



What is U.S. IOOS?

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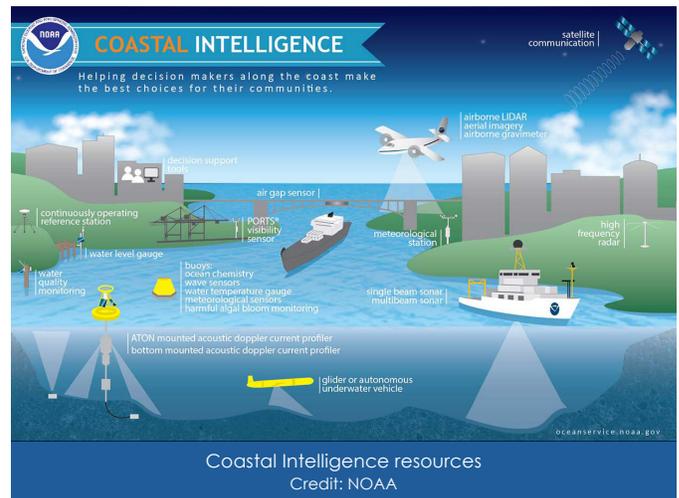
IOOS® is a network of people and tools coordinating the collection and integration of ocean observing data and coastal intelligence to enable scientists, decision-makers, and curious citizens to track, predict, and adapt to changes in our coastal and ocean environments.



What is IOOS?

The U.S. Integrated Ocean Observing System, or IOOS, is our eyes on the oceans, coasts, and Great Lakes.

There are thousands of observing tools in use every day—satellites in orbit, gliders, buoys, high-frequency radar, sharks with satellite tags, sensors on the ocean floor, and more—all operated by different organizations and researchers. IOOS gathers and integrates that data and builds the tools to make those observations compatible and accessible by science, industry, government, and curious citizens all over the world. This benefits everyone from governments to corporations to small businesses and individuals by enabling them to make plans and timely decisions to safeguard lives and livelihoods, drive the economy forward, and foster environmental stewardship.



Our work is integration, so partnerships are essential. Our partners generate the science our tools are built upon. We work with 17 federal partners, 12 regional partners, and an ever-expanding number of local organizations to aggregate observation data and coastal intelligence. We then use that network and information to develop and maintain tools and resources such as the Coastal and Ocean Modeling Testbed (COMT) that help everyone better understand—and manage—our oceans, coasts, and Great Lakes.

Through IOOS, this observing data also becomes part of the UN-sponsored Global Ocean Observing System (GOOS) and the Global Earth Observation System of Systems (GEOSS), where it is integrated with environmental observations worldwide. From the local to the national and the global, IOOS is an essential partner for a comprehensive, integrated, and effective ocean observing system.

Safety

IOOS projects and data help us stay safe in and around the water. In commerce and trade, ships are becoming larger and ports are becoming busier. For example, wave swells entering ports cause ships to tilt, and just one degree of tilt on a super tanker can cause a loss of up to 9' of under keel clearance, dramatically increasing the risk of grounding. IOOS is teaming up with federal and regional partners to develop tools and disseminate data to everyone who needs it. From creating integrated data portals with layers of information to delivering near-real time, compatible, accessible buoy data, IOOS enable ships, harbor masters, industry, and private citizens to make critical operational decisions.



Cargo ship in the Port of Long Beach.
Credit: Jacobsen Pilots Ltd.



An Ocean Acidification sensor in front of the Fairweather.
Credit: NOAA

Environment

IOOS initiatives yield critical environmental intelligence that help individuals and industry better prepare for and respond to detrimental events such as the harmful algal blooms (HABs) that regularly occur in the Pacific Northwest, New England, the Gulf of Mexico, and San Francisco Bay. These HABs are damaging not only to the fishing industry, but the toxins produced by some algae are harmful to animal and human health, causing outbreaks of amnesic, paralytic, or diarrhetic shellfish poisoning. Through our regional partners, we're funding work to deploy new technology and harnessing that data to map and predict HAB growth. In addition, IOOS is drawing on information from outside sources and making it available to everyone who needs it, thereby reducing health impacts and inspiring new ways to fight back.

Economy

IOOS champions economic growth by creating tools and information that help marine businesses operate more effectively. IOOS modeling and observing projects are hard at work providing data about ocean acidification (OA)—a decrease in the calcium carbonate in the water that is essential for shellfish to construct their characteristic shells, for coral reefs to grow, and more. Armed with this data, hatchery managers are able to take pre-emptive action to save their crops, such as oysters and clams, when harmful water is headed their way. Local leaders are also able to reduce the health impacts on their community. As this data builds over time, we'll increase our ability to mitigate the damage from OA events.



Red tide off La Jolla, San Diego, California
Credit: Scripps Institution of Oceanography