FOCUS AREAS
from Arctic stakeholder perspective

Stakeholders: communities, agency managers, subsistence users, oil & gas, shipping, Arctic Council

- **Improve safety of marine operations**
- **Monitor climate and ecosystem status & trends (physics & biology): consequences of environmental change & increased industrial activity on ecosystem & humans**
- **Protect living marine resources, subsistence uses**
- **Mitigate coastal hazards**
- **Monitor water quality**

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SCIENCE DRIVERS: Ocean

MARINE OPERATIONS

- weather & sea state conditions
- ocean circulation at various depths
- bathymetry

COASTAL HAZARDS

- sea level & storm frequency & intensity
- permafrost thaw – erosion
- sea ice extent, thickness & type
- land-sea interface: freshwater input

CLIMATE, ECOSYSTEMS & LIVING MARINE RESOURCES

- time series: physical, chemical & biological obs
- ocean acidification
- loss of sea ice: impacts on ecosystems & living marine resources
- resource surveys: seasonal, annual, real-time
- migration patterns & habitat: foraging & resting
- biodiversity: threatened & endangered species, invasives

WATER QUALITY

- contaminants
- pollution
- harmful algal blooms

SCIENCE NEEDS

- Viewing Ocean in 4-D, include time & depth
- Real-time or near real-time
- Ocean circulation forecasts
- Ocean condition nowcasts/forecasts
- Time series: long-terms obs over time; determine natural variability vs anthropogenic-caused change
- Climatologies: coastal climate variability & trends over time
- Particle trajectories: oil spill, larvae, SAR bodies/ships
- Integrated ecosystem assessments: ecosystem-based management
- Early warnings
- Syntheses
- Data integration & visualization from multiple data sources: federal, state, industry & other data
- Incorporate local & tradtl knowledge & community-based monitoring
- Adaptation & resiliency: tools for people, communities
- Social & political consequences: socio-economic

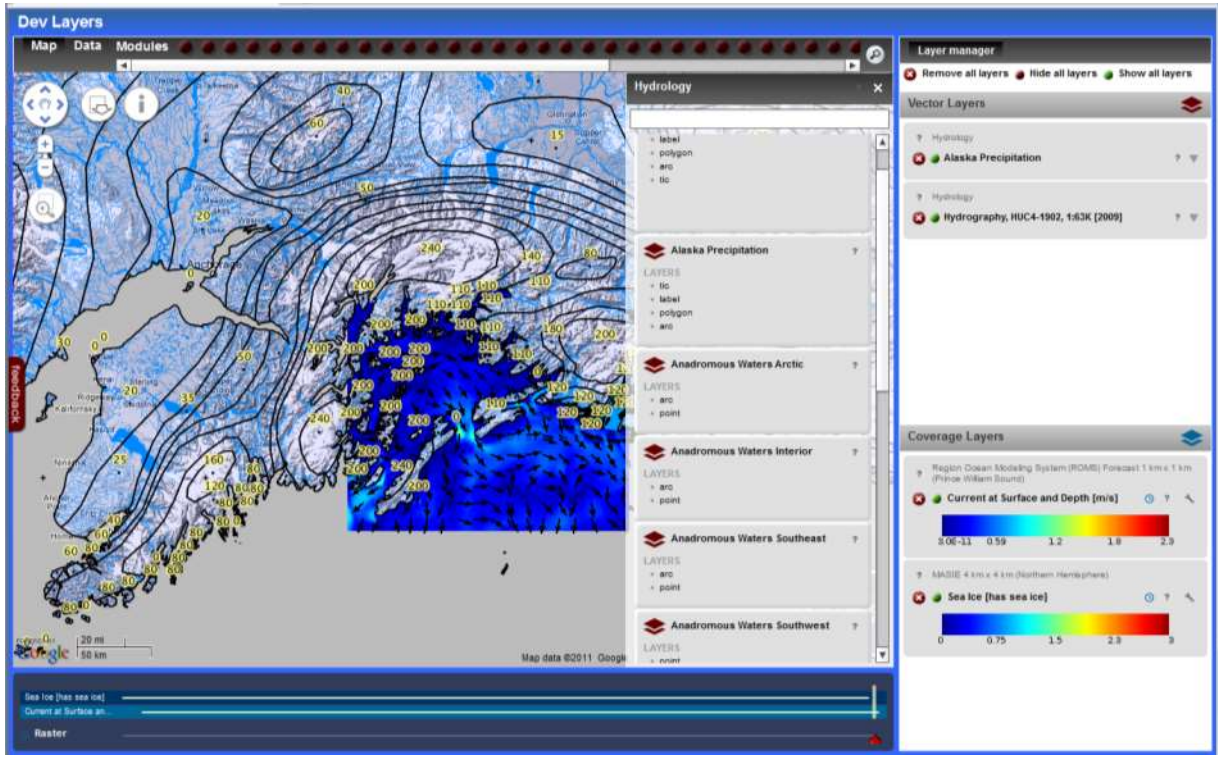
SCIENCE TOOLS

- **Viewing Ocean in 4-D, include time & depth**
- **Use of High Performance Computing: models in near real-time**
- **Web-based data sharing platforms**
- **Data standards, metadata**
- **Data sharing agreements: public access, especially across international boundaries**

AOOS Ocean Portal

Linking AOOS data applications

- View multiple types of data on one interface
  - Sensors
  - Models
  - Remote Sensing
  - GIS & project data
  - In-situ observations
- View available time ranges for each layer
- Download data sets simultaneously
- Follow links to data sources



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Research Workspace

Web-based data management system for assembling, storing, and sharing data between members of biological and physical oceanography communities.

Users can:

- •Create projects
- •Create metadata
- •Upload data (drag and drop)
- •Share or download data
- •View all of the projects, folders, and files uploaded by other group members
- •Track history of data management within the project

Next steps: add new functions including automated archive to NODC, incorporate data into AOOS Ocean Portal Search Tool, publish to completely public access

Groups: Gulf Watch AK, GOAIERP, RUSALCA, DBO

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