The U.S. Integrated Ocean Observing System (IOOS®):
A National Overview

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What is the U.S. Integrated Ocean Observing System?

A tool that will enable the Nation to track, predict, manage and adapt to changes in our marine environment and deliver critical information to decision makers to…

- Improve safety
- Enhance our economy
- Protect our environment
The Integrated Coastal & Ocean Observing System Act of 2009

- Codified IOOS
- Interagency Ocean Observing Committee
- NOAA Lead Federal Agency
- Certification of “non-federal assets” and “regional information coordination entities”
- Provides liability coverage
A National & Regional Collaboration

17 Federal Agencies
11 Regional Associations
One Sensor Testing Partner
System Components

1. Observing Systems
   *In-situ & remotely sensed ocean information*

2. Data Management and Communications (DMAC)
   *Effectively & Efficiently links ocean information to user applications*

3. Modeling and Analysis
   *Decision support tools to aid informed and timely decision making*
U.S. IOOS Coastal Component: Core Variables

1. Temperature
2. Salinity
3. Water level
4. Currents
5. Surface Waves
6. Surface Winds
7. Ocean color
8. Dissolved oxygen
9. pH
10. pCO²
11. Heat flux
12. Bottom character
13. Pathogens
14. Bathymetry
15. Ice distribution
16. Contaminants
17. Stream flow
18. Dissolved nutrients
19. Optical properties
20. Total suspended matter
21. Colored dissolved organic matter
22. Fish species
23. Fish abundance
24. Zooplankton species
25. Phytoplankton species
26. Zooplankton abundance

List could be expanded based on identified needs...
Interoperable data for seven variables linked in a distributed architecture

Before IOOS – Individual Databases

- NDBC
  - Moored buoys
  - Regional observations
  - Tropical Atmosphere Ocean
  - DART
  - High-Frequency Radar

- CO-OPS
  - National Water Level Observation Network

- CoastWatch
  - Satellite Ocean Color

IOOS Regions
- Federal, State, Local, and Industry
- Coast, Bays & Estuaries Models

After IOOS
- Same format
  - IOOS Data Standards
  - Currents
  - Waves
  - Temperature
  - Water Level
  - Salinity
  - Winds
  - Ocean Color
  - Estuaries Models
Army Corps of Engineers contributions to U.S. IOOS

- National Operational Wave Observation Plan
- Dedicated USACE staff detailed to NOAA IOOS office
- Mobile District water level project
- Coastal Data Information Program (CDIP)
Safe Marine Operations: Long Beach/LA Harbor Viewer

SCCOOS providing currents

CDIP providing wave observations, nowcasts & forecasts.

http://sccoos.ucsd.edu/themes/harbors
Key NOAA IOOS Activities

- Build on interoperability
- Strengthen regional and federal partnerships
- Implement the requirements of the Integrated Coastal Ocean Observing System Act
- Administer regional funding opportunities
NOAA IOOS Funding

- Northeast Coastal Monitoring Collaborative
- Alliance for Coastal Technologies
- Super regional modeling testbed
- Sensor validation & verification
- Regional observations

$ Millions

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• IOOS is a comprehensive system and the regions are key partners that need to support both regional and national needs

• Integration of data is critical - this must remain a focus of IOOS

• IOOS is positioned to be an integral part of the Administration’s priorities
Thank You