



**An Integrated Ocean and Coastal  
Observing System for the Chesapeake  
Bay Region**

**US IOOS, CBOS, and the NOAA  
Chesapeake Bay Office**

*"High quality, accessible information is critical to making wise decisions about ocean and coastal resources and their uses to guarantee sustainable social, economic, and environmental benefits from the sea."*

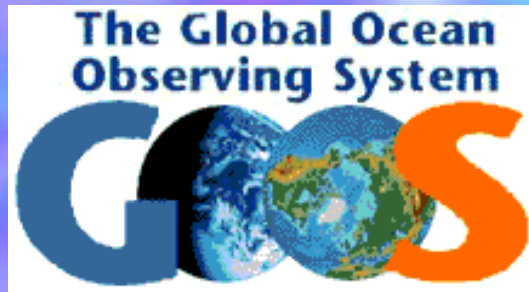
-- U.S. Commission on Ocean Policy



The US Integrated Ocean Observing System is being developed to deliver that information.

A US contribution to GEOSS and GOOS, the IOOS will

- Improve prediction of weather as well as climate change and variability and their impact on coastal communities and the nation;
- Improve the safety and efficiency of marine operations;
- More effectively mitigate the damaging effects of natural hazards;
- Improve national and homeland security;
- Reduce public health risks;
- More effectively protect and restore healthy coastal marine ecosystems; and
- Sustain use of marine resources.



## **GOOS, the Global Ocean Observing System, is**

- A sustained, coordinated, international system for gathering data about the oceans and seas of the earth**
- A system for processing the data to enable the generation of beneficial products and services**
- The research and development upon which such products and services depend on for their improvement**

“Achieving these goals depends on the establishment of a robust network of operational observing activities that routinely, reliably, and continuously provides data and information on oceans and coasts, in forms and at rates specified by groups that use depend on, manage, and study marine systems.”

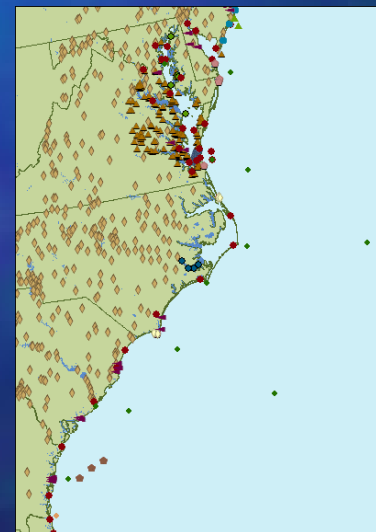
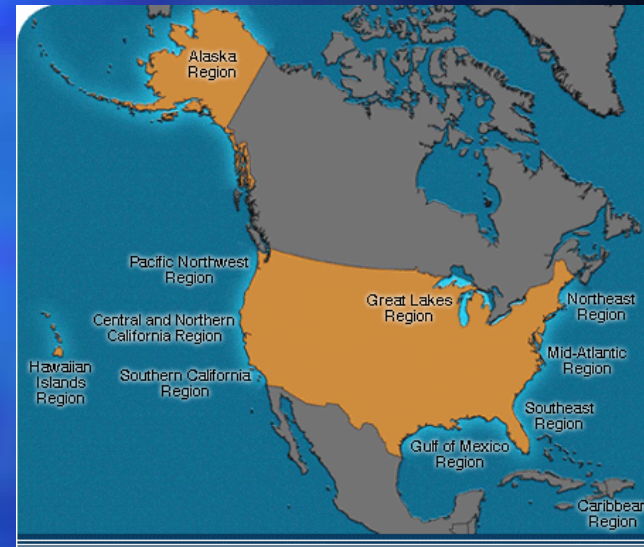
“The coastal component is designed to detect, assess, and predict the effects of weather, climate, natural hazards, and human activities on the state of the coastal ocean, its ecosystems and living resources, and the U.S. economy. It consists of both a national backbone and regional coastal ocean observing systems... ...Development of the coastal component is critical to the design and implementation of ecosystem-based management of ecosystem health and living resources.”

# A national ocean observing system is being created—I OOS

It is made up of 11 regions.

The regions prioritize observations particularly needed in their region, and

There is a Federal 'backbone' that to some extent already exists.



# The Chesapeake Bay Observing System is part of a larger system.

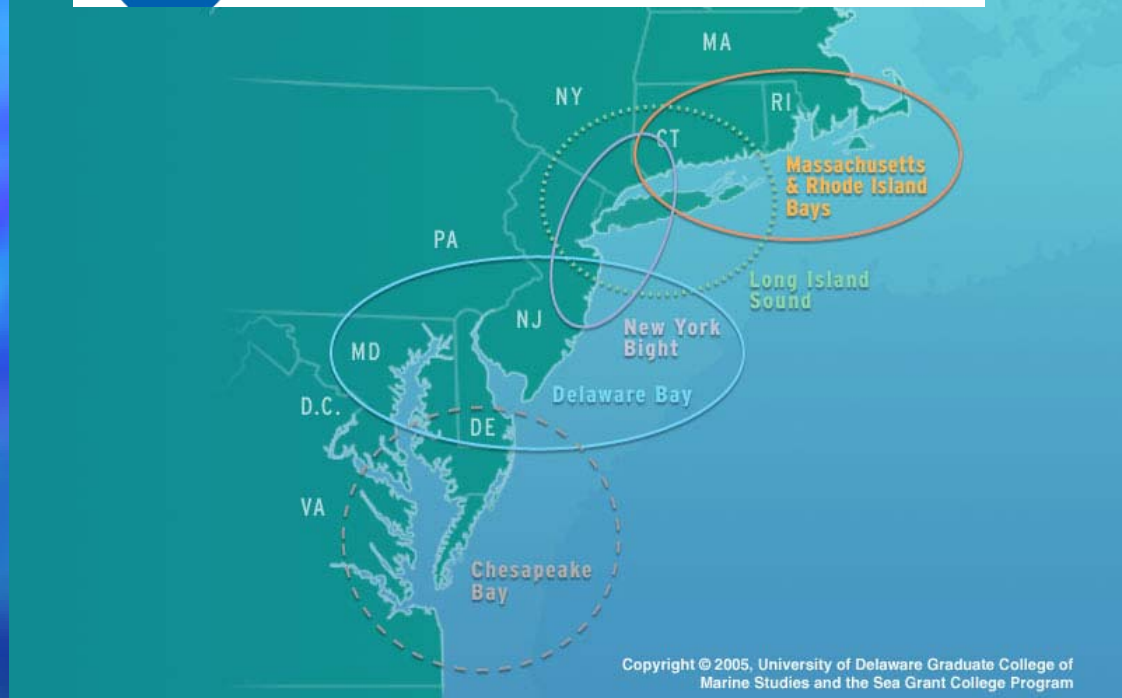
The Mid-Atlantic Coastal Ocean Observing Regional System includes:

- Chesapeake Bay
- Delaware Bay
- New York Bight
- Long Island Sound, and
- Massachusetts and Rhode Island Bays



**MACOORA**

Mid-Atlantic Coastal Ocean Observing Regional Association



## Recent CBOS Milestones

- Nov 2003 – CB Community presented with concept of a CBOS re-designed to emerging IOOS plan; defined priority needs
- 2004 – funding for CCEID, CBOLT, MD DNR profiling
- Dec 2004 - Expanded interest group agrees to organize as RCOOS entity; Interim Steering Committee formed
- 2005 – IOOS funding through NCBO (model validation, visualization, profiling)
- Oct 2005 – (Interim) Executive Director(s) begin organizational tasks

“...With predominantly federal funding, RAs oversee the the development of RCOOSs that contribute to and enhance the national backbone by increasing the time-space resolution of observations and the number of variables measured and analyzed; these activities are based on priorities for data and information determined by user groups in their respective regions.”

## CBOS – ongoing activities

Broad-based Steering Committee representation:

NOAA NCBO; NOAA CO-OPS; NOAA Weather Service; UMCES HPL; WaterKeepers Alliance; ODU; VIMS; CCMP; MEMA; USGS; Hampton Roads; MD DNR; VA DEQ

Continuing interest from NGOs, private sector, DoD

Observations from buoys (HPL, VIMS, ODU, ACT, NOAA CO-OPS & PORTS, MD DNR, NERRS)

DMAC compliant OpenDAP servers and visualization tools (NCBO, VIMS, HPL, SURF, ACT)

CODAR RF surface currents

Developing organizational structure

NCBO recognizes the the need for a regional Integrated Environmental Observation and Data Management System to meet the needs of regional users for products and information necessary for the protection, restoration, and management of the Chesapeake Bay. NCBO has made Integrated Coastal Observations one of the four 'pillars' of its strategic plan. The NCBO Coastal Prediction Center was established o promote the use of NOAA observations and products in the region; to support the development of new observations and products, especially integrated ecosystem observations and environmental forecasts; and to facilitate the delivery of the data and products to policy makers, resource managers, and the public.

- CPC web site – NOAA observations and products, CBOS obs, CCMP model data and forecasts, NESDIS CoastWatch
- Operation (with CCMP) of 'operational' 3D hydrodynamic model
- Operation (with CCMP and CSC) of CBOLT
- Operation (with CCMP and NESDIS) of the CB Sea Nettle and Harmful Algae Bloom forecasts
- Data Management for these and other activities
- ASA Coastmap ESRI-based DMAC compliant visualization (under development)

## NCBO – CBOS Support

- \$900K in direct grants, contracts, cooperative agreements in FY 03-05, including
  - WQ profiling
  - CCEID Wind, Waves, Currents, DO
  - CBOLT
- CBOS annual workshop support; Interim Executive Director
- Coastwatch remote sensing and environmental forecasts
- Coastal Prediction Center
- Outreach to NOAA for further funding opportunities
  - ecosystem based / adaptive management
  - CB Water Trail buoys

STAC - provides scientific and technical guidance to CBP to restore and protect Chesapeake Bay. We think that this is a tool to help accomplish that. Here seeking commitments to CBOS and IOOS goals and principles – as providers, developers, researchers, and users - from other CPB partners.

- NWQMN – IOOS integration
- CBP Shallow Water (and other) Monitoring
- Environmental Forecasting
- Expanded modeling programs
- Research and product development
- Data management
- ?

How to make it happen?

How to make sure it doesn't happen

- Just another program (that will pass)
- Not part of my mission
- Not explicitly funded
- That's MY data (product, format,...)