



2022 United Nations Ocean Conference Side Event

Biomolecular Observations in support of conservation and sustainable development

30 June, 18.00-19:30 Lisbon (UTC+1) time, virtual event on Zoom.

Recording now available at: <https://youtu.be/J4PQjfrsc14>

Organized by: Partnership for Observation of the Global Ocean (POGO); Scripps Institution of Oceanography, USA; Monterey Bay Aquarium Research Institute (MBARI), USA; National Oceanic and Atmospheric Administration (NOAA), USA; Stazione Zoologica Anton Dohrn, Italy; Marine Biological Association, UK; AtlantECO (EU project); Alfred Wegener Institute, Germany

Background on the event (one paragraph)

While real-time data acquisition tools exist for physical and chemical ocean parameters at global scale, there is no equivalent unified global surveillance of life in the ocean. Biological observations at appropriate phylogenetic, temporal and spatial scales are necessary to understand the impacts of ocean health decline and ensure sustainable development. We will, through the global network that the UN Decade-endorsed programme Ocean Biomolecular Observing Network (OBON) is striving to develop, address knowledge gaps with finer-scale biological observations from methodologies based on the DNA blueprint, universal to life on Earth. Several recent demonstrations have validated biomolecular methodologies for fisheries management, conservation (e.g., threatened species, marine protected area design), aquaculture, biogeography and exploration, while enabling fast and inexpensive infectious disease analyses. Our vision, a global marine life surveillance program, builds on successes of these and other biomolecular research programs, enabling broadscale science-based sustainable development. OBON invited a number of relevant projects to give a brief overview of how biomolecular observations are being used to develop our understanding of the world's ocean ecosystems and support their conservation and management. After the brief overviews from these projects, the discussion focused on how the projects could work together within the framework of OBON, particularly in terms of engagement with stakeholders and potential users of biomolecular data. The presenters and participants engaged in an extended discussion on how biomolecular research can enable

broad-scale science-based conservation and sustainable development. Issues that need to be addressed are harmonisation of protocols and data strategies, how to work with sensitive data, and how we can build capacity in areas where currently no well-equipped laboratories are available and resources are scarce. More information on OBON at <https://www.obon-ocean.org/>

Key Issues discussed (5- 8 bullet points)

- use of biomolecular observations to generate knowledge and inform policy
- use of best practice and the sharing of protocols for harmonisation and to help with capacity development
- setting up a data strategy/ framework using FAIR and CARE principles, which will be developed with input from the OBON community
- the importance of working with local stakeholders and governments
- how to set up capacity development in areas with scarce resources

Key recommendations for action (5 - 6 bullet points)

- projects with similar objectives, e.g. those working on microbiomes, to work together and share information
- the need to work with other UN endorsed programmes on cross-cutting areas such as data strategy and best practice
- need to think about sensitive data (e.g. data owned by or relevant to indigenous people, data on invasive species within marine protected areas) and how sensitivities should be handled, while applying FAIR and CARE principles
- capacity development and local knowledge are required to build regional centres in areas where infrastructure and trained personnel are lacking.

Voluntary Commitments (one paragraph)

During the side session there was no time left to discuss voluntary commitments, but all participants were determined to work together on mutual goals, such as protocol and data sharing, using FAIR and CARE principles, increasing scientific knowledge and capacity building.