

Linking IOOS® to the National System of Marine Protected Areas (MPAs)

Protection and Restoration of Ocean Resources

Overview:

Our oceans, coasts and Great Lakes are natural ecosystems that sustain aquatic species, habitats, and natural processes – until the natural balance is changed through impacts and contaminants, both natural and manmade. As a result of these impacts, aquatic ecosystems can experience habitat degradation, species loss and declines in fish stocks, and decline in overall ecosystem health.

Several tools and management methods can be used to begin to restore and protect aquatic ecosystems.

When these tools and methods are used in coordination with each other, restoration and protection efforts can be more effective.

What is IOOS?

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



This parrotfish represents the numerous species being protected by Marine Protected Areas. While some aim to protect and restore whole ecosystems, they also can be designated to protect one single species or an area that has high cultural significance. Photo: Florida Keys National Marine Sanctuary

Integrated ocean information is now available in near real time, and retrospectively. Easier access to this information is improving our ability to understand and predict ecosystem events such as habitat degradation, harmful algal blooms, and beach closures. Such knowledge is needed for everything from ecosystem management to the tourism industry. For example, earlier and more accurate forecasts mean a state agency can determine if fish are dying from a contaminant and issue health warnings to commercial fishermen or beach users.

What are MPAs?

MPAs are places in the ocean where resources are protected by laws or regulations. Examples include national marine sanctuaries, national wildlife refuges, and state reserves and fishery management areas. Nearly all MPAs in the U.S. are multiple use, allowing such activities as commercial and recreational fishing, boating, and diving. In 2008, the National Oceanic and Atmospheric Administration (NOAA) began implementing a national system of marine protected areas. The MPA system

purpose is to protect the nation's natural and cultural marine heritage and sustain production of fisheries and other living marine resources. The system will bring together MPA programs at all levels of government to identify and address common conservation problems, especially those that require working beyond the borders of a single MPA, state or region.

Linking IOOS and the National System of MPAs:

The National System of MPAs and IOOS share the common goals of enhancing the protection, understanding, and monitoring of marine ecosystems. As a result, there are shared benefits from coordinating and integrating data collection and use between the two systems. Most observing systems and MPAs were developed under a variety of programs with site- or region-specific approaches to data collection and management. The 11 Regions are working with IOOS to develop the Data Integration Framework, which includes data standards for ocean parameters.

Coordinating these efforts with the National System will help address the information needs of MPA managers, while avoiding duplication and improving comparability and compatibility issues among data sets. Such integration will allow more timely detection of ocean changes important to society and more effective management responses.

Information Needs:

Ocean observing systems produce a multitude of useful information to assess, monitor, and protect aquatic ecosystems. This information can help define environmental patterns and variations over multiple scales, and



Water quality sampling taking place on an offshore data-logger station in a protected area. Photo: April Bahen, CBNERRVA

assist in conservation and management decisions. This is especially useful for managers making decisions on the designation of an MPA or on its status or improvement over time. Different MPAs require different information to make informed decisions about its management. While some may require information on fish populations, others may need information on whether impending storms will disrupt the cultural resources of a site.

Expanding the range of biological observations such as ocean ecosystem productivity, seawater quality (pollutants, harmful algal blooms, etc.), fish movements, and larval dispersal will benefit IOOS and provide stronger information for critical decisions to protect and manage ocean and coastal resources.

Partnerships:

IOOS data are important for the design, monitoring and assessment of MPAs and MPAs can serve as

reference sites for operation of monitoring equipment. Coordination between NOAA, the Department of the Interior, other Federal and State agencies, non-governmental organizations and universities offers the National System of MPAs and IOOS mutual benefit from increased data standards and improved dissemination of information to the public and decision makers. Our Nation will benefit from enhanced ecosystem-based approach to manage marine resources and improve marine ecosystems.

For More Information:

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