IOOS gliders provide data to support a range of operations including improving hurricane warnings, detecting harmful algal blooms, ensuring safe navigation, supporting offshore energy operations, fishermen and fisheries management and enhancing public health and safety.

IOOS Integrated Ocean Observing System

An interagency Federal-regional partnership in NOAA's National Ocean Service

Gliders are underwater robots that relay information about subsurface conditions. The U.S. Navy estimates gliders are 1/100th of the cost of ship-collected data. Gliders are revolutionizing ocean observing by being cost effective, safe and flexible.

IOOS FY 19 GLIDER REQUEST: $3.3m

Where our nation needs gliders to support safe navigation, public health and safety, and the economy:

Great Lakes: Protecting Drinking Water

Over 35 million people depend on the Great Lakes for their drinking water. Gliders provide the flexibility to focus on issues impacting local areas and to better predict the risk of harmful algal blooms (HABs).

Northeast: Enhancing Maritime Industry By Reducing Endangered Right Whale Collisions

Ship strikes and fishing gear entanglements threaten the endangered right whales. Gliders equipped with acoustic sensors can detect the whales and alert mariners and fishermen in real time about the location of the whales, thus minimizing impacts.

Mid-Atlantic: Protecting Lives and Property From Hurricanes

Gliders are a safe method for seeing below the surface of the coastal ocean, where strong winds stir cold water upwards, affecting the intensity of the storm. Such information improves warnings that can protect lives and property.

Southeast: Saving Lives, Supporting Fisheries and Detecting HABs

Information gathered from gliders along the Southeast coast is critical for predicting riptides, optimizing fisheries management models, improving hurricane intensity forecasts and detecting marine mammals and HABs.

IOOS FY 19 GLIDER REQUEST

Caribbean: Minimizing Impacts of Hurricanes, Reef Bleaching

Hurricanes crossing the Atlantic hit the U.S. Virgin Islands and Puerto Rico first, with little advance warning. Gliders can sense changes in ocean temperature, providing weather forecasters and emergency managers with information on storm intensity. The same gliders provide information for NOAA's coral reef bleaching alerts.

Gulf of Mexico: Ensuring Safe Energy Operations

When the Loop Current shifts north, the strong currents can curtail energy operations, costing the industry over $2 billion per event. Gliders provide the data necessary for improving forecasts about the location and strength of the Loop Current needed for safe and efficient operations.

California Coast: Improving Predictions of Changing Ocean Conditions

In 2015-16, the Dungeness and rock crab fisheries lost between $50-60 million due to long-term closures caused by harmful algal blooms. Glider observations are critical for the models that provide forecasts of HABs, changing local weather and ocean conditions such as El Niño, and the abundance and distribution of marine resources.

Northwest: Protecting Fisheries and Public Health

Gliders flying along the Northwest coast detect deep-water upwellings and changes in the water temperatures, such as the large warm water mass known as "The Blob." Strong currents and upwellings affect safe transportation, fishing and aquaculture, and public health and safety. Glider information is critical for providing early warnings for when conditions may lead to harmful algal blooms that threaten tribal and local shellfish industries.

Alaska: Safeguarding Productive Arctic Ecosystems

The Bering Sea is home to some of the nation's richest fishing grounds, and the Beaufort and Chuckchi Seas are habitat for the bowhead whales, belugas, walrus and ice seals that are critical to Alaska Native subsistence communities. Information from gliders in these seas informs Federal and state managers about ecosystem and habitat changes and monitors the location of endangered marine mammals.

Pacific Islands: Saving Lives and Protecting Public Health in Hawai'i

Information from gliders patrolling Hawaiian waters significantly improves forecast models used by the U.S. Coast Guard for search and rescue operations. The glider data also support the public health advisories based on conditions that optimize growth of the toxic *Vibrio vulnificus* and *Enterococcus* bacteria in coastal waters.

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