CASE STUDY 2

FACTSHEET

ANERIS

aneris.eu

EXPLORE THE UNDERWATER WORLD THROUGH DNA

PARTNERS

LEAD PARTNERS: HCMR, VLIZ, NORCE
INVOLVED RIs: LifeWatch, EMBRC, EGI

TECHNOLOGIES INVOLVED

NANOMICS, MARGENODAT, SLIM-2.0

Case Study 2 follows two deceptively simple questions: how can we better observe what is happening underwater, and how can we collect reliable data about the health of our seas?

ANERIS highlights the need for stable monitoring stations and regular observations that can be compared over time, together with accurate information on the overall health of marine ecosystems to support biodiversity conservation. At its core, Case Study 2 responds to the urgent need to keep our seas healthy as marine life and ecosystems are increasingly affected by global change. Underlying the project's mission is a persistent lack of evidence: without solid data on biodiversity loss, it becomes difficult to justify or design effective action.

KEY MESSAGES

Case Study 2 serves as a kind of telescope for the health of the seas and oceans, allowing people to see and understand marine life without harming the environment in the process. In general, Case Study 2 aims at:

- **Developing novel DNA-based monitoring methods** that do not disturb or harm marine life, while still providing reliable data, including for the early detection of invasive species.
- **Generating new data on marine species and biodiversity** using novel technologies, while allowing results to be compared between different countries and regions.
- **Encouraging citizens to help observe and monitor marine life**, alongside scientists, and contribute to marine biodiversity monitoring through simple, standardised methods.
- **Providing information** that can help protect marine life and marine habitats.

Scientific illustration of *Raja undula*

Provided by Pensoft

WHO BENEFITS AND HOW?

The benefits of healthier oceans are broad. However, there are a few particular stakeholder groups that gain more insight than others:

- **Governments and the European Commission**: more successful implementation of environmental legislation.
- **Academia**: use the data generated to better understand marine life and support concrete conservation actions.
- **Engineers**: use the case study's outputs to further improve data-gathering methods.
- **Industry**: benefit from healthier oceans to provide goods, services and sustainable fisheries over the long term.
- **Future generations**: inherit whatever state we leave the ocean in today.

Preparing sediment samples during the eDNA campaign

Image provided by Hanneloor Heynderickx, VLIZ

POLICY-RELATED CONTRIBUTIONS

This Case Study contributes to the Marine Strategy Framework Directive (MSFD), particularly Descriptors 1 (Biodiversity) and 2 (Non-indigenous species), and can support monitoring requirements under the Water Framework Directive (WFD). The generated biodiversity information can also contribute to marine spatial planning, the EU Biodiversity Strategy for 2030 and the Nature Restoration Regulation, particularly through improved monitoring of native, threatened and invasive species.

Filtering water samples for eDNA extraction

Image provided by Hanneloor Heynderickx, VLIZ

Collecting water samples

Image provided by Panagiotis Kasapidis, HCMR

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