

The Sea MOUNTS

Seamounts, **hotspots of benthic and pelagic biodiversity**, are home to unique communities. In particular, the coral gardens and sponge fields provide a habitat for other benthic invertebrates. Ocean currents interact with these topographies, generating intense turbulent currents that **transport and mix waters with different properties and increase primary productivity**, attracting pelagic fish and marine mammals. The geological nature of the substrate can also influence biodiversity.

A **comprehensive study of all environmental factors** is required in order to understand the great variability of the fauna between neighbouring seamounts, and even within the same seamount.

Observation SYSTEMS

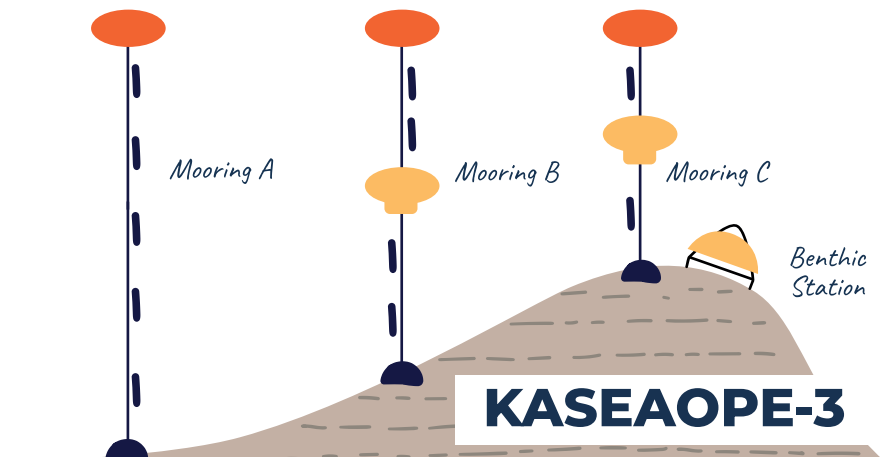
A series of five research cruises will carry out temporal monitoring of two contrasting seamounts **by deploying a multidisciplinary observatory**. The observatory consists of mooring lines **to study the water column** and its processes and benthic stations to study currents and biological communities at the top of the mountain. The observatory was first deployed on Stylaster seamount between 2023 and 2025, and will be deployed on Munida seamount in 2025. During the 2025 cruise, **three moorings will be deployed** on the flank of the seamount, to evaluate existing current models. The last two cruises will involve maintenance, deployment of the moored profiler PROLIXE, and the final retrieving of the instrumentation. These fixed-point observations will be complemented by another research cruise covering larger exploration area.



KASEAOPE-1



KASEAOPE-2

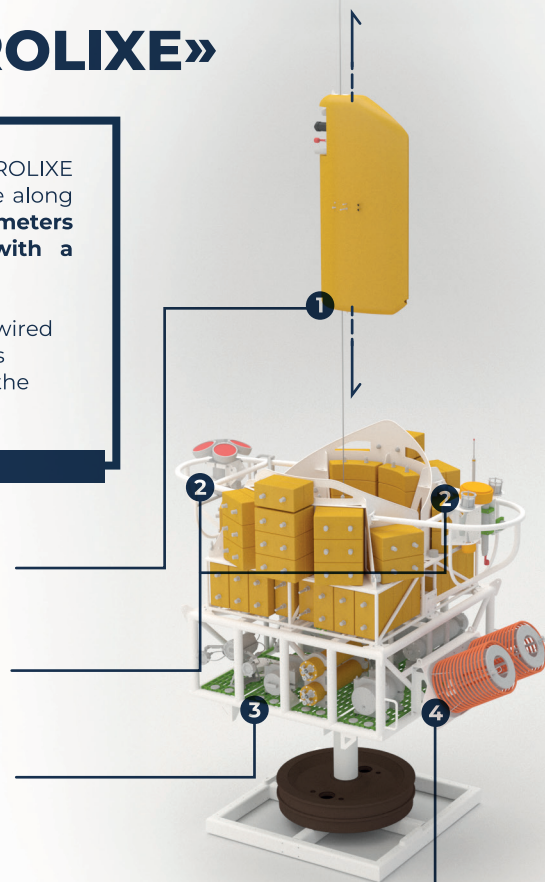


Moored PROFILER «PROLIXE»

Currently under development, the PROLIXE moored profiler will be able to move along the mooring line **to measure parameters throughout the water column with a single set of sensors.**

It will operate either on battery or in wired mode and will be capable to adapt its sampling in real time depending on the events observed.

- 1 Device carrying the sensors, which moves along the mooring line
- 2 Sensors for current measurement and biomass estimation
- 3 Docking station: battery, data logging, other sensors
- 4 Cable for the connected version of the moored profiler

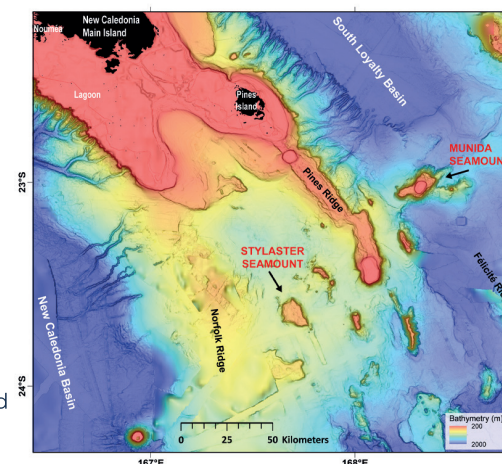


AN UNDERWATER OBSERVATORY IN NEW CALEDONIA

Initiated and coordinated by Ifremer, the **New Caledonia** study site of the **ScinObs project** aims to design and deploy a multi-parameter observatory **to study seamounts** in the Natural Park of the Coral Sea.

Two objectives :

- 1 **To measure and understand** how seamounts influence the ocean circulation, the transport and mixing of water masses.
- 2 **To observe** the dynamics of seamount biodiversity, to understand its distribution and driving factors, **in order to better preserve it.**



Bathymetric map of the southern New Caledonia

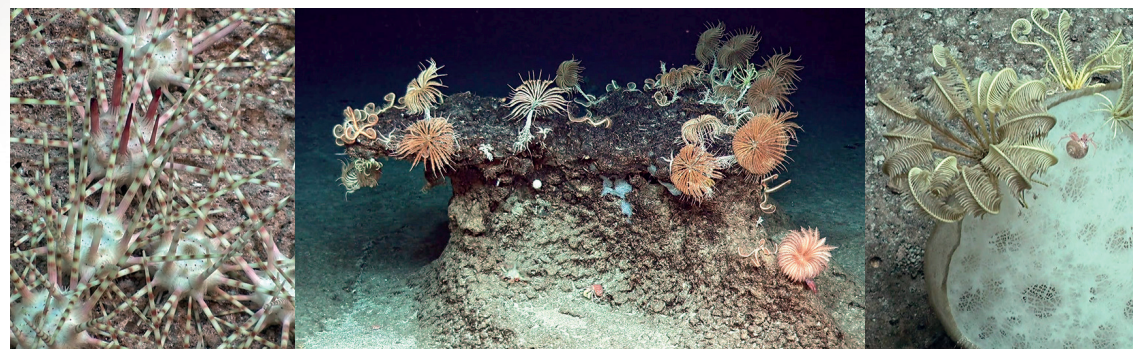


2021
2030 United Nations Decade
of Ocean Science
for Sustainable Development



The ScinObs project represents Ifremer's contribution to the 'One Ocean Network for Deep Observation (OneDeepOcean)' programme, endorsed by the United Nations Decade of Ocean Science for Sustainable Development (2021-2030).

For more information :
onedeeppocean.org



MHNH/Ifremer Kanadeep2 (2019) Fields of urchins, crinoids and sponge on various seamounts in the Natural Park of the Coral Sea.