

# **U.S. Integrated Ocean Observing System (IOOS)**

## **Recommendations of the U.S. IOOS Advisory Committee**

**February 5, 2021**

### **The Oceans and coasts - our Blue Economy**

The coastal and ocean economy is the backbone of the U.S. economy—45% of the nation’s gross domestic product (GDP) is produced in coastal counties. It contributes more than \$282 billion to the U.S. GDP and supports more than 2.8 million jobs. This “blue economy” spans traditional fisheries and navigation, to tourism and recreation, to emerging marine biotechnology research and off-shore wind energy development. Sustainable job growth and opportunities supported by the blue economy, along with the health and vitality of our oceans, coasts and Great Lakes depend on the availability of timely, accurate and reliable information. A commitment to expand and sustain observations through the U.S. Integrated Ocean Observing System (IOOS) is an important opportunity for the next Administration.

### **Coastal and Ocean Intelligence for a Resilient Nation**

U.S. IOOS (Public Law (P.L.) 116-271 – The Integrated Coastal and Ocean Observing System (ICOOS) Act) consists of a leveraged network of regional, national and global buoys, gliders, radars, ships, satellites and other assets. IOOS provides the data and information -- the environmental intelligence -- needed to support resiliency by informing plans for mitigation and response to coastal flooding, extreme weather events, ocean acidification, harmful algal blooms, and oil spills, as well as support the fishing industry, maritime commerce, and search and rescue operations, among many other important economic and societal goals.

The IOOS network includes 17 federal agencies and 11 regional observing systems, led by the National Oceanic and Atmospheric Administration (NOAA). The Interagency Ocean Observation Committee (IOOC) coordinates federal agencies, linking global, national, and regional ocean observations to enable powerful new tools for understanding, predicting, and managing our coastal and ocean resources.

IOOS is a mature system that is already delivering substantial benefits to the economy and science-based management; however, it is falling far short of its full potential, especially in the context of a changing environment. Support for the following recommendations will build on the current foundation to advance modeling and data services needed to address the coastal impacts of our changing climate, provide sustained infrastructure support, and realize even greater local, regional and national economic benefits from IOOS.

## Recommendations

1. **Advance coastal climate change science, preparedness and mitigation by enhancing investment in the U.S. IOOS Office and IOOS Regional Associations** to sustain critical observations in coastal, estuarine and deep-water environments of the US EEZ, as well as data management and integration to ensure timely and reliable delivery to users across the nation. Climate science requires sustained, continuous observations over long time scales, particularly in rapidly changing coastal environments. The IOOS Enterprise is the largest and most trusted integration point of coastal data from federal agencies, academia, and the private sector, and a leader in the development of products and services to support decision making in coastal communities. Increase funding to the maximum authorized amounts through 2025, per the Coastal Ocean Observations and Research Act of 2020.
  
2. **Those investments should prioritize national IOOS infrastructure**, which supports almost every part of NOAA's mission-- from understanding sea surface and atmospheric exchanges during extreme weather events, to ecosystem-based fisheries management, to harmful algal bloom detection, monitoring, and forecasting. The infrastructure that provides invaluable data collection is aging, and in need of recapitalization and hardening to remain resilient and reliable as our climate and our coasts undergo rapid change.
  - a. *Support the full implementation of the 2020 NOAA Uncrewed Systems Strategic Plan 2021-2025*
  - b. *Continue to prioritize the implementation of the CENOTE Act of 2018; Seek new partnerships, including with federal and non-federal entities, and research universities, to leverage resources, expertise, and ultimately expand NOAA operations and capabilities.*
  - c. *Fully fund the recapitalization of the NOAA and Academic (aka UNOLS) Fleets (e.g. the 2016 NOAA Fleet Plan) in support of IOOS observations; these Fleets provide indispensable services to IOOS during the deployment and maintenance of observing assets, including gliders, moorings, and buoys.*
  - d. *Explore options to engage the private and non-profit sectors, to complement federal infrastructure spending.*
  
3. **Prioritize Advances in data collection, modeling, and data assimilation to develop better integrative products for coastal stakeholders.** All IOOS Regions have federally-certified data centers that are part of the federal infrastructure and provide a foundation to establish and grow new initiatives to address climate change impacts to coastal areas.
  - a. *Support the transition of data, through assimilation into models and prediction capabilities, including end products in both the National Ocean Service and the National Weather Service.*
  - b. *Recognize the importance of the IOOS Regional Associations operating at the local and regional levels, providing stakeholders with tailored products, services, and decisional support tools to meet specific regional needs.*

4. **Champion the importance of Ocean Observations at the highest levels of the Federal Government.** Because IOOS is a networked system spanning from the national to regional and local levels, it is important to continue support for interagency ocean observing efforts and coordination through the Interagency Ocean Observation Committee (IOOC). The U.S. should continue its strong leadership role in the Global Ocean Observing System (GOOS).
  - a. *Support interagency ocean observations efforts and the IOOC.*
  - b. *Support future legislation to fully authorize NOAA, which would have lasting positive impacts on IOOS and the entire ocean observing community.*