ABSTRACT

Observations were carried out around the coast of Jamaica between July 1974 and May 1976 over various shallow water habitats and reef areas to depths of 45.5 metres. The purpose of the study was to identify those areas used as nurseries by juvenile reef fish species of commercial importance and to assess the relative importance of these areas.

Measurements of density, species composition and species size were used as criteria to define the relative importance of different areas. It was found that shallow reef areas (<10 m) and inshore areas of mixed coral, rubble and algae were the most important. Of less importance were shallow Thalassia testudinum beds, reefs deeper than 15 metres and mangrove areas.

The ecology of juveniles of three major reef families were studied. Two families, the Acanthuridae and Scaridae are diurnal herbivores. Both groups browse on filamentous algae and the scarids also scrape algae off dead coral leaving characteristic double grooves. The Pomadasyidae are carnivores and while in their primary juvenile stage (1.0 - 6.0 cm FL) feed on planktonic copepods and other invertebrates both diurnally and nocturnally. Secondary stage juvenile pomadasyids (5.5 - 13.0 cm FL, with adult colouration), feed nocturnally over sand and Thalassia flats.

Except for juvenile Scarus taeniopterus and Sparisoma aurofrenatum, the depth range of the juveniles was found to be restricted, the majority occuring in waters less than 10.0 metres deep. Larger juveniles (>10.0 cm) were found in sparse numbers between 15.0 - 25.0 m. S. taeniopterus juveniles are distributed from 15.0 - 45.0 m and S. aurofrenatum juveniles are distributed from 0.5 - 45.5 m with maximum distribution between 15.0 and 25.0 m, and practically equal

abundance at depths below or above that range.

The implications of these findings for fisheries management and conservation are considered in a concluding section.