

# IMPORTANCE OF SEAMOUNT-LIKE FEATURES FOR CONSERVING MEDITERRANEAN MARINE HABITATS AND THREATENED SPECIES

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## INTRODUCTION

16 of the more than 200 seamount-like peaks in the Mediterranean<sup>1</sup> have been observed using ROV.

The findings, which include carnivorous sponges, elasmobranches, coral gardens, sponge aggregations, coralligenous beds, as well as species new to science like the giant foraminifera *Spiculosiphon oceana*, or new to the Mediterranean, like the scleractinian *Anomocora fecunda*, underscore the importance of these geological features as hotspots and shelters/refuges species and habitats that are threatened, in regression, or rare in other Mediterranean areas.

## METHODOLOGY

Since 2006, Oceana has carried out six expeditions in the Mediterranean performing 129 ROV's dives over 16 seamounts, between -37 and -638 meters deep.

## RESULTS

More than 300 hours of video have been collected over a survey area of 208,350 m<sup>2</sup>.

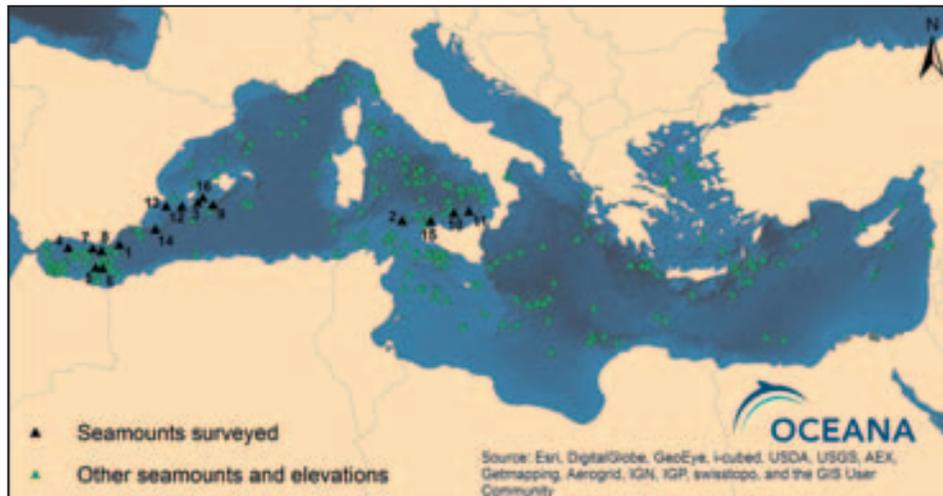
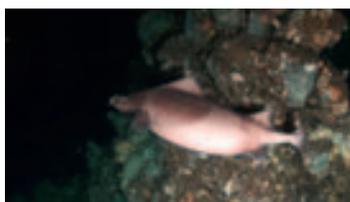


Fig. 1. Abubacer ridge (1), Aceste seamount (2), Ausias March Bank (3), Avempace bank (4), Cabliers bank (5), Catifas bank (6), Chella bank (7), El Sabinar bank (8), Emile Baudot seamount (9), Enareta seamount (10), Filicudi banks (11), Formentera bank (12), Nao mound (13), Palos bank (14), San Vito ridge (15), Ses Olives bank (16).



*Anthomastus* sp. on coral rubble (Cabliers bank). © OCEANA



*Oxynotus centrina* (Chella bank). © OCEANA



Coralligenous bed on Ausias March. © OCEANA

HABITAT	LOCATION	MAIN SPECIES
Coral reefs	4, 5, 6, 7	<i>Lophelia pertusa</i> , <i>Madrepora oculata</i>
Cold water corals	All sites	<i>Desmophyllum dianthus</i> , <i>Stenocyathus vermiformis</i> , <i>Caryophyllia</i> spp., <i>Pourtalesmilia anthophyllites</i> , <i>Javania caileti</i> , <i>Anomocora fecunda</i> , <i>Dendrophyllia</i> spp.
Gorgonian/coral gardens:	1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14	<i>Paramuricea</i> spp., <i>Eunicella</i> spp., <i>Viminella flagellum</i> , <i>Callogorgia verticillata</i> , <i>Acanthogorgia</i> spp., <i>Placogorgia coronata</i> , <i>Swiftia pallida</i> , <i>Muriceides lepida</i> , <i>Villogorgia bebyricoides</i> , <i>Bebryce mollis</i> , <i>Nicella granifera</i>
Black corals	1, 4, 5, 6, 7, 9, 11, 15, 16	<i>Leiopathes glaberrima</i> , <i>Antipathes dichotoma</i> , <i>Antipathella subpinnata</i> , <i>Parantipathes larix</i>
Soft bottoms' octocorals	2, 3, 4, 7, 8, 9, 11, 14, 16	<i>Isidella elongata</i> , <i>Pennatula</i> spp., <i>Pteroeides griseum</i> , <i>Virgularia mirabilis</i> , <i>Veretillum cynomorium</i> , <i>Kophobelemnion stelliferum</i> , <i>Funiculina quadrangularis</i>
Sponge aggregations	3, 4, 5, 6, 7, 9, 14	<i>Asconema setubalense</i> , <i>Phakellia</i> spp., <i>Axinella</i> spp., <i>Tenea muricata</i>
Crinoids and brachiopods bed	2, 4, 8, 9	<i>Leptometra phalangium</i> , <i>Gryphus vitreus</i>
Coralligenous beds	3, 7, 9, 11	Genera <i>Mesophyllum</i> , <i>Lithophyllum</i> , <i>Neogonolithon</i> , <i>Spongites</i> , <i>Lithothamnion</i> , <i>Phymatolithon</i>
SPECIES	LOCATION	COMMENTS
<i>Spiculosiphon oceana</i>	14	New species of giant foraminifera discovered <sup>2</sup> .
<i>Asbestopluma hypogea</i> <sup>3</sup> , <i>Spongia agaricina</i> , <i>Aplysina</i> spp. & <i>Tethya</i> spp.	3, 7, 9, 10	Protected sponges
<i>Anomocora fecunda</i> , <i>Anthomastus</i> sp., <i>Nidalia studeri</i> , <i>Dendrobrachia</i> , <i>Nicella granifera</i> , <i>Sideractis glacialis</i>	3, 4, 5, 6, 7, 12, 14, 16	New or rare cnidarians
<i>Kinetoskias</i> cf. <i>smithii</i> .	3, 9, 16	First cited in the Mediterranean close to the Gibraltar strait <sup>4</sup>
<i>Charonia lampas</i> , <i>Ranella olearia</i> , <i>Schilderia achatidea</i> , <i>Mitra zonata</i>	3, 7, 9	Protected gastropod
<i>Neopycnodonte zibrowii</i> .	1, 7	Recently discovered mollusk <sup>5</sup>
<i>Oxynotus centrina</i> , <i>Centrophorus granulosus</i> , <i>Leucoraja circularis</i> , <i>Cetorhinus maximus</i> , <i>Squalus acanthias</i>	2, 5, 7, 9, 14	Protected elasmobranches

## CONCLUSIONS AND DISCUSSION

Although Mediterranean threatened habitats and species are not confined to seamounts, these elevations seem to host an important representation of those species and habitats that have disappeared or are under strong regression in other areas.

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## REFERENCES

- Morato, T., Kvile, K.Ø., Taranto, G.H., Tempera, F., Narayanaswamy, B.E., Hebbeln, D., Menezes, G., Wienberg, C., Santos, R.S. & T.J. Pitcher (2012). Seamount physiography and biology in North-East Atlantic and Mediterranean Sea. *Biogeosciences Discuss.*, 9, 18951-18992.
- Maldonado, M., López-Acosta, M., Sitga, C., Aguilar, R. García, S. & J. Vacelet (2013). The giant foraminifer who wanted to be a carnivorous sponge: *Spiculosiphon oceana* sp. nov. (Foraminifera, Astrorhizida). Submitted to *Zootaxa* in February 2013.
- Aguilar, R., López-Correa, M., Calcinai, B., Pastor X., de la Torre, A. & S. García (2011). First records of *Asbestopluma hypogea* Vacelet and Boury-Esnault, 1996 (Porifera, Demospongiae Cladorhizidae) on seamounts and in bathyal settings of the Mediterranean Sea. *Zootaxa* 2925: 33-40 (2011).
- Harmelin, J.-G. & J.L. d'Hondt (1993). Transfer of bryozoan species between the Atlantic Oceania and the Mediterranean Sea via the Gibraltar Strait. *Oceanologica Acta*, Vol. 19 (1): 63-72.
- Gofas, S., Salas, C. & M. Taviani in Wisshak, M., López-Correa, M., Gofas, S., Salas, C., Taviani, M., Jakobsen, J. & A. Freiwald (2009). Shell architecture, element composition, and stable isotope signature of the giant deep-sea oyster *Neopycnodonte zibrowii* sp. n. from the NE Atlantic. *Deep-Sea Research* 56 (3): 374-407.