ABSTRACT

Habitat Selection and Competition in Congeneric Surfperches (Embiotocidae) off Santa Barbara, California

by

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Closely related species, because of similarity in form and habit, will usually compete for similar resources where they are sympatric. This competition will intensify selection of traits, morphological and behavioral, which reduce competitive interactions. If morphological differences are minimal when congeners first become sympatric, differences in habitat selection may effectively segregate the species. Eventually, morphological divergence reduces competition to the point where spatial separation is no longer necessary; the species will be in need of different resources. Analysis of habitat selection in two pairs of congeneric embiotocid fishes off Santa Barbara, California supports this hypothesis. In the morphologically least divergent congeners (Embiotica jacksoni and E. lateralis) habitat selection is distinctly different; spatial interaction is minimized as the species compete for similar food resources. The congeners with relatively great morphological differences (Rhacochilus toxotes and R. vacca) utilize different food items in the same habitats. It is suggested that this is a mechanism of niche diversification important in the process of faunal enrichment.