

Ecomorphology Of Feeding And Food Resource Partitioning In Fish Assemblages Of Brush Parks In A Sri Lankan Estuary

G.A.Y.T. Perera and U.S. Amarasinghe

Department of Zoology, University of Kelaniya, Kelaniya, Sri Lanka

Ecomorphological correlates of diet and food resource partitioning among fish assemblages in the brush parks of Meegamuwa (=Negombo) estuary, Sri Lanka were studied. The brush parks in Meegamuwa estuary, Sri Lanka are occupied by fish species of wide ranges of morphological features and dietary habits. Morphological characteristics and dietary habits ordinated by principal component analysis revealed similar faunal patterns. Species having higher values of relative height of the body, relative eye diameter, relative gut length and emarginate and forked caudal fins were predominantly herbivores or detritivores. The species with dorsal eyes, high relative head length, high relative width of the mouth and rounded caudal and pectoral fins were predominantly carnivores. Cluster analysis of fish species based on morphological attributes and dietary habits also substantiated the ecomorphological correlates of diet. Furthermore, the laterally compressed, deep bodied fish species were found to feed on lower trophic levels. On the other hand, dorso-ventrally flattened species fed on higher trophic levels. Therefore, morphological attributes of co-occurring fish species in brush parks can be used to predict their dietary habits. High dietary overlaps occurred only in 7% of fish species in brush parks and their food items are generally not limiting. Hence it is unlikely that the fish species co-occurring in brush parks in Meegamuwa estuary exhibit inter-specific competition. From the present study it is evident that the attraction of fish species into the brush parks is governed by their food resource partitioning. As dietary habits can be predicted by morphological attributes, food resource partitioning is also under the same selection pressure by the environment, as suggested by the concept of ecomorphology.