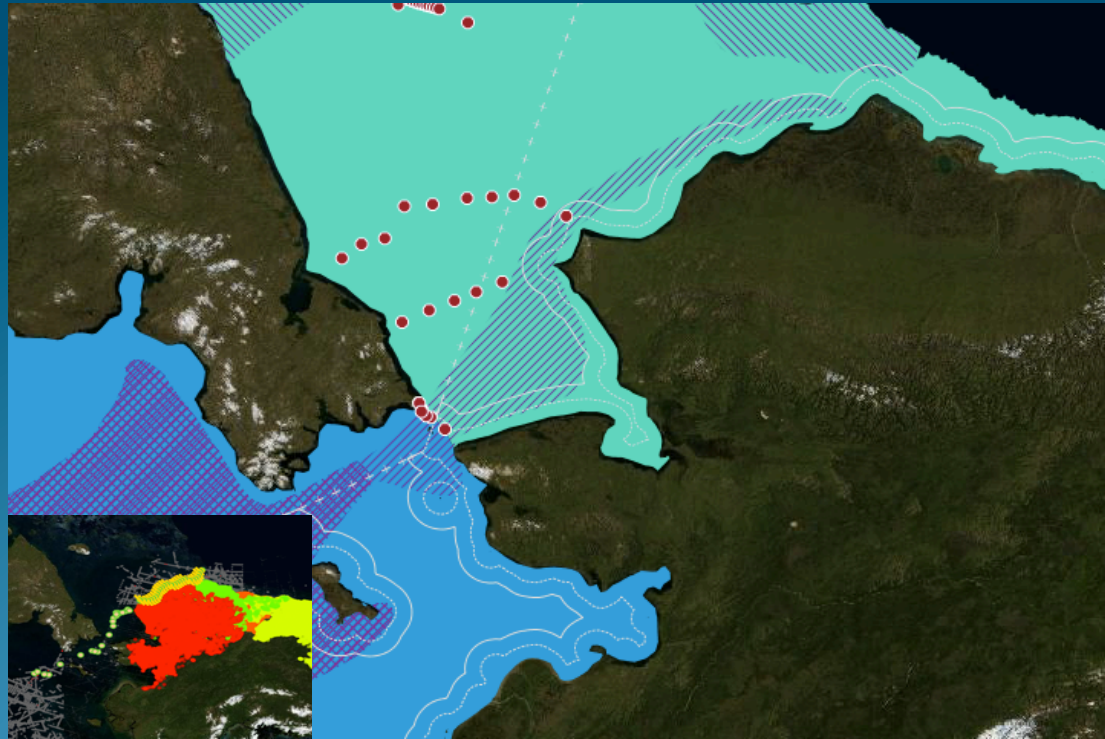


# STAMP

## Spatial Tools for Arctic Mapping & Planning



**Creating an interactive data tool**  
to improve access and usability of Arctic data

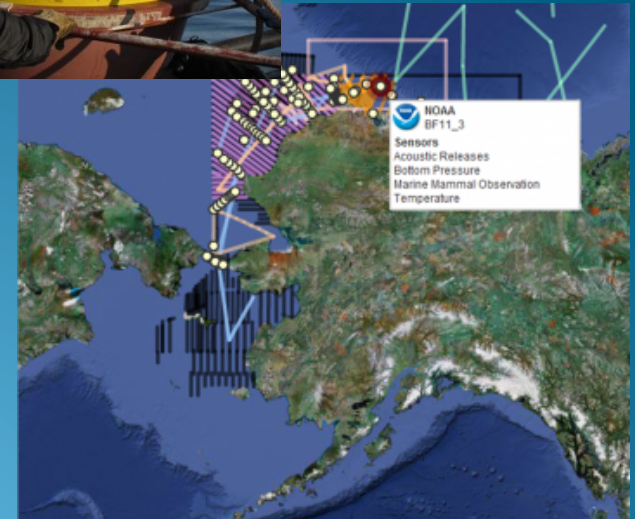
## AOOS – what we do

### Mission

Provide easy access to physical, chemical, and biological data

Network of ocean and coastal observations

Information products and tools for informed decision-making



# AOS Philosophy

- Stakeholder driven
- Open source system
- High performance computing (HPC)
- Made possible by many partners!



To date: focused on real-time sensors, models, and instrument locations

New: integration of historical/GIS data, video imagery, other data formats with new functional capabilities

# STAMP Background

- NOAA funded
- \$760K over 2.5 years (Jan 2012-June 2014)
- Northern Bering and Chukchi Seas
- 5 funded partners





# Using data for informed decision-making



- Who is the tool designed for?:
  1. Resource managers & planners
  2. Members of the public who want to provide input into decisions
  3. People with interest in the Alaska marine environment and want to access data
- Interest expressed for a tool to help inform conversations related to future commercial fisheries

# What does the tool include?

- **Real-time data** (temp, currents, winds, sea ice concentration & extent...)
- **Biological data** (habitat areas, migration routes)
- **Forecasts** (weather models, climate projections)
- **Satellite data** (current and historical)
- **Physical characteristics** (sea ice, bathymetry)
- **\*Human use areas** (ship traffic, industry platforms, subsistence areas)

Users can interactively view, analyze or download data layers together or separately

# How is STAMP different from other data synthesis projects?

- Integrates different data types (historical, real-time, models, project-level data)
- Designed to serve multiple types of users
- Captures changes over time and water column data
- Includes climate change projections
- Interactive/web-accessible

# Project partners:

- Alaska Ocean Observing System (project manager & tool development)
- The Nature Conservancy (scoping)
- UAF's Center for Climate Assessment & Policy (climate layers)
- UAA's Institute of Social & Economic Research (socio-econ layers)

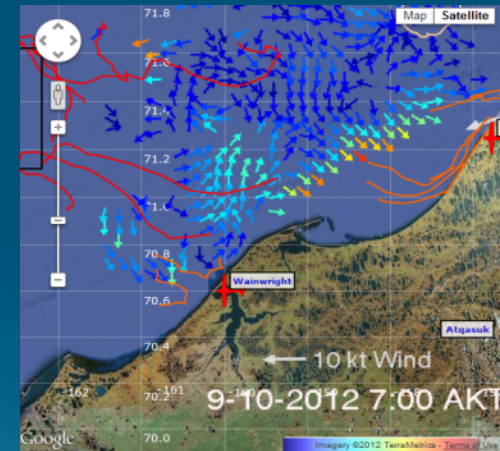
Plus 9 member advisory group





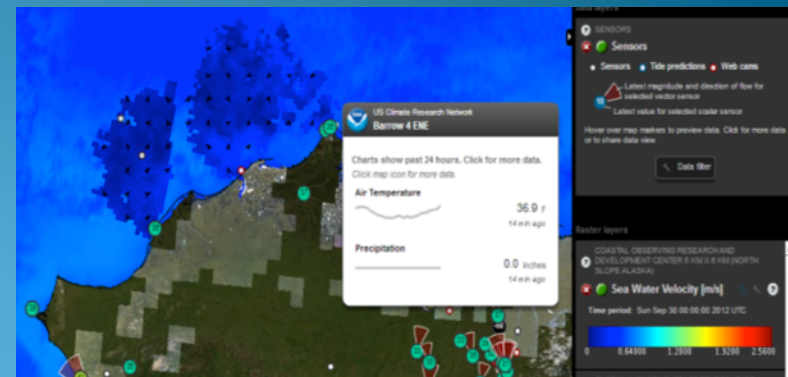
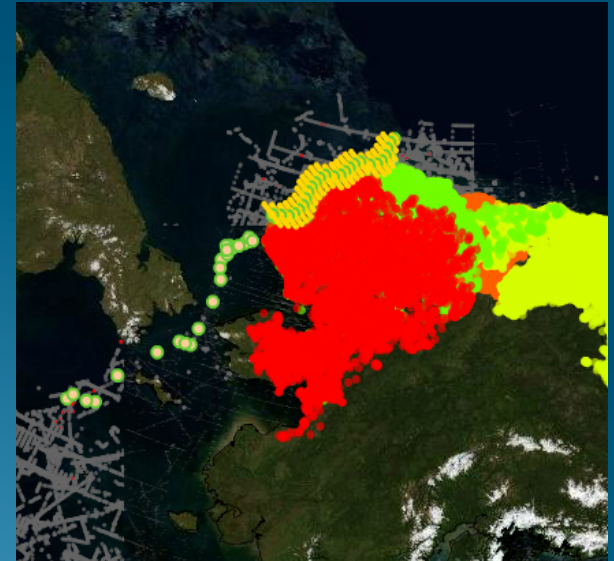
# Results from Scoping

- Priority attributes for the tool
  - Easy access to data
  - User friendly
  - Effective at documenting patchy data/caveats
  - Provides the latest data
- Important findings:
  - Data is not currently available to support sophisticated analytical tools for fisheries decisions
  - The issue if commercial fisheries is still far in the distance.
  - People are interested in the tool being able to assist with immediate issues (rapid change in enviro conditions, increased ship traffic, industry expansion, etc.)



## Current status of the tool...

- Over 200 data layers
- Polar view
- Stacks multiple data types
- Viewable by time period
- Ability to download data
- Data is visual & synthesized



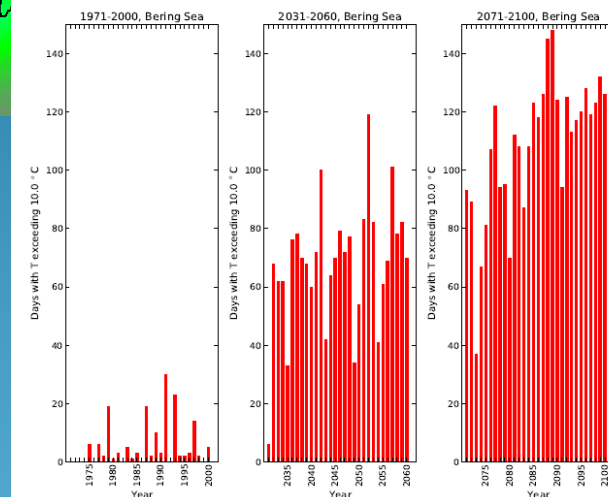
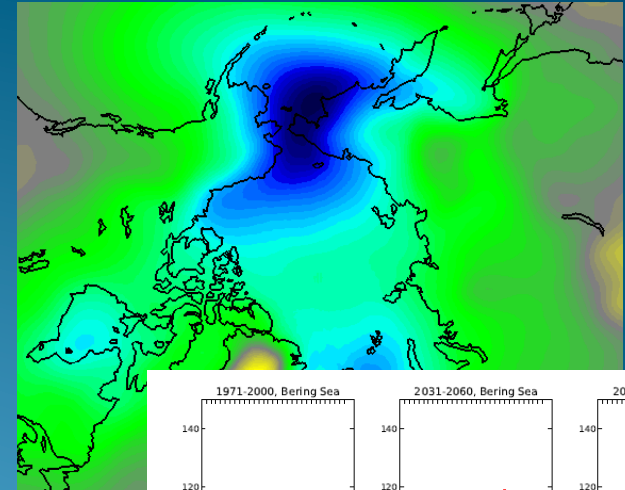
# Quick Live Demo

*Coming soon:*

## Downscaled climate model projections for the offshore from UAF

Maps of predicted temperature, precipitation and wind through 2100

Potential impacts of these changes with changing sea ice cover



# Data in the Queue

- ISER socio-economic data
- ACCAP climate downscaling layers
- NWS Sea ice Forecast
- NIC Sea Ice Character
- Shell Sea ice Analysis
- Arctic Council's infrastructure layers of harbors and runways
- ShoreZone data on biobands and shore type
- NOAA's Nearshore Fish Atlas

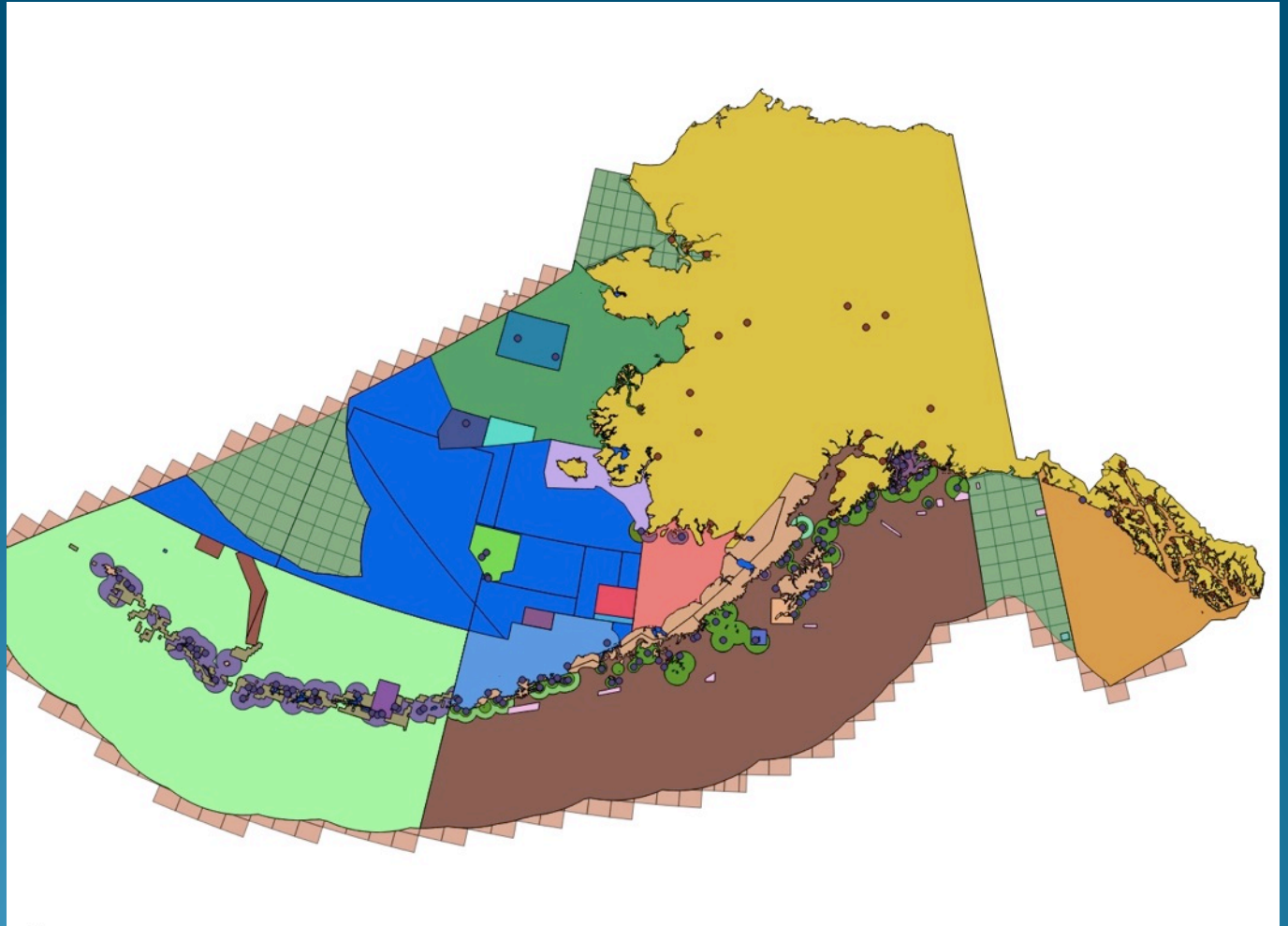




# Data partnerships in development

- OBIS/NOAA fisheries data
- Historical fisheries data held by BOEM
- North Slope Borough GIS resources
- Conflict avoidance areas for North Slope
- Subsistence use areas from the Bering Sea Subnetwork
- AIS vessel traffic from the Alaska Marine Exchange
- Updated Arctic Synthesis data
- Marine mammal data from NMML being synthesized by ERMA
- More detailed oil & gas spatial data

## NOAA management areas



## Winter Workshop

1.5 day workshop in Anchorage (Feb or March)

### Goals:

- Demonstrate existing portal to broader audience
- Present case studies of how the tool can be applied in Alaska
- Discuss ideas for phase II

# Thanks!



Alaska Ocean Observing System

[www.aoot.org](http://www.aoot.org)

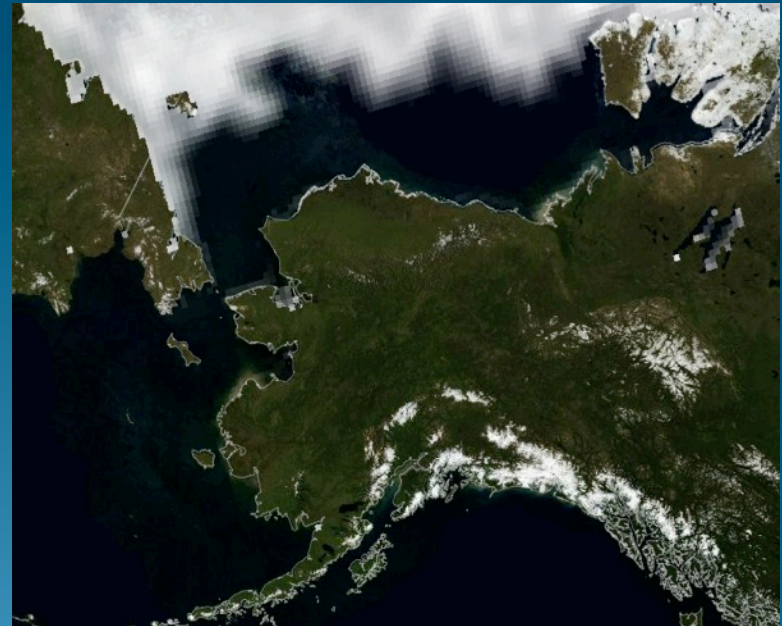
Darcy Dugan – [dugan@aoos.org](mailto:dugan@aoos.org)



# Daily sea ice extent since 1978



Oct 26, 1978

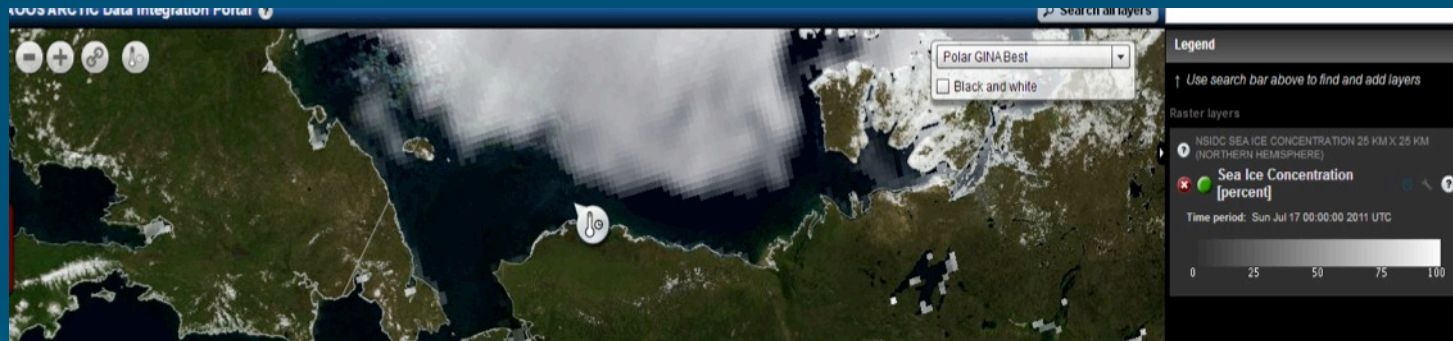


Oct 26, 2012

Data Source: National Snow & Ice Data Center



## With a handy “virtual sensor” tool...



Sea Ice Concentration [percent]  
● Sea\_Ice\_Concentration (%)

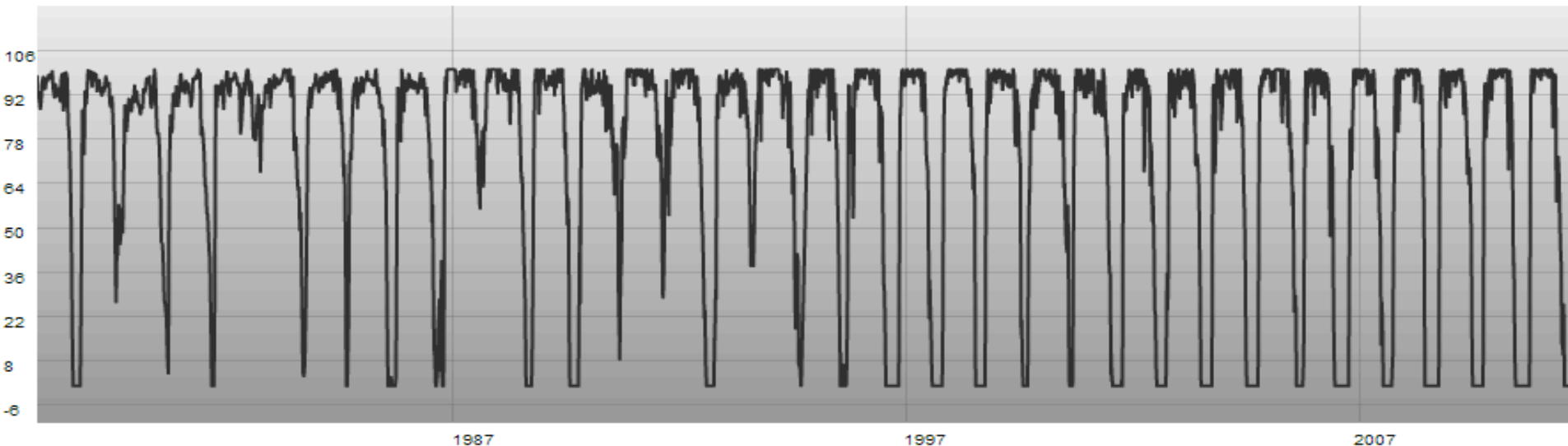


Chart Download

Find ice % cover over time at a specific location