



OOS2025-161, updated on 10 Sep 2025

<https://doi.org/10.5194/oos2025-161>

One Ocean Science Congress 2025

© Author(s) 2025. This work is distributed under the Creative Commons Attribution 4.0 License.



Sustainable Ocean Development Requires All Hands On Deck on Conservation, Improvement, and Restoration of Ecosystems and Biodiversity

Frank Muller-Karger¹ and the Frank Muller-Karger*

¹Saint Petersburg, United States of America (carib@usf.edu)

*A full list of author appears at the end of the abstract

Implementation of the Kunming-Montreal Global Biodiversity Framework (GBF), the Biodiversity Beyond National Jurisdiction Agreement (BBNJ), and the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) requires that different groups coordinate on sharing biodiversity, environmental, and social and economic information, and management goals and practices. These and many other treaties and agreements have much overlap between them in the need for interoperable observations on marine life and biodiversity. Many are directly relevant to plans that nations would be interested in implementing internally for biodiversity monitoring. Can the international community make progress on these agreements? One possible mechanism is to make concerted investments to link what currently represent separate networks of marine researchers, social scientists, technologists, private entities and investors, policymakers, and indigenous and other local groups. These groups shared an interest in the best possible planning and implementation of policy frameworks to advance jobs and the economy while conserving spaces and other resources. They share an interest in contributing to international conventions like the GBF, BBNJ, and CCAMLR. The UN Decade of Ocean Science for Sustainable Development (the Ocean Decade) provides an opportunity to link existing networks to converge on key science and technology requirements, enable minimal key dataflows, and inform policy for sustainable development. Networking around best practices for marine life observing is already occurring in a collaboration between the Global Ocean Observing System (GOOS), the Ocean Biodiversity Information System (OBIS), and the Marine Biodiversity Observation Network (MBON). These and other partners are focused on leading Ocean Decade Programmes to address these challenges. The Ocean Decade could be a good convening mechanism for different interest groups to converge on: A) Common and interoperable practices for the collection and curation of specific sets of biology and ecosystem information; B) Implementing the dataflow strategies required to address big science questions and management of human activities to ensure sustainable development; and C) support local and national-scale capacity building, in partnership and coordination around the world. Such partnerships and collaboration are essential for all nations to advance and achieve some measure of success with the Sustainable Development Goals, and require investments to support existing marine biodiversity observation programs and to identify and fill gaps. Imagining a positive future can incentivize an all-hands-on-deck effort to ensure a

better future for ourselves.

Frank Muller-Karger: Aileen Chau Hwai Tan A. Louise Allcock Ward Appeltans Claudia Barón Aguilar Andreu Blanco Steven J. Bograd Mark John Costello Audrey. M. Darnaude Britt Dupuis Lucie M. Evaux Kelly Goodwin Sean Jungbluth Margaret Leinen Lisa Levin Pooja Mahapatra Rebecca Martone Lina Mtwana Nordlund Anthony B. Ndah Eric Pante Ken Paul Jay Pearlman Dominique Pelletier Veronica Relano Alex David Rogers Sophie Seeyave Joana Soares Simon Taylor Linwood Pendleton