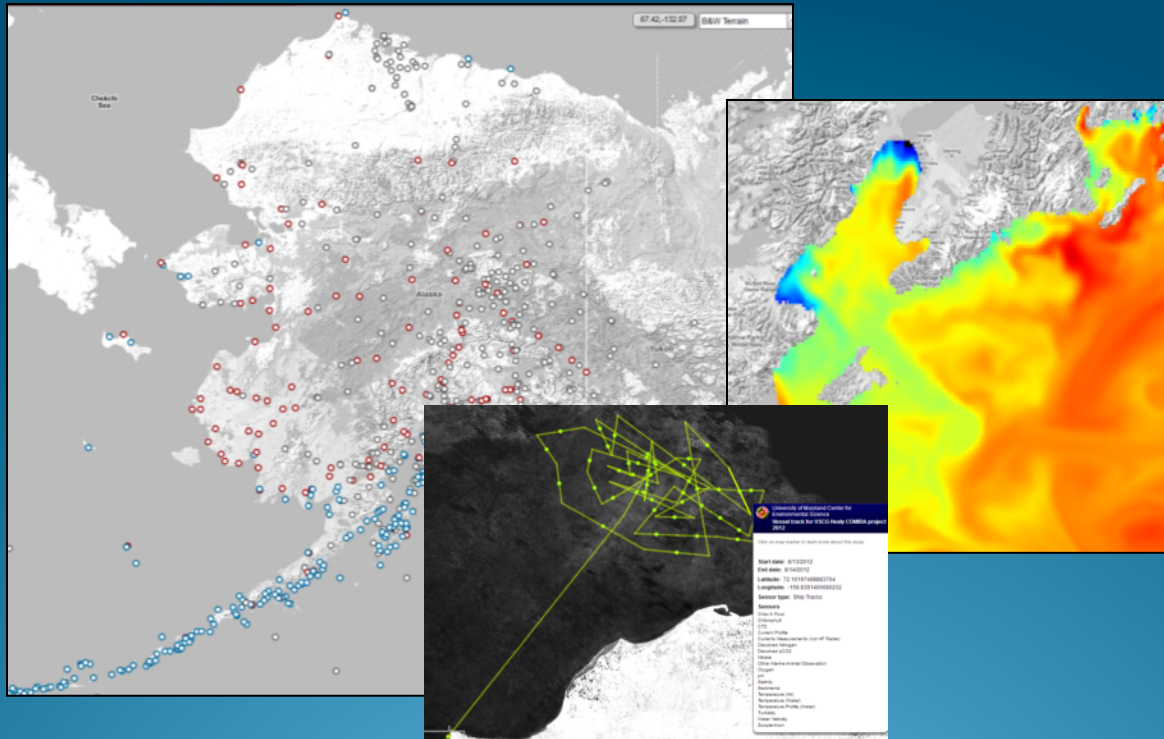


What the Alaska Ocean Observing System can do for you



Providing observations, data and information products to meet agency and stakeholder needs

What is AOOS?

- Part of the Integrated Ocean Observing System (IOOS)
- Governed through a Memorandum of Agreement
- Fiscal agent: Alaska SeaLife Center



Board Executive Committee:

AK Marine Exchange: Ed Page, chair

AK Dept of Natural Resources: Ed Fogels, vice-chair

US Arctic Research Commission: Cheryl Rosa, secretary

Bureau of Ocean Energy Mgmt: Jim Kendall, treasurer

Other Members: AK Sea Grant Program, AK SeaLife Center, AK Dept of Fish & Game, AK Department of Environmental Conservation, Barrow Arctic Science Consortium, NOAA AK Fishery Science Center, NOAA AK Regional Team, North Pacific Fishery Management Council, North Pacific Research Board, Prince William Sound Science Center/OSRI, Shell Oil, University of Alaska, US Coast Guard, US Geological Survey, World Wildlife Fund

Philosophy

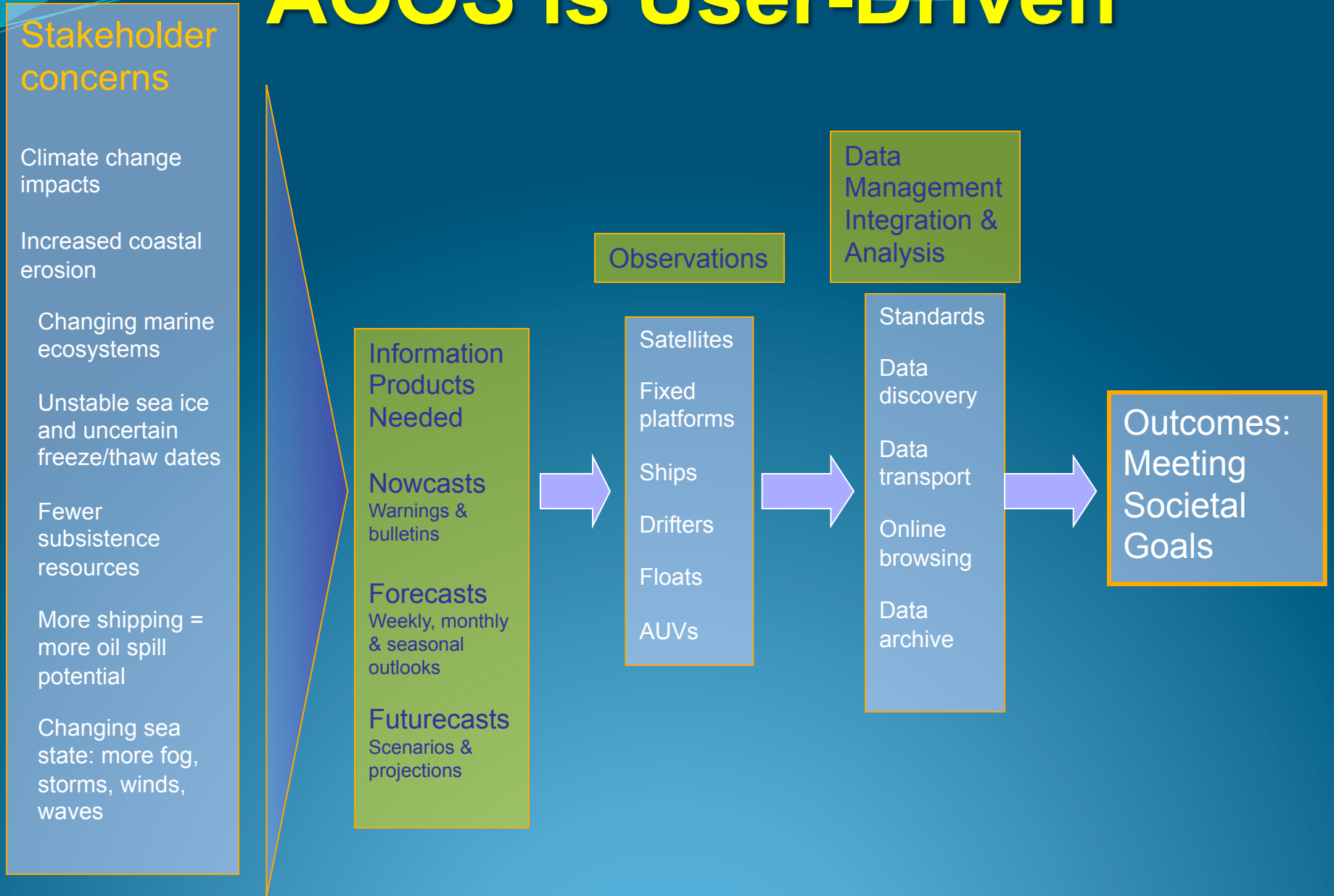
- Congressionally directed, stakeholder driven, science-based
- Measure once, use many times
- Highly leveraged: partners are essential!
- Policy neutral

No REGULATORY authority
 Yes COORDINATING authority
 Yes OBSERVING authority

Only entity mandated by Congress to work with private sector, local, state & federal agencies to coordinate ocean observing



AOOS is User-Driven



Key Stakeholders

- Local communities
- Alaska Native subsistence use
- Offshore oil and gas development
- Fishing: commercial, recreational, subsistence
- Shipping
- Resource managers: species at risk
- Ecosystem services for nation (impacts on nation's climate & weather)
- Conservation
- General public
- Research community



Arctic-focused partnerships

- Federal & State Agencies
- DBO & PAG
- RUSALCA
- Canada: OTN & Ocean Networks Canada, DFO
- PAME: EBM
- CAFF: Biodiversity
- AMBON, MARES, Arctic EIS



AOOS Stakeholder needs: How to identify

- AOOS outreach meetings and workshops
- Participation in advisory groups, steering teams
- Ad hoc stakeholder/researcher & technical expert workshops: navigation safety, ecosystems, and coastal hazards
- Presentations to stakeholder groups & conferences
- Recommendations of other programs w/stakeholder engagement
- Surveys & interviews (sea ice users, recreation boaters)

What does AOOS do?

Themes

- Improve Safety of Marine Operations
- Mitigate Coastal Hazards (erosion, flooding)
- Track Climate & Ecosystem Trends for Fisheries
- Monitor Water Quality: OA



Activities

- Identify & fill observation gaps & forecasts
- Facilitate working groups & networks
- Pilot technology
- Host Regional Data Assembly Center to provide easy access to ocean information
- Generate tools & products for stakeholder use



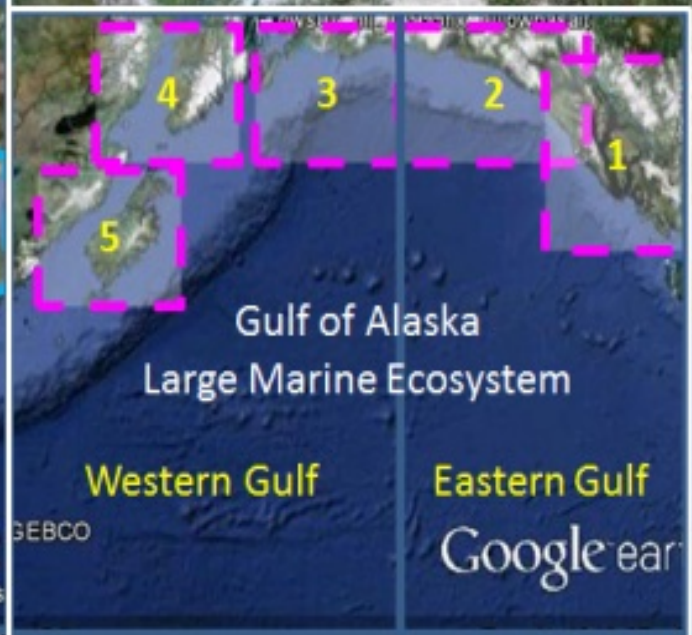
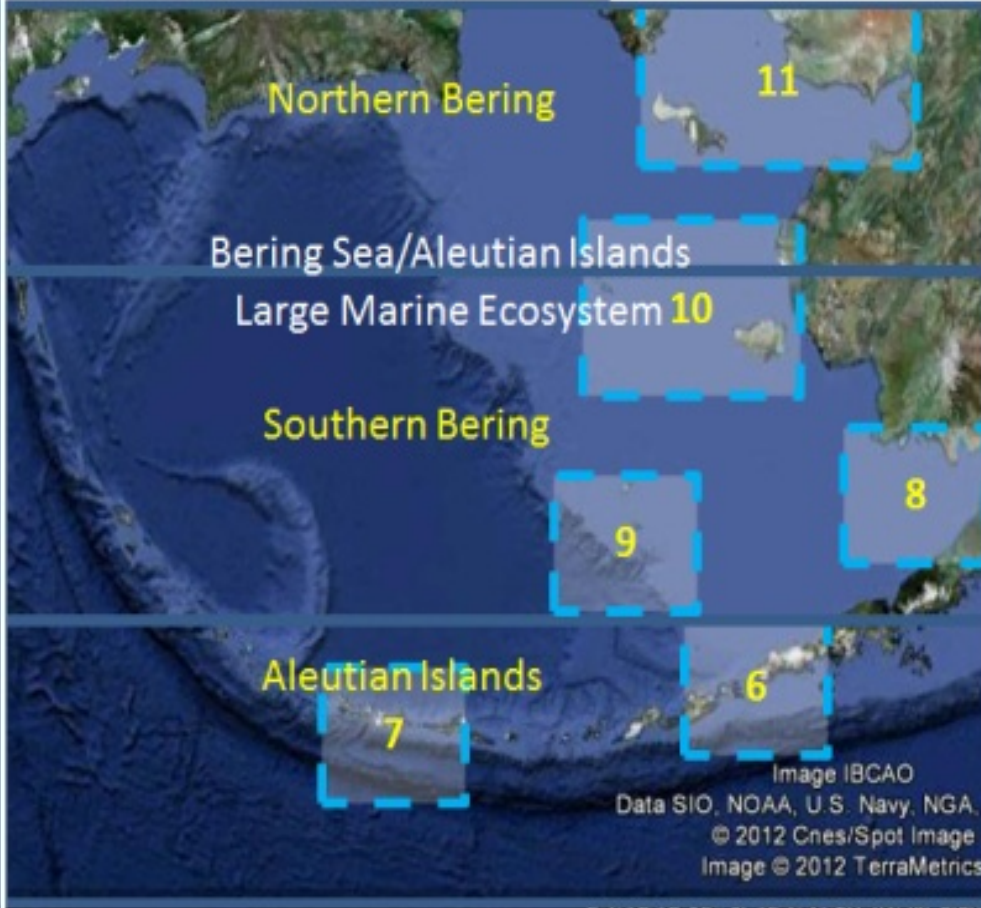


Image IBCAO
 Data SIO, NOAA, U.S. Navy, NGA, GEBCO
 © 2012 Cnes/Spot Image
 Image © 2012 TerraMetrics

Google earth



Marine Operation Safety

- Safe & efficient commercial shipping, recreational & subsistence boating
- Support search & rescue operations in highest risk traffic areas
- Support observations & data tools critical for oil spill response & prevention
- Provide ocean data for offshore energy decision-making



Marine Operation Safety

- **Observations**

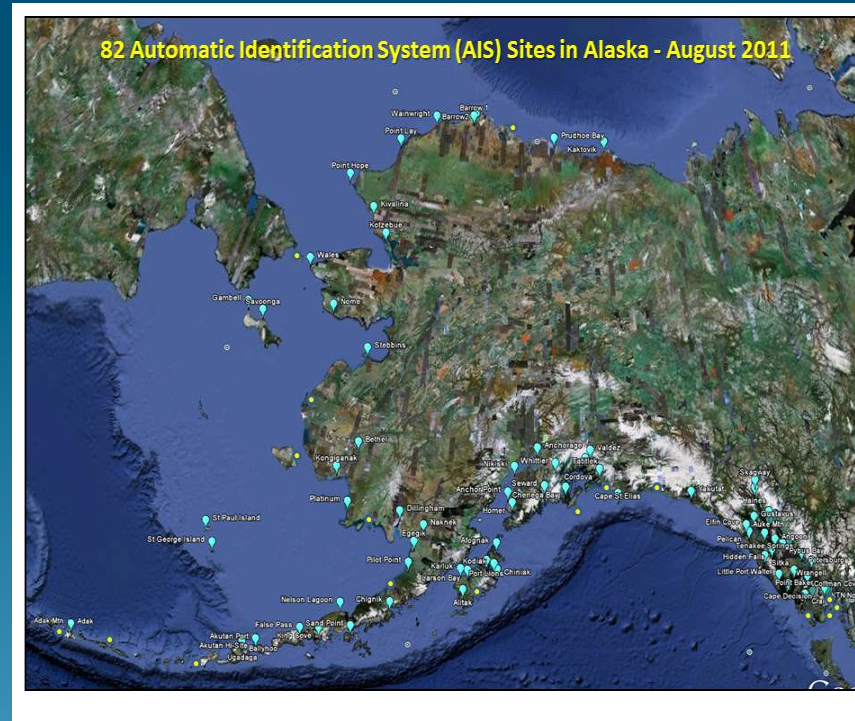
- Weather & wave buoys
- AIS & weather
- HF radars
- Freeze-up detection buoy

- **Products**

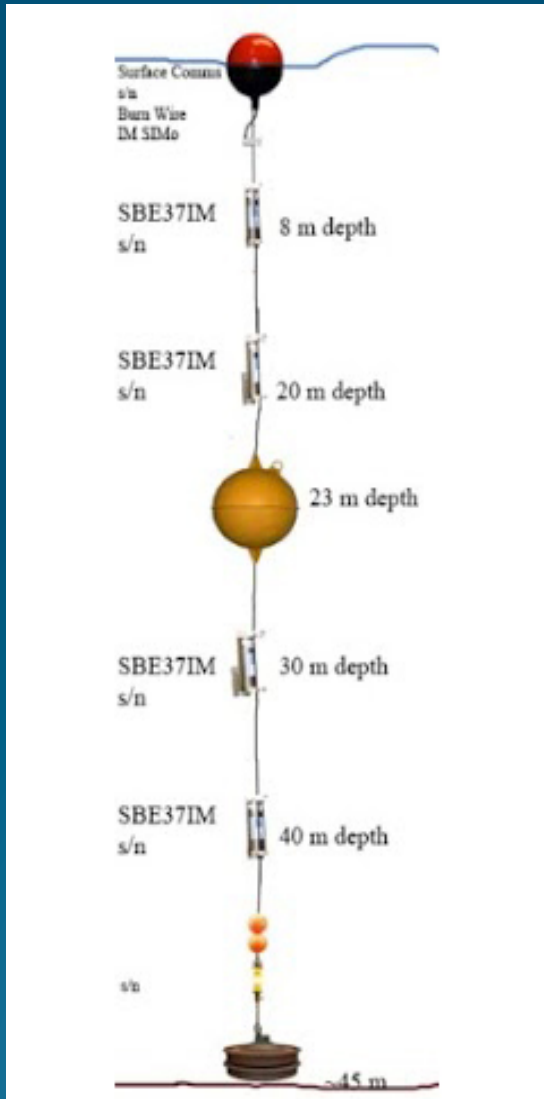
- Real time sensor map
- AIS vessel tracking database
- Arctic Domain Awareness Center support

- **Coordination/facilitation**

- AIS vessel tracking
- Arctic ERMA



Freeze-up detection buoy



- Document sea ice freeze-up with water column conditions prior to and during freeze-up stages in late fall and early winter
 - Surface sensor package detaches prior to actual freeze-up, with the rest of the mooring remaining beneath the sea ice
- The mooring package is unique in that it will remain in place as the sea ice forms.

Sample Ice Detection Buoy Data

portal.aos.org/arctic#module-metadata/5da59d98-59ad-11e1-a1da-0019b9dae22b/8c5dd704-59ad-11e1-bb67-0019b9dae22b - Google Chrome

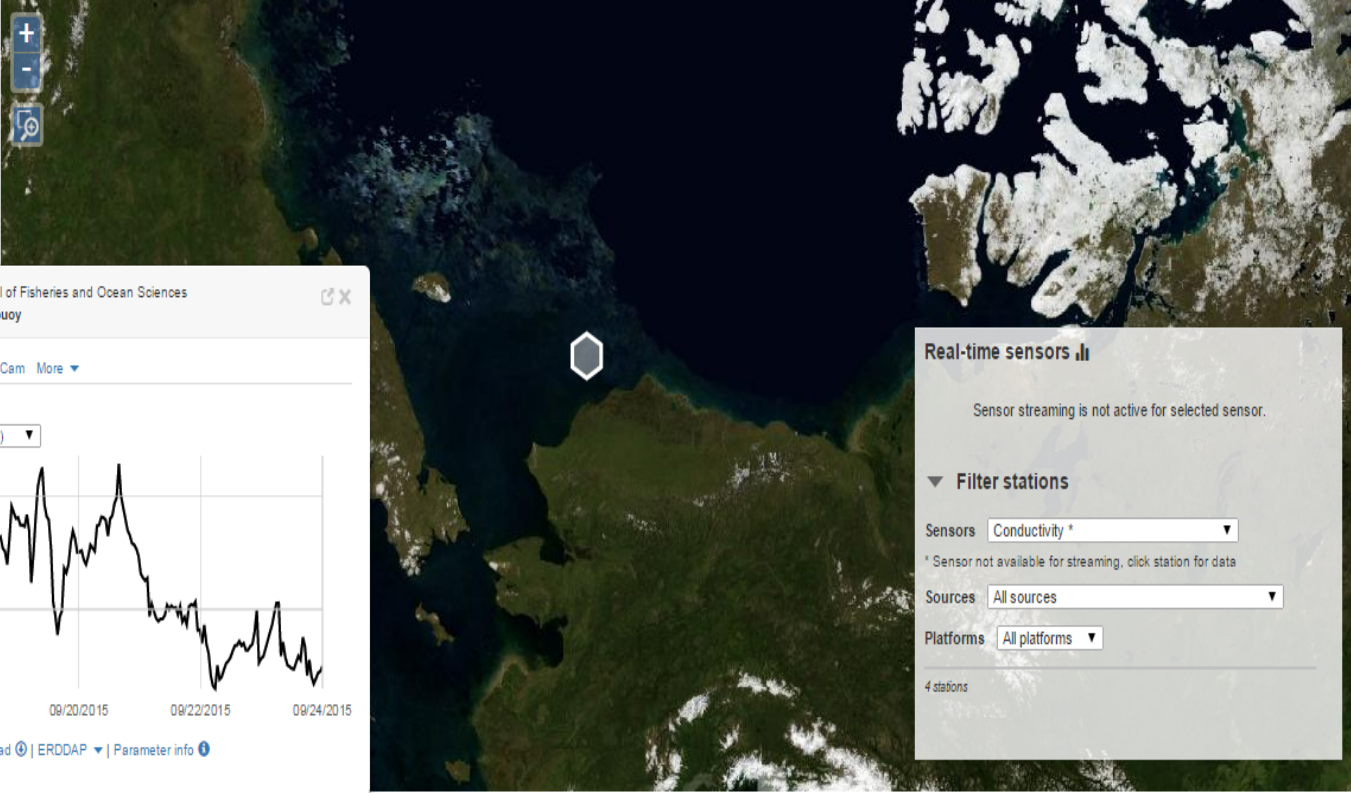
portal.aos.org/arctic#module-metadata/5da59d98-59ad-11e1-a1da-0019b9dae22b/8c5dd704-59ad-11e1-bb67-0019b9dae22b

AOOS Arctic Data Integration Portal Search for data Catalog Portal Settings BETA

AOOS Real-time Sensors

Portal +

- Metadata URL: <http://www.aos.org/aos-data-resources/>




UAF, School of Fisheries and Ocean Sciences
Freeze-up buoy

Conductivity WebCam More

Conductivity

Select Depth: 9 (m)



Source | Download | ERDDAP | Parameter info

Real-time sensors

Sensor streaming is not active for selected sensor.

Filter stations

Sensors Conductivity *

* Sensor not available for streaming, click station for data

Sources All sources

Platforms All platforms

4 stations

^ Sensor streaming statistical overview for on screen stations

Coastal Hazards

- Increase water level observations for emergency response & coastal erosion
- Sea ice thickness, extent & trajectory – what is AOOS role? Initiated Sea Ice Working group, now?
- Support sea level & storm surge forecasts, maps & decision- support tools



Coastal Hazards

Observations

- Weather & wave buoys & sensors
- Water level sensors
- Below ice waves & currents for winter conditions

Products

- Archived shoreline profile database
- Tailored flooding maps
- Electronic sea ice atlas
- Geodetic leveling coastal community tide gauges

Coordination & Facilitation

- informal working group: establish water level observing network



Climate & Ecosystem Trends and Water Quality

- Time series: Physical, chemical & biological observations
- Integrated ecosystem & climate vulnerability assessments
- Climatologies: coastal climate variability & trends over time
- Ocean acidification: sustained monitoring & outreach/public education

Climate & Ecosystem Trends

Observations

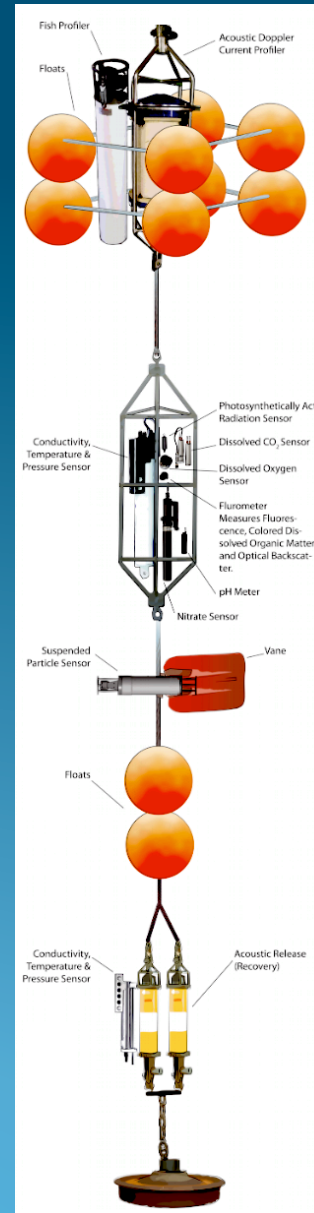
- Whale gliders
- Ecosystem moorings
- OA moorings/surveys

Products

- Sea ice atlas
- Chinook run timing forecast
- Surface current maps

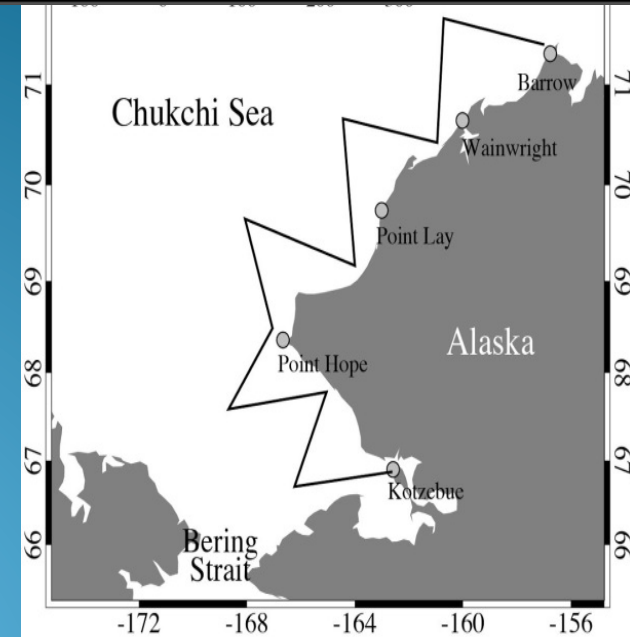
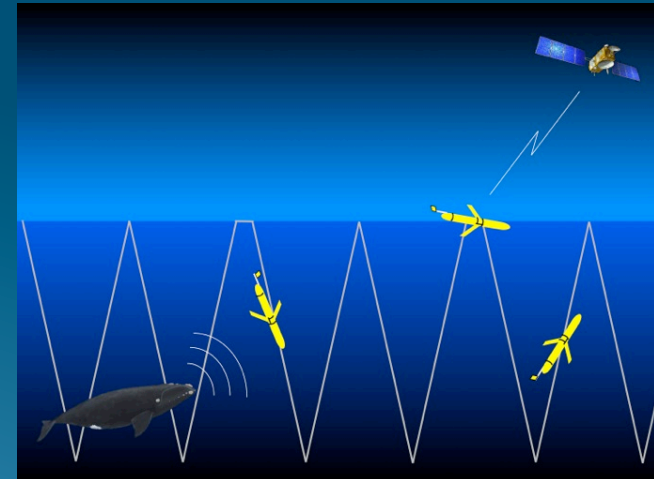
Coordination/Facilitation

- State of AK coast & ocean report
- AK Ocean Acidification Network
- Community based monitoring



Marine Mammal Glider

- 3rd year of deployment
- Region spanning Bering Strait (Kotzebue) to Chukchi Sea (Barrow)
- Lithium batteries allowed solo deployment for entire open water summer season
 - Previous deployments were only 10 days
- AOOS supported purchase of glider and contributes to logistical support and data analysis



Advantages of AOOS

- More agile, flexible than federal agencies
- Connections to stakeholders
- Partnerships w/industry, NGOs, academia
- Facilitate consortia
- Education & outreach

Support for “Blob Blog” Tracker

- Hosted by AOOS
- Features posts from variety of scientists and media
- Central POC
- Provides avenue for those working in the region to share observations
- Share local and national news stories

