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# MED-TROPH: A comprehensive trophic ecology database of marine organisms in the Mediterranean Sea

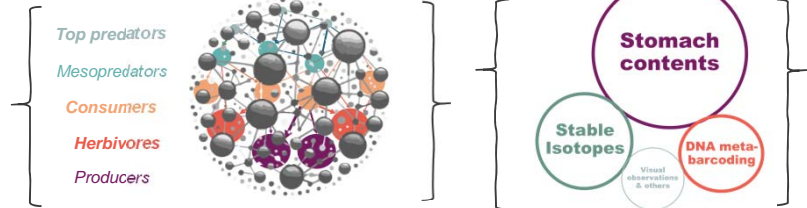
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## Why MED-TROPH?

- Feeding behavior and ecology of organisms are key elements of marine connectivity as species may move towards or prey upon organisms that belong to different habitats;
- Organisms establish ecological linkages through feeding that are the backbone of the structure and functioning of marine ecosystems;
- Understanding these TROPHIC LINKAGES is essential to manage ecosystems with an integrative perspective;
- Food webs, a type of ecological networks, are a key tool to describe the complexity and relevance of trophic connectivity.

## What is in MED-TROPH?



MED-TROPH is a large trophic database that details trophic interactions among marine organisms from the Mediterranean Sea, containing > 34,000 records and > 2,400 entities (including bacteria, chromists, protozoans, plants and animals)

## Main content of MED-TROPH

The Western Mediterranean region, particularly the Algero-Provençal basin, stands out in terms of the number of available studies (Figure 1). Over time, there has been a noticeable increase in the number of studies published annually (Figure 2).

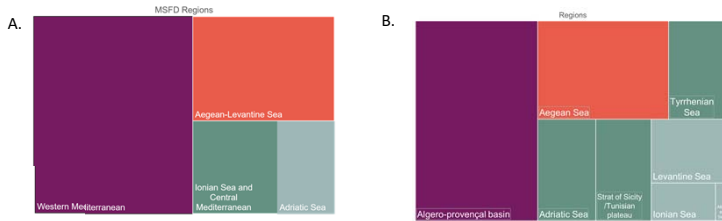


Figure 1. Nº of records about predator-prey interactions by A) MSFD region; and B) Subregions<sup>1,2</sup>.

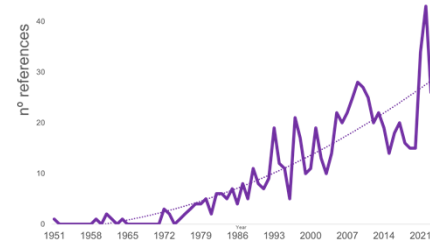


Figure 2. Temporal distribution of studies in MED-TROPH.as of 12/2023.

## Main predators and prey in MED-TROPH

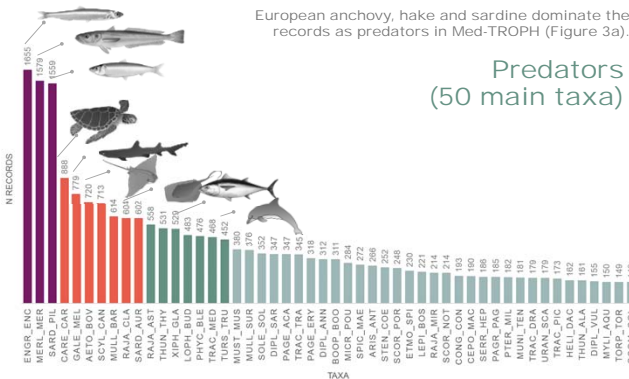


Figure 3a. Main 50 predator records that dominate in Med-TROPH.

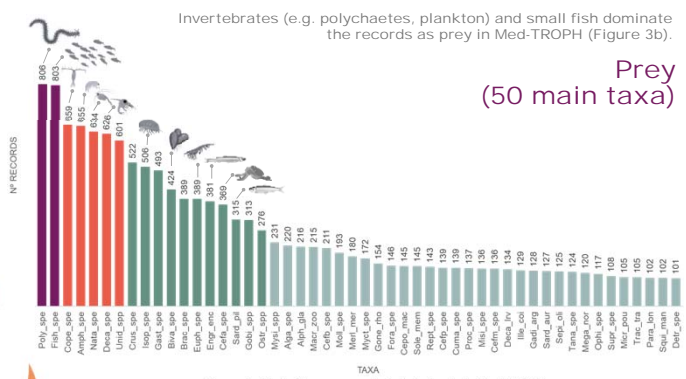


Figure 3b. Main 50 prey records that dominate in Med-TROPH.

## Potential applications

- Understand Marine Connectivity:** to quantify the relationship between species trophic linkages and traits (e.g. taxa, habitat; region)<sup>2</sup>;
- Depict Marine Ecological Networks:** to assess the structure and functioning of marine food webs, and changes with space and time<sup>3</sup>;
- Impact of Species Depletion:** to simulate the potential effects of commercial and vulnerable species depletions and local extinctions due to climate effects and human activities<sup>3,4</sup>;
- Informed Ecosystem Management:** to support the development of integrative management strategies for marine ecosystems.

## Conclusions

- MED-TROPH contributes with essential knowledge about marine ecological networks and trophic connectivity within and between species, habitats and ecosystems of the Mediterranean Sea;
- It characterizes the available knowledge and identifies gaps in the region;
- It is a long-term effort that grows with time.

REFERENCES:  
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 2. Ouled-Cheikh, J., et al. (2022). Marine Ecology Progress Series 696: 169-184;  
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