

ABSTRACT

**A survey of fish species in the Mammee Shoal and Pelican Shoal of
Kingston Harbour and dietary observations on *Archosargus rhomboidalis*
(Linnaeus, 1758) and *Eucinostomus gula* (Quoy & Gaimard, 1824)**

Monique Ramona Curtis

The study investigated changes in the species composition of the benthic fish community and the diet of the two most abundant fish species collected from Mammee Shoal and Pelican Shoal, Kingston Harbour Jamaica. The benthic environment of these sites was sampled, by the use of an otter trawl, 13 times over the eighteen month period between March 2006 and September 2007. The current species list was then compared with lists generated by previous studies Caldwell (1966), Haley (1993) and Greenway (1995) to determine changes in fish species composition in Mammee Shoal and Pelican Shoal. Dietary analysis was also conducted to determine dietary items important to the two most abundant fish species recorded. Fulton's condition factor was calculated to quantify the health of *Archosargus rhomboidalis* and *Eucinostomas gula* at both sites and determine if these species in a mangrove-seagrass habitat were in better health than species in a seagrass habitat.

Twenty one fish species were recorded in the current study. At the study sites *Archosargus rhomboidalis* (>50 % of total catch) and *Eucinostomus gula* (>8 % of total catch) remained the most abundant species when compared to previous studies. The decrease in species richness continues to be influenced by factors such as pollution, over-fishing and decrease in food resource.

Eucinostomus gula were found to be carnivores that fed entirely on small crustaceans. *Archosargus rhomboidalis* were found to be omnivores that fed on amphipods, seagrass, bivalves and macroalgae and display an ontogenetic change in diet. Increase in the importance of plant and large food items corresponds with a decrease in the importance of amphipods from juveniles to adults. Ontogeny influences a reduction of inter and intra-specific competition. Fulton's condition factor and growth coefficients indicate similarity between fish populations from both sites.

Keywords: Monique Curtis, *Archosargus rhomboidalis*, *Eucinostomus gula*, species richness, Kingston Harbour, fish diet, Fulton's condition factor, ontogenetic change in diet, food item importance