



The Eye on Alaska's Coast's and Oceans

Alaska Ocean Observing System Coastal Activities Update

AOOS PRESENTATION TO THE ALASKA COASTAL MAPPING SUMMIT, DECEMBER 9, 2020

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AOOS: Part of a national network

"We are tied to the Ocean. And when we go back to the sea, whether it is to sail or to watch - we are going back from whence we came."

- John F. Kennedy



Alaska – AOOS



Great Lakes – GLOS



Northeast Atlantic –
NERACOOS



Pacific Northwest –
NANOOS



Mid-Atlantic –
MARACOOS



Central and Northern
California – CeNCOOS



Southeast Atlantic –
SECOORA



Pacific Islands –
PacIOOS



Southern California –
SCCOOS



Gulf of Mexico – GCOOS



Caribbean – CARICOOS

What does AOOs do?

- **Increase observing & forecasting capacity & fill gaps**
- **Pilot alternative observing approaches**
- **Facilitate working groups & networks; serve convener role**
- **Host statewide data portal & regional data assembly center to increase access to existing coastal and ocean data**
- **Package information & data in useful ways to meet stakeholder needs**
- **Provide data management services for integrated research programs**

Priorities based on stakeholder needs

Improve Safety of Marine Operations

Safety at sea

Search & rescue

Spill response & prevention

Offshore energy

Mitigate Coastal Hazards

Emergency response & coastal erosion

Sea level rise & flooding

Track Climate & Ecosystem Trends

**Food security: subsistence, recreational & commercial
fishing & hunting**

Commercial fishing

Impacts of climate change

SOUND* (NEW)

Monitor Water Quality

Ocean acidification

Harmful algal blooms

Invasive species & marine debris

Develop Data & Information Products to Support the Above

Updated Strategic Direction 2021-26

- **Renewed commitment to engagement**
- **And...products and services for stakeholders**
- **Focus on Diversity, Equity and Inclusion**
- **Sustain existing and add new observing assets, with updated buildout plans**
- **NEW: nearshore bathymetry & ocean sound**

AOOS and Coastal Mapping

Primary AOOS products are online maps for data distribution:

(<https://aoss.org/aoss-data-resources/>)

Ocean Data Explorer

AK Water Level Watch Tiered Data Portal

ShoreZone maps & imagery

Community flood maps

Real-time Sensor Map

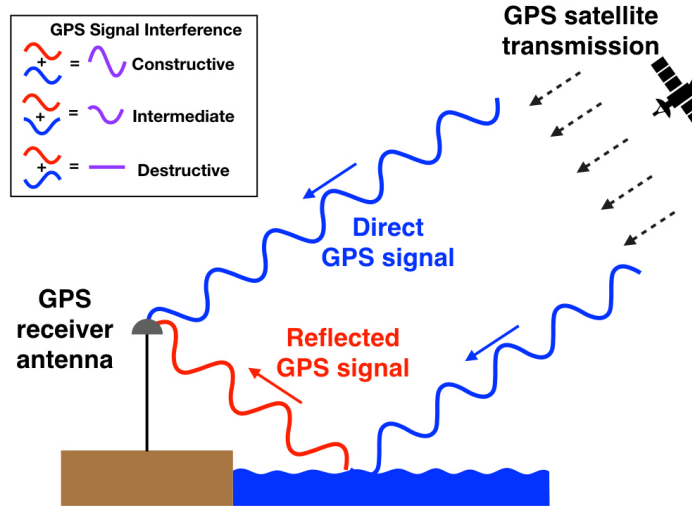
Model Explorer

Cook Inlet Response Tool

Historic Sea Ice Atlas

Seabird Portal

Implementing new water level technologies to serve remote regions



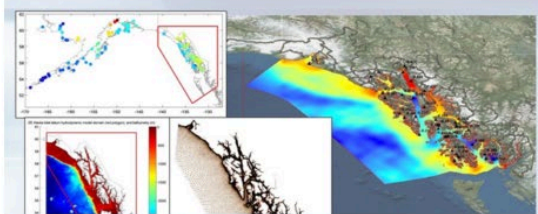
Alaska Water Level Watch: Website, Portal & Buildout Plans



Alaska Water Level Watch

Home About Data Portal Resources Community Monitoring Annual Meetings

Alaska Water Level Watch



VDatum Efforts in Alaska

Southeast Alaska Model Release/Update The VDatum 4.0.1 release on October 28, 2019 includes support for transformations involving the tidal datums of southeast Alaska (SE AK): local mean sea level (LMSL), mean lower low water (MLLW), mean high water (...)

1 2 3 4 5 6 7

[Alaska Water Level Watch Features archive](#)

Welcome

The Alaska Water Level Watch (AWLW) is a collaborative group working to improve the quality, coverage, and accessibility to water level observations in Alaska's coastal zone.

Water level data has many applications that contribute to safe navigation, storm modeling and mapping, tsunami warnings, watches, and advisories, incident response, search and rescue operations, tidal datums, sea level trends, storm trends, and [much more](#).

Contact Us

For more information regarding the Alaska Water Level Observing Network, contact Jacquelyn Overbeck, Alaska Division of Geological & Geophysical Surveys Coastal Hazards Program:

- Jacquelyn.overbeck@alaska.gov
- [Facebook \(https://www.facebook.com/AlaskaWaterLevelWatch/\)](https://www.facebook.com/AlaskaWaterLevelWatch/)

Water Level Build-Out Plan

AWLW Key Milestones Objectives:

1. Additional "satellite" or "float" data
2. Additional support for non-water level observations
3. Strategic partnership releases for the system

Key Milestones Objectives:

- **AWLW Key Milestones Objectives:**
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Search Photos of Past Storms

Search photos of past storms in Alaska. The interface includes a search bar, a map of Alaska with photo locations, and a list of search results.

Alaska Water Level Watch

Catalog Map 1 Data views 2 Settings Share Help Feedback

ALASKA WATER LEVEL WATCH

EXPLORE WATER LEVEL SENSOR DATA

SEARCH DATASETS

Alaska Water Level Watch is a water level data management system and associated interface to house data from NOAA and the AODS Water Level Watch Program in tandem. This system mirrors critical functionality of CO-OPS's Tides Online, yet is designed to accommodate a wide range of observational water level data acquired from external sources through a partnership model. The portal is a complimentary extension of NOAA's authoritative National Water Level Observation Network (NWLON), and is under development in direct collaboration with NOAA staff to ensure consistency and compatibility of data products with downstream tools. Increased access to critical water level observation products (real-time stations, short time series, and high water mark measurements) derived from sites with lower accuracy standards or off-specification installations will help to meet a wide range of maritime applications, water resources management, and scientific research needs.

Please use the 'Feedback' tab in the upper right corner to help improve our services

Explore map

Catalog



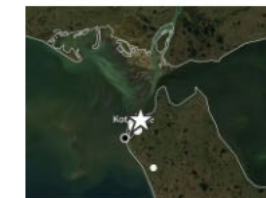
Interactive map

Data Views

Explore highlighted views below. Or, create, save, and share your own custom views.



Featured Source: NOAA CO-OPS Stations



Featured Station: Kotzebue, Alaska



Featured Data View

Piloting use of hydroball for nearshore bathymetry

- Collaborative project with ADNR, NOAA Office of Coast Survey, NOAA's Alaska Regional Collaboration Team
- Builds on prior 2012-13 nearshore bathymetry mapping using a portable sonar system
- Responds to coastal community needs: Golovin, Shishmaref, Savoonga, Gambell, Hooper Bay, Wales
- New hydroball – used in Canada, tested in AK lakes this summer
- More from Bart Buessler later today



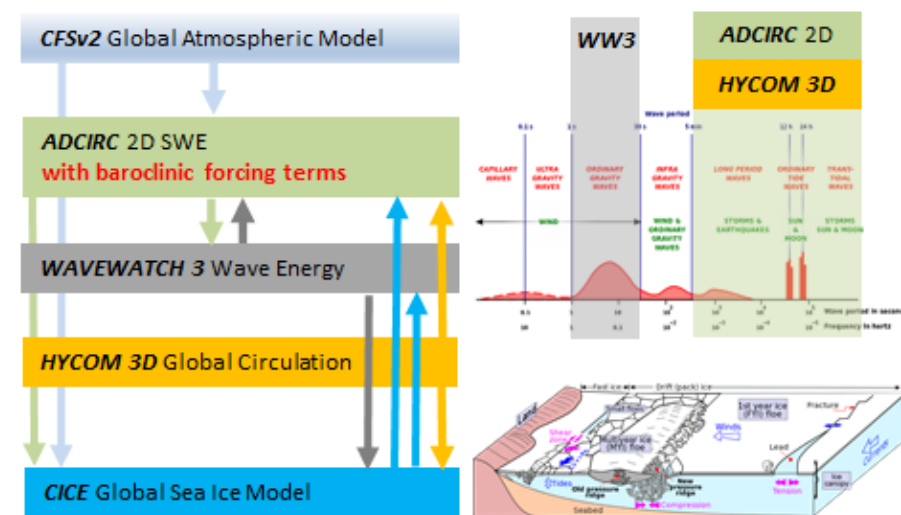
Building Coupled Storm Surge and Wave Operational Forecasting Capacity for Western Alaska: part of the Coastal Hazard Challenge

Additional wave observations are critical



Model now being tested by Fairbanks WFO

Alaska ADCIRC+WW3+HYCOM+CICE model

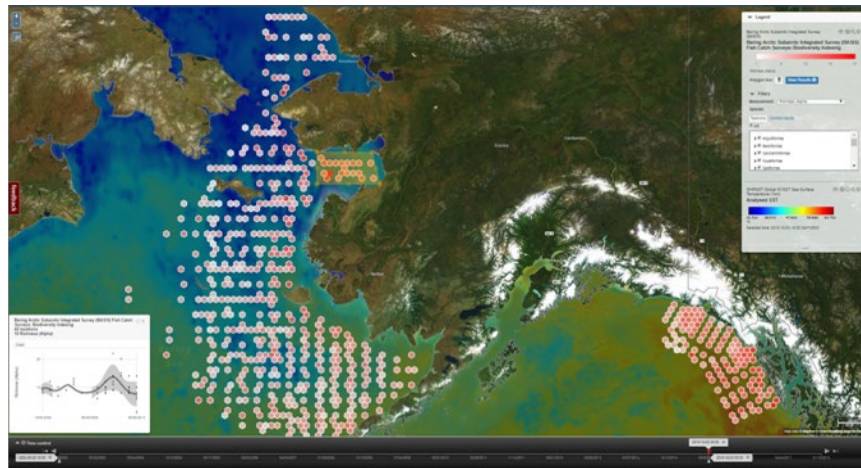


The integrated ALCOFS (ALaska Coastal Ocean Forecast System) showing linkages and interactions between model components.

AOOS Data Assembly Center & Ocean Data Explorer

Map

*Integrate & visualize data from many sources:
Grids, GIS, mobile sensors, platforms, products*



Data Amount

- 2,300 data layers
- 1,500 sensors
- 35 parameters
- 20+ data sources
- 5 million obs/week

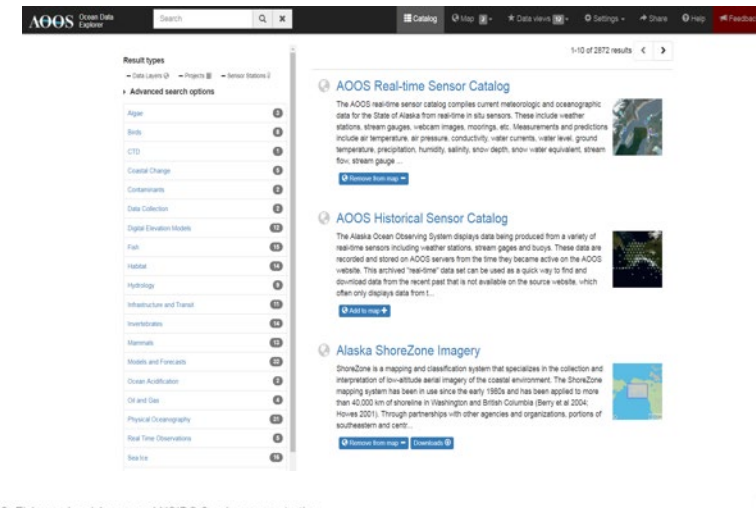
Data Views

*Rapidly assimilate
& compare
different data
streams*



Catalog

Search, metadata, & data download



* BASIS: Fish species richness and NSIDC Sea Ice concentration



AOOS

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