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Life's Tiny Giants: Unveiling the Vital Role of Plankton in the Aquatic Food Webs



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Institute of Cellular and Organismic Biology

細胞與個體生物學研究所1樓演講廳

Host: Dr. Ryuji Machida 町田龍二副研究員



Abstract

This presentation will introduce me as a passionate ocean advocate deeply involved in marine conservation efforts, including operating a scuba diving club and participating in ocean cleaning initiatives. With a background in marine biology from France, my doctoral research delved into understanding the complex dynamics of the pelagic food web in the Marseilles region, employing stable isotope, biochemical, taxonomic composition, and stomach content analyses.

Through meticulous analysis, our research unearthed spatial and taxonomic variations in particulate organic matter (POM) compositions, offering insights into the trophic interactions among phytoplankton, zooplankton, and fish species. Notably, we identified bottom-up organic matter transfer from phytoplankton to planktivorous fish as a crucial component of ecosystem functioning.

Furthermore, our development of innovative sampling methods has enabled long-term plankton surveillance, aiding in comprehending phenomena such as the decline in biomass of small pelagic fish observed in the northwestern Mediterranean Sea in 2008.

Building on this multifaceted approach, my upcoming research will focus on unraveling the relationships between corals, zooplankton, and fish in the coral reef ecosystem of Green Island. Leveraging my expertise in various analytical techniques, this study aims to contribute to marine resource management on Green Island and inform conservation efforts in marine protected areas globally.

In summary, this presentation will highlight the transformative impact of a comprehensive analytical approach in advancing our understanding of pelagic ecosystems, while emphasizing the potential for future research to address critical gaps in marine conservation and management.