

Integration of biodiversity monitoring data into the European Digital Twin Ocean

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The ocean and its biodiversity are vital to life on Earth. Understanding their current state and how that state may change requires comprehensive data on biodiversity and related pressures. Protecting and restoring biodiversity is a key goal of the Horizon Europe Mission to restore oceans and waters by 2030, supporting the EU Green Deal and Biodiversity 2030 targets. A Digital Twin of the Ocean (DTO) is central to this effort, enabling simulations, advancing knowledge, and supporting policy and societal needs.

To accurately model ocean ecology, the DTO depends on continuous, accessible data on biodiversity and environmental pressures. While many actors collect such data and new technologies are emerging, much of the information remains inaccessible or fragmented, hindering the development of the DTO's biological component.

DTO-BioFlow aims to unlock and integrate these "sleeping" data flows using automated pipelines, feeding them into EMODnet and the broader EDITO infrastructure. By combining sustained data streams, models, and algorithms, DTO-BioFlow will build the biological layer of the DTO, delivering digital tools and services for policy and ecosystem management.

Through targeted use cases, the project will show the value of continuous biodiversity data for marine conservation and policy. Mobilising the marine biodiversity community, DTO-BioFlow will increase data availability and accessibility through 2030, directly supporting the Mission's objective to protect and restore marine biodiversity.

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