

# How the diet of a demersal fish predator (*Merluccius merluccius* L., 1758) changes through the years in the central Mediterranean Sea.

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The main objective of this study is to investigate dietary preferences and their inter-annual variation in the European hake, *Merluccius merluccius* (L., 1758). This species is a demersal predator, representing one of the most significant fishery resources in the Mediterranean. Diet composition was assessed through examination of stomach contents from samples collected annually between 2018 and 2023 from both trawl surveys and commercial catches as part of the DCF conducted by Italy in the central Mediterranean Sea (GSA 16). Given the known ontogenetic variations in the dietary preferences of the species, the sampling was stratified into 5 size classes, covering individuals between 5 and 76,5 cm in total length. The results confirm the known preference of juveniles up to 15 cm TL for Mysida and Euphausiacea crustaceans, with a shift to a diet based on Decapoda crustaceans and Osteichthyes for larger sizes. Variation in the relative importance of the main prey is also observed, with alternating Osteichthyes and Decapoda as the most important prey. The comparative analysis of the numerical abundance of the main prey species of commercial interest monitored by the MEDITS trawl surveys (i.e. anchovy, sardine, European hake, horse mackerel and deep-water rose shrimp) suggests the existence of a correlation with their abundance in the sea. This preliminary study is one of the few that documents the adaptation of the diet of *M. merluccius* to trophic availability, highlighting a certain dietary plasticity that must be taken into account when assessing the productive potential of fishery resources using ecosystem approaches.