

OCTOCORALLIA FORESTS HAVE THE POTENTIAL TO BE BOTH A BIODIVERSITY HOTSPOT AND A NURSERY AREA FOR ELASMOBRANCH

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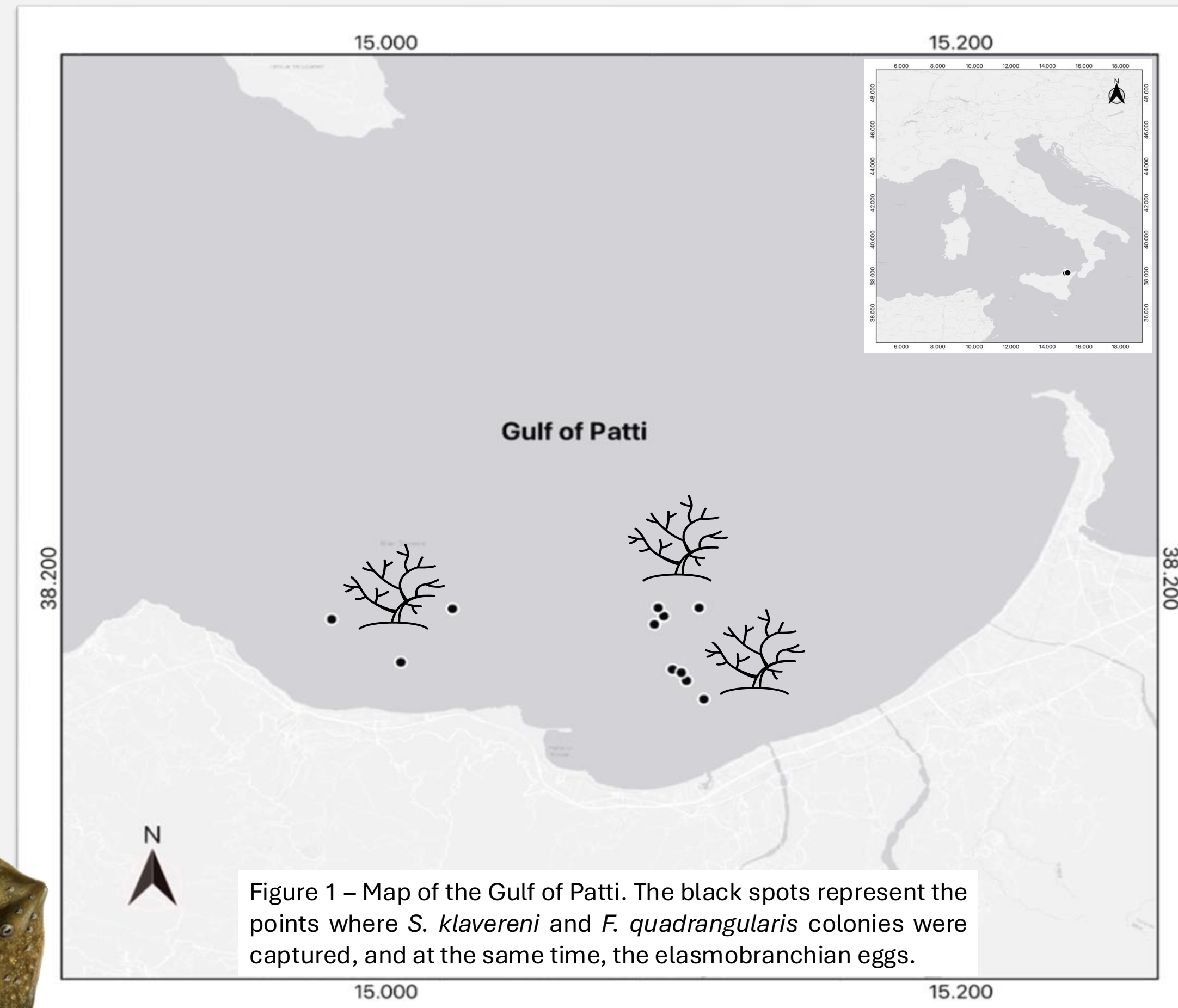
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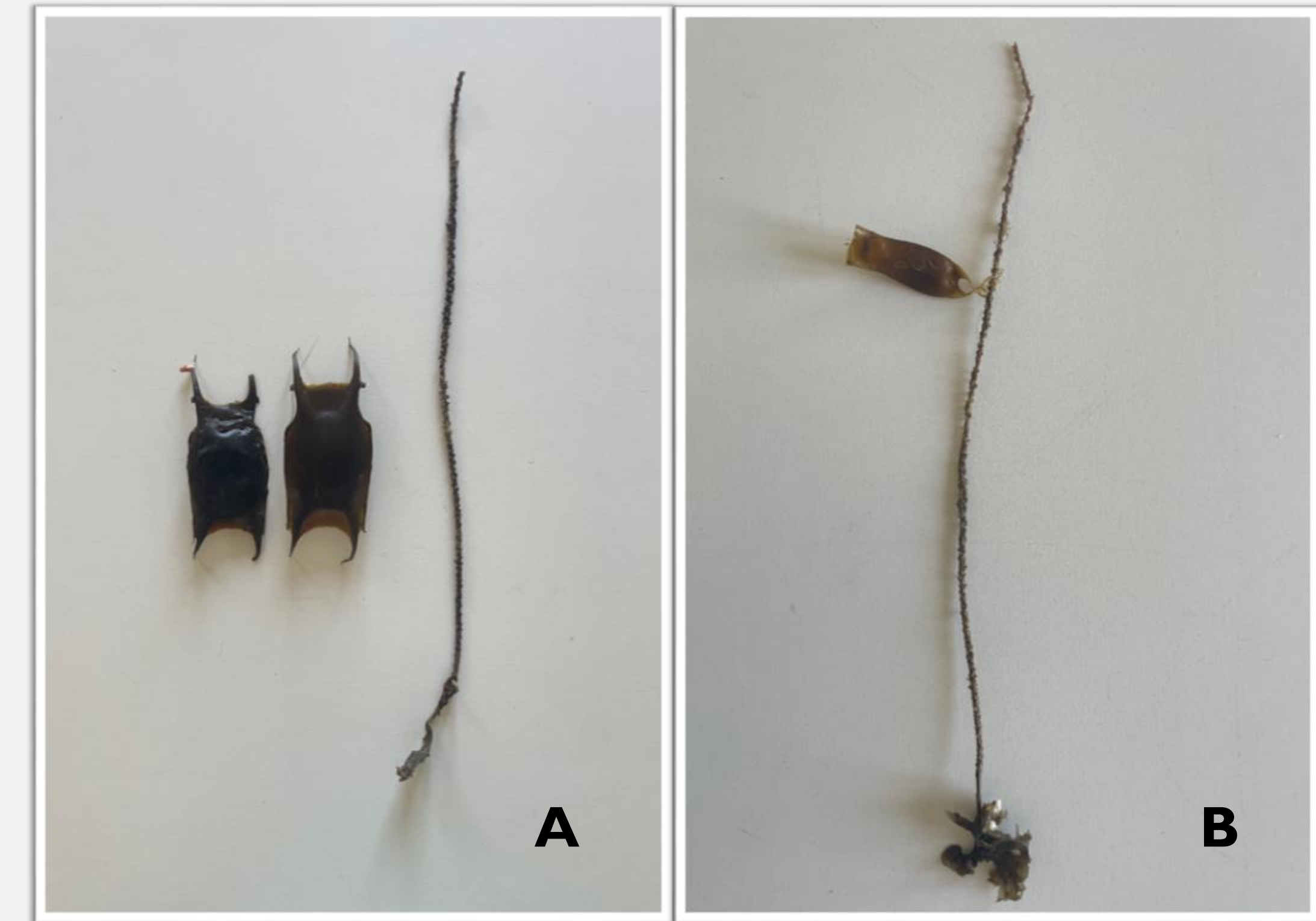
BACKGROUND

Soft-bottom coral forests have become rare due to their sensitivity to anthropogenic impacts like fishing. Once known as biodiversity oases (Bo *et al.*, 2012), they are now mostly confined to protected fishing areas. Understanding their ecological role is crucial, as these corals form three-dimensional habitats in typically barren, deep muddy zones. Their preservation is vital for sustaining biodiversity (Cau *et al.*, 2016).



RESULTS

The observations made with trawling allowed to identify a muddy bottom populated by a rich octocorallia assemblage dominated by *Spinimuricea klavereni* (Carpine & Grasshoff, 1975) ($N/Km^2=81.97$ - Occurrence=64.71%) followed by *Funiculina quadrangularis* (Pallas, 1766) ($N/Km^2=21.39$ - Occurrence=41.18%). In the same depth range, between 66 to 200 m, 30 eggs capsules of *Raja spp.* (fig. 2A) and 1 egg capsul of *Scyliorhinidae* were found (fig 2B). The capsules were discovered with a frequency of occurrence of 55% and always with the co-occurrence of octocorallia colonies of *S. klavereni* (Carpine & Grasshoff, 1975). All the capsules found were empty and only in one case they were found attached to one of the branches of a colony of *S. klavereni*. Elasmobranch species were caught in all the hauls ($N/Km^2=122.88$ -Occurrence=100%).



The question is:

Do octocorallia forests not only contribute to biodiversity, but also serve as breeding grounds for elasmobranchs?

METHODS

The study area is the Gulf of Patti (Fig. 1), in the southern Tyrrhenian Sea of Sicily, closed to trawling since 1990 within 500 m depth. It is for this reason that this gulf was chosen by the scientific team of CNR-IRBIM and ISPRA to investigate descriptor 6 of the Marine Strategy Framework Directive (MSFD; 2008/56/CE). The data were collected during an experimental trawl survey (16-19 October 2023) using the F/V "Papà Carmelo," covering depths of 60-200 m. Species were identified in the laboratory, including egg capsules of elasmobranchs using Serena *et al.* (2010) for skates, and Carpine & Grasshoff (1975) for gorgonians. Nomenclature was verified through WoRMS (2021).

CONCLUSION

Gorgonians, such as *S. klavereni*, create three-dimensional structures on the seabed, serving as habitats for vulnerable species, including elasmobranchs. This work highlights the importance of conserving octocorallia forests, which act as breeding grounds for elasmobranchs. Protecting these coral habitats is essential for maintaining marine biodiversity and supporting sustainable fisheries.

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