local, state, and tribal government collaborations, and expand environmental health capacity in the public health system. The steps will assist in identifying and addressing emerging threats to environmental health, as well as fostering a greater understanding of the effect on mental health. Lastly, OHA is focused on identifying the role of social resilience regarding a community's capacity to adapt and has incorporated increasing climate-resilience of local communities as a strategy in OHA's State Health Improvement Plan, *Healthier Together Oregon*.

Progress to date on initiatives:

Currently, OHA is working to promote climate mitigation efforts that maximize health co-benefits by collaborating with the DEQ Climate Protection Program, Oregon Global Warming Commission Transformational Integrated Greenhouse Gas Emissions Reduction (TIGHGER) Project, and DLCD Climate-Friendly and Equitable Communities Rulemaking initiatives. The 2021 legislature adopted a budget for OHA in House Bill 5024 (HB5024) that included funding specifically for the public health system, comprised of local county public health authorities, Tribal health departments, community based organizations, and OHA to develop plans and strategies to build community resilience to climate risks. With its funding OHA has hired or will hire four additional climate specialists and data analysts to expand environmental health capacity in the public health system and deliver technical assistance to partners. To increase understanding of mental health effects on individuals, OHA published a study on Climate Change Impacts to Youth Mental Health in Oregon.

Authority and nexus in climate and ocean change:

The Oregon Department of Energy (ODOE) is focused on the reduction of greenhouse gas (GHG) emissions that occur as a result of Oregon's use of energy, while also educating and raising awareness of the impacts and risks of climate change.

Program elements that relate to climate and ocean change:

ODOE plays a vital role in energy education through a biennial legislative report, which includes information on energy's role in producing GHG emissions. The agency also produces the Oregon Global Warming Commission Reports that, among other things, track and evaluate the economic, environmental, health, and social impacts of climate change. ODOE also supports the development of efficient energy measures, the reduction of energy demand, cleaner energy technology, and policy initiatives.

Opportunities for augmenting agency programs and actions:

ODOE aims to continue education on energy efficiency, clean energy, and climate change. They also aim to continue research and planning relating to climate change, and to continue administering programs that support energy efficiency and cleaner supplies of energy.

Progress to date on initiatives:

The Oregon Department of Energy (ODOE) continues to make progress in the program areas it identified in the 2021 Multiagency OAH Report. As one high-profile example, the Oregon Global Warming Commission (staffed by ODOE) expects to complete its Transformational Integrated Greenhouse Gas Emission Reduction (TIGHGER) Plan work by the end of 2022. The TIGHGER Plan aims to advise the Governor and Legislature on the medium-term strategies for achieving the state's 2035 greenhouse gas emissions reduction goals, while continuing to grow Oregon's economy and enhancing equity and quality of life for all Oregonians.

Since the 2021 Multiagency OAH Report, recent legislation has bolstered ODOE's work in identified program areas through new studies and additional incentive programs. The Floating Offshore Wind Study identifies the benefits and challenges of integrating up to 3 GW of floating offshore wind into Oregon's electric grid by 2030 (published September 15, 2022). The Renewable Hydrogen Study will report on potential benefits of, and barriers to, production and use of renewable hydrogen in Oregon (expected by November 15, 2022). In addition, the Small-Scale Renewable Energy Projects Study will examine opportunities to encourage the development of small-scale and community-based renewable energy projects that can contribute to economic growth and local energy resilience (expected by September 30, 2022). Furthermore, the Energy Efficient Wildfire Rebuilding Incentive, the Heat Pump Incentive Programs, the Community Renewable Energy Grant Program, and the Rural & Agricultural Energy Audit Program have allowed ODOE to amplify its work in identified program areas.