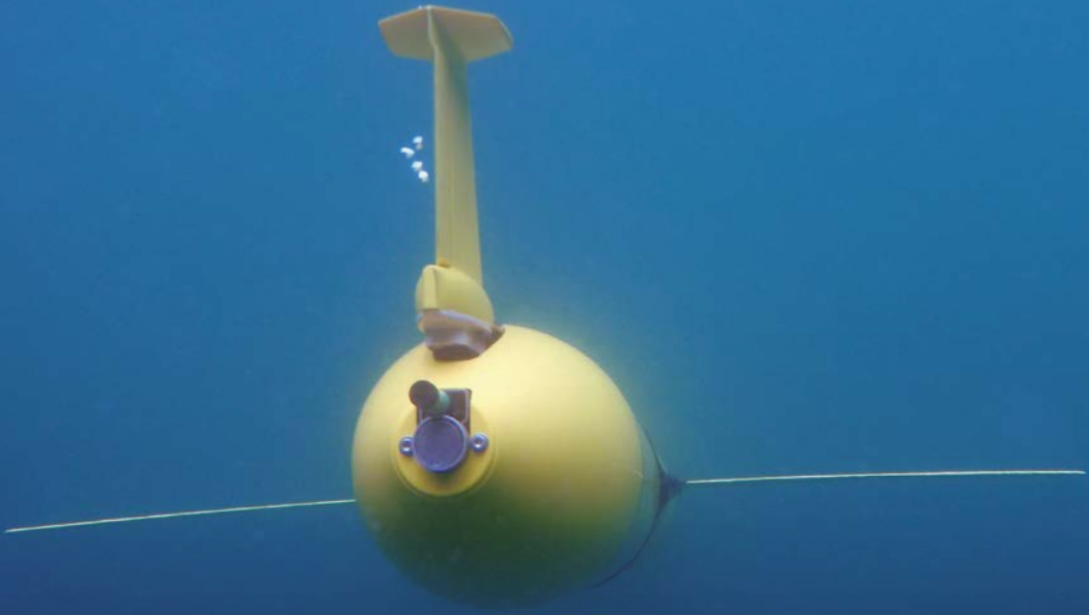


AOOS

Alaska Ocean Observing System



2018
ANNUAL
IMPACT
REPORT

Letter from Executive Director

AOOS is approaching its 15th year in operation later this year. We have come a long way since first starting with a small demonstration project in Prince William Sound. AOOS now operates the largest federally certified data center in Alaska, providing critical ocean and coastal information and data products to stakeholders ranging from commercial fishermen and subsistence users to university researchers and agency managers. We continue to plug gaps in our observing system, most notably this year with a new wave and current buoy for the Port of Nome. In other news this past year, we:



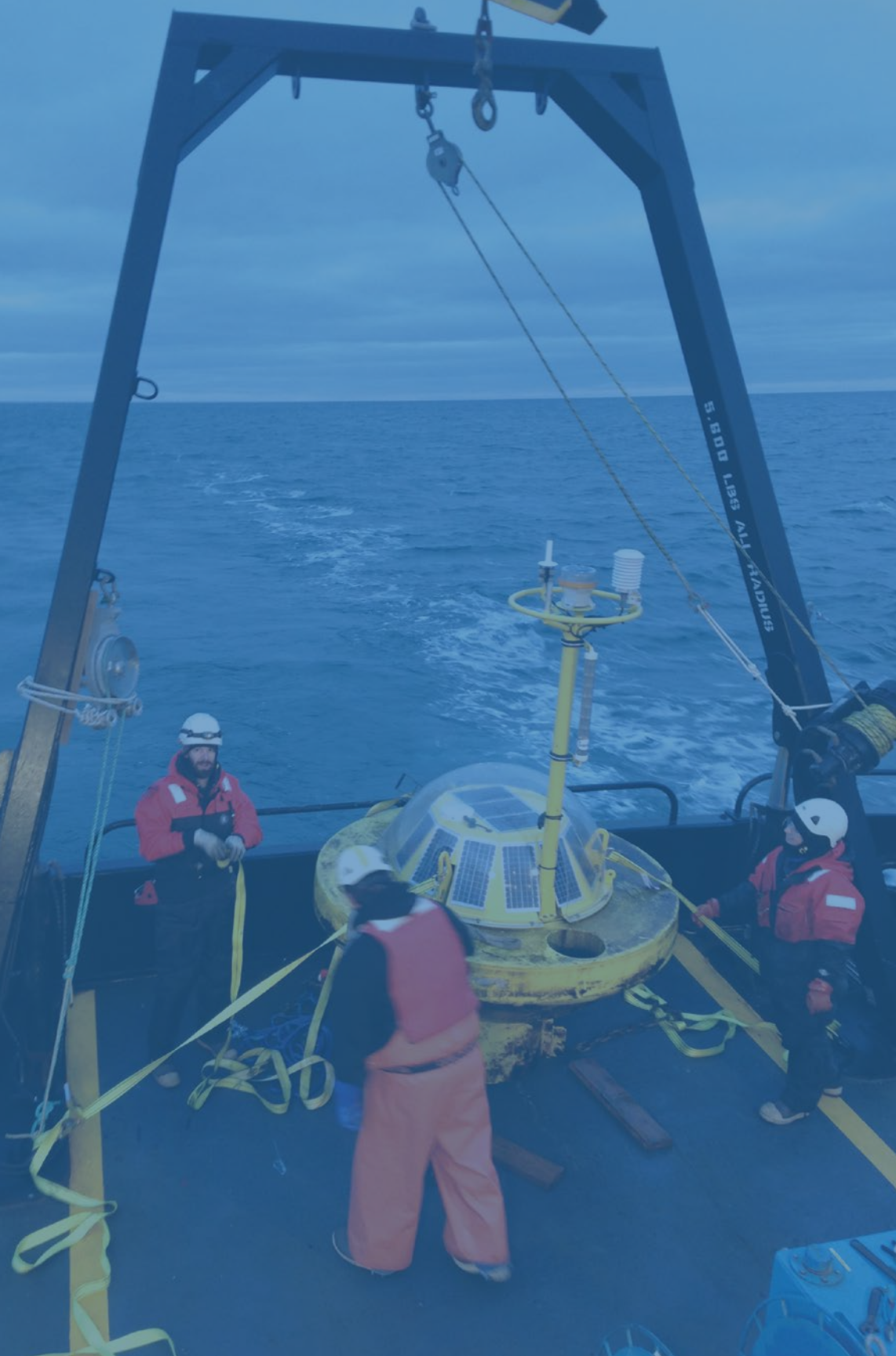
- *Successfully acquired funds to deploy two new high frequency radars in the Bering Strait region to aid maritime safety in an area seeing increased traffic;*
- *Continued to test new water level observing technologies to aid storm surge and flooding forecasts;*
- *Helped coordinate and enhance monitoring across the state for potentially toxic shellfish as part of the Alaska Harmful Algal Bloom Network; and*
- *Increased Alaskans' knowledge about ocean acidification by hosting the Alaska Ocean Acidification Network.*

We continue to be grateful for the support of our partners who share our commitment to bringing the best science and information to Alaskans making decisions about how best to use and manage our resources.

Sincerely,

Molly McCammon

Molly McCammon



Gathering Information and Needs From Resource Users

AOOS continually communicates with a wide variety of stakeholder groups within our large region to discover existing information gaps and topical issues concerning the Gulf of Alaska, Bering Sea, and Arctic Ocean marine systems.

Harmful algal blooms (HABs) have become more prevalent in the Alaska region with warming waters and, in response, AOOS co-founded the Alaska Harmful Algal Bloom Network with Alaska Sea Grant in 2017. The Arctic hub communities of Kotzebue, Barrow and Nome joined the network in 2018 expressing concern with HABs and their impact on subsistence resources to these Bering Sea communities. AOOS acquired additional funding from the US Arctic Research Commission to support baseline monitoring, education and outreach, and the gathering of local and traditional knowledge on past HAB-related events in the Arctic.



AOOS meetings with officials on Capitol Hill



AOOS meetings held with US Government entities



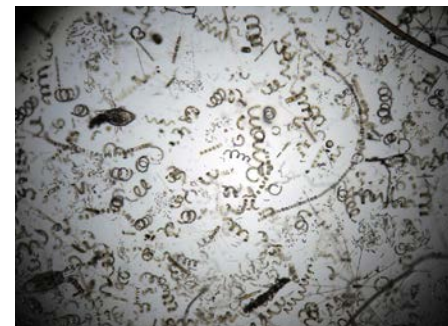
International Meetings AOOS held or participated in



Alaska partnerships and collaborations



Networks facilitated and coordinated by AOOS



Finding Innovative and Economic Ways to Fill the Needs

AOOS projects are designed to fill specific gaps in stakeholder needs for ocean information within the three large marine ecosystems in our region.

Diminishing sea ice in western Alaska (Bering and Chukchi Seas), typically in the fall and spring but now in the winter as well, is exposing the coast to unprecedented coastal erosion threatening local infrastructure and economies. In some extreme cases, entire communities are planning to move to higher ground.

Accurate and timely water level information is critical for the people of Alaska.

AOOS hosts the Alaska Water Level Watch working group to leverage resources across agencies and create an integrated water level observation network. AOOS projects are aimed at increasing coastal mapping efforts, validating innovative and cost effective instrumentation, and creating a web-based portal for the wide variety of Alaska data.



Number of projects managed by AOOS and funded by other agencies



Number of active coastal water level instruments in Alaska



Number of projects funded and managed by AOOS



Number of National Water Level Observation Network (NWLON) reported gaps in coverage for Alaska

Enhancing Maritime Safety

With sea ice coverage decreasing in the Arctic, North American Arctic shipping lanes are open for longer periods of time with a projected increase in marine vessel traffic in the near future. The increase in vessel traffic coupled with the fact that navigational charts for the Arctic are either outdated or non-existent poses a very real and immediate marine safety issue.

With funding from the Arctic Domain Awareness Center, AOOS collaborated with Axiom Data Science and the Marine Exchange of Alaska in a project to assist NOAA in prioritizing areas for updated and dependable nautical charts. This project used a large dataset of historical vessel tracking information coupled with cutting edge data management techniques to identify those areas with greatest vessel use, key to upcoming mapping efforts. That dataset was also used for another project funded by the National Academy of Sciences to assess the potential risk of oil spills to subsistence harvest areas in northern Alaska.

3,000,000

Number of messages received by Alaska AIS stations PER DAY



95%

Percent decline in oldest and thickest ice in the Arctic over the last three decades

485

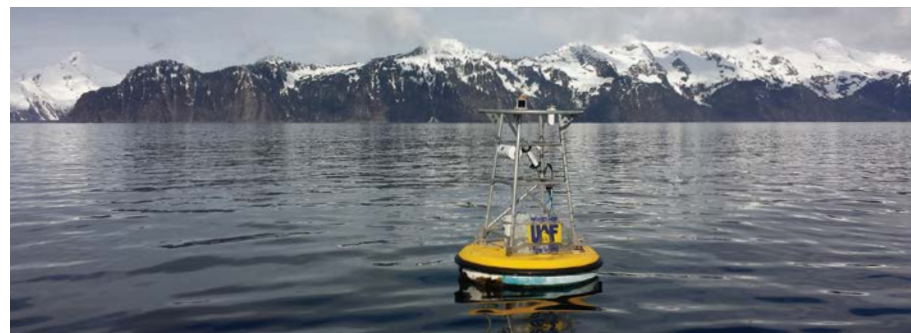
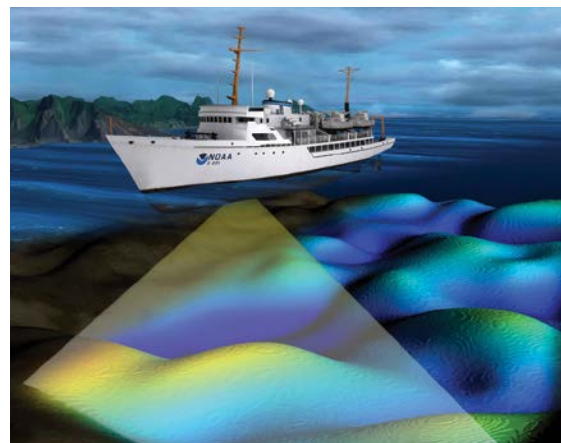
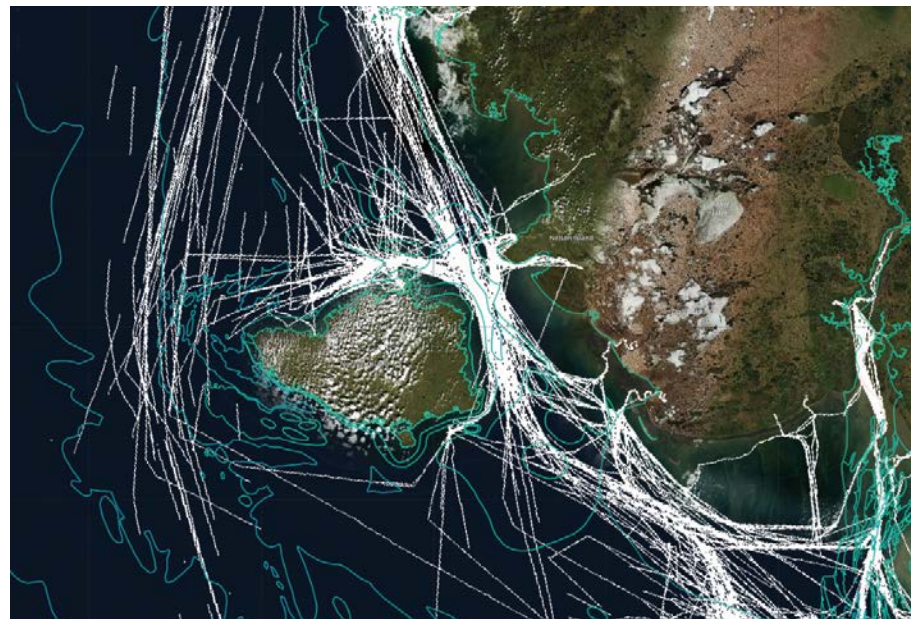


Number of Bering Strait vessel transits in 2016

55



Number of reported shipping incidents north of the Arctic Circle in 2016



Providing the Data to the Public

AOOS provides the most comprehensive interactive web-based source of ocean data for the Alaska region through the AOOS data center. The Ocean Data Explorer (ODE) is used by resource management agencies, industry professionals, researchers, and the recreational public for important real-time information, historical data, and modeling.

“AOOS provides a compendium of ocean data that succeeds in bridging the gap between those who collect the data to those who need it.”

Development of the (ODE) is guided by a feedback tab which allows users to submit questions and suggestions for usability enhancements. Additionally, a survey conducted in 2018 of data portal users was used during an external data management system review and resulted in the addition of several new features allowing for greater customization options and optimized usability.



887

Number of data layers available on the ODE



15,000

Number of on-site sensors reporting data to the ODE



3,000

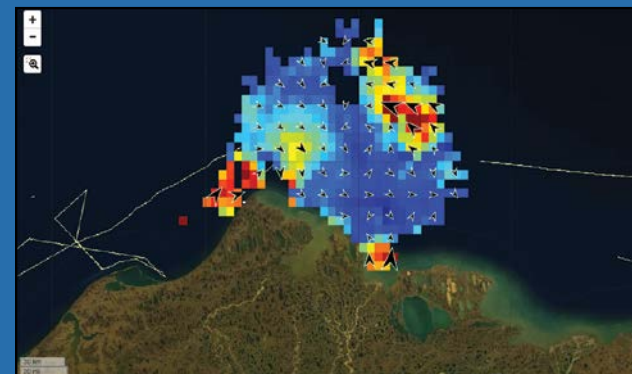
Number of on-site stations reporting data to the ODE

5,000,000

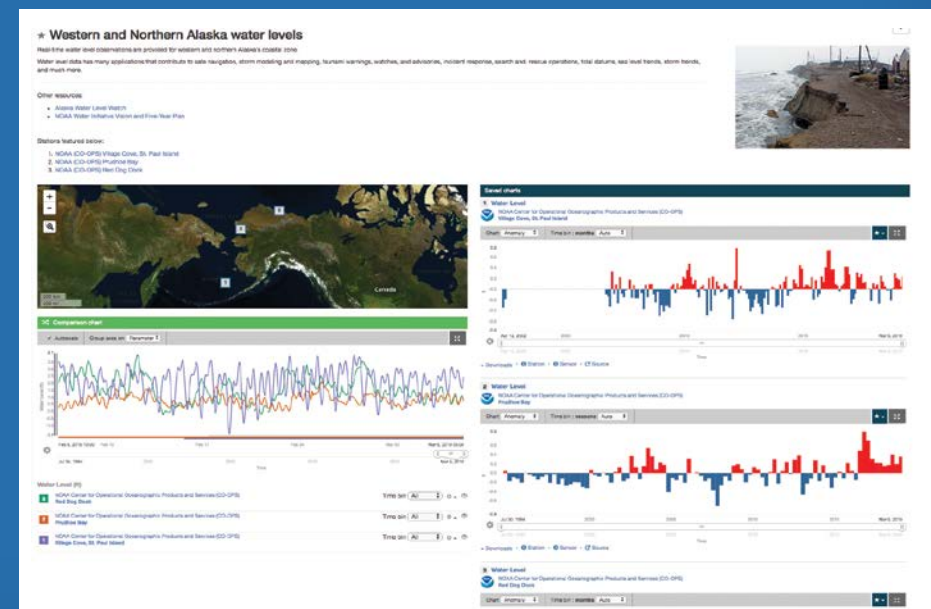
Number of ocean observations reported to the ODE per week



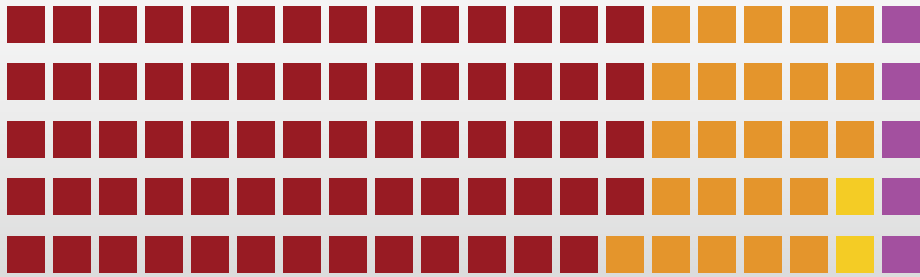
Oil Spill Impact Assessments on Natural Resources



Emergency Response and Maritime Incident Investigations



Financials



Income by Source

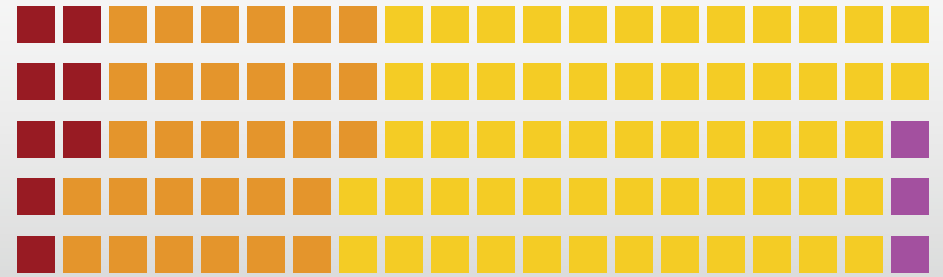
■ IOOS *Some funds are only 1-year equipment investments.

■ Other NOAA and Federal

■ Exxon Valdez Oil Spill Trustee Council

■ Nonprofits, private, Tribes, local, & state government

Total: **\$5,423,550**



Expenses by Subsystem

■ Managing & Building AOOS

■ Data Management & Products

■ Observations & Modeling

■ Outreach, Coordination & Facilitation



Members

State Agencies

- Alaska Department of Environmental Conservation
- Alaska Department of Fish and Game
- Alaska Department of Natural Resources

Federal Agencies

- Bureau of Ocean Energy and Management
- NOAA
- U.S. Coast Guard
- U.S. Geological Survey

State/Federal Agencies

- Alaska Sea Grant

Research Entities

- Alaska SeaLife Center
- NOAA Alaska Fisheries Science Center
- North Pacific Research Board
- Prince William Sound Science Center / Oil Spill Recovery Institute
- University of Alaska
- U.S. Arctic Research Commission

Industry

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

Non-Governmental Organizations

- World Wildlife Fund

Tribal

- Indigenous Peoples Council on Marine Mammals

AOOS Board Officers

- Chair: Katrina Hoffman, Prince William Sound Science Center / Oil Spill Recovery Institute
- Vice Chair: Ed Page, Marine Exchange of Alaska
- Secretary: Cheryl Rosa, U.S. Arctic Research Commission
- Treasurer: James Kendall, Bureau of Ocean Energy and Management

AOOS Staff

- Molly McCammon, Executive Director
- Carol Janzen, Director of Operations and Development
- Holly Kent, Director of Administration and Outreach
- Darcy Dugan, Director of Alaska Ocean Acidification Network
- Marta Kumle, Coastal Mapping Strategist
- Kayla Schommer, Alaska Sea Grant Fellow



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