Ciguatera fish poisoning (CFP) is a seafood-borne illness endemic to the Caribbean that is contracted when fish contaminated with algal toxins ("ciguatoxins" or CTX) are consumed. Non-toxic precursors of CTX are produced by a species of epiphytic algae and enter the marine food web as they are consumed by herbivorous fish feeding on macro-algae and corals, which serve as substrate for the epiphytic algae. As these toxin precursors advance through each level of the food chain they are transformed into the more potent neurotoxin. The toxin prevents the closure of sodium channels and causes prolonged firing of neurons, which induces the gastrointestinal and neurological symptoms associated with ciguatera fish poisoning. The transfer of the precursors from algae to herbivorous fish represents a critical point in the fate of CTX in the marine food web. To understand what factors may contribute to this toxin’s movement in lower trophic levels, the author studied two kinds of herbivorous reef fish. Both surgeonfish and parrotfish are dominant Caribbean reef herbivores that may consume the epiphytic algae, but they differ in feeding strategy and preferred substrate. I extracted CTX from the muscle of my fish samples and tested each sample’s relative toxicity. My results showed that, of the 92 fish sampled, only 57.4% were toxic. Of the fish found to be toxic, 69.6% were surgeonfish while only 30.4% were parrotfish, suggesting that surgeonfish may be a more likely avenue for CTX movement in the lower marine food web.