

## Comparing the Trophic Structure of the Moroccan Mediterranean Sea with the Moroccan Atlantic Coast Using Ecopath Model

**Authors :** Salma Aboussalam, Karima Khalil, Khalid Elkalay

**Abstract :** To describe the structure, functioning, and state of the Moroccan Mediterranean Sea ecosystem, an Ecopath mass balance model has been applied. The model is based on 31 functional groups, containing 21 fishes, 7 invertebrates, 2 primary producers, and one dead group (detritus), which are considered in this work to explore the trophic interaction. The system's average trophic transfer efficiency was 23%. Both the total primary production and total respiration were calculated to be  $>1$ , suggesting that more energy is produced than respired in the system. The structure of our system is based on high respiration and consumption flows. Indicators of ecosystem stability and development showed low values of the Finn cycle index (13.97), system omnivory index (0.18), and average Finn path length (3.09), suggesting that our system is disturbed and has a more linear than web-like trophic structure. The keystone index and mixed trophic impact analysis indicated that other demersal invertebrates, zooplankton, and cephalopods had a tremendous impact on other groups and were recognized as keystone species.

**Keywords :** Ecopath, food web, trophic flux, Moroccan Mediterranean Sea

**Conference Title :** ICMEM 2023 : International Conference on Marine Environmental Modeling

**Conference Location :** Kuala Lumpur, Malaysia

**Conference Dates :** August 17-18, 2023