



OOS2025-1128, updated on 10 Sep 2025

<https://doi.org/10.5194/oos2025-1128>

One Ocean Science Congress 2025

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The Ocean Biomolecular Observing Network: A global hub for biomolecular measurement of marine life

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The Ocean Biomolecular Observing Network (OBON) is an international programme endorsed by the UN Decade of Ocean Science for Sustainable Development (“UN Ocean Decade”) and led by the Partnership for Observation of the Global Ocean (POGO) that aims to accelerate informed decision-making to restore the health of our ocean using the universal signatures of life on Earth: biomolecules. OBON acts as the strategic hub for a global biomolecular observatory in support of the UN Ocean Decade, bringing knowledge based on biomolecules and capacity to advance and broaden their application to diverse ocean users – for example, to monitor biodiversity and understand how it is changing in response to multiple stressors such as pollution, habitat loss, and climate change. OBON will also help communities detect biological hazards like harmful algal blooms and pathogens, and support the management of fisheries and Marine Protected Areas. To achieve this, biomolecular observations need to become a key component of next-generation ocean observing systems – the biological equivalent of the Argo network of profiling floats. To achieve our vision, we are working with our growing family of 20+ endorsed Projects to ensure that biomolecular observations of the ocean are globally coordinated, harmonised, Findable, Accessible, Interoperable and Reusable (FAIR), and reliably flow into the Global Ocean Observing System (GOOS) - via the Ocean Biodiversity Information System (OBIS)- as standard practice integral to sustainable ocean management. OBON’s core pillars are to (1) Innovate technology and methodologies, delivering frameworks to advance biomolecular observations from the coastal to the open ocean, thus enabling broad-scale interpretations and scientific discovery; (2) Develop resources, networks and strengthen capacity globally, to advance observations and analyses while ensuring equitable access to ocean knowledge and resources; and (3) Enhance the use and interpretation of these data through FAIR data practices and model integration, and the creation of ocean knowledge. Together, this work informs ocean users and managers, ensuring sustainable interactions in support of a healthy ocean. This presentation will provide an overview of the OBON

programme, progress to date and recent developments, as well as ways for the global biomolecular observation community to engage. In particular, we will provide examples of OBON's work on policy engagement (e.g. with the Convention on Biological Diversity and UN Framework Convention on Climate Change, UNFCCC), fisheries management, technology/instrumentation, and capacity development, which have been achieved through several workshops bringing together providers and end-users of biomolecular data and information.