

able to adapt to changing environmental conditions. Despite strong annual variability and the presence of major stressors (overfishing, climate change), the marine pelagic resources, mainly fish and plankton remained relatively stable over the two decades, advancing our understanding on the resistance of this east border upwelling system.

Ichthyological importance of shallow coastal areas for pelagic communities: contributions of echosounding

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Marine communities are strongly structured by bathymetry and distance from the coast. Shallow coastal areas host diverse and abundant fish communities and are subjected to strong anthropogenic pressures. However, assessments of good ecological status of pelagic fish populations do not generally take into account the ultra-coastal fringe of the coastline (<20m depth and <5km from coast). Data presented in this study were acquired in Brittany (France) during eleven acoustic surveys conducted in 2020 and 2021 using a splitbeam EK80 echosounder (70, 120 and 200 kHz). Pelagic fish shoals were extracted from the echogram and characterized by spatial (location in the water column), morphological (size and shape of the shoal) and acoustic descriptors. Shoal descriptors were compared between coastal and ultra-coastal areas, taking into account variability between sites, seasons and years. Results showed different shoal structures with notably smaller shoals of pelagic fish in the ultracoastal zone but with a stronger acoustic response, suggesting a higher density per school than offshore and/or different species. This study highlights the uniqueness of ultra-coastal areas for marine pelagic fish communities and underlines the need to integrate their monitoring into marine management and action strategies to improve management and protection systems for these biocenoses.

Sound-scattering layers related to pelagic habitat characteristics: the case

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