The Marine Biodiversity Observation Network (MBON)

Governments and researchers around the world have recognized the need for information to evaluate changes in biodiversity as part of national biodiversity action plans and in international treaties. Information on marine biodiversity is required to evaluate strategies and progress toward the U.N. Sustainable Development Goals (including SDG 14) and Aichi Targets of the Convention on Biological Diversity (CBD), and conducting national, regional (i.e. spanning the continental margin of several countries or a specific ocean basin), and global assessments such as those attempted by the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), the UN World Ocean Assessment, and the Ramsar Convention.

The Marine Biodiversity Observation Network (MBON) was established in 2016 within the Group on Earth Observations Biodiversity Observation Network (GEO BON) to address this need for information. The goal of MBON is to nurture a community of practice for the collection, curation, and analysis of marine biodiversity information. The ultimate objective is to understand how and why life in the ocean is changing, how local changes relate to changes taking place over larger regions, and to provide information to help define options for decisions that are relevant to the conservation and sustainable use of living marine resources. This requires establishing practical measures of biodiversity, defining past or current baselines against which to evaluate change, implementing monitoring programs that use standard protocols, and facilitating the comparison of observations collected in different regions. Doing this on a global scale is a challenge that requires the coordination and collaboration between nations that integrate structures like the Group on Earth Observations (GEO) and the Intergovernmental Oceanographic Commission (IOC) of UNESCO (Figure 1).

The MBON mission is to focus the international operational agencies that constitute the GEO to facilitate the planning, implementation, and ongoing functioning of a network of marine biodiversity observation efforts. These efforts include facilitating linkages between research and operational groups on an international scale. One focus of MBON is on development of Essential Biodiversity variables to complement the broader Essential Ocean Variables (EOVs) defined jointly with the Global Ocean Observing System (GOOS/IOC). MBON and GOOS address the need for common protocols for collection and sharing of observations in collaboration with the Ocean Best Practices System (OBPS/IOC). MBON emphasizes objective knowledge of changes in marine life and ecology, promoting the integration of regional datasets through systems such as the Ocean Biodiversity Information System (OBIS/IOC).

The Meaning of Biodiversity

Biodiversity is here defined following the Convention on Biological Diversity, as the variety of life at the genetic, species, and ecosystem levels. It includes the number of species, the abundance and biomass of organisms, the diverse interactions between organisms and the environment, and the variability and change of the habitat.

Vision of a globally implemented MBON

The vision of the MBON is a community of practice that supports understanding of marine biodiversity and how and why it changes through time through scientific observations, for the promotion of ecosystem conservation, sustainability, and good management practices.
Figure 1. Notional schematic of information flow assisted by international governmental bodies to satisfy user needs. The graphic highlights the linkages and roles of the Intergovernmental Oceanographic Commission (IOC, which houses GOOS, the Ocean Best Practices System/OBPS, and OBIS), and the Group on Earth Observations Biodiversity Observation Network (GEO BON) MBON. Note the planned cross-cutting role of “BON in a Box” under the GEO BON information flow. The marine contribution to the BON in a Box takes place through the OBPS and OBIS.