



Date: March 16, 2021

To: The Honorable Brad Witt, Chair
House Committee on Agriculture and Natural Resources
Oregon State Legislature

**Testimony by Co-Chairs of the Oregon Coordinating Council on Ocean Acidification & Hypoxia
Dr. Jack Barth and Dr. Caren Braby**

Greetings Chair Witt and members of the Committee,

As the Co-Chairs of the legislatively created Oregon Coordinating Council on Ocean Acidification and Hypoxia (or “OAH Council”) established in 2017 by Senate Bill 1039, we appreciate the opportunity to provide comments on House Bill 3114. This is a cohesive plan to implement several of the recommended priorities established in the OAH Council Legislative Reports (submitted in 2018, 2020) and the Oregon OAH Action Plan (adopted by the Governor for 2019-2025) that support fisheries, industry, and coastal economies. We have testified previously about the history of the OAH Council and the process to develop our recommendations, and welcome the chance to continue this dialog. Today, we describe how the projects outlined in HB3114 relate to these OAH action priorities and connect to Oregon’s fishing communities and economies to help inform your decisions.

Background on Ocean Acidification and Hypoxia (OAH) in Oregon

Oregon is among the first places in the world to observe direct impacts of the compounding stressors of ocean acidification and hypoxia (OAH), due to our unique geographic and oceanographic context. Starting in the mid-2000s, low oxygen (hypoxia) began to be observed in Oregon’s coastal waters. Oregon also became one of the first places in the world to observe direct impacts of ocean acidification in our shellfish hatcheries with catastrophic losses in production. When CO₂ is absorbed by seawater, chemical reactions occur that lower its pH (making the seawater more acidic) and make it more difficult for shell-forming species to build shells. Partnerships between Oregon’s mariculture industry, academia, and regulators first discovered ocean acidification (OA) as the culprit and created solutions to mitigate this ongoing problem. All along the West Coast, OAH events continue to intensify in duration and magnitude with signs that they are now undermining the rich ocean and estuarine ecosystems’ food webs.

Bolstering our fishing industries and communities

Deferred action leaves a broad spectrum of industries and communities vulnerable, with increased risk as conditions exacerbate and limit our options to build resiliency. Understanding monitoring and addressing intensifying OAH conditions here in Oregon now, is critical to supporting Oregon’s economy. Oregon’s coastal economies rely on our vibrant marine ecosystem. Our nearshore waters are home to sport and commercial fisheries, all of the State’s

mariculture operations, and contain critical nursery grounds for economically important species including rockfish, oysters, salmon, pink shrimp, clams, and Dungeness crab.

Especially vulnerable are Oregon's shellfish fisheries and tourism industries that depend on a thriving ecosystem. The need for science-based independent surveys for shellfish and their habitats is widely recognized and supported. In particular, the Tillamook Bay Clam Advisory Committee, formed by SB1025 in 2019 to represent commercial, recreational, and conservation stakeholders, is considering ways to improve the frequency of ODFW's shellfish and estuarine assessment surveys. ODFW's assessments and map products are used directly to describe harvest and allot opportunities for recreational and commercial clamming, which support the clam and Dungeness crab industries and tourism in coastal communities. HB3114 bolsters ODFW's capacity to provide timely information to describe and track OAH impacts.

OAH Council Recommendations and HB3114

OAH related projects in HB3114 are for direct appropriation to the Oregon Ocean Science Trust (for redistribution via competitive requests for proposals), the Oregon Department of Fish and Wildlife, and Oregon State University. These projects fall into three themes: 1) ocean monitoring, 2) community and ecosystem resilience, and 3) awareness. Appended to this testimony is a detailed description of the connection between the OAH Council recommended priorities and the cohesive package of projects in HB3114. We also note which projects in HB3114 were originally recommended by the Oregon Shellfish Task Force, which convened by the Legislature before the OAH Council was created.

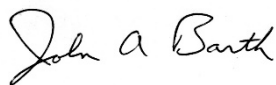
Concluding Remarks

As Co-Chairs to Oregon's OAH Council, we take the charges set forth in SB1039 with a sense of urgency and importance. We have the remarkable opportunity to help Oregon's marine and coastal economies that rely on a healthy marine ecosystem. Throughout the OAH Council process, we have taken a collaborative, science-based approach to developing our recommendations and encouraging public input and participation. The investment opportunities outlined in HB3114 will deliver on these recommendations and benefit Oregonians who love and rely on our iconic and economically important marine species.

Thank you for your consideration of these comments and we welcome any questions.

Sincerely,

John Barth, PhD



Executive Director
Marine Studies Initiative
Oregon State University

Caren Braby, PhD



Marine Resources Program Manager
Oregon Department of Fish and Wildlife



Description of OAH Council recommended priorities and relationship to the projects listed in HB3114

** Recommendations by the Oregon Shellfish Task Force*

2019 Action Plan Theme 1: Advance scientific understanding to address OAH vulnerabilities

- **HB3114, Section 1.1:** \$100,000 for intertidal OAH monitoring at Oregon marine reserves to capitalize on Oregon existing investment in marine reserves as scientific reference sites, by co-locating new OAH monitoring sites at marine reserves.
- **HB3114, Section 1.2:** \$300,000 for subtidal OAH monitoring at Oregon marine reserves to capitalize on Oregon existing investment in marine reserves as scientific reference sites, by co-locating new OAH monitoring sites at marine reserves.
- **HB3114, Section 1.3:** \$100,000 for establishment of OAH monitoring at Yaquina Bay, which is one of the 4 most important estuaries in Oregon, both ecologically and economically.
- ***HB3114, Section 2.1:** \$420,000 for shellfish and eelgrass habitat assessments by ODFW (SEACOR Project) to expand the existing assessment team's resources to increase the frequency of assessments, to better track status of these critical resources over time.
- **HB3114, Section 3.2:** \$100,000 for augmentation of sampling along the Newport Hydrographic Line in order to support research on OAH.
- ***HB3114, Section 3.3:** \$100,000 to support ocean acidification monitoring using Burke-O-Lator systems at key sites along Oregon's coast and at key industry sites.

2019 Action Plan Theme 3: Support community and ecosystem resilience

- ***HB3114, Section 1.4:** \$140,000 for ecosystem modeling of submerged aquatic vegetation to help identify resiliency goals for Oregon's estuaries.
- ***HB3114, Section 1.5:** \$25,000 for development of recommendations, through workshops or seminars, for maximizing abundance of wild shellfish, cultured shellfish and submerged aquatic vegetation in estuaries in Oregon.
- ***HB3114, Section 1.6:** \$150,000 for cooperative research to develop and document best management practices for mariculture to also achieve eelgrass and estuary resilience.
- ***HB3114, Section 1.7:** \$180,000 for funding research on wild and cultured shellfish species and OAH impacts; increase our understanding including reproduction, recruitment, location of source populations, and connectivity.
- ***HB3114, Section 2.2:** \$50,000 for expended estuary mapping of for long-term documentation of OAH impacts on native Olympia oyster beds for long-term monitoring and protection to promote this OAH-resilient species.
- ***HB3114, Section 3.1:** \$170,000 to support the Molluscan Broodstock Program (MBP) at the Hatfield Marine Science Center to restore native populations and promote commercial cultivation of the native Olympia oyster.

2019 Action Plan Theme 4: Share OAH science, impacts, and solutions to raise awareness

- **HB3114, Section 1.8:** \$65,000 for a communications plan and strategy for outreach and education on OAH impacts, science and solutions and to develop communications materials on the science, impacts and solutions for OAH that will be useful in policy decision-making.