

240002 - Implementing long-term genomic observation in the marine environment: the European Marine Omics Biodiversity Observation Network (EMO BON)

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There are many individual biological observation stations in Europe, however there are few and inconsistent links among them. The European Marine Omics Biodiversity Observation Network (EMO BON) is an initiative from the ESFRI (European Strategy Forum on Research Infrastructures) research infrastructure European Marine Biological Resource Centre-European Research Infrastructure Consortium (EMBRC-ERIC) to unite marine stations under one centrally organised observation network that uses shared protocols, international standards and agreed policies. EMO BON aims to establish a coordinated, long-term, marine biodiversity observation network. Currently, EMO BON includes 17 marine stations, located from the Arctic to the Red Sea, which regularly sample for genomic marine biodiversity at different marine habitats (the water column, the soft substrates, and the hard substrates). EMO BON generates high-quality genomic biodiversity data that will be made openly accessible and thereby support constructive dialogue towards a holistic understanding of our ocean. By using omics techniques, in this case metagenomics and metabarcoding, EMO BON captures the most representative amount of biodiversity data, produces maximal information on community biodiversity, and provides the means to access the pool of genes present in an ecosystem. The genomic data can reveal the biodiversity of different communities from microorganisms to Metazoa, their temporal trends and shifts, the ecological relationships among species, and their responses to environmental changes. EMO BON thus becomes the European contribution to the global marine biodiversity observation efforts and plans to collaborate and integrate further with other global entities.

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