

#16841

Biscayne National Park's Coral Reef Successes and Challenges

Background:

The coral reefs in Biscayne National Park (BISC) are the northernmost portion of the Florida Keys coral reef tract (the third longest coral reef system in the world), and are unique in that they are in an ecotone between tropical and subtropical ecosystems. BISC's coral reefs, marine ecosystems and associated fisheries are a critical component of the visitor experience in the Park. Many visitors come to the Park to experience the marine resources – through scuba, snorkeling and via glass-bottom boats. Additionally, BISC's reefs support numerous, productive commercial and recreational fisheries. Surveys show that more than 30% of the park's visitors engage in fishing. BISC's reefs are intimately linked to the function, health and dynamics of the broader, regional ecosystem through water movements and animal migrations.

Over the past century, the area surrounding BISC has experienced a dramatic population growth. There has been a related increase in visitation to the Park and an increase in human-associated impacts on coral reef resources. A recent study determined that exceptionally high, sustained fishing pressure has resulted in "serial overfishing" of key fishery resources. Additionally, there has been a dramatic increase in the number of licensed vessels, some of, which run aground on shallow reefs, destroying coral habitat. Marine debris, often lost or abandoned fishing gear, can damage or kill coral reefs – habitat critical to the fish communities. This damage is higher in park waters than in other similar coral habitats in the lower Florida Keys. Water quality degradation (including Emerging Pollutants of Concern), lack of fresh water flow on the reefs, loss of algae eating marine creatures and diseases (e.g. impacts from activities occurring inside and outside the Park) raise serious concerns with respect to long-term coral health and vitality.

Some of what the increased funding has and continues to be used for:

Because of the nature of the impacts on the coral reefs in BISC, the park has used the funding increase to work on many fronts, in many different divisions, to address problems, raise awareness, reduce impacts and improve the health of the coral reef system. The money has been used for day to day activities in support of coral reef protection to fund important projects.

Seventy-five percent of the time of a senior staff member is dedicated to coral issues (Science Coordinator). His role is to raise awareness outside the NPS that BISC is a great place to do cutting edge research on coral reef issues, develop relationships with universities, USGS and other research groups to get critical management questions answered through sound science especially through outside funding and to get student and public volunteers. He has also established, and is maintaining, a database of research that has been done in the park so it is readily available to be used.

The interpretive division puts a priority on educating visitors and raising awareness of the fragility and impacts to coral reefs. Interpretive rangers go on glass bottom boat tours to talk to visitors about coral reefs. Special exhibits at the park, like the current one on marine debris, highlight impacts to coral reefs. Through presentations, specially designed maps and literature, BISC is striving to increase public awareness of the need to practice reef-friendly behaviors to conserve and preserve coral reef resources.

Many marine resources are damaged due to vessel groundings. BISC has the most extensive program in the System for recovering monies under 19jj (Park Protection Act). The program includes initial response, injury assessment, recovery and restoration.

Acquiring aerial imagery to develop a complete map of the park's coral reef platform as a baseline, and then conducting regular monitoring so that resource changes can be documented, causes can be identified and eliminated (if possible).

Development of a Fisheries Management Plan to address concerns of overfishing of reef resources, as well as to provide direction on how to reduce damage to coral reef habitat caused by commercial and recreational fishing gear. This plan, being developed cooperatively with the State of Florida, is scheduled to be completed in 2004.

Development of performance measures for South Florida Ecosystem Restoration as we work to restore clean fresh water flow on the reef platform, which is needed to maintain healthy coral reef systems.

Development of a coral nursery program to cultivate coral fragments in controlled natural habitats so that, when the coral reaches maturity, it can be used on the reef platform to restore damaged or diseased areas. The program also provides great opportunities for expanding our knowledge on what is needed to maintain/healthy reef systems. This program is being done in conjunction with the University of Miami and uses a lot of student and public volunteer support.

The establishment and maintenance of a mooring buoy system to prevent anchor and anchor-related damage to the reefs.