

The Observing / Modeling System

“It is not possible to instrument the ocean at a high enough density to capture all the structure and variability that is needed to support the products envisioned. A cost-effective approach is to use observationally constrained models to provide the high spatial and temporal resolution depictions and predictions of coastal, ocean and marine conditions.” SECOORA Build-out Plan

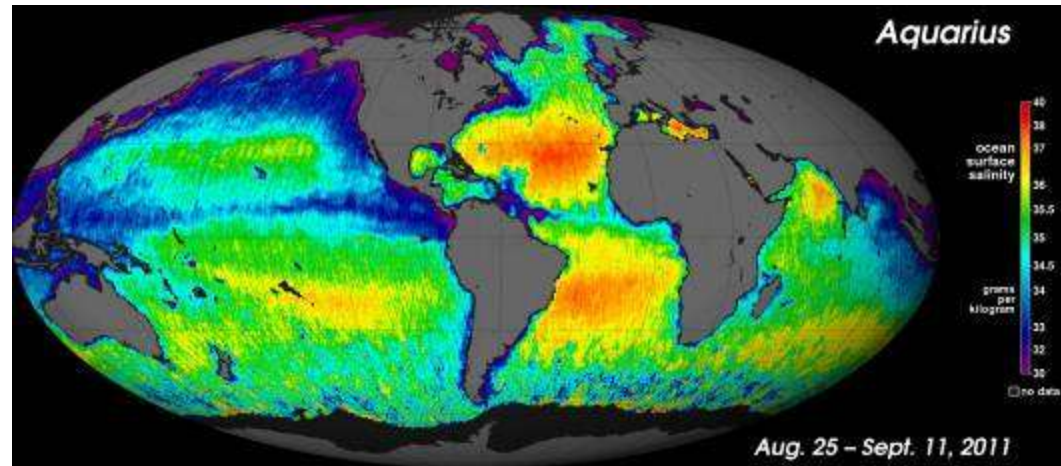
- Observations and models are an integrated system
- Observations are needed for model boundary conditions, forcing, assimilation, and validation
- Models interpolate between observations in space and in time

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Somewhat artificial to consider numbers of different types of platforms separately

- gliders could be substituted for moorings
- new/better remote sensing capabilities may reduce need for in-situ observations

Hyperspectral image
Chesapeake Bay
10/07/09
Courtesy of NASA



Sea surface salinity

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One way to get to a national plan, is to look across a broad spectrum of user needs for a given variable, and design a system that meets a large number of those needs. This has been done for surface currents and waves. Each of those efforts took expert panels years to complete.

HF radar	AOOS	CARI	CeN	GC	GL	MARA	NAN	NERA	PAC	SCC	SEC
# HF and VHF radars (total=395)											
# radars in 5-yr 2009 national plan (total=353)											
# FTEs											

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- This workshop might lead to further national measurement design efforts

AND / OR

- National efforts focused on designing optimum multi-component systems to meet a particular user need or set of products
- Given an agreed upon list of needs, expert panels would have to assess the best technology, spatial and temporal resolution, and packaging and product distribution to meet those needs

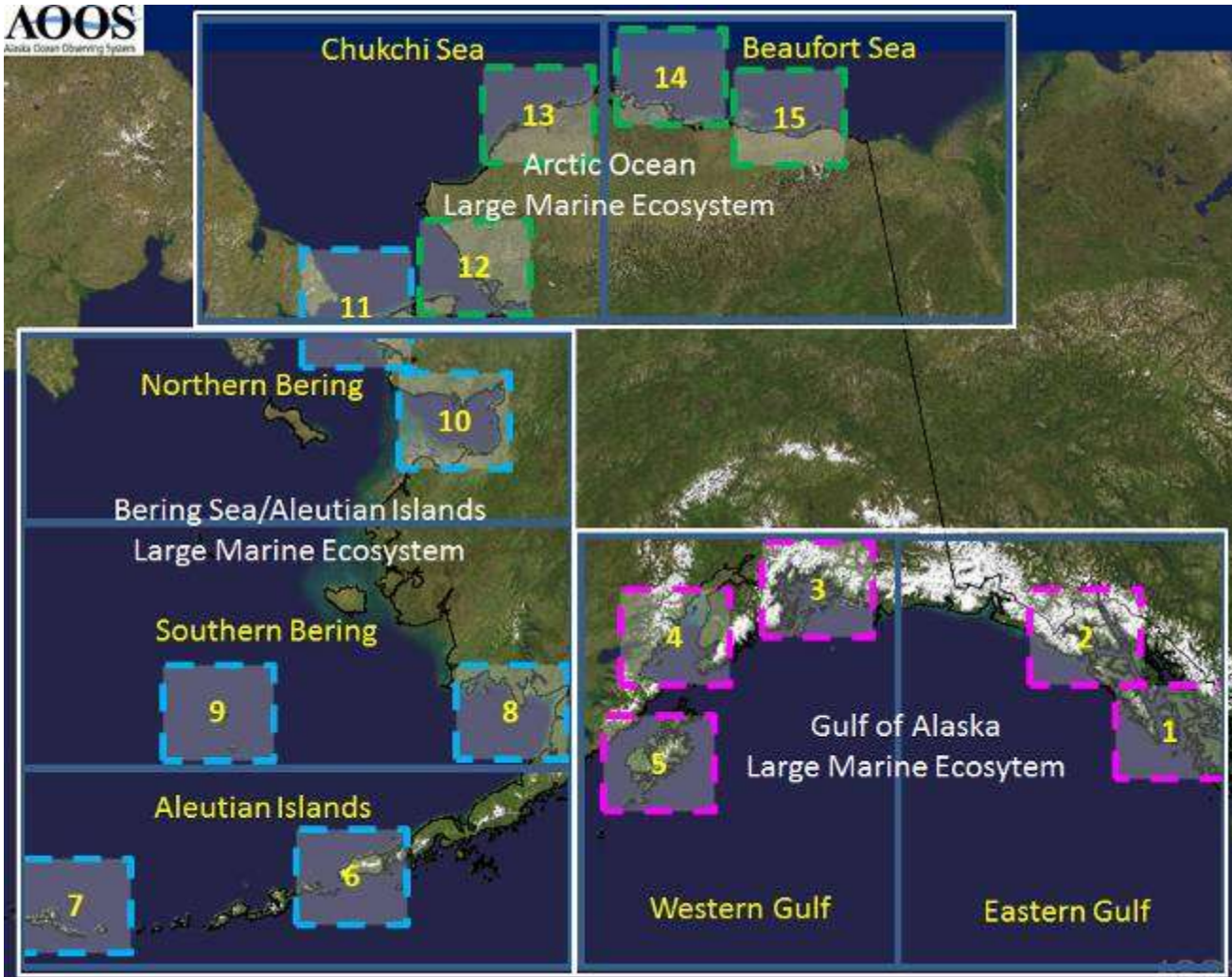
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- Some capabilities rest solely within the regions, such as HF radars and gliders
- Some capabilities rest almost solely at the Federal level, such as the water level observing network
- Some capabilities are spread across the regional and national levels, such as wave measurements

Questions to Consider during Following Sessions

- What are the commonalities among regions on measurements and models to meet common product needs?
- What are the emerging technologies that may replace present-day systems over the next 10 years ?
- Will improvements in model performance over the next decade decrease (or increase?) the need for some types of measurements?
- Are there new developments in remote sensing that will lessen the need for some types of in-situ measurements over the next decade ?
- How do we handle the different mixes of regional and national assets in the synthesis document?

FTEs	A	CARI	CeN	GC	GLOS	MARA	NAN	NERA	PACI	SCC	SEC	Total
Fixed platforms												
Mobile platforms												
Remote sensing												
Modeling												
DMAC												
Product Development												
Education												
Governance & Management												
Total												



3 Regions, 7 Subregions, and 15 Areas defined with AOOS plan. Multiple sites exist within each area.