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Respondent
12 Anonymous

28:08
Time to complete

Basic information

1. Name of GRA *

- GRA: Black Sea GOOS
- GRA: CIOOS
- GRA: EuroGOOS
- GRA: GOOS Africa
- GRA: GRASP
- GRA: IOCARIBE-GOOS
- GRA: IMOS
- GRA: IOGOOS
- GRA: MonGOOS
- GRA: NEAR-GOOS
- GRA: OCEATLAN
- GRA: PI-GOOS
- GRA: SEAGOOS
- GRA: U.S. IOOS

2. Your name *

Gabrielle Canonico

3. Your email *

Gabrielle.Canonico@noaa.gov

4. Your role in the GRA *

GRA Lead

GRA Overview

5. Vision and mission of the GRA *

IOOS Vision: Ocean, coastal, and Great Lakes information that improves lives and livelihoods. IOOS Mission: To produce, integrate, and communicate high quality ocean, coastal and Great Lakes information that meets the safety, economic, and stewardship needs of the Nation.

6. Affiliated organisations and agencies of the GRA *

- Governments/Member States
- Academia
- Research Institutions
- Regional organisations
- Non-governmental Organisations (NGOs)
- Private sectors
- Other

7. Please list the national observing systems that the GRA is connecting to.

United States of America

8. How does the GRA connect to GOOS National Focal Points (NFPs) in the respective countries? *

If so, please specify GOOS NFPs in which countries you are currently connecting to). Link to current GOOS NFPs is: <https://goosoocean.org/who-we-are/goos-national-focal-points/group/>

The current GOOS National Focal Point for the United States co-chairs the U.S. Interagency Ocean Observation Committee (IOOC). The IOOC is responsible for implementing procedural, technical, and scientific requirements to ensure full execution of the System. U.S. IOOS is a representative on this committee and works with the committee to advance U.S. IOOS priorities and activities.

9. Governance of the GRA. *

Please outline governing bodies of the GRA, including Chair, Secretariat, Steering Committee, etc.

The Interagency Ocean Observing Committee (IOOC) - responsible for implementing procedural, technical, and scientific requirements to ensure full execution of the System. The committee is co-chaired by the following agencies: National Science Foundation (NSF), National Oceanic and Atmospheric Administration (NOAA), National Aeronautics and Space Administration (NASA), White House Office of Science and Technology Policy (OSTP).

The U.S. IOOS Program Office – Director (Acting): Krisa Arzayus
Serves as the overall coordinator of U.S. IOOS activities and provides a consistent management function.

IOOS Advisory Committee – Chaired by Debra Hernandez, SECOORA and Vice-chair Eoin Howlett, Trillex. The U.S. IOOS Advisory Committee (the Committee), per Section 12304 of the IOOS Act, shall advise the NOAA Administrator and the IOOC on:

-administration, operation, management, and maintenance of the U.S. IOOS, including integration of federal and non-federal assets and data management and communication aspects of U.S. IOOS, in fulfillment of the IOOS Act;

-expansion and periodic modernization and upgrade of technology components of U.S. IOOS;

-identification of end-user communities, their needs for information provided by U.S. IOOS, and U.S. IOOS' effectiveness in disseminating information to end-user communities and the general public.

10. Strategic documents of the GRA. *

Please list titles, dates, and relevant information of the most recently updated version of the governing documents, including the **links** if available. Strategic documents may include: MoU, Goals and Objectives, Planning documents (e.g. Strategic Plan, Work Plan, Implementation Plan), Data Policy, etc.

ICOOS Act - US IOOS authorizing legislation was passed in 2009 and the Coordinated Ocean Observations and Research Act of 2020 (P.L. 116-271), signed on December 31, 2020, reauthorizing the Integrated Ocean Observing System (IOOS): <https://www.congress.gov/bill/116th-congress/senate-bill/914>

U.S. IOOS Strategic Plan 2022-2025: <https://cdn.ioos.noaa.gov/media/2022/06/V2.1-IOOS-Strategic-Plan-2022-.pdf>

IOOS Implementation Plan – “U.S. IOOS Blueprint for Full Capability, Version 1.0” (November 2012)
https://cdn.ioos.noaa.gov/media/2017/12/us_ioos_blueprint_ver1.pdf

IOOS Development Plan – “The First U.S. Integrated Ocean Observing System (IOOS) Development Plan” (January 2006)
https://cdn.ioos.noaa.gov/media/2017/12/ioos_devplan.pdf

11. Communication tools of the GRA. *

Please list links of GRA website, contact person, newsletter, brochure, introductory video, etc., if any.

<https://ioos.noaa.gov/>

<https://ioos.us/>

Monthly Newsletter: <https://ioos.noaa.gov/communications/eyes-on-the-ocean-ioos-bi-weekly/>

IOOS Program Office Communications POC: Kate Culpepper, kate.culpper@noa.gov

IOOS Association: <https://ioosassociation.org/>

11 IOOS Regional Association Websites: <https://ioos.noaa.gov/regions/>

12. Primary financial sources of the GRA. *

Please consider the investment in the ocean observing system itself as well as for GRA coordination.

IOOS is funded by the United States Government. IOOS Regional Associations are funded through grants from the federal government. They also receive funding from other sources to leverage this federal funding and their established partnerships through academia and the private sector.

Achievements since last GRA Forum (April 2024)

13. Meetings and workshops the GRA organised or sponsored. *

IOOS organizes community meetings (“regional meetings”) every Fall and Spring; next in March 2026.

IOOS organizes an annual Data Management and Cyberinfrastructure community meeting every year; next in June 2026.

IOOS supports biological data mobilization meetings every year to support data flow to IODE/OBIS.

IOOS supports annual meetings for its communities of practice including for the Marine Biodiversity Observation Network, Animal Telemetry Network, ROWG, Underwater Glider Network.

14. Contribution/Integration to the Global Ocean Observing Networks. *

If the GRA is currently contributing/integrating to other networks other than GOOS networks, please specify them in the field of 'Other'.

- Ship Observations Team (SOT)/Voluntary Observing Ships (VOS)
- Ship Observations Team (SOT)/XBT-Ship of Opportunity Programme (SOOP)
- Ship Observations Team (SOT)/Automated Shipboard Aerological Programme (ASAP)
- Global Ocean Ship-Based Hydrographic Investigations Programme (GO-SHIP)
- Global Sea Level Observing System (GLOSS)
- OceanSITES
- Data Buoy Cooperation Panel (DBCP)/Moored Buoys (MB)
- Data Buoy Cooperation Panel (DBCP)/Tsunami Buoys
- Data Buoy Cooperation Panel (DBCP)/Drifting Buoys (GDA)
- Argo
- The Global High Frequency Radar Network
- Ocean Gliders
- Animal-Borne Ocean Sensors (AniBOS)
- Emerging: Fishing Vessel Observing Network (FVON)
- Emerging: Surface Ocean CO2 Observing Network (SOCONET)
- Emerging: Science Monitoring And Reliable Telecommunications (SMART) Subsea Cables
- Emerging: SUN Fleet
- None
- Other

15. Any other ocean observation projects and activities uniquely conducted by the GRA?

IOOS supports Communities of Practice to advance coordinated observations and standardized data approaches and data flows, and user-driven information delivery, including:

- Marine Life - MBON, ATN
- Underwater
- Ocean Acidification monitoring and information
- SOFAR/Back Yard Buoys

There has also been continued development of the Benefits of Ocean Observing Catalog and website.

16. **Contribution of data at local/national/regional/global level. ***

Please indicate other data centers and repositories in 'Other', if applicable.

- Ocean Data and Information System (ODIS)
- IODE National Ocean Data Center (NODC)
- IODE Associate Data Unit (ADU)
- IODE Associate Information Unit (AIU)
- WMO Information System (WIS)
- Other

17. Describe the primary roles of the GRA in facilitating the **delivery of Information, Products and Services to end users** and how these are different/complementary to national activities. *

DMAC, data assembly centers, and <https://ioos.us/>. Each region has their own data portals.

IOOS, being a part of the Global Earth Observing System of Systems (GEOSS), ascribes to the GEOSS data sharing principles. The basic intent of these principles is for full and open exchange of data and metadata with minimum possible cost, delay and restriction. IOOS also aims to abide by the FAIR principles for Findability, Accessibility, Interoperability, and Reuse of digital assets. In particular, observations gathered with IOOS funding are made freely available. In some instances, IOOS® data providers may act as a "clearinghouse" for other lower capacity or smaller scale providers.

IOOS establishes authoritative QA/QC procedures for the U.S. IOOS core variables, as necessary, including detailed information about the sensors and procedures used to measure the variables through the Quality Assurance / Quality Control of Real Time Oceanographic Data (QARTOD).

18. **In what areas (checklist is below) does the GRA enable co-designed/co-produced ocean observing solutions? ***

More detailed information & services, e.g. links, can be indicated in 'Other'

- Biodiversity conservation
- Sustainable fisheries
- Coastal resilience
- Climate resilience mitigation and adaptation
- Sustainable ocean planning
- Marine carbon capture and storage
- Safety of life at sea
- Coastal hazard warnings
- Disaster risk reductions
- Human health
- Ocean science
- Other

19. **Please list new Best Practice documents completed in 2025 (and submitted to the OBPS). ***

None in 2025.

20. Capacity Building and Knowledge Sharing

Please state the capacity building activities organised in 2024-2025, and # of beneficiaries; expertise/experience shared with other GRAs in terms of capacity building.

DMAC Code sprint, IOOS data mobilization trainings and workshops, IOOS-MTS-NOPP 2025 Ocean Life Forum for cross-sector sandbox and project development, NOAA Ocean Enterprise Initiative and Ocean Accelerators program, and MTS-NOAA-GOOS Dialogues with Industry.

Essential Ocean Variables (EOVs) Measurement

GOOS Essential Ocean Variables (EOVs) are defined as the *minimum set of ocean variables* that are needed to assess ocean state and variability for important global ocean phenomena, and to provide essential data for applications that support societal benefit. Please see more detailed information and specification sheet for each EOv via <https://goosocean.org/what-we-do/framework/essential-ocean-variables/>

21. Please indicate the **physics EOVs** that have been/are being measured by your GRA. *

	Yes	No	No info
Sea state	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ocean surface stress	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sea ice	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sea surface height	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sea surface temperature	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subsurface temperature	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Surface currents	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subsurface currents	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sea surface salinity	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subsurface salinity	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ocean surface heat flux	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ocean bottom pressure	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Turbulent diapycnal fluxes (*pilot)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

22. Please indicate the **biochemistry EOVs** that have been/are being measured by your GRA. *

	Yes	No	No info
Oxygen	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nutrients	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inorganic carbon	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transient tracers	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Particulate matter	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nitrous oxide	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stable carbon isotopes	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Dissolved organic carbon	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. Please indicate the **biology and ecosystems EOVs** that have been/are being measured by your GRA. *

	Yes	No	No info
Phytoplankton biomass and diversity	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Zooplankton biomass and diversity	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fish abundance and distribution	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sea turtles abundance and distribution	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Seabirds abundance and distribution	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marine mammal abundance and distribution	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coral cover and composition	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Seagrass cover and composition	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Macroalgal canopy cover and composition	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mangrove cover and composition	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Microbe biomass and diversity (*pilot)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Benthic invertebrate abundance and distribution (*pilot)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. Please indicate the **cross-disciplinary (including human impact) EOVs** that have been/are being measured by your GRA. *

	Yes	No	No info
Ocean colour	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ocean sound	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marine debris (*pilot)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

25. Additional comments on EOVS measurement by your GRA.

34 IOOS Core Variables: Ocean observing measurements required to detect and predict changes in the ocean. <https://ioos.us/task-teams/bio/ioos-core-variables>

Planning and Support

26. Top 3 Challenges and Opportunities *

To highlight the **challenges** for operation of GRA and how to address them; as well as the **opportunities** for new partnerships with regional networks, programme/project, countries; new funding opportunities including cooperation with industries; emerging requirements for delivery of information and services, and etc.

Challenges:

1. Funding uncertainty.
2. Significant organizational change.
3. Legislative reauthorization of the program still in flux.

Opportunities:

1. Co-design to enable requirements-driven prioritization of observation collection and data sharing needs will enable expanded engagement with and investment by the private sector. This is an opportunity that IOOS and other GRAs should emphasize going forward.
2. Modeling and numerical prediction - Advancing public safety, national security, and economic growth through the use of AI-enhanced modeling, forecasting, warnings, and emergency management, and commercial partnerships. Continue to support hurricane intensity forecasting through the glider collaboration project.
3. Strengthen ocean observation and technology development through the Ocean Enterprise Initiative partnership.

27. Planning for 2026-2027 *

To highlight top 3-5 priorities of the GRA over next two years.

IOOS near term strategic priorities are:

1. Strengthen system-wide governance and coordination of national assets (e.g. HFR, water level sensors)
2. Mitigate the effects of coastal hazards
3. Strengthen messaging/communications of the value of ocean observing through the development of the Benefits of Ocean Observing Catalog and other use cases.
4. Document high priority national and regional observation and data requirements in order to fill observing gaps and develop multi-region or national-scale data products.

28. Requested Support from GOOS *

May include but not limited to communication support; capacity building support; partnership building support; leveraging support from member states, etc. Indicate priority or urgency.

Engage more actively with the GRA Council and co-chairs to understand GRA priorities and capabilities but also to ensure an ongoing and iterative dialogue about how GRAs can evolve to better align with GOOS components and strategies.