

Investigating Trophic Relationships in Moroccan Marine Ecosystems: A Study of the Mediterranean and Atlantic Using Ecopath

Authors : Salma Aboussalam, Karima Khalil, Khalid Elkalay

Abstract : An Ecopath model was employed to investigate the trophic structure, function, and current state of the Moroccan Mediterranean Sea ecosystem. The model incorporated 31 functional groups, including 21 fish species, 7 invertebrates, 2 primary producers, and a detritus group. The trophic interactions among these groups were analyzed, revealing an average trophic transfer efficiency of 23%. The results indicated that the ecosystem produced more energy than it consumed, with high respiration and consumption rates. Indicators of stability and development were low for the Finn cycle index (13.97), system omnivory index (0.18), and average Finn path length (3.09), indicating a disturbed ecosystem with a linear trophic structure. Keystone species were identified through the use of the keystone index and mixed trophic impact analysis, with demersal invertebrates, zooplankton, and cephalopods found to have a significant impact on other groups.

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

Conference Title : ICFAS 2023 : International Conference on Fisheries and Aquatic Sciences

Conference Location : Osaka, Japan

Conference Dates : October 30-31, 2023