World Academy of Science, Engineering and Technology
International Journal of Marine and Environmental Sciences
Vol:14, No:11, 2020

Differentiating Morphological Patterns of the Common Benthic Anglerfishes from the Indian Waters

Authors : M. P. Rajeeshkumar, K. V. Aneesh Kumar, J. L. Otero-Ferrer, A. Lombarte, M. Hashim, N. Saravanane, V. N.Sanjeevan, V. M. Tuset

Abstract : The anglerfishes are widely distributed from shallow to deep-water habitats and are highly diverse in morphology, behaviour, and niche occupancy patterns. To understand this interspecific variability and degree of niche overlap, we performed a functional analysis of five species inhabiting Indian waters where diversity of deep-sea anglerfishes is very high. The sensory capacities (otolith shape and eye size) were also studied to improve the understanding of coexistence of species. The analyses of fish body and otolith shape clustered species in two morphotypes related to phylogenetic lineages: i) Malthopsis lutea, Lophiodes lugubri and Halieutea coccinea were characterized by a dorso-ventrally flattened body with high swimming ability and relative small otoliths, and ii) Chaunax spp. were distinguished by their higher body depth, lower swimming efficiency, and relative big otoliths. The sensory organs did not show a pattern linked to depth distribution of species. However, the larger eye size in M. lutea suggested a nocturnal feeding activity, whereas Chaunax spp. had a large mouth and deeper body in response to different ecological niches. Therefore, the present study supports the hypothesis of spatial and temporal segregation of anglerfishes in the Indian waters, which can be explained from a functional approach and understanding from sensory capabilities.

Keywords : functional traits, otoliths, niche overlap, fishes, Indian waters
Conference Title : ICDSE 2020 : International Conference on Deep-Sea Environments
Conference Location : Amsterdam, Netherlands
Conference Dates : November 05-06, 2020