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--Mid-Atlantic Coastal Ocean Observing Regional Association-- MACOORA Fact Sheet, 2010

MACOORA

- Is one of eleven regional associations within U.S. Integrated Ocean Observing System (IOOS)
- Covers 9 states from MA to NC; 66 million people, 4 estuaries, the world's largest navy base
- Systematically collects observations from buoys, moorings, ships, gliders, satellites
- Builds computer forecast models and tools that ensure data quality and interoperability
- Translates and transfers observations and science to useful information
- Produces web-based tools, GIS layers, indices, and decision support tools

ENHANCES THE ECONOMY BY PROTECTING LIVELIHOODS

- Fishermen and Fisheries Managers rely on ocean information. MACOORA is developing coastal ocean habitat indicators for important fish species by applying modern statistical habitat modeling techniques to the data
- A MACOORA ensemble of ocean forecast models that are trained with data assimilated from a fleet of autonomous ocean gliders and satellite sensors provide key oceanographic information to support fisheries studies
- Workers need reliable weather information. MACOORA supports a broad network of regional weather forecasts linked to a growing regional weather forecast system for assimilation and validation. Weather forecasts are critical for ocean-related businesses, including the tourist industry, shipping and maritime trade, recreational fisheries, and the insurance industry. Local coastal businesses rely on these forecasts as well
- Businesses and the public rely on emergency managers. MACOORA provides observations on waves, wind, water levels, and precipitation before, during and after storms to assist first responders, and to improve the accuracy and resolution of forecasts for inundation and erosion

SETS THE STAGE FOR OFFSHORE WIND ENERGY

- MACOORA can provide the research and preparatory work that must be done to promote the safe and efficient operation of giant wind turbines, including the transmission of electricity by power lines along the ocean floor
- MACOORA informs offshore energy planning and operations through the synthesis of region-scale baseline environmental data and real-time ocean observations. The information is used by state and regional ocean alliances to support planning, as well as safe and efficient operations

SAVES LIVES

- MACOORA HF Radar data became an official operational component of the U.S. Coast Guard Search and Rescue Operations System (SAROPS). The associated reduction in search area size and response time enables the U.S. Coast Guard to save more lives
- Real-time observations – and forecasts - of offshore waves and currents enable first responders to quickly reach accident scenes
- Wave observations and rip current forecasts are supplied to lifeguards to protect beach-goers

PREPARES US FOR CLIMATE CHANGE CHALLENGES

- MACOORA can provide the observations for expected climate change impacts including sea level rise and storm surges (result: flooding and inundation), higher water temperatures, changing current patterns and increased ocean acidification (result: decreased oxygen and changes in fisheries)
- MACOORA's capability can deliver regional scale observations of essential climate variables to track the changes over seasonal, annual, and decadal periods

HELPS TO ASSESS WATER QUALITY—BEACHES, BAYS AND OFFSHORE

- MACOORA provides real-time updates of offshore waves and currents, and short-term forecasts of sea surface conditions, necessary to understand the movement of floatables [trash and debris]
- MACOORA provides the observations to state managers necessary to predict and manage harmful algal blooms, hypoxia, and pollution
- MACOORA provides real-time surface current information from high frequency radars to assist in the containment of hazardous material spills

AIDS PORTS AND MARITIME TRANSPORTATION

- MACOORA's observations and forecast models (winds, waves, currents, water level, ocean temperature and salinity) support navigation safety for commercial shipping interests and recreational boaters
- MACOORA's contributions to improved weather and ocean forecasts are used by government and private industry -- in easy to understand graphical representation on websites

DELIVERS DECISION-SUPPORT TOOLS FOR EMERGENCY MANAGEMENT IN THE CHESAPEAKE BAY

- The Chesapeake Inundation Prediction System (CIPS) is developing a high-resolution inundation forecast capability for the National Weather Service
- CIPS capabilities represent the next generation of inundation forecast tools to help protect lives and property
- CIPS capabilities are ready to expand from Chesapeake Bay to other areas

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