

**AOOS Marine Operations Workshop Notes**  
**May 12<sup>th</sup>, 2010, AOOS Conference Room**  
Notes by Darcy Dugan

On Wednesday, May 12<sup>th</sup> AOOS convened a workshop to discuss the data and modeling needs for marine operations. The purpose was to help develop a strategic plan for ocean observing activities to provide weather, waves, currents and access to information that may aid safe, efficient and environmentally sound maritime operations in Alaska. The intention is for AOOS will use the recommendations suggested during the workshop for proposals and collaborations with other entities.

Participants included users of the data, decision makers, and information providers. These included:

- US Coast Guard
- Alaska Marine Exchange
- Alaska Energy Authority
- Minerals Management Service
- Edison Chouest Offshore
- Cook Inlet Regional Citizens Advisory Council
- National Weather Service
- Fugro Offshore Survey
- University of Alaska Fairbanks
- John Oswald & Associates
- Alaska Ports & Harbors
- Denali Commission
- Oil Spill Recovery Institute

To understand what information is needed, AOOS first needed to understand what types of decisions stakeholders need to make.

**Needs Discussed:**

- **Oil spill response:** models and real time data to predict oil spill plumes, and potentially HF radar to verify models
- **Search and Rescue:** accessible data and tools for immediate response. These needs are not daily, but when they arise, the information is needed immediately.
- **“Pushed” or offline data:** Many vessels do not have internet outside of port, and need non-web-based access to weather forecasts and conditions. This could be “pushed data” via text message. Those vessels that do have internet connectivity need small files with short download times. In both cases, it is important to make sure the display is understandable. It’s not always English speakers that need the information.
- **Tidal power development:** more data on tidal currents, biological activity, sediment transports & loads, conflicting uses, and baseline data.
- **Sea Ice:** Vessels in the Arctic that may not be equipped for ice need to know where the ice is, preferably a 1-week forecast. Vessels also need to know ice thickness, and whether ice is first year ice vs. multi-year ice, which has large impacts on safety. Supplying ice in shapefiles so it can be overlaid with other information would be useful for some entities.
- **Observations at harbors:** Mariners would appreciate better weather observations at ports. Weather stations at airports do not always reflect the weather at the harbors – sometimes they are several miles away, or enough inland to not capture coastal conditions.

- **Visibility:** there is not a lot of information or forecasting for visibility. Visibility observations and forecasting could be improved.
- **Combining information on one screen:** At present, mariners have multiple screens open – one for AIS and one for weather information. This could be optimized by having AIS and weather information on the same map.
- **Consistent displays/visualizations:** For vessels transiting between regions, standard protocols and displays for coastal information would help mariners find information quickly.

## **Recommendations:**

### Visualization and Information Tools

- Provide a map interface showing what information is available locally
- Provide a map interface of what instruments are in the water, who owns them, and what they are collecting on a seasonal basis
- Provide a dual display of AIS and weather forecasts on the same screen
- Push a matrix of data by creating a relational database where boaters, based on their location, can receive wind speed, wave height, weather forecast within a certain radius.
- Merge webcams and weather stations to create an atlas and time series
- Map out usable HF radar sites for the state in case of a spill

### Increase Observing Capacity

- Install weather stations at more ports and harbors for local weather obs
- Leverage volunteer ship reporting, especially in Arctic. First, make sure the ships are set up to take accurate information. Use industry associations to redissiminate information (this works better than the government trying to work with individual members)
- Increase portable resources such as AUV's since the Alaska coastline is too big to have fixed assets. Alternatively, have equipment on boat and anchor it at different places instead of going to shore.
- Increase HF radar coverage and provide the data for emergency response, GNOME spill trajectory model, ocean circulation models, and SAROPS

## **Other Items of Interest:**

- Within a year, NOAA (NWS) will be able to push data from their electronic database, given lat/long of the user.
- MMS (Warren Horowitz) has the ability to develop an ice atlas and is open to working with the University or Coast Guard to create an ice forecasting model using weather data and ice information.
- NWS is expanding and revamping their sea ice forecasts from 3 days a week to 5 days a week. This summer, they are going through a development phase to improve the process – please contact Don Moore with suggestions.
- If the Alaska Marine Exchange can provide the NWS with the locations of high vessel density, the NWS will work towards getting more weather stations in those areas.

**Additional Key Topics from Discussion**

- Make sure information is in the format that people need. Package and delivery mechanisms are key.
- A lot of marine information exists but needs to be consolidated
- There is high value in public/private partnerships