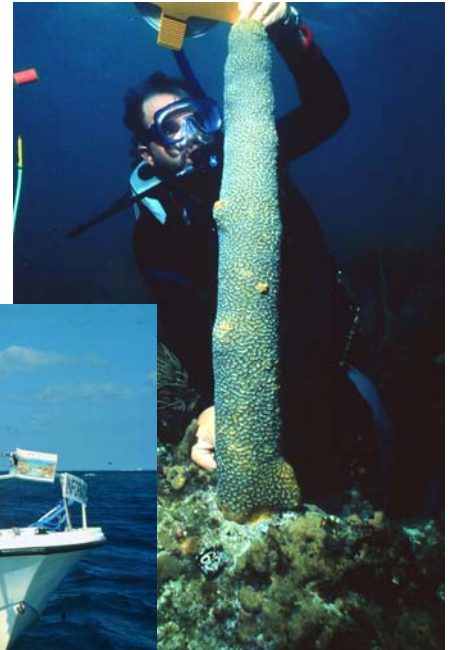


# Florida Keys National Marine Sanctuary Draft Revised Management Plan



February 2005

U.S. Department of Commerce

National Oceanic and  
Atmospheric Administration

National Ocean Service

National Marine Sanctuary Program

This document is the draft revised management plan for the Florida Keys National Marine Sanctuary. It replaces the management plan that was implemented in 1997 and will serve as the primary management document for the Sanctuary during the next five years.

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### **Note to Reader**

In an effort to make this document more user-friendly, we have included references to the Florida Keys National Marine Sanctuary web site rather than including the entire text of many bulky attachments or appendices that are traditionally included in management plans. Readers who do not have access to the Internet may call the Sanctuary office at (305) 743-2437 to request copies of any documents that are on the Sanctuary's web site. For readers with Internet access, the Sanctuary's web site can be found at: <http://floridakeys.noaa.gov>.

# ABOUT THIS DOCUMENT

This document is a report on the results of NOAA's five-year review of the strategies and activities detailed in the 1997 *Final Management Plan and Environmental Impact Statement* for the Florida Keys National Marine Sanctuary. It serves two primary purposes: 1) to update readers on the outcomes of successfully implemented strategies - in short, accomplishments that were merely plans on paper just five years ago; and, 2) to disseminate useful information about the Sanctuary and its management strategies, activities and products. The hope is that this information, which charts the next 5 years of Sanctuary management, will enhance the communication and cooperation so vital to protecting important national resources.

## *Sanctuary Characteristics*

The Florida Keys National Marine Sanctuary extends approximately 220 nautical miles southwest from the southern tip of the Florida peninsula. The Sanctuary's marine ecosystem supports over 6,000 species of plants, fishes, and invertebrates, including the nation's only living coral reef that lies adjacent to the continent. The area includes one of the largest seagrass communities in this hemisphere. Attracted by this tropical diversity, tourists spend more than thirteen million visitor days in the Florida Keys each year. In addition, the region's natural and man-made resources provide livelihoods for approximately 80,000 residents.

The Sanctuary is 2,900 square nautical miles of coastal waters, including the recent addition of the Tortugas Ecological Reserve. The Sanctuary overlaps six state parks and three state aquatic preserves. Three national parks have separate jurisdictions, and share a boundary with the Sanctuary. In addition, the region has some of the most significant maritime heritage and historical resources of any coastal community in the nation.

The Sanctuary faces specific threats, including direct human impacts such as ship groundings, pollution, and overfishing. Threats to the Sanctuary also include indirect human impacts, which are harder to identify but seem to be reflected in coral declines and increases in macroalgae and turbidity. More information about the Sanctuary can be found in this document and at the Sanctuary's web site: <http://floridakeys.noaa.gov>.

## *Management Plan Organization*

Within this document, the tools that the Sanctuary uses to achieve its goals, are presented under five management divisions: 1) Science; 2) Education, Outreach & Stewardship; 3) Enforcement & Resource Protection; 4) Resource Threat Reduction; and, 5) Administration, Community Relations, & Policy Coordination. Each management division contains two or more *action plans*, which are implemented through supporting *strategies* and *activities*. The strategies described in the 1997 *Management Plan* generally retain their designations in this document. As in the 1997 plan, two or more action plans may share a strategy where their goals and aims converge.

## *Accomplishments and Highlights*

The Sanctuary's programs and projects have made significant progress since the original management plan was implemented 1997. An overview of these accomplishments is provided in the Introduction. In addition, each action plan contains bulleted lists of accomplishments since the 1997 management plan was adopted.

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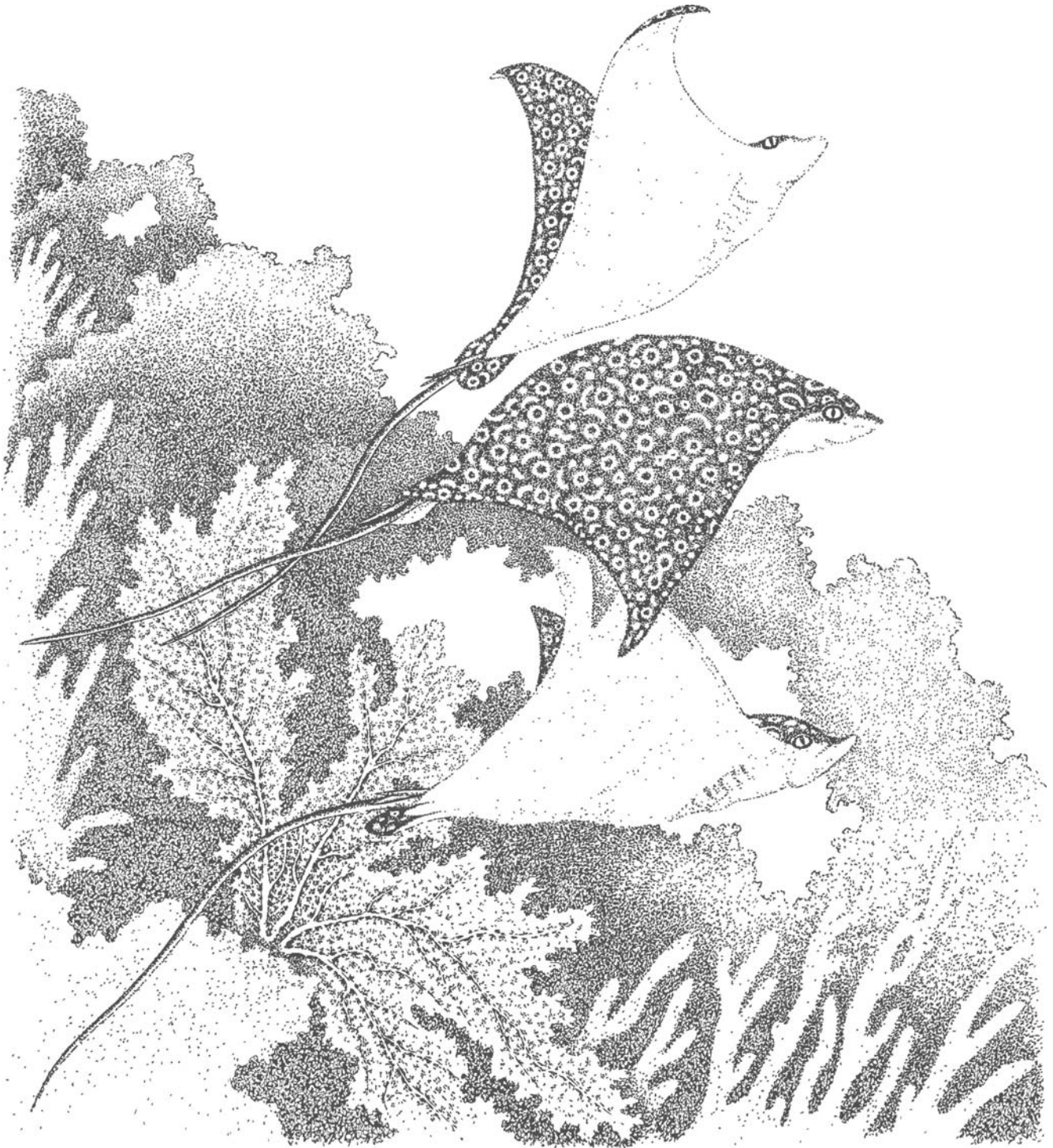
## Acronyms

ASA	Abandoned Shipwreck Act
ATBAs	Areas to Be Avoided
AWT	Advanced Wastewater Treatment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DARP	Damage Assessment and Restoration Program
DMR	Department of Marine Resources (Monroe County)
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
F.S.	Florida Statutes
FAC	Florida Administrative Code
FDACS	Florida Department of Agriculture and Consumer Services
FDHR	Florida Division of Historical Resources
FDEP	Florida Department of Environmental Protection
FFWCC	Florida Fish and Wildlife Conservation Commission
FKNMS	Florida Keys National Marine Sanctuary
FKNMSPA	Florida Keys National Marine Sanctuary Protection Act
FPS	Florida Park Service
FWRI	Fish and Wildlife Research Institute
FWS	Fish and Wildlife Service
GIS	Geographic Information System
GPS	Global Positioning System
HAZMAT	Hazardous Materials
MBTA	Migratory Bird Treaty Act
MEERA	Marine Ecosystem Event Response and Assessment
MHR	Maritime Heritage Resources
MMPA	Marine Mammal Protection Act
MMS	Minerals Management Service
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NEPA	National Environmental Protection Act
NGO	Non-governmental Organization
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NMS	National Marine Sanctuary
NMSA	National Marine Sanctuary Act
NMSP	National Marine Sanctuary Program
NOAA	National Oceanic and Atmospheric Administration
NOS	National Ocean Service
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
OSDS	On-Site Disposal System
PSSA	Particularly Sensitive Sea Area



SAV	Submerged Aquatic Vegetation
SCR	Submerged Cultural Resources
SEFSC	Southeast Fisheries Science Center
SFWMD	South Florida Water Management District
SPA	Sanctuary Preservation Area
SWIM	Surface Water Improvement and Management Act
SWM	Stormwater Management
TNC	The Nature Conservancy
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USDOC	U.S. Department of Commerce
USDOI	U.S. Department of Interior
USDOS	U.S. Department of State
USDOT	U.S. Department of Transportation
USGS	U.S. Geological Survey
WMA	Wildlife Management Area

# 1.0 INTRODUCTION



## 1.1 The National Marine Sanctuary Program (NMSP)

The National Marine Sanctuary Program (NMSP) is a network of 13 marine protected areas (Figure 1.1), encompassing marine resources from Washington State to the Florida Keys, and Lake Huron to American Samoa. The National Oceanic and Atmospheric Administration's (NOAA) National Ocean Service (NOS) has managed the nation's marine sanctuaries since passage of the Marine Protection, Research and Sanctuaries Act of 1972. Title III of that Act is now called the National Marine Sanctuaries Act (NMSA), which is found in Appendix A.

Today, the national marine sanctuaries contain deep-ocean gardens, near-shore coral reefs, whale migration corridors, deep-sea canyons, and underwater archaeological sites. They range in size from one-quarter square mile in Fagatele Bay, American Samoa, to more than 5,300 square miles off Monterey Bay, California – one of the largest marine protected areas in the world. Together, these sanctuaries protect nearly 18,000 square miles of coastal and open ocean waters and habitats. While some activities are managed to protect resources, certain multiple uses, such as recreation, commercial fishing, and shipping are allowed to the extent that they are consistent with a sanctuary's resource protection mandates. Research, education, outreach, and enforcement activities are major components in each sanctuary's program of resource protection.

The NMSP is recognized around the world for its commitment to management of marine protected areas within which primary emphasis is placed on the protection of living marine resources and our nation's maritime heritage resources.

Figure 1.1. The National Marine Sanctuaries



### The NMSP Vision:

*People value marine sanctuaries as treasured places protected for future generations.*

### The NMSP Mission:

*To serve as the trustee for the national system of marine protected areas to conserve, protect, and enhance their biodiversity, ecological integrity and cultural legacy.*

## 1.2 The Florida Keys National Marine Sanctuary (FKNMS)

### *Historical Setting*

Warning signs of the fragility and finite nature of the region's marine resources have been present in the Florida Keys for years. In 1957, a group of conservationists and scientists met at Everglades National Park to discuss the demise of the coral reef resources at the hands of those attracted by its beauty and uniqueness. The conference resulted in the 1960 creation of the world's first underwater park, John Pennekamp Coral Reef State Park. However, in the following decade, public outcry continued over pollution, overfishing, physical impacts, overuse, and user conflicts. The concerns continued to be voiced by environmentalists and scientists alike throughout the 1970s and into the 1990s.

As a result, additional management efforts were instituted to protect the Keys' coral reefs. In the Upper Keys, Key Largo National Marine Sanctuary was established in 1975 to protect 103 square nautical miles of coral reef habitat from north of Carysfort Lighthouse to south of Molasses Reef. In the Lower Keys, the 5.32 square nautical mile Looe Key National Marine Sanctuary was established in 1981.

Despite these efforts, oil drilling proposals and reports of deteriorating water quality occurred throughout the 1980s. At the same time, scientists were assessing coral bleaching and diseases, long-spined urchin die-offs, loss of living coral cover, a major seagrass die-off, and declining reef fish populations. Such threats prompted Congress to act. In 1988, Congress reauthorized the National Marine Sanctuary Program and ordered a feasibility study for possible expansion of Sanctuary sites in the Florida Keys - a directive that signaled that the health of the Keys ecosystem was of national concern.

The feasibility studies near Alligator Reef, Sombrero Key, and westward from American Shoal were overshadowed by several natural events and ship groundings that precipitated the designation of the Florida Keys National Marine Sanctuary (FKNMS). Three large ships ran aground on the coral reef during one 18-day period in the fall of 1989. Although people cite the ship groundings as the issue triggering Congressional action, it was, in fact, the cumulative degradation and the threat of oil drilling, along with the groundings. These multiple threats prompted Congressman Dante Fascell to introduce a bill into the House of Representatives in November of 1989. Congressman Fascell had long been an environmental supporter of South Florida and his action was very timely. Senator Bob Graham, also known for his support of environmental issues in Washington and as a Florida Governor, sponsored the bill in the Senate. Congress gave its bipartisan support, and on November 16, 1990, President George Bush signed the bill into law.

With designation of the Florida Keys National Marine Sanctuary in 1990, several protective measures were implemented immediately, such as prohibiting oil and hydrocarbon exploration, mining or otherwise altering the seabed, and restricting large shipping traffic. Additionally, protection to coral reef resources was extended by restricting anchoring on coral, touching coral, and collecting coral and live rock (a product of the aquarium trade). Discharges from within the Sanctuary and from areas outside the Sanctuary that could potentially enter and affect local resources were also restricted in an effort to comprehensively address water quality concerns.

### ***Administration and Legislation***

The Sanctuary uses an ecosystem approach to comprehensively address the variety of impacts, pressures, and threats to the Florida Keys marine ecosystem. It is only through this inclusive approach that the complex problems facing the coral reef community can be adequately addressed.

The goal of the Sanctuary is to protect the marine resources of the Florida Keys. It also aims to interpret the Florida Keys marine environment for the public and to facilitate human uses of the Sanctuary that are consistent with protection of this particular marine ecosystem. The Sanctuary is administered by NOAA and is jointly managed with the State of Florida under a co-trustee agreement. The Florida Governor and Cabinet, sitting as the Board of Trustees for the State of Florida, designated the Florida Department of Environmental Protection (FDEP) as the State's partner for Sanctuary management. Additionally, the Florida Fish and Wildlife Conservation Commission (FWC), created in 1999, enforces Sanctuary regulations in partnership with Sanctuary managers. FWC also houses the Fish and Wildlife Research Institute (FWRI), which conducts and coordinates scientific research and monitoring.

National Marine Sanctuaries are typically designated by the Secretary of Commerce through an administrative process established by the NMSA. However, recognizing the importance of the Florida Keys ecosystem and the degradation of the ecosystem due to direct and indirect physical impacts, Congress passed the Florida Keys National Marine Sanctuary and Protection Act (FKNMSPA) in 1990, (P.L. 101-605) (Appendix B) designating the Florida Keys National Marine Sanctuary. President George Bush signed the FKNMSPA into law on November 16, 1990.

The FKNMSPA requires the preparation of a comprehensive management plan and implementing regulations to protect Sanctuary resources. This draft *Revised Management Plan* responds to the FKNMSPA's requirements. The implementing regulations, effective as of 1 July 1997, are found at 15CFR922 and in Appendix C. The designation document for the FKNMS is found in Appendix D.

### ***Sanctuary Boundaries***

The Sanctuary's enabling legislation designated 2,800-square-nautical miles of coastal waters off the Florida Keys as the Florida Keys National Marine Sanctuary. The Sanctuary's boundary was amended in March 2001 when the Tortugas Ecological Reserve was designated, significantly increasing the marine resources requiring protection.

Currently, the boundary encompasses approximately 2,900 square nautical miles (9,800 square kilometers) of coastal and ocean waters and submerged land (Figure 1.2). The boundary extends southward on the Atlantic Ocean side of the Keys, from the northeastern-most point of the Biscayne National Park along the approximate 300-foot isobath for over 220 nautical miles to the Dry Tortugas National Park. The boundary extends more than 10 nautical miles to the west of the Park boundary, where it turns north and east. The northern boundary of the Sanctuary extends to the east where it intersects the boundary of the Everglades National Park. The Sanctuary waters on the north side of the Keys encompass a large area of the Gulf of Mexico and western Florida Bay. The boundary follows the Everglades National Park boundary and continues along the western shore of Manatee Bay, Barnes Sound, and Card Sound. The boundary then follows the southern boundary of Biscayne

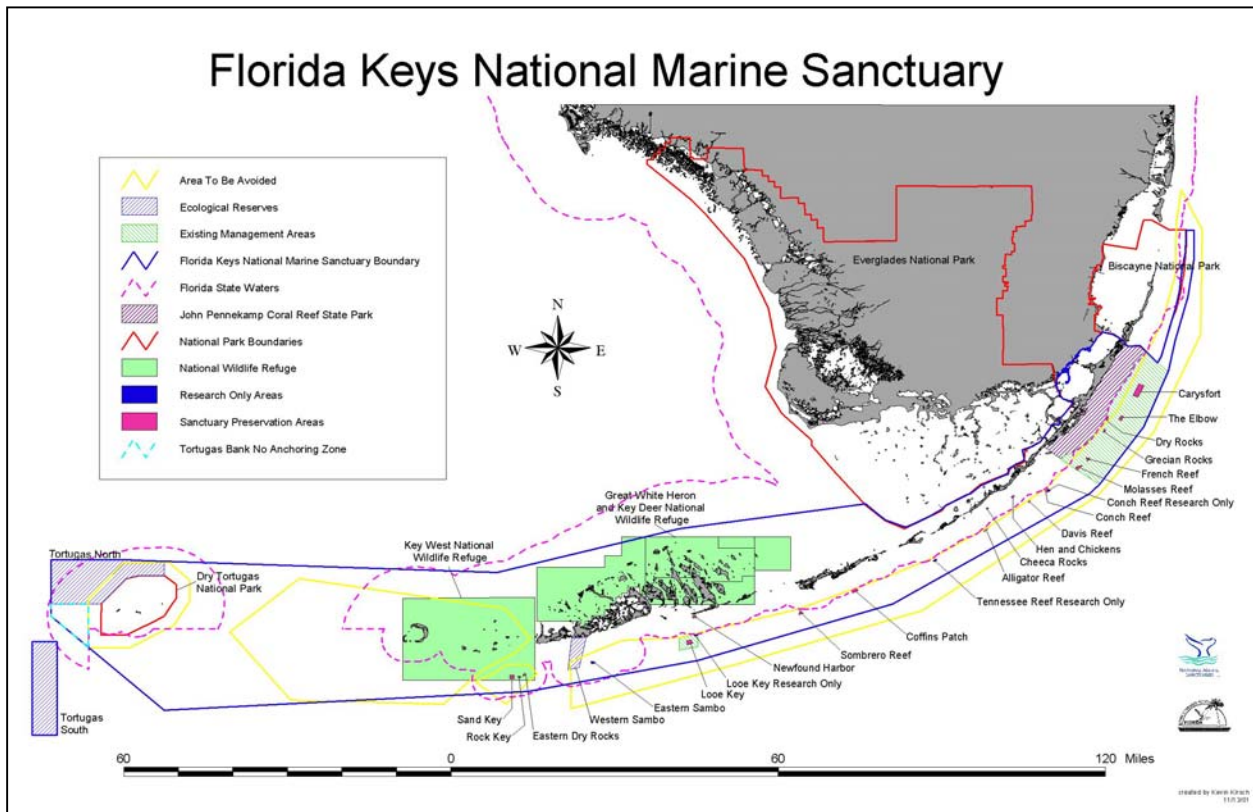
National Park and up its eastern boundary along the reef tract at a depth of approximately 60 feet until its northeastern-most point.

A separate, non-contiguous, 60 square nautical mile area off the westernmost portion of the Sanctuary is called the Tortugas Ecological Reserve South. The area's shallowest feature is Riley's Hump.

The Sanctuary boundary overlaps two previously existing National Marine Sanctuaries (Key Largo and Looe Key); four U.S. Fish and Wildlife Service (USFWS) refuges; six state parks, including John Pennekamp Coral Reef State Park; three state aquatic preserves; and other jurisdictions. Everglades National Park, Biscayne National Park and Dry Tortugas National Park are excluded from Sanctuary waters, but each shares a boundary with the Sanctuary.

The shoreward boundary of the Sanctuary is the mean high-water mark, except around the Dry Tortugas where it is the boundary of Dry Tortugas National Park. The Sanctuary boundary encompasses nearly the entire reef tract, all of the mangrove islands of the Keys, and a good portion of the region's seagrass meadows.

Figure 1.2. The Florida Keys National Marine Sanctuary Boundaries



### ***Socio-Economic Context***

The environment and the economy are inextricably linked in the Florida Keys, making management and protection of existing resources and reducing impacts critical if the economy is to be sustained. Tourism is the number one industry in the Florida Keys, with over \$1.2 billion dollars being spent annually by over 3 million visitors. The majority of visitors participate in activities such as snorkeling, SCUBA diving, recreational fishing, viewing wildlife and studying nature. Recreational and commercial fishing are the next most important sectors of the local economy, annually contributing an estimated \$500 million and \$57 million respectively (<http://marineeconomics.noaa.gov>).

Because of the recreational and commercial importance of the marine resources of the Florida Keys, protecting these Sanctuary resources is valuable not only for the environment but also for the economy. The special marine resources of the region, which led to the area's designation as a National Marine Sanctuary, contribute to the high quality of life for residents and visitors. Without these unique marine resources, the quality of life and the economy of the Keys would decline.

## 1.3 The Management Plan Review Process

### *What is management plan review?*

In 1992, when Congress reauthorized the NMSA, it required all National Marine Sanctuaries to review their management plans every five years in order to monitor and evaluate the progress of the national mission to protect national resources. The Florida Governor and Cabinet, as trustees for the State, also mandated a five-year review of the Florida Keys National Marine Sanctuary Management Plan in their January 28, 1997 resolution.

The Sanctuary's management plan review creates a road map for future actions based on past experience and outcomes. The review reevaluates the goals and objectives, management techniques, strategies, and actions identified in the existing management plan. It provides the opportunity to take a close and comprehensive look at outcomes and plan for future management of the Sanctuary.

### *The 1997 Florida Keys National Marine Sanctuary Management Plan*

After the initial six-year FKNMS planning process, a comprehensive management plan for the Sanctuary was implemented in July 1997. The management plan focused on ten action plans which were largely non-regulatory in nature and involved educating citizens and visitors, using volunteers to build stewardship for local marine resources, appropriately marking channels and waterways, installing and maintaining mooring buoys for vessel use, surveying maritime heritage resources, and protecting water quality. In addition to action plans, the 1997 management plan designated five types of marine zones to reduce pressures in heavily used areas, protect critical habitats and species, and reduce user conflicts. The efficacy of the marine zones is monitored Sanctuary-wide under the Research and Monitoring Action Plan.

The implementing regulations for the FKNMS became effective July 1, 1997. The 1997 management plan was published in three volumes: Volume I is the Sanctuary management plan itself (which this document updates); Volume II describes the process used to develop the draft management alternatives, including environmental and socioeconomic impact analyses of the alternatives, and the environmental impact statement; Volume III contains appendices, including the texts of Federal and State legislation that designate and implement the Sanctuary. All three volumes of the 1997 management plan are available on the Sanctuary web site (<http://floridakeys.noaa.gov/>) and from the Sanctuary's Marathon office. Volume II is not being revised as part of this review. After public input, government review and final adoption of this five-year review and revised Management Plan, this document will replace Volumes I and III.

### *How does management plan review work?*

Review of the 1997 management plan began in early 2001 with a meeting in Tallahassee, Florida, among Federal and state partners responsible for Sanctuary management and various FKNMS and NMSP staff. The review included the Sanctuary Advisory Council (SAC) and the general public in every step of the process.

In the late spring and summer of 2001, FKNMS staff, working closely with the SAC, held scoping meetings and re-convened working groups that had been created during development of the 1997 plan. The scoping meetings were held in Marathon, Key Largo, and Key West, and gave the public the opportunity to meet with SAC members, Sanctuary managers, and FKNMS staff. The meetings



included round-table discussions on every action plan, and participants had the opportunity to move freely between the various topics being discussed at each table.

The scoping period for the revised management plan lasted from June 8 through July 20, 2001.

Approximately 30 comments were received - a sharp contrast to the more than 6000 public comments received during the comment period for the 1997 plan. In addition, the working groups held more than three dozen meetings between June and September 2001 to discuss, evaluate, revise and update action plans. SAC members and FKNMS staff who had served on the working groups presented the proposed revisions to the Sanctuary Advisory Council at three meetings in October 2001. The full advisory council recommended minor changes and approved each action plan in this document. The Advisory Council membership and Working Group membership lists are included in Appendix E.

### *The Role of Sanctuary Management as Facilitators*

A Sanctuary management plan is designed to identify the best and most practical strategies to achieve common goals, while getting the most out of public investment. Achieving this aim cannot be accomplished solely through the authorities and resources of an individual Sanctuary management authority. It requires a broad partnership of programs, authorities, and resources, coordinated to meet the needs of both the sanctuary site and the broader region of which it is a part.

Consequently, the management plan review process first focuses on finding the most effective strategies to accomplish common goals. These strategies are the product of a process that brings together constituents, institutions, and interested parties in directed working groups to address specified problem areas. How these strategies are to be implemented – with whose authorities, investments, and personnel – is determined subsequently to developing the best strategies. While the Sanctuary program commits to carrying out specific strategies as budgets allow, in many cases implementation becomes the responsibility of other institutions such as state, Federal, or local partners, that have either the authorities, the appropriate program, and/or the resources required.

In this process, the sanctuary management plan becomes a framework in which the role of all partners is codified. The Sanctuary assumes the role of facilitator and integrator of a far larger body of activities and outcomes than are within the immediate authorities, programs, and resources of the site. This facilitation role provides the mechanism for continued implementation, evaluation, and adaptation of the partnership activities documented by the plan, ensuring its continuity and overall success.

## 1.4 Accomplishments

There have been many accomplishments in the sanctuary beginning with the authority established under the Florida Keys National Marine Sanctuary and Protection Act of 1990 and the implementation of the management plan in 1997. An overview of the Sanctuary's accomplishments is given here, and more details are provided within each Action Plan.

**1. Area To Be Avoided.** The "Area To Be Avoided" (ATBA) designation has resulted in a significant decrease in the number of major ship groundings on the coral reefs. As Figure 1.3 illustrates, prior to 1990 there was a major ship grounding involving vessels greater than 50 m in length, nearly every year, while only two have occurred since the creation of the ATBA. The International Maritime Organization agreed that the ATBA should be given additional strength as a Particularly Sensitive Sea Area (PSSA) in 2002 (see Accomplishment 5 below). The ATBA regulations are at 15 CFR Part 922, Subpart P, Appendix VII. Figure 1.4 shows the ATBA and the Sanctuary boundary.

Figure 1.3. Reef groundings of vessels greater than 50m before & after ATBA designation.

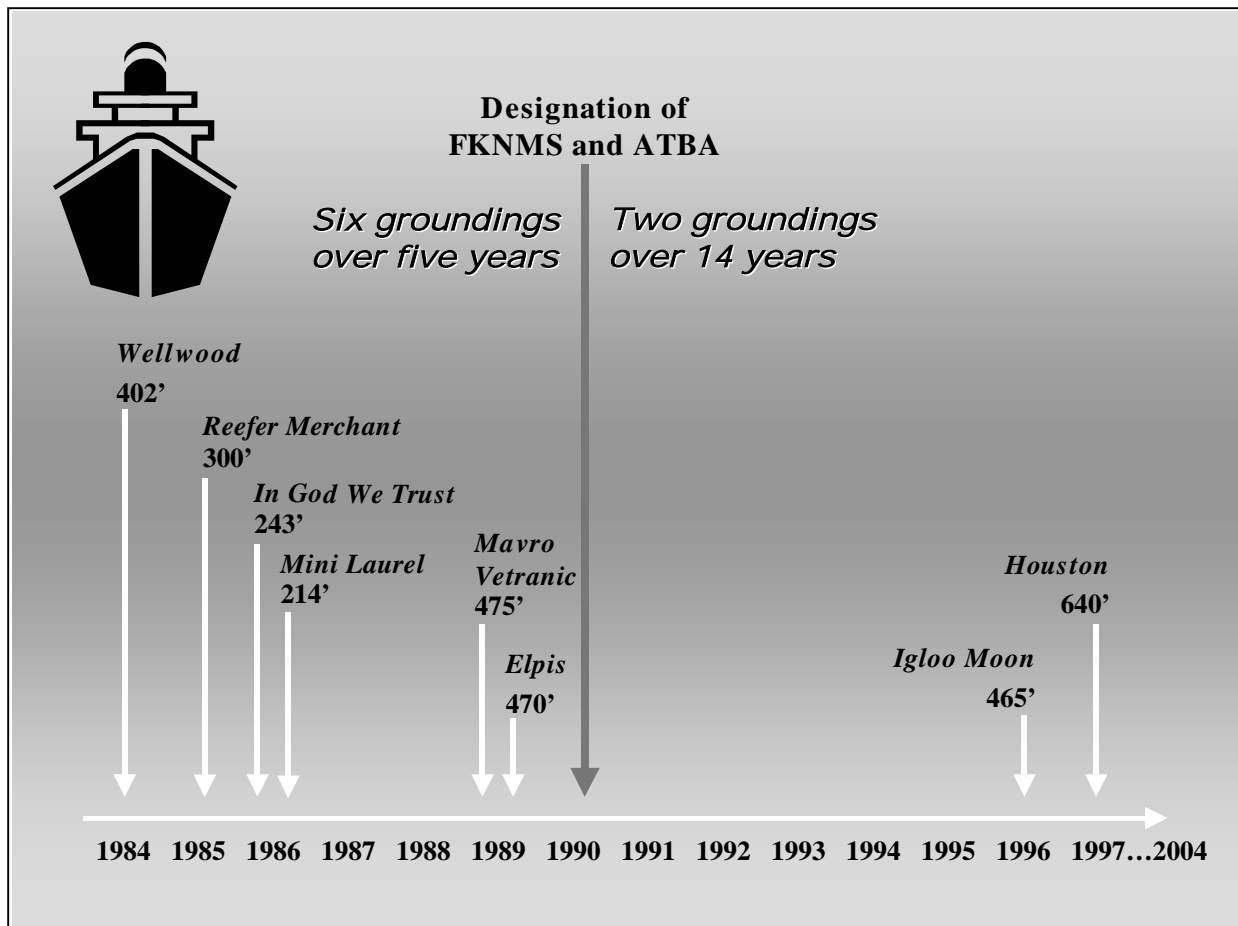
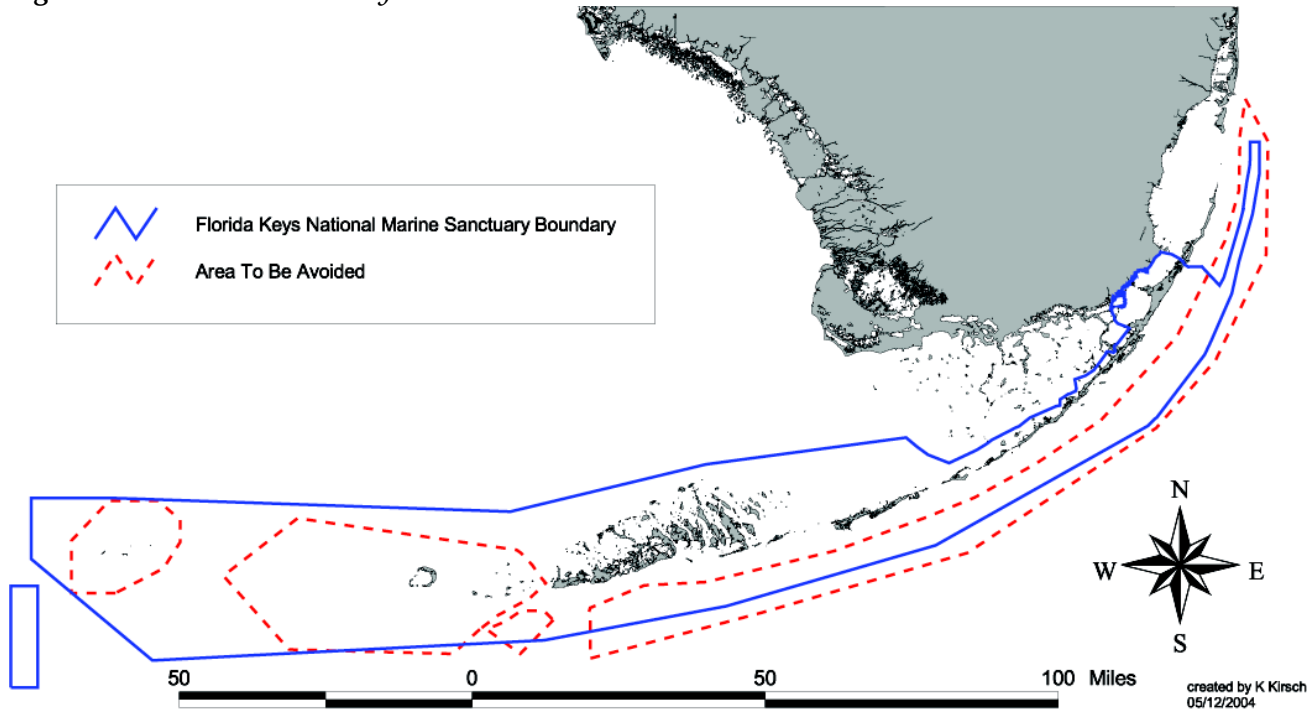


Figure 1.4. FKNMS boundary and ATBA



**2. Oil Drilling and Hard Mineral Mining Ban.** A ban on these activities was established when the Sanctuary was created, and has prevented these activities from occurring in the Sanctuary.

**3. The Water Quality Protection Program.** This program has produced the first Water Quality Protection Program for a national marine sanctuary and has fully implemented 26 of 49 high-priority activities, many of which are carried out in cooperation with other action plans.

**4. The Comprehensive Everglades Restoration Plan.** The Sanctuary continues to participate in the Comprehensive Everglades Restoration Plan. Sanctuary staff have been active on this project since 1993, including chairing a working group for the South Florida Ecosystem Restoration Task Force and staffing its science and education committees. The Sanctuary's participation seeks to protect the ecosystem's water quality by eliminating catastrophic releases of freshwater into Florida Bay following rain events.

**5. Designation of the Florida Keys as a Particularly Sensitive Sea Area.** In November 2002, the United Nations International Maritime Organization approved designation of the Florida Keys as a PSSA. The designation is not accompanied by additional rules and regulations, but seeks to elevate public awareness of the threat of oil spills and hazardous materials to sensitive marine environments and will ensure that the previously mentioned ATBA is noted not only on U.S. charts but also on nautical charts worldwide.

**6. Long-term and continuing progress in the Research and Monitoring and Zoning action plans.**

Research and Monitoring has produced significant scientific data, hypothesis testing, mapping, trend documentation, and wide dissemination of these findings. Especially notable is the Keys-wide benthic map which provides valuable information for Sanctuary managers. In addition to the new protected zone in the Tortugas Ecological Reserve, the Sanctuary's zoning programs continue to provide invaluable data that crosses simple category boundaries.

**7. Education, Public Outreach, Sanctuary Stewardship, and Volunteerism.** Through these inter-related efforts, information is flowing from scientists to managers and then to educators, who reach the next generation. More than 120,000 volunteer hours, a \$1.8 million value, have been donated to the Sanctuary between 1996 and 2000. Even more valuable than the dollar worth of the program is the stewardship created through volunteerism, which uniquely contributes to the long-term effectiveness of the Sanctuary.

**8. Enforcement and Regulations.** Both the city of Key West and the State of Florida have declared Florida Keys waters under their jurisdictions as "no-discharge" zones. Additional accomplishments in implementing the Enforcement and Regulatory Action Plans are largely a tribute to the cooperative efforts among the State, the Florida Fish and Wildlife Conservation Commission, the Florida Park Service, the U.S. Coast Guard and NOAA. Notable among these is the cross-deputization of state-certified law enforcement officers, which allows them to enforce some Federal laws, including fisheries regulations.

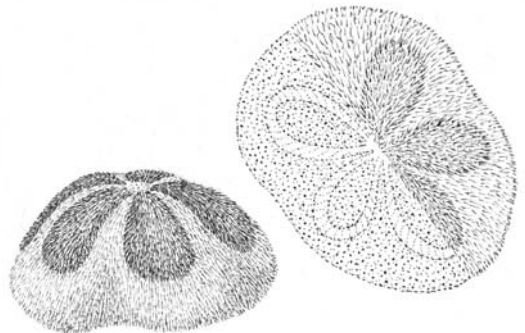
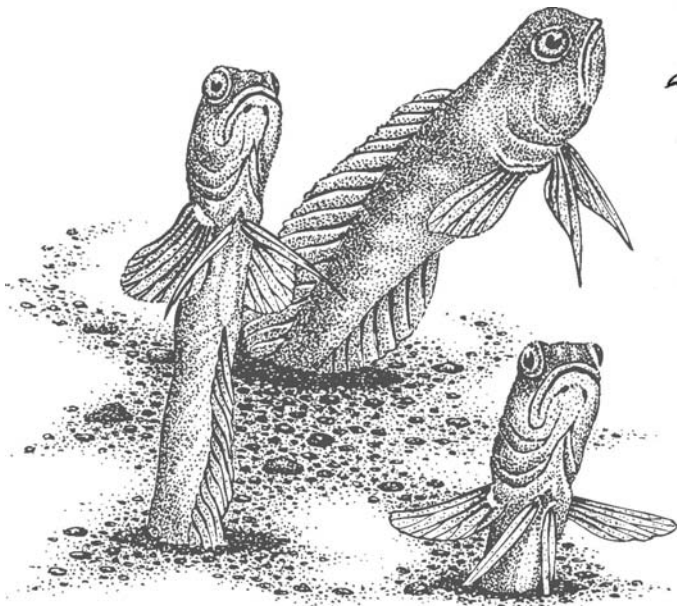
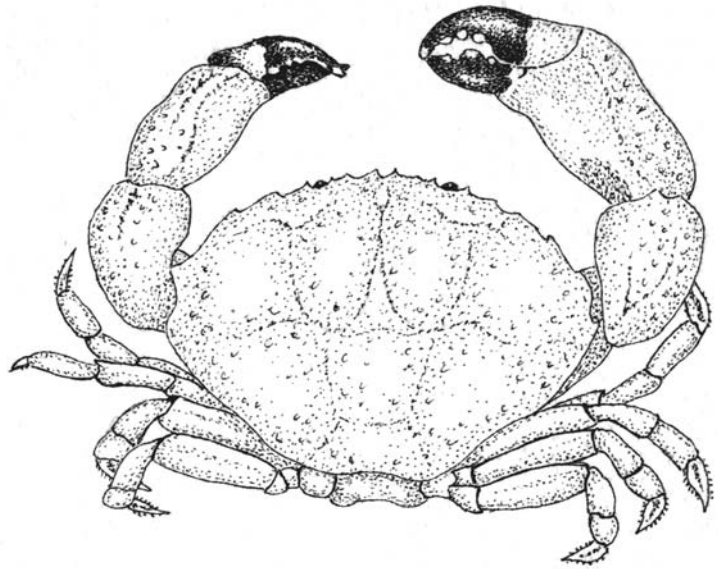
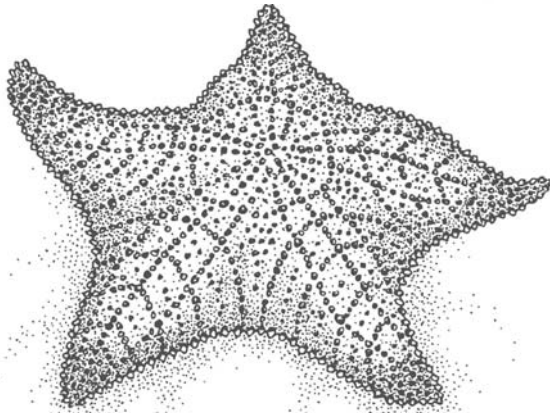
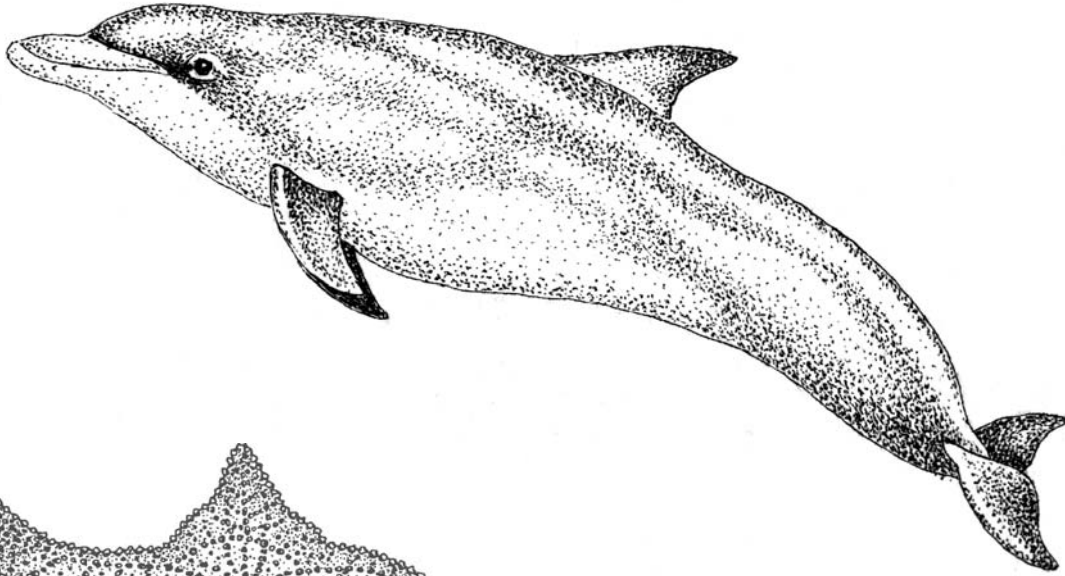
**9. Damage Assessment and Restoration.** The Damage Assessment and Restoration Action Plan is new to this document but is based on accumulated data and lessons learned since 1982. The cross-disciplinary strategies will prove useful in reducing the number of vessel groundings in Sanctuary waters as well as restoring Sanctuary resources damaged by vessels.

**10. Maritime Heritage Resources.** The Maritime Heritage Resources Action Plan includes a close partnership of the State, NOAA, and the Florida Advisory Council on Historic Preservation described in a 1998 programmatic agreement for resource management (see Appendix F). More recently, the 2002 discovery of a previously unknown wreck within the Sanctuary has brought about a community-endorsed research and interpretation plan for the site. Overall, the Action Plan represents excellent progress in balancing resource protection, investigation and interpretation.

**11. Mooring Buoys and Waterway Management (formerly Channel Marking).** The Mooring Buoy and Waterway Management Action Plans have implemented simple but effective strategies for reducing vessel damage to the coral reef and to seagrass beds. The long-term success of these programs – mooring buoy strategies have been used in local Sanctuary waters since 1981 when they were introduced at the Key Largo National Marine Sanctuary – has largely been due to a unique interface of education, outreach, enforcement, and research and monitoring activities.

**12. Operations.** Since 1997, the Sanctuary has integrated the administrative functions of two former sanctuaries – at Key Largo and Looe Key – into a single headquarters umbrella with two regional offices. This integration streamlined delivery of human resources, community relations, and policy development. It also resulted in a series of accomplishments, ranging from an updated electronic financial reporting system to the 130-episode television series, *Waterways*.

## 2.0 THE SANCTUARY ENVIRONMENT: A SUBTROPICAL ECOSYSTEM



## **2.1 Introduction**

Adjacent to the Keys' land mass is a complex marine ecosystem that supports a variety of spectacular, unique, and nationally significant seagrass meadows, mangrove islands, and extensive living coral reefs. This ecosystem is the marine equivalent of a tropical rain forest in that it supports high levels of biological diversity, is fragile and easily susceptible to damage from human activities, and possesses great value to humans if properly conserved. The ecosystem supports over 6,000 species of plants, fishes, and invertebrates, including the nation's only coral reef that lies adjacent to the continent, and one of the largest seagrass communities in this hemisphere.

## 2.2 Living Marine Resources

The Florida Keys ecosystem contains one of North America's most diverse assemblages of flora and fauna. The Florida peninsula and Florida Keys serve as a partial barrier between the temperate waters of the Gulf of Mexico and the tropical to subtropical waters of the Atlantic Ocean, resulting in a unique distribution of marine organisms.

The coral reef tract, arching in a southwesterly direction for 220 miles, comprises one of the largest communities of its type in the world. It is the only emergent coral reef system off the continental U.S. All but the northernmost extent of the reef tract lies within the sanctuary.

The reef tract is a bank-barrier system comprised of an almost continuous reef community. One of its most noticeable features is its seaward-facing spur-and-groove formation. Over 6000 patch reefs, circular to oval in shape, lie in nearshore to offshore areas.

The ecosystem also supports one of the world's largest seagrass beds, among the richest, most productive, and most important submerged coastal communities. Seagrasses provide food and habitat for commercially and recreationally important species of fish and invertebrates. Without the seagrass community, the coral reef community would likely collapse.

Mangroves form an important component of the ecosystem, fringing most of the more than 1600 islands and 1800 miles of shoreline. Mangroves provide important ecological functions such as habitat for juvenile fishes and invertebrates, sediment traps, and surface area for attached organisms such as oysters, sponges, and algae.

The Florida Keys coral reef ecosystem is highly biologically diverse, and includes:

- 520 species of fish, including over 260 species of reef fish
- 367 species of algae
- 5 species of seagrasses
- 117 species of sponges
- 89 species of polychaete worms
- 128 species of echinoderms
- 2 species of fire coral
- 55 species of soft corals
- 63 species of stony corals

### *Coral Reefs and Coral Health*

The reefs of Florida have undergone change for millennia due to sea-level changes, storms, and other natural occurrences. More recently, human impacts have directly and indirectly damaged the reef structure and reef communities, and as a result corals are under stress.

In the Florida Keys, a decrease in coral cover and species diversity and an alarming increase in coral diseases and coral bleaching have been recorded in the Coral Reef/Hard-bottom Monitoring Project conducted by Florida's Fish and Wildlife Research Institute (FWRI). The project records biodiversity, coral condition (including diseases and bleaching), and coral cover at stations located in various habitat types. Since 1996, over 66 percent of the monitored sites have exhibited losses in stony coral

diversity, although some positive trends were noted in the 1999-2000 survey period. Significant gains and losses of several stony coral species have occurred both between years and over the entire sampling period, indicating fluctuations in coral species richness but no loss of species Sanctuary-wide.

In addition, FWRI monitoring has shown a declining trend in stony coral cover from 1996 to 2000, with the greatest relative change occurring in the Upper Keys. A reprieve from this decline has recently been observed and may be attributable to the lack of significant events such as bleaching, tropical storms, or hurricanes. As with species diversity, scientists find that coral cover is highly variable by both habitat type and region.

Recruitment (settlement of new individuals) of stony corals is an important factor in overall community dynamics. Two monitoring programs that are evaluating coral recruitment trends find that differences exist in coral recruitment among habitat types and regions. Juvenile corals in the lower Keys suffered significant mortality in 1998 due to a direct strike from Hurricane Georges.

Coral diseases increasingly threaten the overall health and vitality of reef systems in the Sanctuary. While over ten coral diseases are believed to exist at this time, only three pathogens have been positively identified. The monitoring project has documented increases in the number of research stations that contain diseased coral, the number of coral species with disease, and the number of diseases themselves. Regional differences in disease incidence have also been documented, with the highest concentration observed in the Key West and Lower Keys region.

Over the past 20 years, coral bleaching events in the Sanctuary have increased in frequency and duration. Massive coral bleaching was first recorded in the Lower Keys in 1983 along the outer reef tract, where shallow fore-reef habitats were the most affected areas. Bleaching expanded and intensified with events in 1987 and 1990, and culminated with massive coral bleaching in 1997 and 1998 that targeted inshore and offshore reefs throughout the Keys. Coral bleaching is undoubtedly responsible for some of the dramatic declines in stony coral cover observed Sanctuary-wide in the last five years. Similar observations of bleaching have been made regionally and internationally since 1987, and it is widely recognized that 1997 and 1998 were the worst coral bleaching years on record, causing significant loss of corals worldwide.

#### *Algae, Seagrasses, and Other Benthic Organisms*

Monitoring of benthic, or bottom, communities by the National Undersea Research Center at the University of North Carolina at Wilmington has documented that algae of various species dominate bottom habitats at all sites throughout the Sanctuary. Sponges and soft corals cover a much smaller percentage of the sea floor (from about 10 percent to 20 percent). Like algae, they are highly variable, depending on the region being surveyed and the time of year.

Seagrasses are comprehensively monitored by Florida International University as part of the Sanctuary's Water Quality Protection Program. Data indicate approximately 12,800 square kilometers of seagrass beds lie within and adjacent to the Sanctuary. Some variability in seagrass cover and abundance has been identified, although populations seem relatively stable. Continued monitoring will be invaluable for detecting human impacts on the seagrass communities.



### *Reef Fish*

Monitoring fish populations occurred for many years before the Sanctuary's designation and continues to this day. From 1979 through 1998, a total of 263 fish species representing 54 families were observed. Over half of all fish observed were from just ten species. Relatively few fish of legal size have been seen, which is consistent with several studies that indicate reef fish in the Florida Keys are highly overexploited.

Despite population declines throughout much of the Sanctuary, fish numbers in fully protected zones (Sanctuary Preservation Areas, Ecological Reserves, and Special-use and Research-only areas) are increasing to some degree. Years of data from one monitoring program show that the number of individuals of three exploited species are higher in protected zones than in fished sites. Researchers have also seen an overall increase in the average abundance of three snapper species at several sites after the sites were protected.

### *Mobile Invertebrates*

FWRI monitors mobile invertebrates, such as spiny lobster and queen conch. Spiny lobsters continue to be more abundant in the fully protected Sanctuary Preservation Areas and Ecological Reserves than outside these areas. Researchers have found their average size is larger and catch rates (number of lobsters per trap) are higher than in reference areas during both the open and closed fishing seasons.

Queen conch populations have remained low for the last decade despite a prohibition on their collection since 1985. Attempts to supplement wild populations with laboratory reared stock and experiments aimed at improving their reproduction are designed to ameliorate the long-term decline in queen conch populations in the region.

Sea urchins are also in very low abundances, especially the long-spined urchin, suggesting poor recovery of this species since its massive Caribbean-wide die-off in 1983. Two research efforts underway are exploring means by which populations of this key species may be restored.

## 2.3 Non-living Marine Resources

### *Maritime Heritage Resources*

The waters of the Florida Keys have some of the most significant maritime heritage and historical resources of any coastal community in the nation. Because of its unique geographical position on the European and American trade routes, shipwrecks in the Keys contain a record of the 500-year history of the Americas. Key West has been the crossroads of the Caribbean, and the sea has remained the common thread through the region's cultural and historic sites. The relative inaccessibility of underwater cultural sites has ensured that many delicate artifacts remain undisturbed. The importance of the region's maritime heritage resources is great, and the possibility exists for discovering some of the earliest archaeological sites in North America. A detailed description of the cultural and historical resources of the Florida Keys is contained in the "Description of the Affected Environment," of the Environmental Impact Statement (see Volume II of the Florida Keys Management Plan at <http://floridakeys.noaa.gov>).

### *Water Quality*

Many water-quality parameters have been monitored Sanctuary wide by Florida International University's Southeast Environmental Research Center since 1995 as part of the Water Quality Protection Program. Thus far, results indicate that some elements (dissolved oxygen, total organic nitrogen, and total organic carbon) are present in higher concentrations in surface waters, while other indicators (salinity, turbidity, nitrite, nitrate, ammonium, and total phosphorus) are higher in bottom waters.

Geographic differences in water quality include higher nutrient concentrations in the Middle and Lower Keys and lower nutrient concentrations in the Upper Keys and Dry Tortugas. Also, declining inshore-to-offshore trends across Hawk Channel have been noted for some parameters (nitrate, ammonium, silicate, total organic carbon and nitrogen, and turbidity).

Probably the most interesting findings thus far show increases over time in total phosphorus for the Dry Tortugas, Marquesas Keys, Lower Keys, and portions of the Middle and Upper Keys, and increases in nitrate in the Southwest Florida Shelf, Dry Tortugas, Marquesas Keys, and the Lower and Upper Keys. In contrast, total organic nitrogen decreased somewhat, mostly in the Southwest Florida Shelf, the Sluiceway, and the Lower and Upper Keys. These trends may be driven by regional circulation patterns arising from the Loop Current and Florida Current, and have changed as the period of record has increased.

Stationary instruments along the reef tract continuously monitor seawater parameters and ocean states. The data are analyzed by Florida Institute of Oceanography's SEAKEYS program and periodically transmitted to satellites and made available on the Internet. Additionally, water temperature data are recorded every two hours from a series of thermographs that the Sanctuary has maintained for the past ten years.

## 2.4 Threats to the Ecosystem

The deterioration of the marine ecosystem in South Florida is no longer a matter of debate. Visitors, residents and scientists alike have noted the precipitous decline in the health of the coral reef ecosystem. The threats causing these visible signs of decline are numerous and often complex, ranging from direct human impacts to global climate changes.

Direct human impacts include vessel groundings, anchor damage, destructive fishing, and damage to corals as a result of divers and snorkelers standing on them. Boat propellers and large ships have damaged over 30,000 acres of seagrasses and more than 20 acres of coral reef habitat in the Sanctuary.

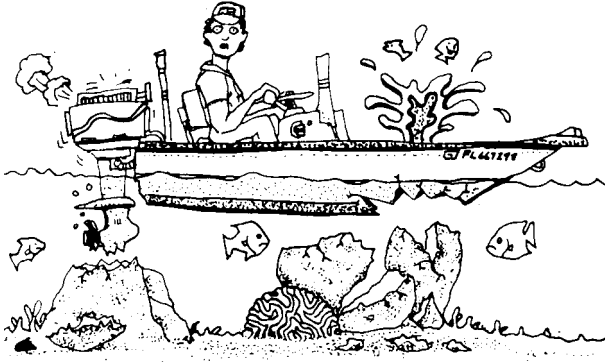
Most pressures stem from the 5 million annual visitors and 80,000 year-round residents. Their high levels of use in the Sanctuary have significant direct and indirect effects on the ecosystem. Sanctuary visitors primarily seek water-related recreation, including fishing, diving, snorkeling, and boating.

Although less immediate than direct physical damage to the corals, other stressors also significantly affect the Florida Keys ecosystem. Overfishing has dramatically altered fish and other animal populations on the coral reef, contributing to an imbalance in ecological relationships that are critical to sustaining a diversity of organisms. Eutrophication (an outcome of excess nutrients in the water, such as fertilizers) of nearshore waters is a documented problem. Wastewater and stormwater treatment and solid-waste disposal facilities are highly inadequate, directly affecting nearshore water quality. Some solutions to water quality problems are being implemented, but given the scope of the problem, more action is required.

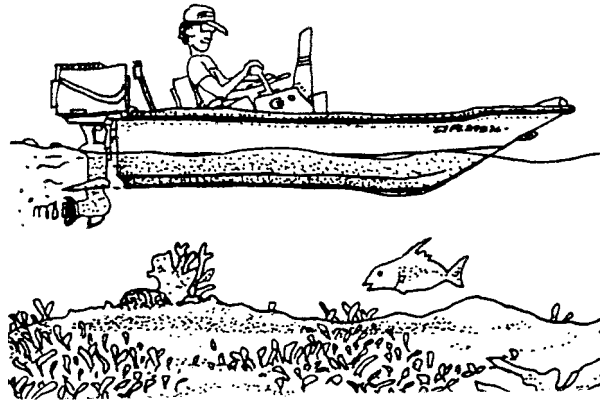
In Florida Bay, reduced freshwater flow has increased plankton blooms, sponge and seagrass die-offs, and fish kills. Since Florida Bay and nearshore waters provide important nursery and juvenile habitat for a variety of reef species, the declines in these areas affect the overall health and structure of offshore coral reefs. Therefore, regional strategies to address the quantity, quality, timing, and distribution of freshwater flows into the South Florida ecosystem and Florida Bay through the Comprehensive Everglades Restoration Plan are critical.

In addition, seasonal and yearly seawater temperature fluctuations, increasing solar radiation, and atmospheric changes all affect the ecosystem. The impacts are seen in coral disease and bleaching, which have increased in frequency, duration and range, coinciding with the ten warmest years on record. Under normal conditions, corals and reef organisms would be expected to tolerate and recover from sporadic events such as temperature variation. However, additional human-induced stresses are likely affecting the ability of these organisms to adequately recover from climate fluctuations.

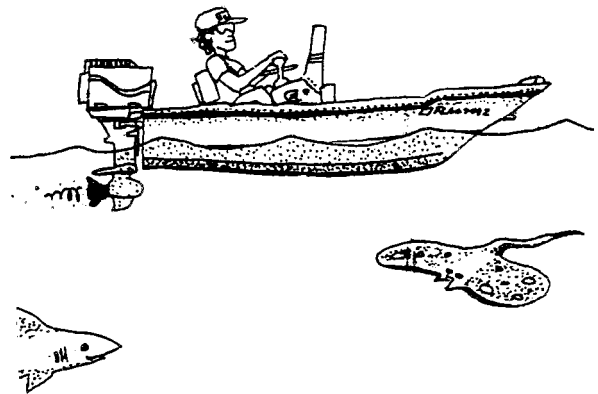
### 3.0 ACTION PLANS



**BROWN, BROWN, RUN AGROUND**



**GREEN, GREEN, NICE AND CLEAN**



**BLUE, BLUE, SAIL ON THROUGH**

## What Are Action Plans?

Action plans are the means by which the Sanctuary identifies and organizes the wide variety of management tools it employs to manage and protect its marine resources. “Road maps” for management, action plans articulate the programs and projects used to address the resource issues identified in the Sanctuary and to fulfill the purposes and policies of the NMSA. Each action plan is composed of *strategies* sharing common management objectives and *activities*, which are the specific actions the Sanctuary and its partners will take to implement the strategies.

## What Are The Action Plans In This Document?

The following chapters are the action plans that guide every aspect of sanctuary management. Readers should note that the 1997 *Final Management Plan* for the Sanctuary included ten action plans, presented in alphabetical order to address management needs related to:

- Channel/Reef Marking
- Education and Outreach
- Enforcement
- Mooring Buoys
- Regulatory
- Research and Monitoring
- Submerged Cultural Resources
- Water Quality
- Volunteer
- Zoning

In this revised management plan, four new action plans have been added: Science Management and Administration Action Plan, Damage Assessment and Restoration Action Plan, Operations Action Plan, and, Evaluation Action Plan. The Submerged Cultural Resources Action Plan has been changed to the Maritime Heritage Resources Action Plan, while the Channel/Reef Marking Action Plan has been renamed to more accurately reflect the intent, which is “Waterway Management”, and the word “Marine” has been added to the Zoning Action Plan to clarify the title.

### *Management Divisions*

In this revised management plan, the individual action plans have been grouped into five management divisions. This was done to both improve the organization of the plan as well as to highlight the management goals for each of the plans. The individual action plans for the Sanctuary are organized in the following divisions:

#### **Sanctuary Science**

- Science Management and Administration Action Plan
- Research and Monitoring Action Plan

#### **Education, Outreach and Stewardship**

- Education and Outreach Action Pan
- Volunteer Action Plan

#### **Enforcement and Resource Protection**

- Regulatory Action Plan
- Enforcement Action Plan
- Damage Assessment and Restoration Action Plan
- Maritime Heritage Resources Action Plan

**Resource Threat Reduction**

- Marine Zoning Action Plan
- Mooring Buoy Action Plan
- Waterway Management Action Plan
- Water Quality Action Plan

**Administration, Community Relations and Policy Coordination**

- Operations Action Plan
- Evaluation Action Plan

**Implementing Action Plans**

The FKNMS defines a place where many governmental and non-governmental organizations work in partnership to achieve the Sanctuary’s goals: protect resources and their conservation, recreational, ecological, historical, research, educational, or aesthetic values through comprehensive long-term management. This management plan describes these collective efforts, and its implementation relies on resources and efforts from a variety of partners. Table 3.1 describes the extent to which each of the action plans and strategies within this revised management plan can be implemented under three funding scenarios. Funding from both NOAA and other partners, (e.g. EPA, Monroe County, etc.) is considered in ranking the level of implementation.

*Table 3.1 Action Strategy Implementation Over Five Years Under Three Funding Scenarios*

Implementation* with NOAA Funding	Implementation* with Partner Funding	Scenario 1: Level Funding	Scenario 2: 5% per year increase	Scenario 3: 10% per year increase
● - High ⊙ - Medium ○ - Low	◆ - High ◇ - Medium ◇ - Low			
<b>Sanctuary Science</b>				
Science Management and Administration Action Plan				
	Strategy B.11 – Issuance of Sanctuary Research Permits	●	●	●
	Strategy W.29 – Dissemination of Findings	⊙	⊙	●
	Strategy W.32 – Maintaining a Technical Advisory Committee	●	●	●
	Strategy W.34 – Regional Science Partnerships and Reviews	⊙	⊙	●
	Strategy W.35 – Data Management	◇	◇	◆
Research and Monitoring Action Plan				

\* Implementation ranking considers the priority of each strategy as well as the percentage of activities that could be initiated, maintained, and/or completed under differing funding scenarios.

	Strategy W.33 - Ecological Research and Monitoring	⊙◇	⊙◇	●◆
	Strategy Z.6 - Marine Zone Monitoring	⊙	⊙	●
	Strategy W.36 - Conducting Socioeconomic Research	●	●	●
	Strategy F.3 - Researching Queen Conch Population Enhancement Methods	●◆	●◆	●◆
	Strategy F.7 - Researching Impacts from Artificial Reefs	⊙◇	⊙◇	●◆
	Strategy F.6 - Fisheries Sampling	⊙◇	⊙◇	●◆
	Strategy F.11 - Evaluating Fishing Gear/Method Impacts	○◇	○◇	⊙◇
	Strategy F.15 - Assessing Sponge Fishery Impacts	⊙◇	⊙◇	●◆
	Strategy W.18 - Conducting Pesticide Research	○◇	○◇	⊙◇
	Strategy W.22 - Assessing Wastewater Pollutants Impacts	●◆	●◆	●◆
	Strategy W.23 - Researching Other Pollutants and Water Quality Issues	⊙◇	⊙◇	●◆
	Strategy W.24 - Researching Florida Bay Influences	⊙◇	⊙◇	●◆
	Strategy W.21 - Developing Predictive Models	⊙◇	⊙◇	●◆
<b>Education, Outreach and Stewardship</b>				
Outreach and Education Action Plan				
	Strategy E.4 - Developing Training, Workshops and School Programs	○	⊙	⊙
	Strategy E.6 - Continuing the Education Working Group	●	●	●
	Strategy E.10 - Establishing Public Forums	⊙	⊙	●
	Strategy E.11 - Participating in Special Events	⊙	⊙	●
	Strategy E.1 - Printed Product Development and Distribution	○	○	⊙
	Strategy E.2 - Continued Distribution of Audio-Visual Materials	⊙	●	●
	Strategy E.3 - Continue Development of Signs, Displays, Exhibits, and Visitor Centers	⊙	⊙	⊙
	Strategy E.5 - Applying Various Technologies	⊙	⊙	⊙
	Strategy E.12 - Professional Development of Outreach and Education Staff	○	○	⊙
Volunteer Action Plan				
	Strategy V.1 - Maintaining Volunteer Programs	⊙	⊙	⊙
	Strategy V.2 - Working with Other Organization/ Agency Volunteer Programs	○	○	○
	Strategy V.3 - Providing Support for Volunteer Activities	○	○	⊙
<b>Enforcement and Research Protection</b>				
Regulatory Action Plan				
	Strategy R.1 - Maintaining the Existing Permit Program	⊙	⊙	●
	Strategy R.2 - Regulatory Review	⊙	⊙	●
Enforcement Action Plan				
	Strategy B.6 - Acquiring Additional Enforcement Personnel	●	●	●
Damage Assessment and Restoration Action Plan				
	Strategy B.18 - Injury Prevention	○	○	⊙
	Strategy B.19 - Implementing DARP Notification and Response Protocols	○	○	⊙
	Strategy B.20 - Damage Assessment and Documentation	⊙◇	⊙◇	●◇
	Strategy B.21 - Case Management	◆	◆	◆
	Strategy B.22 - Habitat Restoration	◇	◇	◆
	Strategy B.23 - Data Management	○	⊙	⊙
Maritime Heritage Resources Action Plan				

	Strategy MHR.1 - MHR Permitting	●◆	●◆	●◆
	Strategy MHR.2 - Establishing an MHR Inventory	○◆	○◆	◎◆
	Strategy MHR.3 - MHR Research and Education	○◇	○◇	◎◆
	Strategy MHR.4 - Ensuring Permit Compliance through Enforcement	●◆	●◆	●◆
	Strategy MHR.5 - Ensuring Interagency Coordination	●◆	●◆	●◆
<b>Resource Threat Reduction</b>				
Marine Zoning Action Plan				
	Strategy Z.1 - Wildlife Management Areas	○	◎	●
	Strategy Z.2 - Ecological Reserves	◎	●	●
	Strategy Z.3 - Sanctuary Preservation Areas	○	◎	●
	Strategy Z.4 - Existing Management Areas	●	●	●
	Strategy Z.5 - Special-use Areas	○	◎	●
Mooring Buoy Action Plan				
	Strategy B.15 - Mooring Buoy Management	●	●	●
Waterway Management Action Plan				
	Strategy B.1 - Boat Access	◆	◆	◆
	Strategy B.4 - Waterway Management/Marking	◆	◆	◆
Water Quality Action Plan				
	Strategy W.19 - Florida Bay Freshwater Flow	●◆	●◆	●◆
	Strategy W.3 - Addressing Wastewater Management Systems	◇	◇	◆
	Strategy W.5 - Developing and Implementing Water Quality Standards	◇	◇	◇
	Strategy W.7 - Resource Monitoring of Surface Discharges	◆	◆	◆
	Strategy W.11 - Stormwater Retrofitting	◇	◇	◆
	Strategy W.14 - Instituting Best Management Practices	◆	◆	◆
	Strategy B.7 - Pollution Discharges	◎◆	◎◆	●◆
	Strategy L.1 - Elimination of Wastewater Discharge from Vessels	◎◆	◎◆	●◆
	Strategy L.3 - Marina Operations	◆	◆	◆
	Strategy L.7 - Assessing Solid Waste Disposal Problem Sites	◇	◇	◆
	Strategy W.15 - HAZMAT Response	○◆	○◆	◎◆
	Strategy W.16 - Spill Reporting	○◆	○◆	◎◆
	Strategy L.10 - HAZMAT Handling	◇	◇	◆
	Strategy W.17 - Refining the Mosquito Spraying Program	◇	◇	◆
	Strategy W.10 - Addressing Canal Water Quality	◇	◇	◆
<b>Administration</b>				
Operations Action Plan				
	Strategy OP.1 - Addressing Administrative Policy Issues	◎	◎	◎
	Strategy OP.2 - Addressing Resource Policy Issues	◎	◎	◎
	Strategy OP.3 - Addressing Legal Issues	◎	◎	●
Evaluation Action Plan				
	Strategy EV.1 - Measuring Sanctuary Performance Over Time	●	●	●



### **3.5 ADMINISTRATION, COMMUNITY RELATIONS AND POLICY COORDINATION**

This management division includes two action plans: the Operations Action Plan and the Evaluation Action Plan. Effective Sanctuary management requires an administrative infrastructure and an operations program that supports the various management programs. The action plans in this management division describe the Sanctuary administrative and operations approaches to management and provide a mechanism to evaluate the effectiveness of Sanctuary management.

While often overlooked in the development of a management plan, this management division is an essential element to the overall management of the Sanctuary. This section describes the necessary administrative needs and operational requirements to support effective marine protected area management.

## 3.5.1 Operations Action Plan

### *Introduction*

This action plan is different from the others in that it is divided into four sub-sections: 1) Administration; 2) Community Relations; 3) Policy Development; and, 4) The Sanctuary Advisory Council. Each of these sub-sections represents a primary function of FKNMS operations and contains the following information:

- A description of the function;
- Accomplishments since inception of the 1997 management plan; and,
- Strategies and activities.

### *Goals and Objectives*

The goals of the Operation Action Plan are to:

- Provide highly effective, day-to-day administrative functions;
- Establish effective community outreach; and,
- Develop and implement policy coordination.

To achieve these goals, the Sanctuary will work towards the following objectives:

- Ensuring cooperation among Sanctuary management and agencies with jurisdiction within or adjacent to the Sanctuary.
- Promoting informed decisions based on the best available research and analysis, taking into account the environmental, economic, and social impacts.
- Complementing coordination among appropriate authorities to enforce existing laws that fulfill Sanctuary goals.

## Function 1: Sanctuary Administration

### *Summary*

A professional administrative team that provides the services necessary to meet its trustee responsibilities carries out the Sanctuary's day-to-day operations. When the Sanctuary was designated and two existing sanctuaries (at Key Largo and Looe Key) were included into the broader boundary, their administrative functions had to be integrated. The Sanctuary is administered under a single administrative umbrella at headquarters, with two regional offices in Key Largo and Key West. There are several key components to Sanctuary administration, such as:

### *Human Resources*

The staff is composed of Federal and State employees, contractors, and volunteers, managed in accordance with policies established by the Office of Management and Budget, Department of Commerce, NOAA, and the State. Elements of the human resources function include:

- *Recruitment and Retention* - Managers, on an on-going basis, evaluate position needs and possibilities for new recruitment. Managers follow Federal and state policies and use open competition to attract the greatest number of qualified candidates and provide equal opportunity employment.
- *Training and Career Enhancement* - Training and development programs assist in achieving the Sanctuary's mission and performance objectives by improving employee and organizational performance. Employees, supervisors, management, and NOAA's human resource development office share responsibility for performance-based learning.
- *Employee Performance and Recognition* - A supervisor traditionally completes annual performance appraisals that are the basis for personnel action, including promotion and pay increases. Supervisors are encouraged to acknowledge outstanding accomplishments by staff via promotions, financial awards, and the Sanctuary's Team Member of the Year Award.
- *Discontinuation of Service* - Supervisors conduct exit interviews with employees who separate from service. The results are shared with Sanctuary management and recommendations from departing employees are considered when appropriate.
- *Time and Attendance* - Two staff members maintain official time and attendance records for Federal and state staff. Employees who participate in projects relating to enforcement and damage assessment and restoration are required to maintain additional records for cost documentation purposes. These records are often used to obtain reimbursement through the legal system for vessel groundings.
- *Safety* - Emergency response and hurricane plans are prepared and updated annually for each Sanctuary site. Copies are distributed and posted. Program managers strive to recognize work-place hazards and improve working conditions to the greatest extent possible, with guidance from NOAA's Environmental Compliance and Safety Office. Federal and state labor laws and workman's compensation information are posted at all Sanctuary offices.

### *Financial Administration*

The Sanctuary's financial administration includes annual financial planning for upcoming state and Federal fiscal years, budget tracking, managing the financial portions of memoranda of agreement, and purchasing in accordance with Federal and state policy and regulations. Elements of the financial administration function include:

- *Budget Planning and Tracking* - The Sanctuary management team is responsible for budget planning with the assistance of the Sanctuary's financial officer, including development of an Annual Operating Plan consistent with NMSP activities. National activities currently include education, research, marine zoning, enforcement, site characterization, GIS cultural resources, management plan review, system-wide monitoring, damage assessment and restoration, volunteer, outreach, water quality, SAC, and core operations.
- *Alternative Sources of Funding* - Alternative fund sources include donations, civil penalty payments, and interagency fund transfers. Fundraising is also accomplished by nonprofit organizations, including Sanctuary Friends of the Florida Keys and the National Marine Sanctuary Foundation. Civil penalty funds, by law, generally can be used only for resource management and response costs and equipment. Additional funds come from parties responsible for repairing resource damage such as the National Fish and Wildlife Foundation, which administers fines related to ocean dumping.
- *Purchasing* - Administrators and managers adhere to numerous Federal and state purchasing regulations stipulating required sources of supply, time frames, forms, approvals, and payment procedures. Some staff members have government credit cards; the cardholder is accountable for using the card in accordance with government regulations. The financial officer is accountable for overseeing purchase orders, tracking expenses, alternative-fund accounting, issuing VISA checks, and overseeing credit card use, among other responsibilities.

### *Information Technology*

Information-technology support is provided through the sanctuary administrative office with regional office involvement. A computer-assessment team meets regularly to improve collaboration and communication and facilitate cooperation among field offices with the automated data processing and information technology staff at headquarters. The team assesses current hardware and software profiles for each office, oversees hardware and software purchases, assesses current and future needs, develops long-range plans, and evaluates requests for additions or upgrades.

In 1998, staff developed and implemented the web site that is continuously updated. The web master assures that the site is relevant, timely, and useful. The web master responds to requests received through the site and logs comprehensive data about traffic, which is used to continually enhance and update this public service.

### *International Coordination*

Over the last decade, coral reef health has become a global issue. Many of the issues addressed in this management plan are relevant to coral reef communities worldwide. International groups and foreign countries routinely contact the Sanctuary and the national program to discuss programs and conduct tours. The staff plans to develop a formal international program in the coming year.

### *Sanctuary Friends*

Sanctuary Friends of the Florida Keys, Inc., is a nonprofit membership organization dedicated to raising awareness and building support for the programs, policies and goals of the Sanctuary. This organization, established in 2000, has a membership of nearly 100 individuals. A major membership campaign and a fundraising drive are upcoming.

### *Reporting*

The Sanctuary staff generates reports as a necessary mechanism to share information with NOAA headquarters, the State, other agencies, stakeholders, and the public. The reports are available in hard copy and on the Sanctuary's web page. The Sanctuary management team provides weekly, monthly, and quarterly reports to fulfill various requirements established by NOAA and FDEP. The reports provide accountability for programs, funding, management and regulation. In addition, staff prepares an annual State of the Sanctuary Report, and annual reports to the Florida Governor and Cabinet.

### *Hurricane Planning*

Each office annually reviews and updates its unique hurricane plan that addresses buildings, vessels, vehicles, equipment and evacuation. Evacuation plans are based on hurricane alerts issued by the National Weather Service. When evacuation plans are implemented, each person reports to a member of the management team on the progress of preparations. Offsite contact with evacuated personnel continues until the evacuation order is lifted.

### *Security*

Building security in Federal offices became a high priority after the 1995 bombing in Oklahoma City and recent large-scale terrorist attacks on U.S. soil. For the Sanctuary, this translates into offices secured by lock and key and under electronic surveillance at all offices and sites. Where possible, a locked fence encloses outside storage. Sanctuary managers regularly evaluate security. Other property, including vessels and vehicles require separate security. Many of the Sanctuary's vessels are kept at marinas, and, although security measures vary, marina operators are meeting overall security goals. Staff security includes identification cards and fingerprinting of new employees.

### *Real Estate*

With the exception of law enforcement offices at the Marathon Government Center, all staff is currently located in rented office space. However, the Sanctuary acquired 2.94 acres and two former Navy buildings in Key West in December of 1999, through the Base Realignment and Closure program. The complex has been named The Dr. Nancy Foster Florida Keys Environmental Center, in recognition of her tremendous contribution to protection of the nation's marine environment. It is the only real estate owned by the Sanctuary. Congress appropriated approximately \$8 million to develop the site into a world-class, multi-agency visitor center, and to house the Sanctuary's Lower Keys regional office, a maintenance facility, and docks that will consolidate Lower Keys regional staff and vessels at one location.

### *Facilities*

The Sanctuary currently leases all its office, storage, and dock space. Most leases include utilities, cleaning, building maintenance and repairs, grounds maintenance, parking, storage, and conference rooms. The Sanctuary also rents off-site storage on Big Pine Key for printed matter for public distribution. Dock space is leased in the Upper Keys, Middle Keys, and Lower Keys for vessels.

### *Equipment and Supplies*

Equipment includes vehicles, vessels, engines, machinery (e.g., mooring-buoy drills), and associated electronics, computers and traditional office equipment. Regional property custodians maintain a property inventory and maintenance schedules. Administrative staff orders material and supplies for offices and other routine functions as needed.

### *Records Retention*

The administrative office in Marathon ensures that Federal records are kept for a minimum of six years and three months and state records are retained for seven years. Sensitive records and documents are kept in a secure file until the retention time has expired. Documents of historical, biological, or regulatory significance are kept indefinitely.

### *Communications*

Sanctuary communications include written, verbal and electronic communication via office telephones, cellular phones, pagers, and two-way vessel radios, all governed by Federal and state policies, directives, and regulations. The administrative assistant at each office is responsible for keeping current with policies and regulations. The three offices have a telephone system with voice messaging to maximize office efficiency. Cellular phones are used between administrative staff and staff on the water. Staff members who are assigned cellular telephones are responsible for the equipment and ensuring use for government purposes only. Pagers are provided to key staff for off-duty communication in the event of an emergency. Two-way radios are installed on many vessels. Staff regularly evaluates its service providers to ensure that the most cost-effective pricing plans are in effect.

### *Maintenance*

The office buildings are leased and regular maintenance is covered under the terms of the lease. The staff completes routine and preventive maintenance on its equipment, buildings, vehicles and vessels, including engines. The maintenance program is geared to lifecycle management and to ensure productive and safe use.

### *Vessels and Vehicles*

Sanctuary programs require a variety of vehicles and vessels. All vehicles and vessels are used only for official government activity. Regulatory enforcement requires in-shore, offshore and long-range patrol capabilities and such vessels range from 28 feet to 82 feet. The Damage Assessment and Restoration program uses smaller vessels to access resource damage in shallow areas. Staff uses vehicles to travel to and from official meetings, to tow boats, transport gear, and to assist visiting dignitaries. Many vehicles are leased from the General Services Administration and staff abides by its regulations. The Sanctuary's Vessel Policy covers operation, use, and maintenance seeks to provide safe and productive vessel use and has become a model for other NOAA programs.

### *Accomplishments*

There have been several administrative accomplishments since implementation of the 1997 management plan, including:

- Fully integrated the administration of two existing National Marine Sanctuaries and the larger Sanctuary into a single unit with some functions retained by the regional offices.

- Developed and implemented a financial accounting system that has been adopted by other National Marine Sanctuaries to track expenditures by budget category (printing, travel, vessel repairs, salaries) and program (education and outreach, maritime heritage resources, enforcement).
- On-going recruitment in accordance with Federal and state guidelines to hire and retain the highest caliber and best-qualified workforce.
- Created and implemented employee-recognition programs.
- Established and implemented quarterly management team meetings. Participants include the superintendent, policy coordinator and project manager, and the Upper Region and Lower Region managers. In addition, the superintendent holds “All Hands Meetings” at least twice a year to bring the entire team together to discuss issues and share information.
- Continuous pursuit of alternative sources of funding, including from the National Fish and Wildlife Foundation, which administered fines resulting from litigation related to ocean dumping.
- Helped establish and continues support for Sanctuary Friends of the Florida Keys, Inc., a nonprofit organization that promotes the Sanctuary mission and goals, and raises funds for the Sanctuary.
- Developed and implemented hurricane plans for all three offices and Sanctuary vessels. Implementation has minimized hurricane damage to offices, vessels and vehicles.
- Acquired 2.94 acres and two buildings at Truman Annex in Key West for a world class, multi-agency visitor center and facilities for the Lower Keys regional office.
- Organized and implemented two regional offices in the Upper Keys and Lower Keys.
- Developed and implemented a vessel policy for the operation, use, and maintenance of Sanctuary vessels.

## Function 2: Community Relations

### *Summary*

Good community relations are an essential component of Sanctuary management. In addition, the Keys community is socially complex with a large turnover of residents and an ever-changing tourist population. In order to keep new residents and visitors informed, the media is regularly involved. Key components of the Sanctuary are administrative and operational policies that are consistent with national policies and site-specific policies that address local needs.

There are several on-going Community Relations activities including:

- The Sanctuary's half-hour television show, "Waterways," produced in partnership with the National Park Service and the U.S. Environmental Protection Agency. The show is aimed at increasing awareness of the marine and terrestrial environments of the Florida Keys and the Everglades and the efforts underway to protect and conserve them.
- Media packets that provide background information on current issues and topics to assist journalists in reporting on Sanctuary issues.
- News releases to address breaking news, notify the public of opportunities to participate in Sanctuary management decisions, and increase awareness of Sanctuary initiatives.
- Press conferences to brief media representatives and editors on significant issues through presentations and question-and-answer sessions with relevant personnel.
- Press trips to help media representatives gain firsthand knowledge of Sanctuary resources, threats to the ecosystem, and initiatives to protect and conserve them.
- Radio and television appearances by Sanctuary team members to publicize a variety of topics related to the sanctuary.
- Video production and editing of stock footage and other video products to document resources, threats to sanctuary resources, and sanctuary program activities and accomplishments.
- Regularly maintained communication plans on major issues to outline how the public receives timely and accurate information from the Sanctuary.

### *Accomplishments*

Community relations activities were separated from the Education and Outreach function in 1997 with the hiring of a public-outreach coordinator. Since then, the program has achieved many accomplishments, including:

- Worked with the Environmental Protection Agency and National Park Service, to produce 130 episodes of "Waterways," a television show focusing on the unique aspects of the South Florida environment and the Sanctuary's efforts to understand and protect it.
- Coordinated outreach efforts leading to the establishment of the Tortugas Ecological reserve by conducting media visits and providing information in various formats to national media entities and the public.
- Coordinated media coverage of reef restoration projects, including a comprehensive public awareness campaign for the *Columbus Iselin* restoration. The campaign included public meetings to inform dive shops, other businesses and local residents; production of a video explaining the restoration for dive shops to show to customers; production of a laminated card explaining the restoration for use on board dive boats; coordination of a VIP and media trip to



view the restoration site, which resulted in national coverage, including Reuters, *The Miami Herald* and The Associated Press.

- Coordinated media coverage for activities of the Sanctuary Advisory Council.
- Worked with Reef Relief, the City of Key West, Florida Fish and Wildlife Conservation Commission, and the U.S. Coast Guard to conduct a public awareness campaign to achieve compliance with the new no-discharge zone designation for City of Key West Waters, including developing brochures and posters and conducting a series of visits with local editors.
- Developed and distributed press releases for all Sanctuary public meetings on significant issues, such as the Particularly Sensitive Sea Area proposal, correct use of mooring buoys, and installation of new buoys.
- Participated in or coordinated taped and live interviews, for local radio stations.
- Coordinated media coverage for three years of Sustainable Seas Expeditions in the Sanctuary; publicized and staged open houses.
- Provided images for use in publications and on the Internet, as well as provided footage for video projects, including television news and documentaries, and features on the Discovery and National Geographic channels.

## Function 3: Policy Development and Coordination

### *Summary*

This description is not intended as a comprehensive list of Sanctuary policies but as a guide for how policy matters are developed and addressed. Some facets of the policy structure are well established, while others have been identified for further development. There are three principal areas related to FKNMS policy development and coordination: administrative, resource and legal.

### *Administrative Policy*

The Sanctuary is managed through a joint-trustee agreement between NOAA and the State. As such, the program is staffed with personnel from NOAA, the Florida Department of Environmental Protection, and the Florida Fish and Wildlife Conservation Commission. Each agency is subject to a unique set of agency directives, policies, and procedures. The Sanctuary's regional management structure relies on these staff members cooperating as a functionally seamless unit.

Administrative policies integrate the policies of federal and state agencies. This is accomplished through Standard Operating Procedures, maintaining supervisory and administrative staff familiar with specific policies, and holding regular management team meetings to identify and rectify potential inconsistencies. In addition, the Sanctuary Superintendent holds "All Hands Meetings" at least twice a year to bring the entire Sanctuary team together to discuss issues and share information. The administrative officer focuses on developing and implementing consistent administrative policy to ensure compliance with agency directives and provide staff with clear administrative direction.

The Sanctuary superintendent is responsible for conducting management team meetings that include the superintendent, Upper Keys and Lower Keys regional managers and senior policy coordinator. The senior project manager and regional staff may be required to assist in developing agendas.

### *Resource Policy*

NOAA and the Sanctuary recognize the importance of their active involvement in regional, national, and international policy-making that affects marine resources and marine protected areas. As one of the primary agencies involved in marine-resource management in South Florida and one of the world's largest marine protected areas, the Sanctuary and its staff are often consulted on emerging issues and practices. In many cases, the Sanctuary has a vested interest in the activities of other agencies and groups. Further, the visibility of the Sanctuary in the community as a leader in marine-resource management generates frequent inquiries regarding its policy or position on specific issues. Thus, supervised by the superintendent, the Sanctuary's administrative office coordinates policy development and distribution. Policy development and dissemination often involve NOAA headquarters, the State, regional staff, and other organizations. The policy-development process may use the Sanctuary Advisory Council or the Technical Advisory Committee to review an issue and determine its potential effects on Sanctuary resources or to provide a forum for public education and participation. Whenever possible, the Sanctuary relies on peer-reviewed science for policy development. In certain cases, a lack of scientific understanding on an issue may require the Sanctuary to initiate or request additional study before rendering an opinion.

Topics on Which the Sanctuary has been asked for an opinion include:

- Artificial reefs

- Beach nourishment
- Central sewage
- Dredging
- Exotic species removal
- Fish and shark feeding
- Fishery management
- Climate Change
- Light pollution
- Marine mammal stranding
- Personal watercraft
- Shark attacks
- Transportation projects

#### *Legal Review and Interpretation*

As a regulatory entity, the Sanctuary is involved with activities that require legal review and interpretation. The administrative office coordinates legal reviews and seeks interpretations from State and Federal legal or administrative staff.

The Sanctuary management team oversees the permit program, including the application, issuance, tracking and related assessments (see also the Regulatory Action Plan, Strategy R.1 – Maintain the Existing Permit Program). Under its regulatory authority, the Sanctuary may issue permits to conduct otherwise prohibited activities if the activities further the understanding and conservation of Sanctuary resources. Permits are generally issued for research, management, and educational projects and are tracked using a standardized database. Recently, a no-cost, paperless permit system was instituted to track entrance to and egress from the Tortugas North Ecological Reserve. The permit helps ensure that mooring buoys are available for permit holders and that vessels visiting the reserve understand the regulations. Another type of permit, also free, allows for the collection of baitfish from the Sanctuary Preservation Areas and requires holders to report catch and location data annually to the Sanctuary. Research, education, and bait fishing permits are centrally reviewed and processed in the Marathon office; Tortugas North access permits are issued from the Marathon and Lower Region offices.

In addition to these permits, the Sanctuary works with Federal and State agencies to review applications for sea floor dredging and filling to ensure that construction projects of significant scope or size, or those that threaten marine resources through cumulative impacts, are minimized or mitigated.

#### *Accomplishments*

There have been several policy-related accomplishments since implementation of the 1997 management plan, such as:

- Creation of the first Sanctuary Advisory Council in the National Marine Sanctuary Program.
- Implementation of on-going working groups as subcommittees of the Sanctuary Advisory Council that include its members, Sanctuary staff, and the general public, to address the action plans and other issues of community concern and interest.
- Establishment of Sanctuary policies on an as needed basis consistent with Federal and State guidelines, policy and legislation.

- Worked closely with headquarters on the 1999 reauthorization of the National Marine Sanctuary Act to allow Sanctuaries to receive donations and disperse funds to non-governmental agencies for services provided.
- Worked closely with Sanctuary representatives to develop national, program policies address issues in a consistent manner. This includes staff participation in national-level teams responsible for Management Plan Reviews, Education and Outreach plan development and implementation, and the Science/Research and Monitoring plan development.

**Strategies**

There are three strategies associated with this function:

- OP.1 Addressing Administrative Policy Issues
- OP.2 Addressing Resource Policy Issues
- OP.3 Addressing Legal Issues

Each of these strategies is detailed below. Table 3.15 provides estimated costs for implementation of each strategy over the next five years.

**Table 3.15 Estimated Costs of the Operations Action Plan/Policy Development and Coordination Function.**

Operations Action Plan Strategies	Estimated Annual Cost (in thousands)					Total Estimated 5 Year Cost
	YR 1	YR 2	YR 3	YR 4	YR 5	
OP.1: Addressing Administrative Policy Issues	500	525	550	575	600	2,750
OP.2: Addressing Resource Policy Issues	260	275	285	300	315	1,435
OP.3: Addressing Legal Issues	240	250	265	275	290	1,320
<b>Total Estimated Annual Cost</b>	<b>1,000</b>	<b>1,050</b>	<b>1100</b>	<b>1,150</b>	<b>1,205</b>	<b>5,505</b>

## STRATEGY OP.1 ADDRESSING ADMINISTRATIVE POLICY ISSUES

### *Summary*

The FKNMS is managed thru a co-trustee agreement between the State of Florida and NOAA. FKNMS staff come from three different agencies – two state and one federal. Successfully implementing this coordinated management requires clear and consistent administrative policies that meet not only the needs of the individual government agencies, but also the goals of the Sanctuary and the implementation of this management plan. Three activities have been identified to continue achieving the integration of policies and procedures that has allowed successful co-management since the Sanctuary was established.

### *Activities (3)*

**(1) Develop Standard Operating Procedures.** Develop and maintain standard operating procedures based on Federal, state and agency directives and regulations in order to provide staff and programs with consistent and clear direction.

Status: On-going.

Implementation: Currently the Sanctuary has standard operating procedures for many program activities. The administrative office provides specific guidance. The administrative office, through direction and oversight of the superintendent, implements this activity. The administrative office will explore more formal development of standard operating procedures and continue to provide formal policy guidance. Topics to be addressed in a manner specific to the Sanctuary include such things as controlled correspondence, freedom of information act requests, procurement, security, travel, and vessel and vehicle operations.

**(2) Continue Staff Training.** The Sanctuary maintains a staff familiar with applicable agency directives and regulations through a variety of training and communication strategies, including information technology-based reference and guidance.

Status: On-going.

Implementation: The administrative office is responsible for implementing this activity. Regional office staff may be required to assist.

**(3) Conduct Management Team Meetings.** The superintendent conducts quarterly meetings of the management team to address administrative policy matters and includes Upper Keys and Lower Keys regional managers and a senior policy coordinator.

Status: On-going.

Implementation: The superintendent convenes quarterly meetings of the management team and administrative policy issues are discussed at each of the meetings. These meetings have provided an important forum for addressing administrative policy issues and their implementation remains a priority.

## STRATEGY OP.2 ADDRESSING RESOURCE POLICY ISSUES

### *Summary*

There are in excess of 25 local, state and federal agencies in the Florida Keys. Successful management of the Sanctuary requires that sanctuary staff coordinate closely with these agencies in the development of local policies that address resource health and conservation. Two activities have been identified to implement this strategy.

### *Activities (2)*

**(1) *Promote Interagency Collaboration in Policy Making.*** The administrative office communicates with organizations and agencies involved in resource impacts or regulation to: 1) determine potential effects to Sanctuary management interests; 2) help develop policy statements, and 3) consult with affected agencies regarding Sanctuary related policies.

*Status:* On-going.

*Implementation:* The Sanctuary continues its involvement with local, regional, national, and international organizations on policies affecting marine resources. The administrative office is responsible for implementation. Regional and national headquarters staff may be requested to assist.

**(2) *Provide Policy Information to the Public.*** Communicate valid and emerging resource concerns to the general public.

*Status:* On-going.

*Implementation:* The administrative office is responsible for organizing implementation of this activity, working with the Sanctuary Advisory Council, the public outreach and education coordinators, and other appropriate staff.

## STRATEGY OP.3 ADDRESSING LEGAL ISSUES

### *Summary*

The Sanctuary administrative office coordinates legal reviews and interpretations as part of implementing a number of the activities described in this management plan. Permitting and regulatory development are two key areas heavily linked to legal considerations (see also the Regulatory Action Plan); however, legal guidance is also required for a variety of policy, management, and administrative functions.

### *Activity*

**(1) Strengthen Legal Review and Interpretation.** The administrative office coordinates legal reviews and seeks interpretations from federal and state legal staff. Efforts to improve this coordination function and delivery of legal expertise might be expected to further enable efficient and effective management of the Sanctuary in achieving its goals.

Status: On-going

Implementation: FKNMS staff coordinate with legal counsel in federal and state government. Ways to strengthen this coordination are identified when possible.

## Function 4: The Sanctuary Advisory Council

### *Summary*

The Sanctuary Advisory Council was an integral part of the planning process when the original management plan was developed and continues to be a vital link to the community. The council represents user communities, including the dive industry, environmental community, boating community, commercial and recreational fishermen, the maritime heritage resources community and the research and education communities. The council meets every other month for regular sessions and hosts special meetings as needed to address Sanctuary resource issues and the five-year review of the Sanctuary's management plan. In addition, working groups, which function as sub-committees, address specific action plans and issues of concern.

### *Accomplishments*

Advisory Council accomplishments since implementation of the 1997 management plan include:

- Recommended reconfiguration of the Area To Be Avoided to make international ship traffic safer. Eight Racon beacons have been installed to alert vessels of their proximity to the reef tract.
- Recommended that the International Maritime Organization designate the Florida Keys as a Particularly Sensitive Sea Area. The designation was made in 2002.
- Formed the Tortugas 2000 Working Group, which included a broad spectrum of stakeholders, to design the largest marine protected area in North American waters. The group's *Preferred Alternative* was accepted by the Governor and Cabinet of the state of Florida, NOAA, the South Atlantic Fisheries Management Council and the Gulf of Mexico Fisheries Management Council. The no-take Tortugas Ecological Reserve was officially implemented in 2001.
- Formed more than ten Action Plan Working Groups to review and commented on the *Florida Keys Draft Revised Management Plan*.
- Formed a Personal Watercraft Working Group to explore options for reducing resource impacts from this vessel type. As a result, WMAs have been implemented in particularly sensitive roosting areas and shallow seagrass areas.
- Addressed a number of highly contentious, local issues by holding special meetings that heard from expert panels, reviewed evidence, and made recommendations to the appropriate regulatory bodies. The SAC forwarded recommendations on commercial sponging in Sanctuary waters as well as the special two-day sport lobster (mini-season) to the Florida Fish & Wildlife Conservation Commission. SAC recommendations on the marine mammal stranding network operations in the Florida Keys were addressed by NMFS.
- Formed a Large Vessel Working Group to address turbidity problems in the Key West area. The group reviewed information on the special dredging project conducted for the U.S. Navy in Key West Harbor and Shipping Channel and investigated the impacts of cruise ships on Sanctuary resources, with consistent input from the cruise industry. SAC recommendations were taken by Sanctuary managers to the appropriate authorities in the Navy, U.S. Army Corps of Engineers, the State of Florida and NOAA.
- Based on a Working Group recommendation, asked Sanctuary managers to expand the special Baitfish Permit to allow selective taking of baitfish from certain SPAs using hairhooks. This pilot program was implemented in 2004.



- Developed *Desired Future Conditions* for the Biscayne National Park Fisheries Management Plan through a Working Group that operated in conjunction with the Park Service. The recommendations go out for public comment in 2005.
- Hosted Florida Fish & Wildlife Conservation Commission board members and members of the National Marine Sanctuary Program's Marine Protected Area Technical Advisory Council at mixers in 2003 and 2004.
- Participated in events coordinated by the National Marine Sanctuary Foundation in the Florida Keys as well as the Sanctuary sponsored meeting "Connectivity: Science, People and Policy in the Florida Keys National Marine Sanctuary" held in Key West in 2004.
- Provided instrumental support to the Sanctuary Friends of the Florida Keys, a non-profit organization dedicated to supporting the mission of the Florida Keys National Marine Sanctuary.