



## Tortugas Reserve Showing More, Larger Fish After Five Years of Protection

By NOAA ([more by this author](#))  
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As its fifth anniversary approaches, researchers find confirmation that the country's largest marine reserve, part of the Florida Keys National Marine Sanctuary, is fulfilling its goal of protecting the region's marine life.

Three studies examining the Tortugas ecological reserve, protected from fishing since July 2001, documented increasing numbers and sizes of commercially and recreationally important species of fish and other marine life. Because the Tortugas region is upstream from the Florida Keys reef tract, improvements in the reserve's fish populations may help sustain fish stocks in the Keys and further north, as more and larger fish produce larvae that are carried away from the reserve on ocean currents. Adult fish may also move to areas outside the reserve as competition for space increases within. These fish then become available to the fishery, an effect known as spillover.

Encompassing 151 square nautical miles in two sections, the Tortugas reserve is the largest of the sanctuary's groundbreaking network of 24 areas set aside for special protection. Tortugas

North protects the extensively deep coral reefs of Tortugas Bank and Sherwood Forest. Tortugas South protects Riley's Hump, a low profile reef that is a spawning site for grouper, snapper, and valuable deepwater habitat found nowhere else in the sanctuary that supports commercially important golden crab, tilefish, and snowy grouper.

In the journal, *Bulletin of Marine Science*, analyzing data collected between 1999 and 2004, Drs. Jerald Ault and Steven Smith of the University of Miami and James Bohnsack of NOAA Fisheries Service found increases in size and abundance inside the reserve compared to outside, including key species such as black grouper.

"Although the recovery process is still in an early stage, our results after three years are encouraging and suggest that no-take marine reserves, in conjunction with traditional management, can help build sustainable fisheries while protecting the Florida Keys coral reef ecosystem," said the group in their latest journal publication.

In the journal, *Fisheries Bulletin*, Michael Burton of NOAA Fisheries documents the reformation of a spawning aggregation of mutton snapper

at Riley's Hump. In 2001, the year the reserve was established, divers surveying Riley's Hump observed a group of 10 mutton snapper in an apparent spawning aggregation. By 2004, this number had increased to 300. "We conclude from behavior, timing and location that we are observing spawning aggregations of mutton snapper beginning to re-form on Riley's Hump following more than two decades of intensive exploitation," wrote Burton and coauthors Kenneth Brennan, Dr. Roldan Munoz, and Richard Parker, Jr.

A final report to the sanctuary from the same researchers noted a significant increase in the abundance of large fish in the reserve relative to sites in Dry Tortugas National Park and unprotected areas. "These increasing trends within the Tortugas ecological reserve are surprisingly evident among a variety of prominent species exploited by fisheries, including white grunt, yellowtail snapper, hog fish, and red grouper," the researchers stated.