



Alaska Ocean Observing System 2021 Impact Report

From the Executive Director

It has been more than one year since I started as AOOS Executive Director, and I'm proud to share with you some of the highlights of the past year, including:

- Learning to navigate federal funding challenges and opportunities;
- Developing implementation plans for AOOS receipt of Congressional infrastructure funds;
- Receipt of a National Science Foundation award (with two other regional ocean observing systems) to work with Indigenous communities (ours is with the Alaska Eskimo Whaling Commission) to co-produce a proposal for locally-managed wave buoys; and
- Successful operation of AOOS observing assets, even in a time of COVID-19.



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Board Members

State Agency

- Alaska DEC
- Alaska DF&G
- Alaska DNR

Federal Agency

- NOAA
- USCG
- USGS
- BOEM

State/Federal

- Alaska Sea Grant Program

Research Entities

- University of Alaska
- NPRB
- PWSSC/OSRI
- NOAA AFSC
- US Arctic Research Commission
- Alaska SeaLife Center

Industry

- Marine Exchange of Alaska
- North Pacific Fishery Management Council
- Hilcorp, Alaska

Environmental NGO

- World Wildlife Fund

Tribal

- Indigenous People's Council on Marine Mammals



Observing Highlights

Seth Danielson



Arctic Eco-moorings Monitor Changing Ecosystem

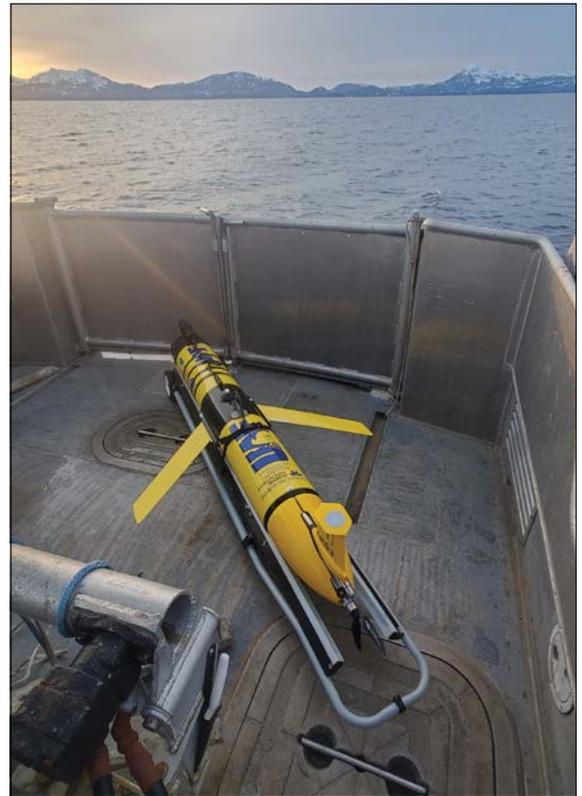
The annual turnaround of the Chukchi Ecosystem Observatory was successfully accomplished in November, along with sampling along the Distributed Biological Observatory lines in the Chukchi and northern Bering Seas (see photo to left). We commend crew leaders Seth Danielson and Jackie Grebmeier for accomplishing this scientific effort, despite vessel conflicts and cruise cancellations due to the COVID-19 pandemic.

New Water Level Stations Added in Undersampled Alaska

With only four federal water level stations from the Bering Sea to the Beaufort Sea, AOOS funds were used to install new stations at the Port of Dillingham in Bristol Bay and at Utqiaġvik on the Beaufort coast (see photo to right) to provide real time water level data through the AOOS supported Alaska Water Level Watch Data Portal. The data are used for understanding tidal and wind-driven water level variations, and for storm surge, wave, and flooding forecasts.



JOA Surveys



Hank Statscewich, UAF

More Weather Observations Improve Navigation Safety

AOOS continues to support the Marine Exchange of Alaska with co-installation of weather sensors and AIS vessel tracking stations along Alaska's coast to support local mariners and National Weather Service forecasting. Mariners can directly access the weather through the AIS system, or from the AOOS data portal or the Marine Exchange website. The station under construction in above photo is in Southeast Alaska.



Marine Exchange of Alaska

Autonomous Vehicles Provide Near Real Time Ocean Conditions

Prior to its participation in the 2022 International Year of the Salmon High Seas Pan-Pacific Expedition, the AOOS-supported glider Shackleton successfully located tagged herring and mapped environmental water column conditions in Prince William Sound (above photo) in 2021. Both programs are demonstrating the operational use of gliders for ocean monitoring in support of real time ecosystem assessments needed for setting fishing quotas and other fisheries management activities.

2021 AOOOS Impact Report

Networking



Alaska Ocean Acidification Network

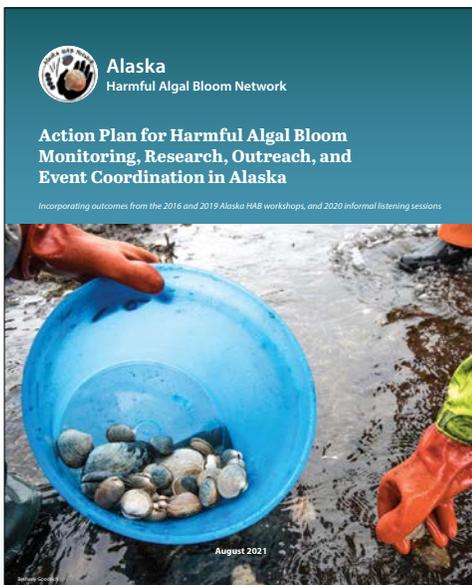
Now in its 6th year supporting researchers, communities and stakeholders, with:

- Communities from Ketchikan to Utqiagvik taking water samples to establish nearshore baseline conditions for OA
- Expanded engagement with the fishing community including crabbers and participation in new “Skipper Science” community observing program
- Widely distributed 6-part podcast series titled “Our Future Ocean: what can carbon policy do for the ocean and Alaska Fisheries”

Alaska Water Level Watch

A collaborative working to improve the quality, coverage, and accessibility to water level observations in Alaska’s coastal zone through:

- Piloting a single beam sonar system Hydroball (TM) that can be easily towed behind skiffs to map bathymetry of shallow nearshore waters and river mouths in western Alaska
- Testing the feasibility of realtime camera systems to monitor coastal hazard conditions and storm surge run-up
- Adding 1-2 new water level stations per year as part of a network-developed buildout plan to fill critical water level observing data gaps across Alaska



Alaska Harmful Algal Bloom Network

Congressional funding helped support:

- New AHAB Action Plan to provide direction for future HAB research, monitoring and outreach activities in Alaska
- Monthly update calls organized by AHAB coordinator to facilitate information sharing and consistently attended by 35-40 network members from across and outside Alaska

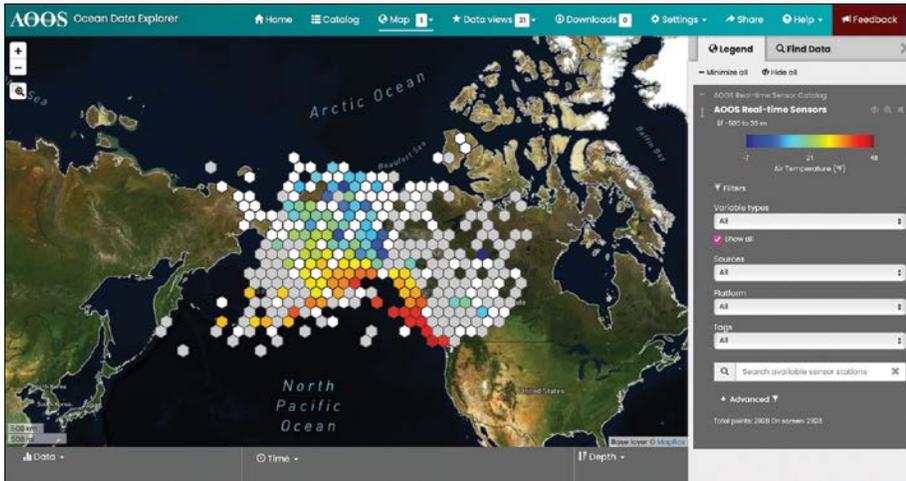


Coming Soon

Alaska Marine Ecosystem Network

Tying together conditions along Alaska’s coastal ocean.

Putting Data to Use



Ocean Data Explorer

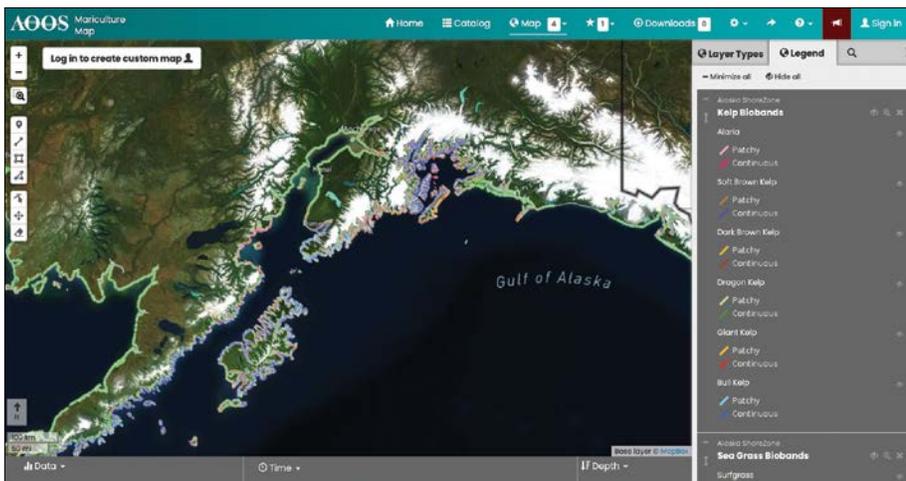
AOOS' flagship data portal for Alaska ocean and coastal waters with:

- More than 3000 searchable data layers including realtime sensor feeds, operational oceanographic and atmospheric models, satellite observations and GIS data sets
- New updated features including data comparison and charting functions and advanced charting features, featured data views and shareable custom data views, and station and source level metadata pages



Bering Sea Ocean Data Sharing Initiative

- Publishing regular Bering Science status reports in collaboration with Community Advisory Panel
- With World Wildlife Fund and National Park Service Beringia funding, developing a Bering Sea Transboundary Incident Response Tool that incorporates Russian and US data for use in planning for and preventing an oil spill or other emergency response
- Supporting a Bering Sea Data Integration Portal



Web-based Mariculture Map

A tool for planning and permitting marine aquaculture projects in Alaska that enables users to:

- Search, view, and download environmental, oceanographic and social data layers
- Create and print custom maps for permit applications
- Discover real-time coastal and ocean sensor data

