



TORTUGAS FISHERMEN EARNINGS NOT IMPACTED BY CLOSURE

Research Project Description: An economic assessment was conducted to evaluate the potential impacts on catch and financial performance of fisheries after the Tortugas Ecological Reserve (TER), a large no-take marine zone, became effective in 2001. This integrated assessment involved multiple sources of information. Saltwater Products License holders in four categories (Tortugas, Western Sambo, General and Marine Life Collectors) were surveyed regarding their expenses and fishing practices prior to and for five years after reserve implementation. Data on catch, the value of catch and changes in catch locations were also analyzed in this study. From these sources of information, economists predicted possible impacts and evaluated actual impacts to reef fish, shrimp, spiny lobster and king mackerel fisheries in relation to reserve establishment. To assess the potential impacts on for-hire recreational operators, economists conducted a survey of all recreational for-hire operations both prior to and after reserve establishment.

Research Results: Panel results showed that commercial fishermen did not experience any financial loss during the first five years of the TER. They did, however, shift their efforts away from the Tortugas area towards fishing grounds closer to home, a change that was primarily due to increases in fuel costs. The actual changes in catch and revenues received by fishermen from the Tortugas area varied considerably depending on fishery. The table (below) summarizes the expected changes for each fishery and how the fishery actually responded during the five years.

The most interesting survey result concerned the reef fish fishery. Socio-economists had predicted losses for displaced fishermen who were expected to have difficulty finding other fishing grounds to make up for lost catches. However, reef fish catch from the Tortugas area actually increased after TER establishment and showed an increasing trend. To make up for displacement from the reserve, TER fishermen found new unfished areas that were not previously “known” fishing grounds.

Summary of Economic Assessments for each Tortugas Fishery	
Reef Fish	Revenue losses were expected to occur, but did not take place. Fishermen found new previously un-fished areas to make up for lost fishing grounds.
Shrimp Trawling	Revenue losses were not expected to occur and were not observed due to the closure. Tortugas fishermen were able to find ample fishing grounds, but prices of shrimp declined due to market conditions, resulting in revenue losses for shrimpers.
Spiny Lobster	Revenue losses were not expected to take place and no losses were observed due to closed areas. Hurricanes affected catches, but recovery took place. Revenue losses were offset by fishing for stone crab and king mackerel.
King Mackerel	Revenue losses were not expected for this highly mobile pelagic species. No losses took place due to closure. Mackerel catch increased from pre- to post establishment.
Recreational Fishing	Revenue losses were not likely to occur and did not take place due to closure. Demand for Tortugas trips did decline, but for-hire operators attributed this to higher fuel costs coupled with reduced bag limits, making Tortugas trips not worth the extra cost.

Economic assessments conducted in conjunction with the implementation of Tortugas Ecological Reserve are summarized for each Tortugas fishery. Table: NOAA Socio-economic Monitoring Program