NOAA Fisheries

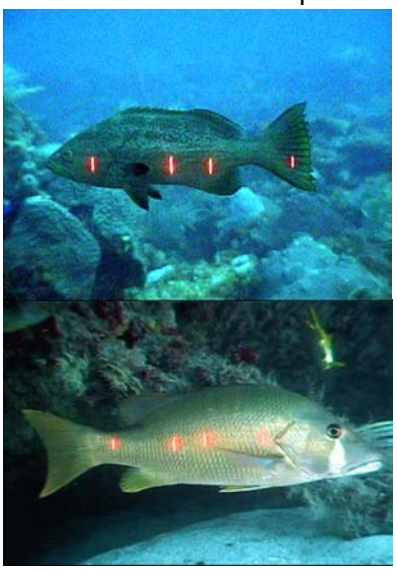
Coral Reef Conservation Program

Highlights of Selected Accomplishments for Fiscal Years 2001 and 2002

NOAA Fisheries

FLORIDA AND THE CARIBBEAN

Monitoring Reef Fishes and Habitats in the Florida Keys: NOAA Fisheries (National Marine Fisheries Service - NMFS) has led the interagency efforts to monitor the rich fish resources that attract divers and fishers to coral reefs. The recreational fishing fleet has increased exponentially (444%) since 1964 with no limits on the number of boats allowed to fish. Special emphasis has been placed on monitoring in the Florida Keys, including baselines for the recently established Tortugas Ecological Reserve.

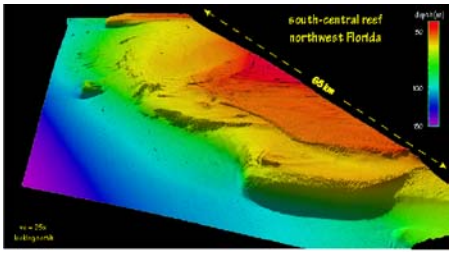


Measuring fish length with laser beams

- Before protection, 40% of high value stocks such as snappers, groupers, and grunts were overfished in the Tortugas and 77% in the rest of the Keys.
- Numbers of groupers in the Keys have been reduced down to 5% - 10% of their historical levels.

In FY-2002, NMFS worked with numerous partners to completed the most ambitious fish and habitat census to date of the Florida Keys coral reef ecosystem from Miami to the Tortugas Bank. During the month-long expedition, 52 scientists made 1806 scuba dives and covered over 230 miles of reef. Results confirmed the high levels of overfishing, but also that numbers and size of fishes in ecological reserves where fishing is not allowed were much higher than outside. There was also preliminary evidence of an increase in diversity and abundance of exploited species in the Tortugas Reserve after only one year of protection. These monitoring studies support a 5-year performance review of the Florida Keys National Marine Sanctuary and will serve as a baseline for assessing future changes in for economically important species resulting from the creation of the Tortugas marine reserves.

Mapping and characterizing deep-water reefs of the Florida shelf: In FY-2001, NOAA Fisheries in conjunction with the United States Geological Survey, the Minerals Management Service, the University of New Hampshire and NOS completed the multi-beam sonar mapping of the major areas of the Northeastern Gulf of Mexico, including the new Madison-Swanson and Steamboat Lumps Marine Protected Areas. These areas were recently protected as important habitats for commercial fishes and contain some deep reefs that likely rival those found in the Flower Gardens National Marine Sanctuary. Additional habitat characterization of deep *Oculina* reefs off the East coast of Florida using submersibles and multi-beam sonar revealed significant habitat damage from illegal trawling. The work on the *Oculina* reefs is being done in partnership with the Sustainable Seas Initiative of the National Ocean Service and National Geographic. In FY-2002, mapping of *Oculina* banks was expanded, and other key deep reef resources are being mapped in partnership with the South Atlantic, Gulf of Mexico and Caribbean Fishery Management Councils.



Initial multi-beam map from Southwest Florida

Coral decline and impacts of coral diseases: In the Florida Keys and throughout the Caribbean, reefs have been devastated by a combination of human impacts and coral diseases. NMFS studies revealed that elkhorn and staghorn coral, previously the dominant shallow water corals in the region, had decreased by 95% to 98% over the last 17 years at Looe Key. Coral disease is a major cause of this decline. These two species have been so badly reduced throughout their range that they have been listed as candidates for protection under the Endangered Species Act. We are completing a major status review of these species and continue research, including a population genetic study of elkhorn coral, to better understand and reverse their decline. NMFS is working with NOS and other partners to develop a coral disease consortium to determine the condition of coral reef ecosystems, the biogeographic distribution of diseases and other emerging threats, their causes and impacts and mitigating factors.

White band disease

Benefits of marine reserves in Florida to recreational fishers: On November 30, 2001, *Science* magazine published a study led by NMFS. The reserves in Merritt Island National Wildlife Refuge, close to NASA's Cape Canaveral rocket launch site have been protected from fishing since1962. The NMFS study showed that more world record size fish of several species have been caught in waters within 62 miles of the reserves than in all other areas of Florida combined. This study points to the important benefits of marine reserves as tools to help replenish fisheries. As a priority in FY-2002, NMFS has installed a radar surveillance system to enhance enforcement in the new Tortugas Ecological Reserve.

Grouper

Technical Assistance to Puerto Rico and US Virgin Islands: NMFS opened an office in Puerto Rico in 2001 to enhance outreach to the U.S. Caribbean and the Caribbean Fishery Management Council on coral reef issues. This is a first step in efforts to bring our coral reef monitoring, research and management expertise to better serve our constituents in the U.S. territories. In FY-2002, NMFS has begun support for several conservation activities in the territories. NMFS and Sea Grant joined in support of a coral reef fisheries workshop for U.S. Virgin Islands and Puerto Rico, which focused on fishery utilization, marine management, fishery regulations and enforcement, and education. To help reduce the impact of fishing and boating on coral reef resources, NMFS held fishermen workshops and supported the development of marine conservation areas in Puerto Rico. We worked in Puerto Rico to determine important spawning areas for economically and ecologically important reef fishes in order to support essential fish habitat designation of particular concern.

Fishing boats in Puerto Rico