STUDIES OF FISH RECRUITMENT AT LEO-15

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ABSTRACT

The continental shelves are especially productive for fishes, but our understanding of events affecting fish recruitment are limited because we often lack 1) long-term measurements, and 2) the ability to recognize and track the consequences of episodic or short-term events (e.g. storms, upwelling). In response, we have begun a multi-institutional effort to provide long-term measurements for biotic and abiotic variables, with the capability to focus on short-term episodic events, for a portion of the inner continental shelf. These efforts are concentrated in the vicinity of Beach Haven Ridge (7 km long, 10-20 m depth), which sidescan sonar indicates has complex and heterogeneous surficial settlements. To date we have focused on metamorphosis and settlement because accumulating evidence suggests that this is a critical period in the life history of fishes. To date, we have determined that there are number of species that settle at the ridge, with most settlement occurring during the summer and early fall. Based on collections of planktonic and benthic individuals with Tucker trawls and beam trawls, respectively, we have verified the presence of 1) a transient assemblage that passes through the study site on the way to the adjacent Great Bay estuary, 2) an assemblage of estuarine forms that occurs at the ridge during estuarine outwelling, and 3) species that spawn and settle on the ridge. For those that settle at the ridge, there are specific habitat preferences; black sea bass (Centropristis striata) and seaboard goby (Gobiosoma ginsburgi), are found primarily in structured habitats, such as accumulations of surf clam valves, while other species, such as smallmouth flounder (Etropus microstomus), and searobins (Prionotus spp.) occur across a variety of habitats. Thus, our preliminary observations suggest that the inner continental shelf functions as a nursery for selected species.