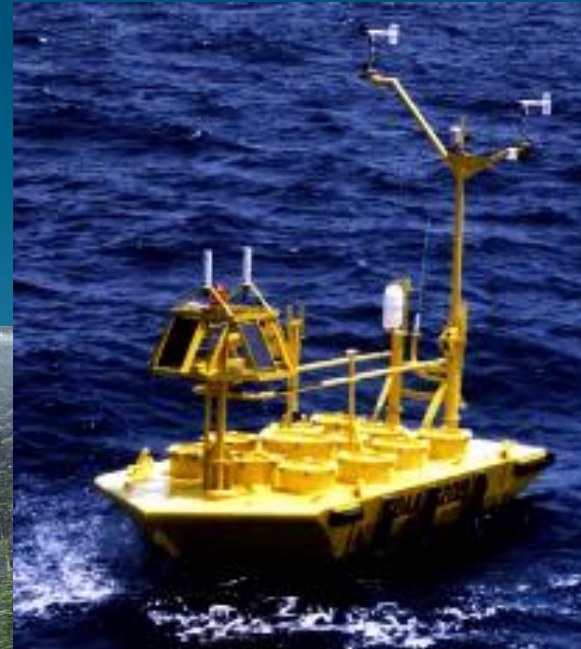


Alaska Ocean Observing System 101



Molly McCammon
Alaska Ocean Observing System
January 23, 2015

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

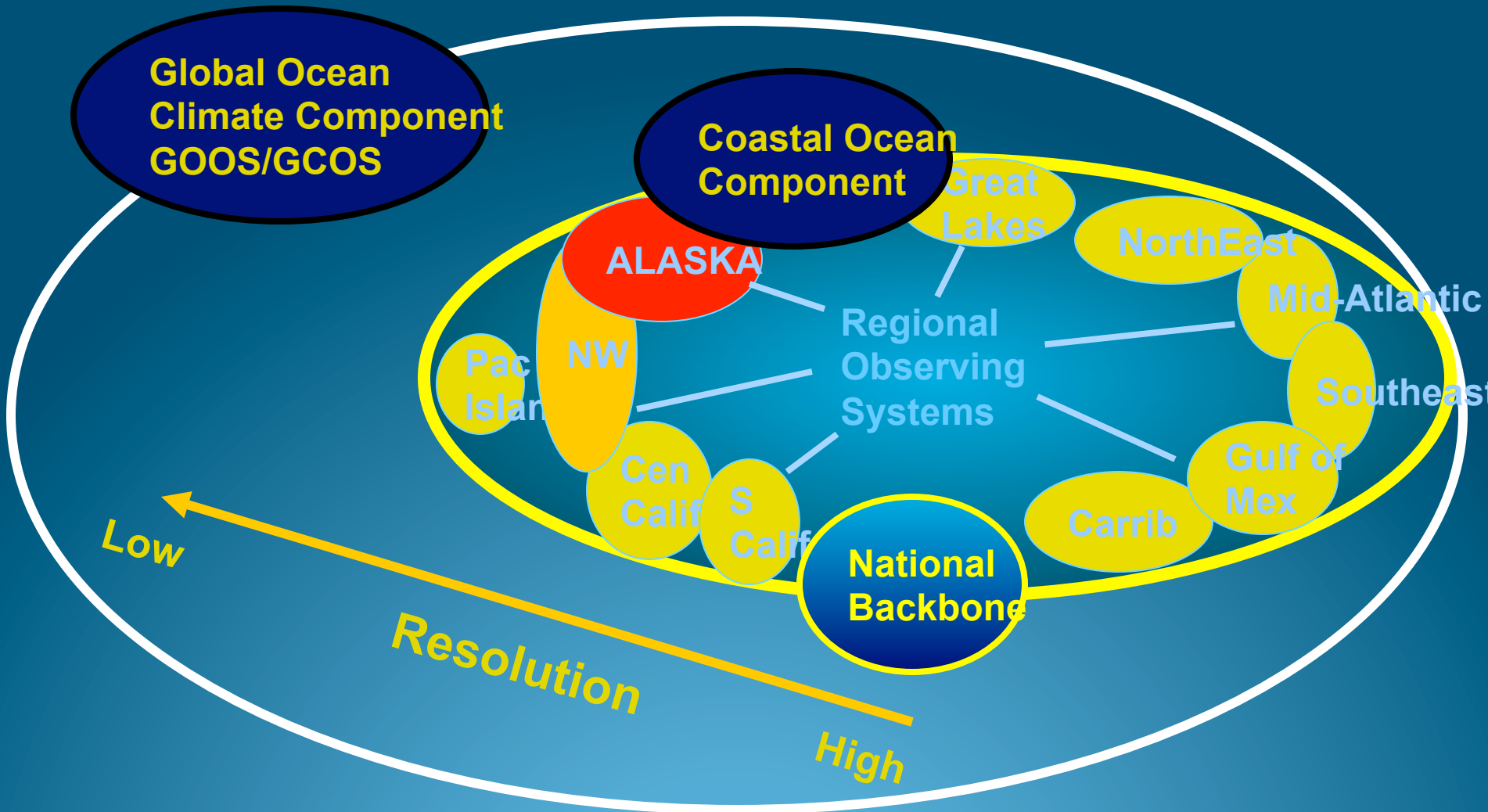
Other Members: AK Sea Grant Program, AK SeaLife Center, AK Dept of Fish & Game, AK Department of Environmental Conservation, Barrow Arctic Science Consortium, NOAA AK Fishery Science Center, NOAA AK Regional Team, North Pacific Fishery Management Council, North Pacific Research Board, Prince William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

Philosophy

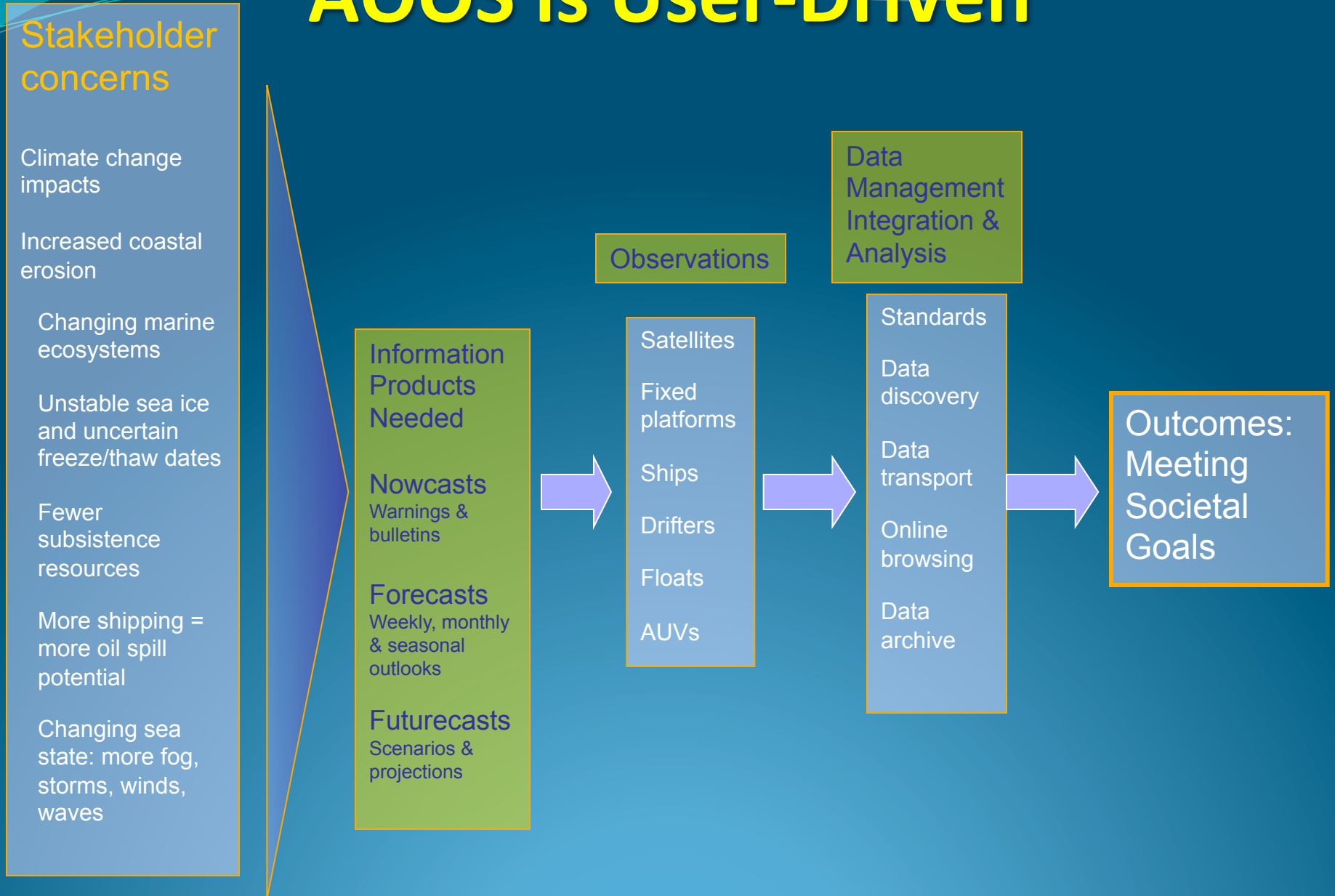
- Congressionally directed, stakeholder driven, science-based
- Measure once, use many times
- Highly leveraged: partners are essential!
- Policy neutral



U.S. IOOS Multi-Scale System



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)
- General public



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)
- Beginning new engagement preparing for next 5-year cooperative agreement

Questions to Stakeholders

- What are the main issues facing you?
- What decisions do you need to make?
- What information do you need to make those decisions?
- What information is missing?
- How do you want the information made available?

What does AOOS do?

Themes

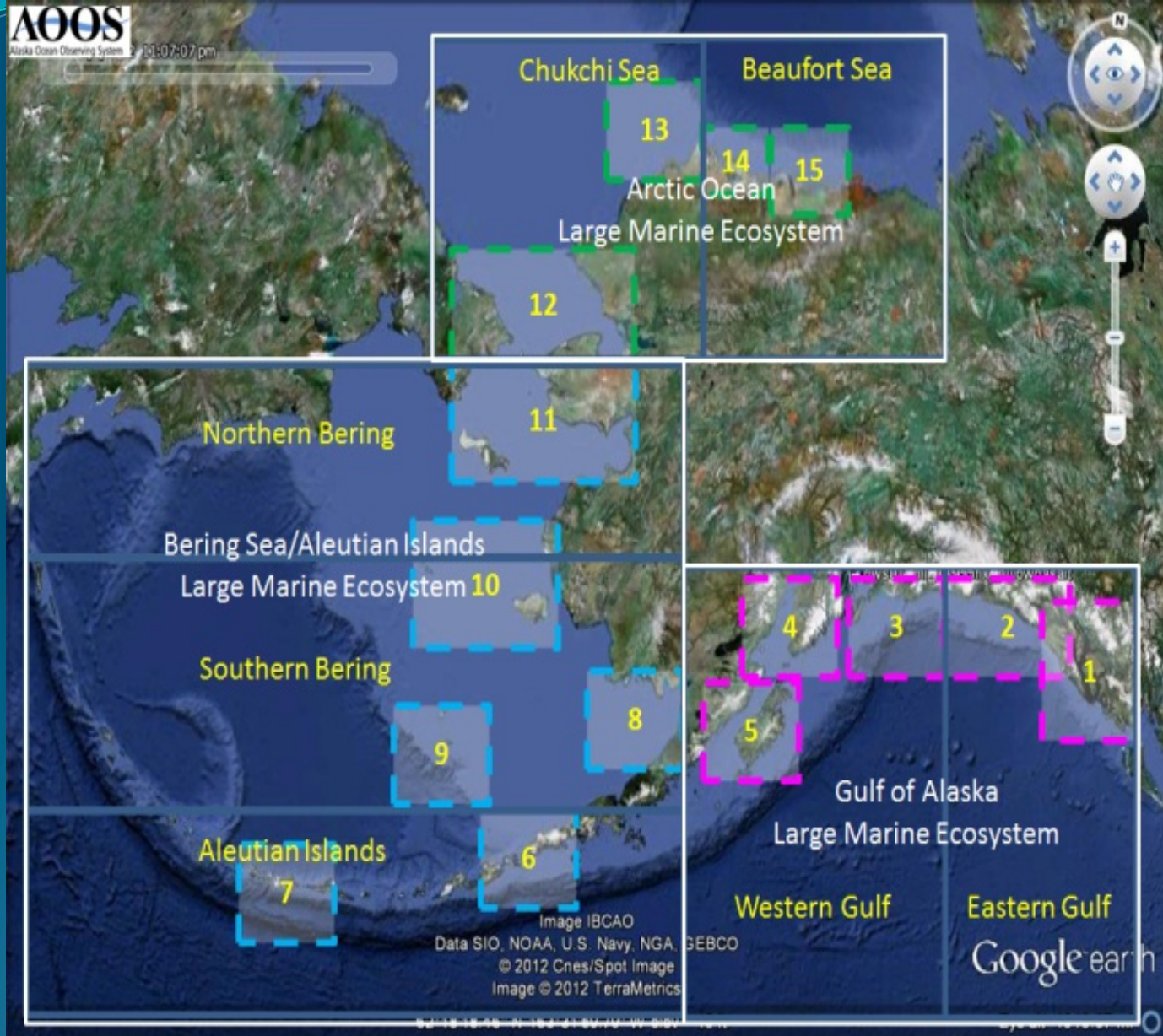
- Improve Safety of marine Operations
- Mitigate Coastal Hazards
- Track Climate & Ecosystem Trends for Fisheries
- Monitor Water Quality
- Develop Data & Information Products



Activities

- Maintain observations
- Support forecasts
- Facilitate working groups & networks
- Host statewide ocean data portal





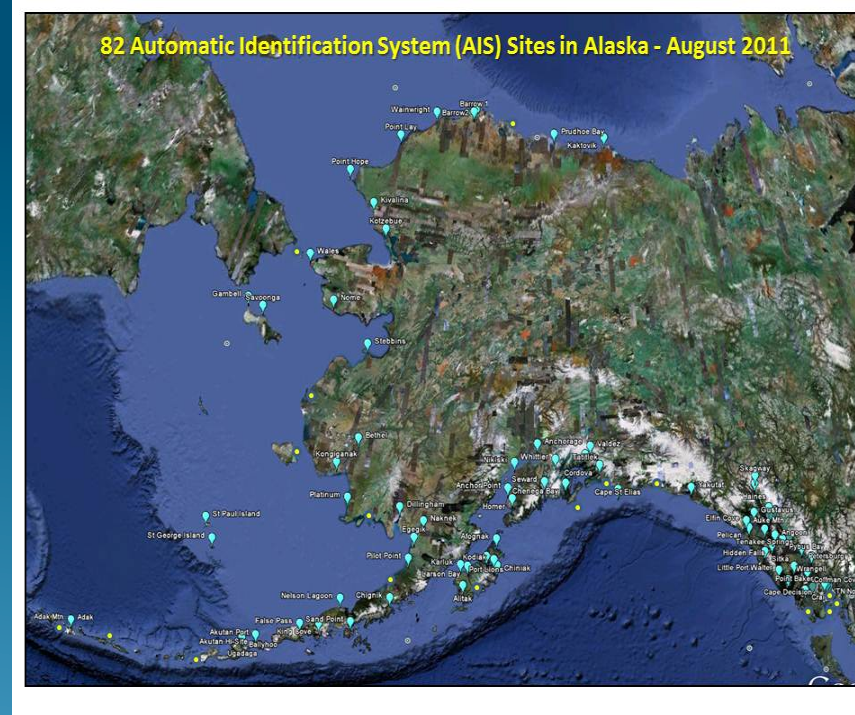
Marine Operation Safety

- Safe & efficient commercial shipping & recreational boating: weather & sea state conditions
- Improved search & rescue
- Spill response
- Offshore energy: support, monitoring



Marine Operation Safety

- **Met ocean & wave buoys**
- **AIS & weather**
- **HF radars**
- **Real time sensor map**



Coastal Hazards

- Emergency response & coastal erosion
- Sea ice thickness, extent & trajectory
- Sea level & storm surge forecasts & maps



Coastal Hazards

- Wave buoys
- Water level observations:
short-term tide gauges
- Archived shoreline profile database
- Tailored flooding maps
- Below ice waves & currents for winter conditions
- Electronic sea ice atlas
- Facilitate ad hoc working group

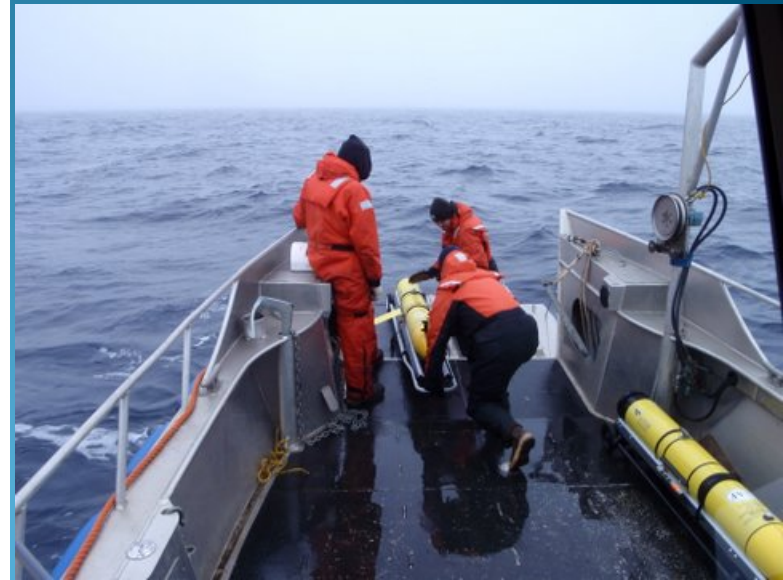
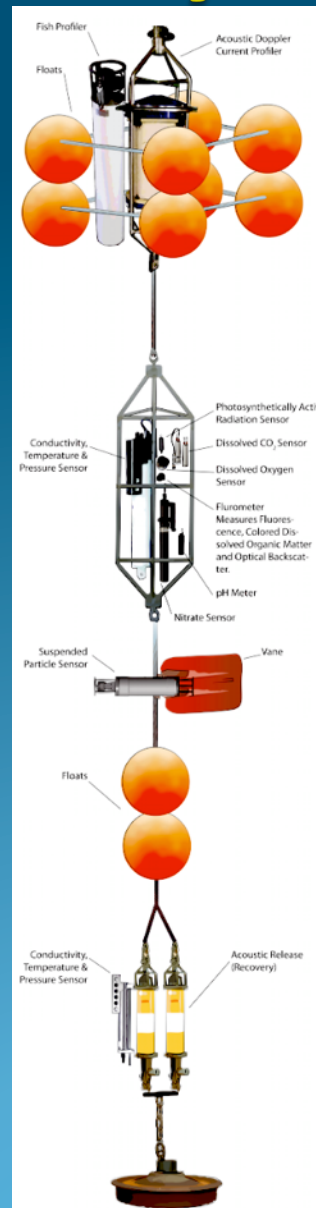


Climate & Ecosystem Trends and Water Quality

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

Climate & Ecosystem Trends

- DBO
- Whale gliders
- OA moorings
- Ecosystem moorings
- Sea ice atlas
- Chinook run timing forecast
- Integrated & visualized data products
- Seward Line
- PWS and CI surveys
- PWS OTN line



Data management & information products

Maintain AOOS website and data portal

- OCEAN DATA EXPLORER
- Real-time Sensor Map
- Model Explorer
- Research Assets Map
- Arctic Portal
- Cook Inlet Response Tool
- Industry Arctic Data
- Research Workspace
- Seabird Portal
- Beluga Sightings Database



AOOS Alaska Ocean Observing System
THE EYE ON ALASKA'S COASTS AND OCEANS

Home About AOOS Access Data Regional Pages Special Projects

Welcome to the AOOS Data Resources Page.

Below you will find brief descriptions of several interactive maps and data discovery tools. Several of these individual data layers can now be integrated into regionally based visualization portals (Arctic and Cook Inlet with more to come). To download complete datasets, scroll down to the bottom on this page for a table of interoperable web services.

Interactive Maps and Data Discovery Tools

Research Assets Map – Interested in the location of research instruments and monitoring efforts planned or deployed in Alaska's waters? This map is intended to assist with region-wide planning, research logistics, public education and outreach, and to promote effective collaboration as research efforts in Alaska expand.

Scrolling over or clicking on a particular feature provides more information about each asset. The map can also be queried by time period, what is being measured, or who owns the instrument. While an effort is made to include all assets in the water this season, there may be components missing, or ones whose actual locations are different from those planned prior to deployment, and coverage prior to 2010 is limited. If you would like to add a planned research cruise or instrument, [Click Here](#).

Real-time Sensor Map – This interactive map taps into more than 4,000 real-time sensors owned and maintained by a variety of federal, state and private entities.

Temperature, precipitation, wind and water turbidity are but a few observations streaming in real-time. Simply click a point on the map to access primary source data and metadata, or to view more detailed information and images via webcam. To search across Alaska's waters, users can filter sensors by station type or source on the right-hand panel. If you have questions please use the red **feedback** tab on the left side of the screen.

Model Explorer – This application displays a catalog of gridded data available through AOOS including satellite observations, model predictions and input layers for numerical simulations. Research institutions and agencies across Alaska and beyond contribute to and share original information through this portal.



AOOS launches new Ocean Data Explorer

Check out AOOS' new statewide portal, which provides access to every publicly available dataset held by AOOS. You can browse and visualize over 500 data sets and models, overlay interdisciplinary data, and access metadata.

1 2 3 4 5 6 7 8 9 10

[Featured content archive](#)

Latest news

APRIL 7, 2014

[Learn about STAMP at an April 16th reception](#)

The STAMP project is hosting a reception highlighting a new Arctic data tool that can assist Arctic coastal management, research and community planning. Come learn more from 4-6pm in downtown Anchorage.



MARCH 20, 2014

[Alaska Marine Policy Forum - March Summary](#)

Learn the latest on marine funding, legislation, and state and

AOOS 10th Anniversary Highlights - Fact Corner

2012 marked the start of the [STAMP](#) project – Spatial Tools for Arctic Mapping and Planning. With the help of multiple partners, STAMP produced a data integration and visualization tool that is part of AOOS. [Tour the portal](#) and let us know what you think!

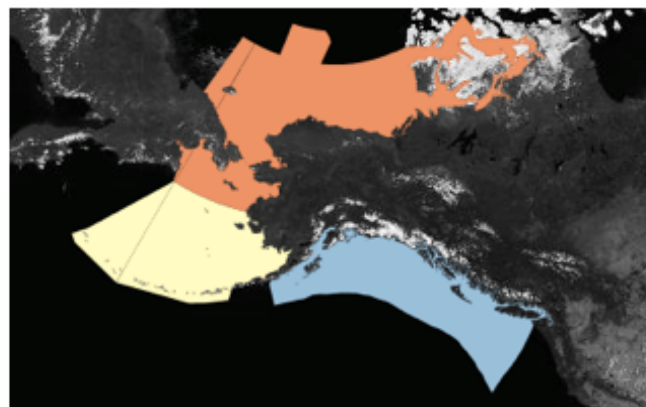


AOOS Data Portal

[Recent updates](#)



[Ocean Data Explorer](#)

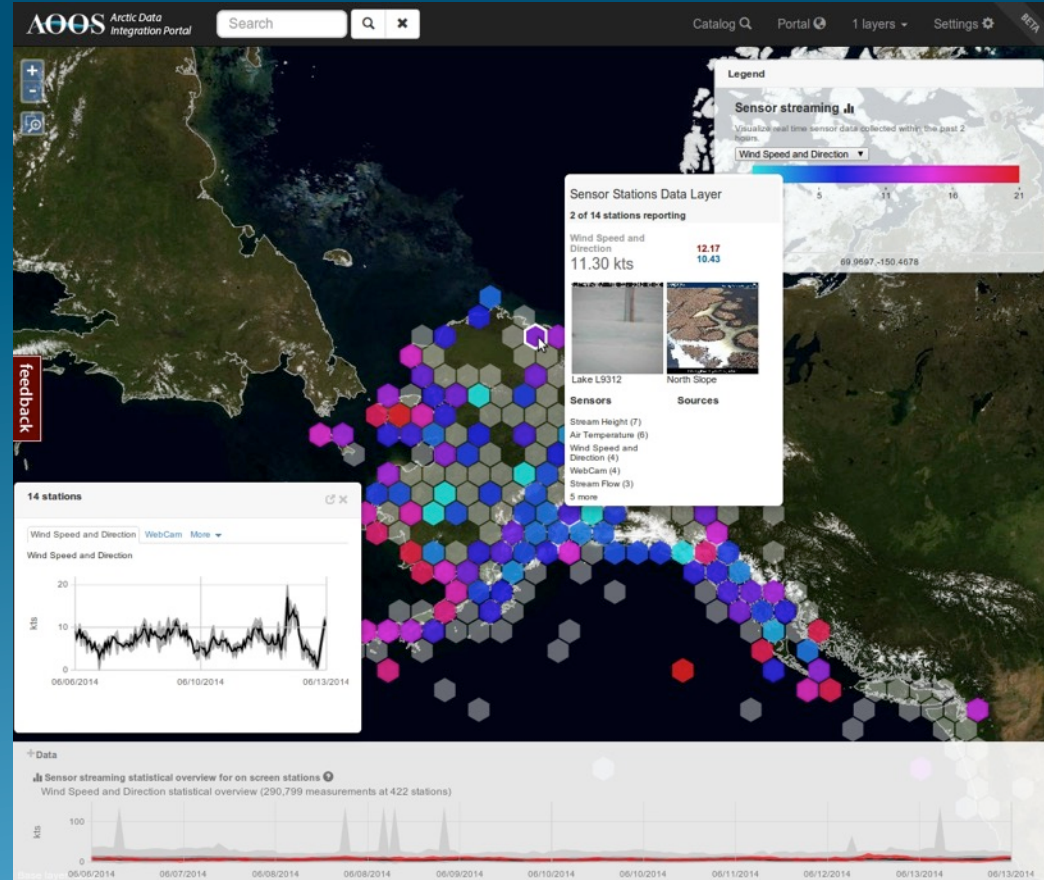


Regional views: [Arctic](#) • [Bering Sea](#) • [Gulf of Alaska](#)

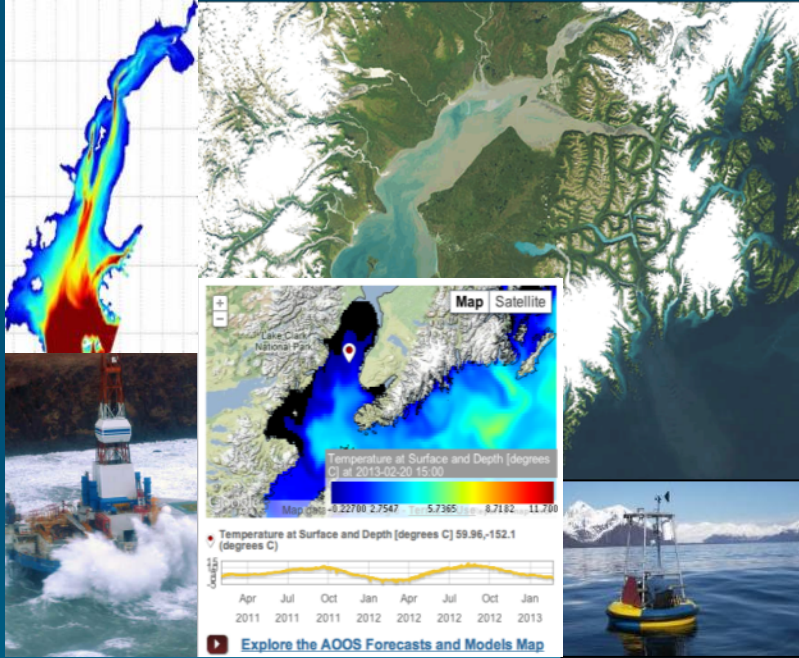
Real-Time Sensors

Over 3,000 sensors

Air temp
Barometric Pressure
Currents
Water level
Ground temp
Precipitation
Humidity
Salinity
Snow depth
Stream flow
Stream height
Tides
Water temp
Web cams
Weather
Wind
More....



When ERMA not available: Cook Inlet Response Tool



ShoreZone

Integrates:

- Geographic Response Strategies
- Oil Persistence estimates
- Biological data
- ShoreZone imagery and video
- Real-time conditions

Used in Kullik incident

Advantages of AOOS

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

Thank you

www.aooos.org

Molly McCammon
Alaska Ocean Observing System
January 23, 2015