



IOOS®: Partnerships Serving Lives and Livelihoods

Call to a National Effort

Overview:

The Integrated Ocean Observing System (IOOS) is a partnership among federal, regional, academic and private sector parties which provides data and information to improve our understanding and management of our oceans, coasts, and Great Lakes.

IOOS supplies critical information about our Nation's waters. Scientists working to understand climate change, governments adapting to changes in the Arctic, municipalities monitoring local water quality, industries understanding coastal and marine spatial planning all have the same need: reliable and timely access to data and information that informs decision making.

Improving Lives and Livelihoods

IOOS enhances our economy. Improved information allows offshore oil and gas platform and coastal operators, municipal planners, and those with interests in the coastal zone to minimize impacts of natural hazards, sea level rise, and flooding. This information improves marine forecasts so mariners can optimize shipping routes, saving time and reducing fuel expenses - translating into cost savings for consumers.



Easier and better access to integrated ocean information is improving our ability to understand and predict coastal events, climate change, and ecosystem changes.
Graphic: Glynn Gorick for UNESCO Intergovernmental Oceanographic Commission

IOOS benefits our safety and environment. A network of water quality monitoring buoys on the Great Lakes makes beaches safer by detecting and predicting the presence of bacteria (*E. coli*). Mariners use IOOS wave and surface current data to navigate ships safely under bridges and in narrow channels.

The U.S. Coast Guard uses an IOOS network of high frequency radar systems measuring surface currents to reduce the size of search areas, improving the odds of search and rescue operations. Coastal high frequency radars also improve harmful algal bloom

prediction, water quality assessments, and oil spill response.

Evolution:

The U.S. IOOS program history began in 2000 with the passage of the Oceans Act. The Act created the U.S. Commission on Ocean Policy, which, in 2004, recommended the establishment of IOOS.

In March of 2009, President Obama signed the Integrated Coastal and Ocean Observation System Act into law, authorizing IOOS and designating NOAA as the lead federal agency. In June of 2009, the Administration convened the Ocean Policy Task Force.

One of the Task Force objectives is to strengthen and integrate Federal and non-Federal ocean observing systems, sensors and data collection platforms into a national system. That system then compliments and works with international observation efforts.

What is IOOS:

IOOS is a national and international endeavor that includes a global component, focused on the open ocean, and a coastal component focused on the U.S. Exclusive Economic Zone, including the Great Lakes and estuaries. Both components are comprised of subsystems: observations, data integration, modeling and analysis.

IOOS is also the U.S. contribution to the Global Ocean Observing System (GOOS). GOOS is the ocean component of the even larger Global Earth Observation System of Systems, which also monitors our planet's atmosphere and land surface.

Global Component:

The global component of IOOS is designed to meet climate requirements of the United Nations Framework Convention on Climate Change. The ocean moderates global temperature and amounts of atmospheric carbon dioxide. It plays a critical role in sea level rise, drought, and tropical cyclones.

The global component focuses on monitoring the world's oceans to understand their influence on climate change and variability. This component includes 12 programs that collect real-time data using satellites, ships, buoys, gauges, and moorings. The global component is now 61% complete.

Visit www.oco.noaa.gov for more information.



Coastal Component:

The coastal component of IOOS has a national element and a regional element.

The national element includes 17 federal agencies that provide the backbone for IOOS. The national program oversees the regional element and ensures compatible, consistent advancement of IOOS in both the national and regional elements.

The regional element is comprised of 12 partners that include 11 regions and a consortium of research institutions, resource managers and private sector companies that conduct sensor testing and validation. This component provides regional observation systems and high resolution models to support local user needs. The regions also deliver more user-friendly access to data, consistent with national data management practices, as well as tools and technologies to monitor local environments.

IOOS also supports cutting-edge technologies such as unmanned, underwater vehicle called “gliders”. These vehicles monitor water currents, temperature, and conditions that reveal effects from storms, impacts on fisheries, and other ocean parameters.

In 2009, scientists at Rutgers University, a Mid-Atlantic partner of IOOS, became the first to navigate a glider across the Atlantic Ocean to Spain. This marked an important milestone in ocean observing and was a success due to the key role played by undergraduates, our Nation's next generation of oceanographers.

For More Information:

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