

THEME SESSION N

The biological carbon cycle,
the role of marine animals,
and the impacts of fishing

Annual
Science
Conference
ICES 2025 | 15-18 September
Klaipėda, Lithuania

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Cite this Book of Abstracts:

ICES. 2025. Theme Session N – The biological carbon cycle, the role of marine animals, and the impacts of fishing. ICES Annual Science Conference 2025, Klaipėda, Lithuania.

Cite an abstract:

[Abstract authors]. 2025. [Abstract title]. In: Theme Session N – The biological carbon cycle, the role of marine animals, and the impacts of fishing. ICES Annual Science Conference 2025, Klaipėda, Lithuania.

Theme Session N Report

2025

The biological carbon cycle, the role of marine animals, and the impacts of fishing.

Conveners: Conveners: Paula Silvar Viladomiu (Ireland), Angela Martin (UK), Ingrid van Putten (Australia)

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Exploring the Effects of Crustacean Fishing on Cold-Water Coral and Gorgonian Ecosystems: Conservation Strategies for Carbon Sequestration

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Crustacean fishing has significant impacts on cold-water coral and gorgonian communities. These cold-water corals include Vulnerable Marine Ecosystems (VMEs) such as *Dendrophyllia ramea* and *D. cornigera*. Our observations indicate that fishing gear used to capture crustaceans like lobster, brown crab, and European crab along the western coast of Portugal is frequently abandoned or anchored in rocky areas. When these traps are brought aboard, they often retrieve cold-water corals and gorgonians attached to them. Sometimes, only small branches are collected, while entire structures may come to the surface on other occasions. Fishermen tend to break the corals into smaller pieces to avoid damaging their gear.

These organisms play a crucial role in carbon fixation, yet they face significant destruction. The only effective way to mitigate this destruction is through educational initiatives aimed at fishermen, encouraging the return of salvaged corals and gorgonians to the sea whenever possible. Furthermore, any corals that cannot be returned should be taken ashore for proper restoration and rehabilitation, followed by subsequent reintroduction into their natural habitat. Implementing such measures is essential for minimising the impact on carbon sequestration dynamics and safeguarding the region's overall biodiversity.

Keywords: Carbon sequestration, Cold-water coral, Gorgonian ecosystems, Crustacean fishing

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