

Linking IOOS® with Ocean and Coastal Mapping

Map Once, Use Many Times

Overview:

Our oceans, coasts and Great Lakes are a vast system of waterways that decision makers and managers can better understand by using visual representations. Just like driving to our favorite vacation spot, maps help us understand and guide our decisions about marine environments.

Our coastal areas are of great importance considering an estimated 160 million people live within 50 miles of the coast. Rapid development of coastal land has increased the risk from natural disasters.

Accurate ocean and coastal map products are essential to assess and manage dynamic and economically critical coastal zones. They provide the framework for observing system design and the development of forecast models.

Climate change models predict inundation from sea level rise and when combined with stronger weather-related events will exacerbate both economic and environmental impacts.

What is IOOS?

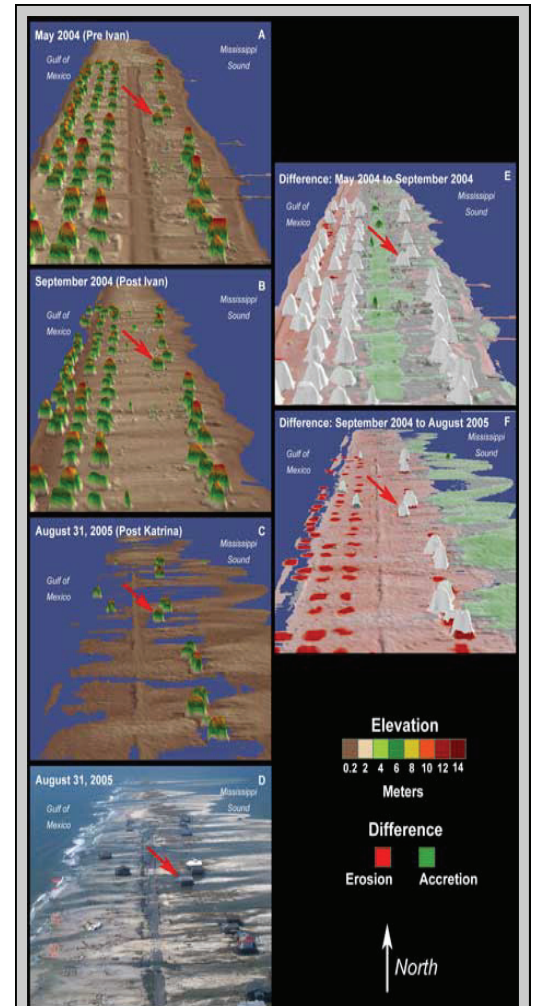
The Integrated Ocean Observing System (IOOS) is a federal, regional and private sector partnership providing new tools and forecasts to improve our safety, economy and environment. IOOS is an interagency effort coordinated between 17 federal agencies and 11 regions.

Integrated ocean information is available in near real time, as well as retrospectively. Easier and better access to this information is improving our ability to understand and predict ecosystem events – such as harmful algal blooms, changes in habitat, and beach closures. Such knowledge is needed for earlier and more accurate forecasts and to contribute to integrated mapping efforts.

What is IOCM?

Integrated Ocean and Coastal Mapping (IOCM) is using geospatial data and interpretive information - ranging from elevation to salinity - and merging them together with other information, to develop mapping products. These products serve user communities with varied interests, needs and responsibilities.

Mapping also supports other needs such as tsunami modeling, storm surge planning, coastal erosion, habitat restoration, navigation interests, and sea-level rise.



Since the beginning of the 2004 hurricane season, Federal agencies have partnered to provide rapid assessments of impacted areas and evaluation of their long-term recovery. The figure shows damage on Dauphin Island, AL, from pre-2004 storms through Hurricane Katrina. Data was collected through funding from USGS and the Corps of Engineers using sensors owned by NASA and the Naval Oceanographic Office. The figure was produced from multi-agency data analyzed by the USGS. These integrated mapping relationships have grown to include other Federal and non-Federal participation to prevent duplication.

Integrating Mapping Efforts:

Coordinated mapping efforts are required to meet National mapping needs due to extensive, diverse, and challenging coastal and marine settings. A comprehensive and coordinated approach to mapping will encourage partnerships and resource leveraging, minimize duplication of effort, and ensure that geospatial data and products are developed using the same formats to maximize return on investments.

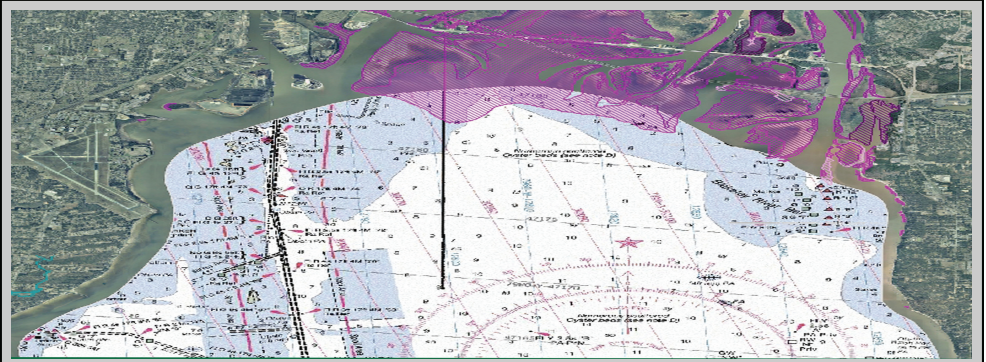
IOCM is an important objective for the National Oceanic and Atmospheric Administration (NOAA), U.S. Army Corps of Engineers (USACE), U.S. Geological Survey (USGS) and other federal and state agencies, academic institutions, and private sector organizations that rely on ocean and coastal geospatial data to make informed decisions.

The Interagency Working Group on Ocean and Coastal Mapping (IWG-OCM) was established to facilitate efforts for cooperation; to coordinate and leverage mapping activities and resources across the federal sector and with state; industry; and academic interests; and to make mapping data and information easily accessible.

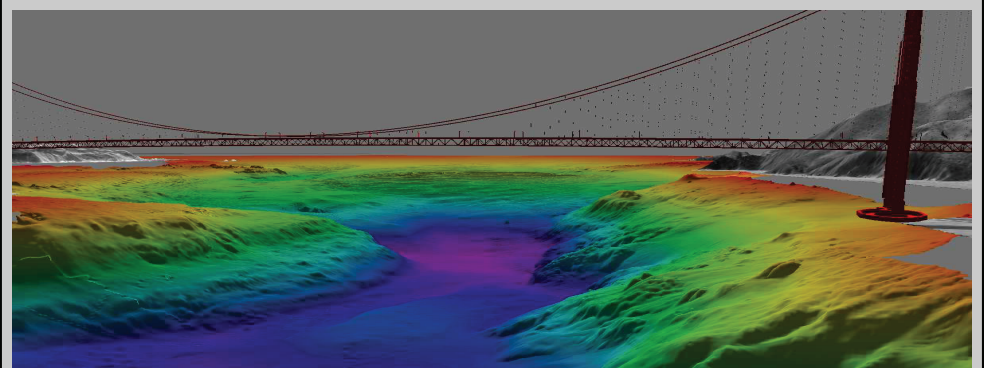
Partnerships:

The IWG-OCM hosted a workshop to develop a national strategy and implementation plan. The *National Ocean and Coastal Mapping Strategic Action Plan* draws on the collective insights and contributions of the national ocean and coastal mapping community and identified three action areas:

1) build the mapping community by increasing awareness, building advocacy, sharing priorities and



The IWG-OCM is working with the Gulf of Mexico Alliance to develop a Gulf of Mexico Mapping Master Plan that will identify the mapping requirements for the Alliance, identify on-going Federal, State, academia, and NGO mapping programs that provide some data now, and identify gaps between needs and existing mapping programs. The Mapping Master Plan will be maintained by the Gulf Coast Ocean Observing System Regional Association to keep it up to date and aid in filling gaps.



The California Seafloor Mapping Project is a partnership between the State of California, the U.S. Geological Survey and NOAA's Ocean, Fisheries and Satellite Services to acquire and archive high-resolution bathymetry, acoustic backscatter, and biological and geological ground-truth data out to 3 nautical miles. These data are used to create a comprehensive map series to support the designation and monitoring of marine protected areas, manage marine fisheries, improve coastal circulation models, assess earthquake and tsunami hazards, and update nautical charts.

practices, and supporting integrated mapping;
2) provide the most effective tools for integrated mapping; and
3) demonstrate success by identifying, implementing, and communicating a series of successful integrated mapping activities and ensuring the broad integrated mapping community shows progress.

These IOCM tenants and those of IOOS, support NOAA's strategic goals with data, information, and products to meet our Nation's economic, social, and environmental needs.

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