



Deep-sea Atlas of the Eastern Mediterranean Sea

CURRENT KNOWLEDGE



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Presentation/

This atlas has been developed as part of a series of publications produced by the International Union for the Conservation of Nature - Centre for Mediterranean Cooperation (IUCN-Med) to assess the current state and knowledge of Mediterranean deep-sea ecosystems and biodiversity. The development of this publication has been coordinated by IUCN-Med in close collaboration with the Hellenic Centre for Marine Research and with the financial support of the MAVA Foundation. It responds to one of the strategic actions and targets expressed in the **Conservation overview of Mediterranean deep-sea biodiversity Strategic Assessment (IUCN, 2019)** and aims to assess existing knowledge on Eastern Mediterranean deep-sea biodiversity and understand the full array of drivers that affect species and ecosystems in these environments.

The Eastern Deep Sea Atlas is the first attempt to showcase the available information on marine biodiversity for the region. It offers an opportunity to explore the relationship between biologically diverse areas and their underlying physical and chemical conditions, as well as the relationship with potential pressing factors. This atlas presents key information to promote a better understanding of important areas for biodiversity conservation and current pressures on deep-sea ecosystems to support conservation management in the region. Furthermore, the atlas assesses the occurrence and use of existing natural resources, potential negative (direct and indirect) land-sea risks and the effects of climate change on deep-sea ecosystems.

Deep-sea ecosystems include waters beyond 200 m depth and represent the world's largest biome, covering more than 65% of the earth's surface and including more than 95% of the global biosphere. Despite the vast area they cover, both pelagic and benthic deep-sea ecosystems remain widely unknown. This also applies to the Mediterranean Sea, where deep-sea habitats are estimated to form as much as 78% of the total marine surface.

The Eastern Mediterranean basin, which encompasses the areas of the Eastern Ionian, Aegean, Libyan and Levantine Seas in this volume, is a particularly sensitive area due to its geophysical position and diverse and extreme climate conditions. It is also considered one of the most oligotrophic regions of the world.

The publication has been divided into different sections that explore the ecosystem conditions, the geomorphology, biodiversity and threats facing key areas of deep-sea environments such as seamounts and canyons, as well as the role of important habitat forming species, primarily corals and sponges. Furthermore, it provides information on biodiversity, mega and meiofauna and their critical role in deep-sea ecosystems, alongside potential areas for defining essential habitats for commercial fish species. Additionally, it looks into the footprint presence of commercial fishing, which in the Mediterranean is entering deeper waters as resources in shallower areas are becoming less abundant. Finally, the atlas aims to address threats and pressures placed on deep-sea environments, including the presence of marine litter, oil and gas sourcing, cables placed along on the seafloor and marine traffic.

Collating and comparing this information obtained from different sources presented a number of challenges. Data collection across different Mediterranean countries often lacks a standardised methodology, which may complicate the diversity forms of information collected. Furthermore, there can be considerable variation regarding the extent, specificity and availability of information available.

The publication recognises the existing opportunities to improve and advance the geospatial information presented. Nonetheless, the Eastern Deep Sea Atlas provides its reader an opportunity to understand the rich biodiversity of remote deep-sea ecosystems to gain a better understanding of these environments and facilitate efforts for a comprehensive programme to ensure their conservation. As the results of further research become available and are shared, it will be possible to advance our understanding of the biodiversity and ecosystem functions as well as to assess the impacts that will help decision-makers build effective biodiversity conservation and management actions.

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