
Elevating IOOS to a National Endeavor
Recommendations of the
U.S. Integrated Ocean Observing System Advisory Committee
March 2015

Executive Summary

The U.S. [Integrated Ocean Observing System](#) (IOOS) is an innovative public-private enterprise of integrated national and regional ocean, coastal, and Great Lakes observations that equips the nation to face natural and manmade risks to economic growth, prosperity, and survivability, and ensures a safe, productive, and resilient ocean and coastal zone. The U.S. [IOOS Advisory Committee](#) (IOOS AC) is charged under Sections 12302 and 12304 of the Integrated Coastal Ocean Observing System (ICOOS) Act to provide advice to the National Oceanic and Atmospheric Administration (NOAA) Administrator and the other federal agencies that comprise the [Interagency Ocean Observation Committee](#) (IOOC) regarding the purpose and responsibilities of the national IOOS. In response to this charge, the IOOS AC provides recommendations for the continuing evolution of the national IOOS endeavor to meet key societal goals for the benefit of the nation's citizens and economic entities. Building upon the IOOS AC Vision document provided in Spring 2013, this document provides recommendations on Guiding Principles for the achievement of the IOOS Vision.

Critical to advancing IOOS to full potential is the elevation of IOOS to a national endeavor embraced by all IOOC federal agencies participating and providing leadership toward the common development. The IOOC agencies and non-federal entities must engage and participate cooperatively in building IOOS. The six suggested Guiding Principles for the elevation of IOOS to a National Endeavor outline actions to improve interagency engagement with each other and the non-federal sectors in building IOOS. This enhanced leadership will foster public-private partnerships for ocean observing systems that will benefit the U.S. economy while protecting the environment and the health and safety of the nation's citizenry.

The IOOS AC offers three recommendations to the NOAA Administrator and the IOOC for the achievement of the Guiding Principles.

- Enhance IOOS **leadership** through the elevation of the IOOS staff office to an IOOS Program Office within NOAA, so the office can better engage actively all IOOC agencies in the development of IOOS.
- Embrace IOOS **marketing and communications** to stimulate public and private sector engagement and co-investment in building IOOS and IOOS-related products.
- Evaluate long-range **planning and operations** for the national IOOS endeavor, including appropriate annual accountability, based on the understanding that building IOOS will require cooperative actions by federal and non-federal entities over many decades.

Each of these recommendations is elaborated with specific suggestions in this document. The IOOS AC stands ready to provide clarifications as needed.

Elevating IOOS to a National Endeavor

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The U.S. Integrated Ocean Observing System (IOOS), from its inception, continues to evolve rapidly. The system has proven responsive to addressing some of the nation's most pressing challenges: human health and safety, disaster response, national security, economic security, environmental resilience and sustainability. This advice builds upon our [Vision](#) (IOOS AC 2013) for the future:

“IOOS is an innovative public-private enterprise of integrated national and regional ocean, coastal, and Great Lakes observations that equips the nation to face natural and manmade risks to economic growth, prosperity, and survivability, and to ensure a safe, productive, and resilient ocean and coastal zone.”

Advancing IOOS to full potential requires engagement of all the agencies within the IOOC, as well as non-federal entities, to participate cooperatively in building IOOS. ***Guiding principles to elevate IOOS to a National Endeavor are:***

- **Embrace** IOOS as an enabler of new approaches to intergovernmental cooperation and public/private partnerships, and as a source of innovation for the public good.
- **Elevate** the role of IOOS as a national endeavor, which provides advice to leadership of the individual agencies, not secondary support to individual agencies, and elevates the national significance of science for decision support.
- **Enhance** the national IOOS endeavor by establishing an Integrated Ocean Observing System Program Office within the NOAA, that uses, to the extent necessary, personnel from member agencies participating on the IOOC to oversee daily operations and coordination of the System (ICOOS Act of 2009; Section 12304 (c) (3) (A)).
- **Engage** the agencies, operators and the public-private sectors together through ongoing strategic marketing and communication designed to facilitate iterative and meaningful development and co-investment.
- **Extend** the IOOS endeavor's strategic engagement with the international [Global Ocean Observing System](#) (GOOS).
- **Execute** investment efficiently for continue development of an Integrated Ocean Observing System.
- **Evaluate** IOOS enterprise success against measurable goals, priorities and objectives toward the ICOOS Act (shared aspirational goals) for both the individual partners and overall effort.

The IOOS AC offers the following **recommendations** as critical to the achievement of the Guiding Principles presented above:

1. **In support of an elevated leadership role for IOOS**, the IOOS AC recommends the following:
 - The NOAA Administrator, in collaboration with the IOOC, should clearly define how IOOS can effectively lead across agencies and how those agencies can be counted upon to support the IOOS vision.
 - This leadership approach should provide the roadmap for accountability, evaluation of success both operationally and fiscally, and elevation of the recognition and relevance of IOOS internally and with nongovernmental and private sector partners.
 - The NOAA Administrator and IOOC should agree on how they will work together and with the IOOS Program Office to strengthen this culture in IOOS leadership.
 - The IOOC should clearly define a governance approach with agreed upon leadership roles and responsibilities to ensure a transparent and effective IOOS enterprise.
 - The IOOS Office should be elevated within NOAA to a Program Office, as per the IOOS Act of 2009.
 - IOOS “touch-points” should be identified to connect the complex organizations that make up IOOS to the IOOS Program Office and IOOC member agencies.
 - The IOOS Program Office, the IOOC, and the NOAA Administrator should communicate all actions to the regional associations and thus to all IOOS enterprise stakeholders.
 - The NOAA Administrator and IOOC should seek to celebrate IOOS success internally and externally. The IOOS enterprise touches a vast network of individuals and organizations in much the same way a championship team positively impacts a high school or college community.

2. **In support of the marketing and communications Guiding Principles**, which are focused on engagement, embracing new approaches, and evaluation for success, outreach should include a continuum stretching from applied research to product use, with an active customer-driven focus. Marketing and Communications should incorporate the following:
 - Enterprise advocacy;
 - Brand tone, identity, and management;
 - Iterative, two-way communication and knowledge transfer;
 - Continued value for enterprise partners;
 - Marketing imagination and implementation;
 - Facilitated business development (enabling production and sales of products by others);
 - Stakeholder engagement to reach agreement on prioritized needs for IOOS phased build-out with regular review and engagement (annual / semiannual);

- Engagement of citizens, where possible, in activities such as identifying needs or providing citizen science;
 - Engagement of the public with IOOS by fostering use of social media in novel ways, e.g. receiving observations (pictures, text) and providing both warnings and IOOS data;
 - Improvement in how proprietary contributions are given credit and protection, which are essential for the IOOS business model and value proposition.
3. **In support of the planning and operations Guiding Principles**, which emphasize efficiency in execution and enhancement of the IOOS office, the following suggestions are offered:
- Consistent focus on strategic planning, designed resilience, and flexibility at all levels with continued review.
 - Requirements for coordination with national and international integrating systems, for example, the National Response Framework, NOAA Data Integration Framework, Spatial Data and GIS interoperability standards, Metadata Standards and other key existing (and future) standards.
 - Flexible planning from maintenance to introduction of promising new technologies to take into account the changing constraints on the funding entities.
 - Flexible cost savings mechanisms, such as a pool of deployable observational assets, e.g. portable weather stations, general spare parts and instruments for use in emergency situations such as hurricane or tsunami response.
 - Flexible management to tie diverse, operational parts together to enable federal and non-federal partners to retain or increase their funding based on collaboration with the national IOOS endeavor.
 - Flexible management to integrate federal, regional, private, and public data, products, and services.
 - Review of IOOS assets for ranking by quality of data incoming and new methodologies for how to handle these types of information.

The IOOS AC thanks you for your consideration of our recommendations and stands ready to provide additional clarification or information needed regarding the Guiding Principles and recommendations presented in this document.

Reference for Further Reading:

IOOSAC (2013) "Benefits from Ocean Information in the Smartphone Era." Integrated Ocean Observing System Advisory Committee Recommendations to the Integrated Ocean Observing Committee. http://www.ioos.noaa.gov/advisorycommittee/ioos_fac_vision.pdf