

# Florida Keys National Marine Sanctuary Revised Management Plan



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This document is the revised management plan for the Florida Keys National Marine Sanctuary. It replaces the management plan that was implemented in 1996 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) 809-4700 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 [floridakeys.noaa.gov](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 1996 *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 in 1996; 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 recreation and livelihoods for approximately 80,000 residents.

The Sanctuary is 2,900 square nautical miles of coastal waters, including the 2001 addition of the Tortugas Ecological Reserve. The Sanctuary overlaps four national wildlife refuges, six state parks, three state aquatic preserves and has incorporated two of the earliest national marine sanctuaries to be designated, Key Largo and Looe Key National Marine Sanctuaries. Three national parks have separate jurisdictions, and share a boundary with the Sanctuary. The region also 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 vessel groundings, pollution, and overfishing. Threats to the Sanctuary also include indirect human impacts, which are harder to identify but are 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.

## *Management Plan Organization*

Within this document, the tools that the Sanctuary uses to achieve its goals are presented in 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 1996 *Management Plan* generally retain their designations in this document. As in the 1996 plan, two or more action plans may share a strategy where their goals and aims converge. The 1996 plan can be accessed on the Sanctuary's Web site [floridakeys.noaa.gov](http://floridakeys.noaa.gov)

### *Accomplishments and Highlights*

The Sanctuary's programs and projects have made significant progress since the original management plan was implemented 1996. An overview of these accomplishments is provided in the Introduction. In addition, each action plan contains bulleted lists of accomplishments since the 1996 management plan was adopted.

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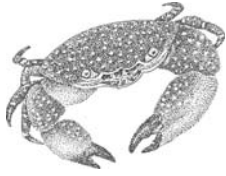


# Acronyms

ACHP	Advisory Council on Historic Preservation
AGRRA	Atlantic and Gulf Rapid Reef Assessment Program
ASA	Abandoned Shipwreck Act
ATBA	Areas to Be Avoided
AWT	Advanced Wastewater Treatment
CAD	Computer Automated Dispatch
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERP	Comprehensive Everglades Restoration Plan
CFR	Code of Federal Regulations
CRCP	Coral Reef Conservation Program
DARP	Damage Assessment and Restoration Program
DEP	Florida Department of Environmental Protection
DTNP	Dry Tortugas National Park
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
F.S.	Florida Statutes
FAC	Florida Administrative Code
FDACS	Florida Department of Agriculture and Consumer Services
FDCA	Florida Department of Community Affairs
FDHR	Florida Division of Historical Resources
FDOT	Florida Department of Transportation
FKNMS	Florida Keys National Marine Sanctuary
FKNMSPA	Florida Keys National Marine Sanctuary Protection Act
FPS	Florida Park Service
FR	Federal Register
FWC	Florida Fish and Wildlife Conservation Commission
FWRI	Fish and Wildlife Research Institute
FY	Federal Fiscal Year
GIS	Geographic Information System
GMD	Growth Management Division (Monroe County)
GMFMC	Gulf of Mexico Fishery Management Council
GPS	Global Positioning System
HAZMAT	Hazardous Materials
ICS	Incident Command Structure
ICW	Intra-coastal Waterway
IMO	International Maritime Organization
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

MRD	Marine Resources Division (Monroe County)
NCCOS	National Centers for Coastal Ocean Science
NEPA	National Environmental Policy Act
NGO	Non-governmental Organization
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NMS	National Marine Sanctuary
NMSA	National Marine Sanctuary Act
NMSF	National Marine Sanctuary Foundation
NMSP	National Marine Sanctuary Program
NOAA	National Oceanic and Atmospheric Administration
NOAA/OLE	NOAA Office of Law Enforcement
NOS	National Ocean Service
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRDA	Natural Resource Damage Assessment Claims
NURC	National Undersea Research Center
OFW	Outstanding Florida Waters
OSDS	On-Site Disposal System
OSTDS	On-Site Sewage Treatment and Disposal System
PREP	National Prepared for Response Exercise Program
PSSA	Particularly Sensitive Sea Area
RECON	Reef Ecosystem Condition Program
REEF	Reef Environmental Education Foundation
RNA	Research Natural Area
RSMAS	University of Miami/Rosenstiel School of Marine and Atmospheric Science
SAFMC	South Atlantic Fishery Management Council
SAP	Science Advisory Panel
SAV	Submerged Aquatic Vegetation
SCR	Submerged Cultural Resources
SEFSC	Southeast Fisheries Science Center
SFWMD	South Florida Water Management District
SHIELDS	Sanctuary Hazardous Incident Emergency Logistics Database System
SPA	Sanctuary Preservation Area
SWIM	Surface Water Improvement and Management Act
SWM	Stormwater Management
TAC	Technical Advisory Committee
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
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WAMS	Waterway Assessment and Marking System

WMA Wildlife Management Area  
WQPP Water Quality Protection Program  
WQSC Water Quality Steering Committee



## 3.3 ENFORCEMENT & RESOURCE PROTECTION

This management division bundles all of the essential legal tools that are available to Sanctuary Managers to protect the natural and historical resources of the Florida Keys National Marine Sanctuary. These action plans include: the Regulatory Action Plan; the Enforcement Action Plan; Damage Assessment and Restoration Action Plan; and the Maritime Heritage Resources Action Plan. Each of these action plans serves a direct role in protecting and conserving Sanctuary resources, whether they are natural or historic resources.

Effective management requires a comprehensive set of regulations and an enforcement program to implement those regulations. The most successful marine protected areas are committed to enforcement of their regulations. The Sanctuary regulations and the interpretive approach to enforcing those regulations are described in this section.

Vessel groundings and damage to submerged Sanctuary resources are a major management issue in the Sanctuary. An average of over 500 vessel groundings occur every year in the Sanctuary and this destructive activity has resulted in the need for a separate action plan to describe the Sanctuary's approach to damage assessments and restoration.

Historical resources are also protected within the Sanctuary and the action plan that describes the Sanctuary's approach to protecting these resources is described in this management division. A rich and colorful history of exploration and discovery of submerged historical resources in the Florida Keys has necessitated the development of an action plan that integrates the State of Florida and NOAA's trustee responsibilities for these resources.

## 3.3.1 Regulatory Action Plan

### *Introduction*

#### *Overview*

Regulations are an integral component of the FKNMS management process. They make up an important part of the management plan by regulating certain activities on a Sanctuary-wide basis and by regulating other activities depending on how that area of the Sanctuary has been categorized or zoned. Permitting, certification, and notification and review processes allow certain activities that are otherwise prohibited to take place under carefully controlled circumstances.

The strategies in this action plan implement and refine a comprehensive, coordinated regulatory program that complies with the requirements of the Florida Keys National Marine Sanctuary and Protection Act and the National Marine Sanctuaries Act. The first strategy describes the Sanctuary's permitting program that is routinely implemented to allow activities compatible with resource protection to be conducted with appropriate monitoring and conditions. The second strategy outlines 16 management issues that the Sanctuary Advisory Council, its working groups, and the general public have identified as requiring review and, where appropriate, revision of the existing regulations.

#### *Background*

Drawing on 20 years of management experience in the Key Largo and Looe Key National Marine Sanctuaries, NOAA developed regulations to protect natural and historic resources as part of the *Final 1996 Florida Keys National Marine Sanctuary Management Plan* (Appendix C). These regulations meet national legislative mandates as well as carefully considering resource protection and multiple uses compatible with resource protection. These regulations were developed through a process that included an impact assessment of expected environmental and socioeconomic consequences and extensive public comment. As outlined in the Management Agreement between the State of Florida and NOAA, any changes to the regulations will need to be reviewed and approved by the Governor and Cabinet, acting as the Board of Trustees of the Internal Improvement Trust Fund.

In addition to establishing new regulations, NOAA utilized existing regulations under federal, state, and local laws to the extent possible. These authorities include existing federal laws, such as the Coastal Zone Management Act, the Magnuson-Stevens Fishery Conservation and Management Act, the Clean Water Act, the Rivers and Harbors Act, Coastal Barrier Resources Act. They also include state laws, such as: the Beach and Shore Preservation Act, the Florida Environmental Land and Water Management Act, the Florida Air and Water Pollution Control Act, the Florida Aquatic Preserves Act of 1975, and the Florida Clean Vessel Act. To achieve this coordination, Sanctuary regulations supplement, rather than replace, existing authorities that already regulated some portion of the actions called for in specific management strategies. In a few instances, agencies have specifically requested that Sanctuary regulations incorporate existing laws and regulations. This is accomplished using tools which can be administered under the NMSA and the FKNMSPA. At the local level, the regulations in this action plan complement the goals, objectives, and policies established by Monroe County in its *Year 2010 Comprehensive Plan*.

In the end, new regulations were adopted to address 19 management strategies from the 1996 management plan. Another 34 management strategies that had a regulatory component were either

addressed by regulations that had already been established by another agency or required scientific analysis before regulations could be established.

### *Goals and Objectives*

The goal of this action plan is to refine and continue implementation of a comprehensive and coordinated regulatory program for the Sanctuary to ensure the protection and use of Sanctuary resources in a manner that:

- Complements existing regulatory authorities;
- Facilitates all public and private uses of the Sanctuary that are consistent with the primary objective of resource protection;
- Utilizes a system of temporal and geographic zoning to ensure effective site-specific resource protection and use management;
- Ensures coordination and cooperation between Sanctuary managers and other federal, state, and local authorities with jurisdiction within or adjacent to the Sanctuary;
- Achieves simplicity in the regulatory process and promotes ease of compliance with Sanctuary regulations;
- Promotes mechanisms for making informed regulatory decisions based on the best available research and analysis, taking into account information about the environmental, economic, and social impacts of Sanctuary regulations; and
- Complements coordination among appropriate federal, state, and local authorities to enforce existing laws that fulfill Sanctuary goals.

The objectives of this action plan are to:

- Continue implementing an efficient and effective permitting program;
- Further refine the regulations that guide Sanctuary management based on experience since 1997.

### *Accomplishments*

Since implementation of the 1996 management plan, there has been a number of enforcement, permitting and regulatory accomplishments, such as:

- Since July 1, 1997, the following regulations have been implemented: 1) 1998 regulations establishing a large no-anchor zone in the Tortugas for ships 50 meters or more in length, and 2) Regulations expanding the Sanctuary boundary and establishing a permanent 151-square-nautical mile no-take zone called the Tortugas Ecological Reserve,.
- On recommendation of the Water Quality Steering Committee and EPA, the State of Florida and NOAA have established a no-discharge zone for state waters in the Sanctuary. The Water Quality Steering Committee has requested no-discharge regulations for the entire Sanctuary. The process to establish a no-discharge zone for the entire Sanctuary has been initiated with a goal to complete the process by 2009.
- Since 1997, over 400 permits have been issued that represent more than 300 discrete research or educational projects. A permitting database, continually updated, tracks the status of permits and summarizes research projects.
- Since 1997, an average of 210 no-cost bait fish permits have been issued yearly by the Sanctuary to facilitate the charterboat fishing industry's need for live bait. Permit holders report catch and location data annually.

- A new process to issue “hair-hooking” permits was initiated in 2004. Almost 60 permits have been issued.
- A no-cost, paperless permit system was instituted in 2001 to track entrance to and egress from Tortugas North Ecological Reserve. The system ensures that mooring buoys are available and regulations are understood by vessels visiting the reserve.

**Strategies**

There are two strategies associated with this action plan:

- R.1 Maintaining the Existing Permit Program
- R.2 Regulatory Review and Development

Each of these strategies is detailed below. Table 3.6 provides estimated costs for implementation of each strategy over the next five years.

**Table 3.6 Estimated costs of the Regulatory Action Plan**

Regulatory Action Plan Strategies	Estimated Annual Cost (in thousands)					Total Estimated 5 Year Cost
	YR 1	YR 2	YR 3	YR 4	YR 5	
R.1: Maintaining the Existing Permit Program	100	100	100	100	100	500
R.2: Regulatory Review	100	100	100	100	100	500
<b>Total Estimated Annual Cost</b>	<i>200</i>	<i>200</i>	<i>200</i>	<i>200</i>	<i>200</i>	<b>1,000</b>

**Strategy Summary**

The issuance of permits assures protection and conservation of Sanctuary resources from harmful activities and practices. A well-developed and implemented permitting program allows scientists and others to conduct their work while following the conditions defined in an established permitting process. Scientific findings from permitted activities can enhance managers' understanding about Sanctuary issues and resources and assist in the implementation of management programs.

Since implementation of the 1996 Management Plan, the FKNMS has used a comprehensive permitting program to issue and track research, education, archeological and other projects that occur in Sanctuary waters that may have minor or uncertain resource impacts. Permits may be issued under various categories (see 15 CFR 922.166) as General Permits, Historical Resources Permits (now titled Maritime Heritage Resource Permits), and Special Use Permits. Specific regulatory review criteria for each permit category must be satisfactorily met for a permit to be issued. Over 200 permits are issued yearly to private and public institutions, non-governmental organizations, and individuals to perform otherwise prohibited activities. A straightforward application process and inclusive database exist to facilitate permit issuance and track permit requirements and reports.

**Activities (6)**

**(1) Continue Support for General Permits.** A Sanctuary general permit may be issued if the activity proposed will: (1) further research or monitoring related to Sanctuary resources, (2) further educational value of the Sanctuary, (3) further natural, cultural or historical resource value, (4) further salvage and recovery operations from an air or marine casualty, (5) assist in managing the Sanctuary, and (6) otherwise further Sanctuary purposes. The majority of general permits issued by the FKNMS are granted to further research or monitoring related to Sanctuary resources, and are described in the Science Management and Administration Action Plan. Other types of general permits are issued less frequently, but are available if applicable to the project proposed and if review criteria are met.

Status: On-going.

Implementation: The NOAA aspect of FKNMS has the lead agency for this activity since this is a federal function, which has been fully implemented and continues as a critical management tool.

**(2) Continue Support for Maritime Heritage Resource Permits.** Sanctuary permits may be issued for the survey/inventory and research/recovery of historical and cultural resources. Administration of these permits follows all necessary federal and state regulations. The issuance of Maritime Heritage Resource (MHR) permits is further described in the MHR Action Plan.

Status: On-going.

Implementation: The NOAA aspect of FKNMS has the lead agency for this activity; active consultation with state agencies is described in the MHR Action Plan.

**(3) Continue Support for Special Use Permits.** Special Use Permits have been issued infrequently since 1997. Requirements regarding the issuance of special use permits are contained in section 310 of



the NMSA (16 USC 1431 et seq.), which states that special use permits may be issued to establish conditions of access to and use of Sanctuary resources or to promote public use and understanding of those resources. Since 1997, some issues have been brought forward by the public, other agencies, and Sanctuary staff that may be best resolved through the issuance of special use permits. For example, a special use permit may be the most appropriate means by which to allow permit holders to conduct concession-type or commercial activities under certain conditions. Special Use permits may also address the need for marine mammal viewing tours to adhere to specific viewing guidelines to avoid disturbance. Any additions or changes regarding the issuance of special use permits in the FKNMS will be consistent with the NMSA.

*Status:* Five special use permits have been issued by the FKNMS over the last several years. Currently, the types of activities eligible for special use permits are limited.

*Implementation:* The NOAA aspect of FKNMS has the agency responsible for this activity and will undertake an assessment of various types of special use permits in conjunction NMSP headquarters as resources permit.

**(4) Develop Permit Guidelines.** In cooperation with the NMSP, the FKNMS has developed permitting guidelines that describe permit procedures, request application information, and include staff contact information. A permit application form, primarily aimed at research and education permit applicants, is posted at the Sanctuary's Web site and may be submitted electronically ([floridakeys.noaa.gov](http://floridakeys.noaa.gov)).

*Status:* On-going.

*Implementation:* This process has been implemented, with periodic updates to the Permit Guidelines as needed, and continues as a critical management activity.

**(5) Establish a Permit Protocol.** A protocol for records management and permit tracking was established in 1997. Records management strives to incorporate electronic technologies as much as possible to file the numerous documents associated with each permit, including application forms, correspondence, copies of permits and amendments, and reports. Permit tracking via an electronic database continues to be the cornerstone of the FKNMS and NMSP permitting program. Significant advances to the database will streamline data entry for both the applicant and Sanctuary staff and are being undertaken at this time by NMSP headquarters.

*Status:* On-going.

*Implementation:* An effective permit protocol has been established and continues to be implemented. The permit database is running for NMSP staff and is anticipated to be available to the public in 2007/2008.

**(6) Promote Interagency Collaboration in Permitting.** Sanctuary permitting staff communicates with other federal, state, and local agencies and organizations involved in regulating or overseeing projects with potential resource impacts to: (1) determine potential effects to Sanctuary resources, (2) aid in developing conditions to avoid or minimize resource impacts, (3) offer suggestions for mitigation of unavoidable impacts, and (4) provide technical assistance and consultation regarding activities occurring in Sanctuary waters. A specific example of this coordination is the guidance that Sanctuary staff provides in permitting and installing idle-speed/no-wake shoreline markers (see the Waterways Management Action Plan, Strategy B.4 - Waterway Management/Marking, Activity 10). Another

specific example of this coordination is the direct communication with federal, state and local governments for marine debris removal and derelict or abandoned vessel issues.

*Status:* On-going.

*Implementation:* FKNMS continues consultation with agencies and organizations on projects and activities affecting marine resources, whether a FKNMS permit is being issued or another agency is leading the permit process. Regional and national headquarters staff (both federal and state) are requested as needed.

## **STRATEGY R.2            REGULATORY REVIEW AND DEVELOPMENT**

### ***Strategy Summary***

Since implementation of the 1996 management plan, the Sanctuary Advisory Council, its working groups, and the general public identified a number of management issues that require review and, where appropriate, potential revision of existing regulations. Such issues include but are not limited to:

- Commercial salvage and tow-boat operations
- Operation of personal watercraft and other vessels within the Sanctuary
- Bait fishing in Sanctuary Preservation Areas
- Catch-and-release trolling in four Sanctuary Preservation Areas
- Definition of “trolling”
- Boundary adjustment(s) of some protected areas
- Clarification of the intent of regulations in Research-only Areas
- Special Use permits for marine mammal expeditions
- Consistency between state and federal regulations for wastewater discharges
- Cruise ship sedimentation plumes
- Possible need for identification and establishment of additional marine zones

Additionally, some topics such as artificial reefs and fish feeding are national issues that the NMSP is addressing on a system-wide basis.

The following activities identify existing regulations that will be considered for revision in order to address the management issues that have been identified. Although the 1996 management plan incorporated regulations as a component of plan adoption, these potential revisions to current regulations will be undertaken as a separate action, following this management plan review process. As part of the separate process other federal, state and local agencies with jurisdiction, as well as the general public, will be invited to participate in the scoping, review and development of any potential changes to the FKNMS regulations. As outlined in the Management Agreement between the State of Florida and NOAA, any changes to the FKNMS regulations will need to be reviewed and approved by the Governor and Cabinet, acting as the Board of Trustees of the Internal Improvement Trust Fund.

## *Activities (17)*

**(1) Evaluate Need for Marking of Channels and Reefs.** Working with the Sanctuary Advisory Council, determine if there is a need to revise regulations. Currently, there is a prohibition on vessel speeds greater than idle speed in areas designated as idle-speed only/no-wake, and within 100 yards of navigational aids indicating emergent or shallow reefs (partially addressed in CFR 922.163(a)(5)).

**(2) Evaluate Boat Groundings.** Working with the Sanctuary Advisory Council, determine if there is a need to revise regulations. Currently, there is a prohibition on prop scarring or other injury to seagrasses or the seabed (partially addressed by CFR 922.163(a) (5)).

**(3) Consider Pollution Discharge controls.** Currently, there is a prohibition on discharging or depositing materials or other matter in the Sanctuary (addressed by CFR 922.163(a) (4)). Exceptions to this prohibition include: discharging or depositing fish, fish parts, and bait during traditional fishing operations and discharging cooling water, engine exhaust, deck wash and effluent from marine sanitation devices during normal vessel operations. However, in protected zones, including Wildlife Management Areas, Ecological Reserves, Sanctuary Preservation Areas, and Special-use Areas, only discharges from engine exhaust and cooling water are allowed.

In 2002, the EPA and State of Florida established a no-discharge zone<sup>2</sup> through the federal Clean Water Act for the state waters of the Sanctuary. This action came at the recommendation of the Sanctuary's Water Quality Steering Committee and as a request by the Governor of Florida to the Administrator of the Environmental Protection Agency. Draft regulations were issued for public review and the public overwhelmingly recommended approval. The EPA issued the final rule (67 FR 35735) in May 2002. The Sanctuary's Water Quality Steering Committee has requested that NOAA establish a similar no-discharge zone for the federal waters of the Sanctuary. Sanctuary managers will conduct a similar public process to evaluate this request.

**(4) Reduce Impacts from Salvaging and Towing.** This activity seeks to identify a methodology to reduce damage to natural resources resulting from improper vessel salvage methods. Salvagers or towboat operators responding to vessel groundings are required to report the groundings to the appropriate authorities (USCG, the state, or the Sanctuary). This is to ensure an appropriate response on the part of the agencies to the incident and to report the safety of passengers, the condition of the vessel and any resource damage. This requirement is not always followed and there have been documented instances where additional damage to the submerged resources has occurred.

NOAA did not issue regulations to implement this strategy in 1997; however, it attempted to work with the salvage and tow industry to achieve this goal. During the period in which the Sanctuary regulations have been in effect, the issue of lack of notification to appropriate officials by some salvage and towboat operators, as well as other resource injury problems, has surfaced repeatedly.

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<sup>2</sup> Section 312 of the Clean Water Act gives the Environmental Protection Agency and states the authority to designate "No Discharge Zones". A no discharge zone is an area of a waterbody or an entire waterbody into which the discharge of sewage (whether treated or untreated) from all vessels is completely prohibited. No discharge zones are designed to give states an additional tool to address water quality issues associated with sewage contamination.

(To the extent that a salvage operation involves prohibited activities, CFR section 929.166 provides for the issuance of National Marine Sanctuary General Permits to allow the activity.)

The Regulatory Action Plan Working Group recommended revising Strategy B.13 to establish Special-Use permits for salvage and towboat operators. One potential approach may be to develop standard salvage procedures, which may include, but not be limited to: 1) obtaining a permit, 2) notifying authorities, 3) where appropriate, having an authorized observer at the site or receiving permission to proceed, 4) providing operator training, and 5) promoting environmentally sound salvaging and towing practices. These or similar procedures could be implemented as part of a permit for salvaging and towing operations.

**(5) Reduce Impacts from Personal Watercraft (PWC) and Other Vessels.** This activity will consider the issuance of new or revised regulations addressing the impacts from PWC and other types of vessels. The issue of personal watercraft operation within the Sanctuary received the largest volume of public comment during the nine-month review of the draft 1996 management plan. The issue of personal watercraft continued throughout the comment period to be among the Sanctuary Advisory Council's most heavily debated issues. Actions implemented in 1997, beginning with the final regulations, took a proactive approach to dealing with this issue based on recommendations from the Sanctuary Advisory Council.

Since implementation of the 1996 FKNMS management plan, the controversy over PWC operation has diminished some, but local concerns continue to be frequently voiced. While the PWC industry has made efforts to address noise and pollution, conflicts among PWC users, the resources, and other Sanctuary users continue. The problems created by these conflicts continue to be brought to the attention of FKNMS managers by the Sanctuary Advisory Council and others in the community. Following implementation of FKNMS regulations, Monroe County attempted to resolve PWC issues through its Marine and Port Advisory Committee and Board of County Commissioners. The efforts did not move forward and the issue continues to be brought before the Sanctuary Advisory Council.

The Sanctuary Advisory Council established a PWC Working Group in 1998, held a series of public meetings and followed a rigorous schedule in an attempt to resolve the conflicts. The PWC working group presented a series of options or recommendations to the Sanctuary Advisory Council in June 2000.

In addition, the Sanctuary Advisory Council's Regulatory Working Group spent many hours reviewing the minutes of PWC Working Group meetings, held throughout 1999, 2000 and 2001, and established the regulatory alternatives that will be considered during the two years following the acceptance of this plan (See Appendix G). These alternatives will be incorporated into the required National Environmental Policy Act documentation that will be prepared in conjunction with any draft regulations. These draft alternatives are being considered for the management of all vessels in the Sanctuary, including personal watercraft.

**(6) Ensure Consistency Among Fishing Regulations.** This activity will improve administrative and regulatory coordination between fisheries regulatory agencies operating within Sanctuary waters through a protocol for drafting and revising fisheries regulations in order to implement a consistent set of fishing regulations throughout the Sanctuary. Working with the Sanctuary Advisory Council, FWC, and South Atlantic and Gulf of Mexico fishery management councils, FKNMS managers will

ensure administrative and regulatory coordination between fisheries regulatory agencies operating within the Sanctuary.

**(7) Consider Need for Mariculture Regulations.** Working with the Sanctuary Advisory Council, FWC, South Atlantic and Gulf of Mexico fishery management councils and Florida Department of Agriculture and Consumer Services, FKNMS managers will determine if there is a need to establish mariculture operations regulations and proceed accordingly. This activity may help reduce fishing pressures on wild marine-life species and help satisfy the commercial demand for these species. This is a long-term effort designed to identify and develop mariculture techniques and, possibly, to allow the development of mariculture operations that are consistent with the Sanctuary's primary purpose of resource protection.

Currently FKNMS staff is working with a number of groups including the Florida Aquarium, Mote Marine Laboratory, the University of Florida and marine life collector Ken Nedimeyer to establish coral aquaculture sites in the FKNMS.

**(8) Consider Need for Artificial Reefs Regulations.** Artificial reefs are addressed by CFR 922.163(a) (3) and (4), which prohibit alteration of or construction on the seabed and discharge/deposit of materials without a permit, CFR section 922.166 which provides for the issuance of national marine sanctuary general permits, and CFR section 922.49 which governs notification and review of applications for leases, licenses, permits approvals, or other authorizations to conduct a prohibited activity. In addition, the "Policy Statement of the National Marine Sanctuary Program: Artificial Reef Permitting Guidelines" was finalized in July 2005.

Working with the Sanctuary Advisory Council, Sanctuary managers will determine if there is a need to revise FKNMS regulations and proceed accordingly.

**(9) Consider Need for Exotic Species Regulations.** While the release of exotic species into Sanctuary waters is already prohibited under CFR 922.163(a) (7), there are no specific references to exotic species released in ballast water. This is an emerging issue nationally and may need to be addressed in the Sanctuary. Working with the Sanctuary Advisory Council, FKNMS managers will determine if there is a need to revise these regulations. FKNMS managers will develop any potential regulations consistent with international law and other state and federal agencies' regulations that address the discharge of ship ballast water containing exotic or non-indigenous species. The State of Florida currently has in place Florida Statute 370.081 (1) which makes it unlawful to import any marine plant or animal non-indigenous to the area. Paragraph (5) under this same statute makes it unlawful to release into the waters of the state any non-indigenous saltwater species.

**(10) Consider Need for Fishing Gear/Fishing Methods Regulations.** Certain fishing methods and/or gear types are addressed by CFR section 922.163(a) (11), which prohibits explosives, poisons, oil, and bleach as fishing methods and by the Protocol for Cooperative Fisheries Management. Working with the Sanctuary Advisory Council, FWC, South Atlantic and Gulf of Mexico fishery management councils, Sanctuary managers will determine if there is a need to revise these regulations and proceed accordingly. If required, regulations will likely be developed requiring the use of low-impact gear and methods in priority areas in consultation with the fishery management councils and the FWC.

**(11) Consider Need for Spearfishing Regulations.** Currently, spearfishing is addressed by CFR 922.164, which prohibits spearfishing in Ecological Reserves, Sanctuary Preservation Areas, the Key Largo and Looe Key Existing Management Areas, and the four Special-use (research-only) Areas and by the Protocol for Cooperative Fisheries Management. The need for spearfishing restrictions for high priority areas (e.g., areas of low abundance, a high degree of habitat damage, or a high degree of user conflicts) will be reviewed. Working with the Sanctuary Advisory Council, FWC, South Atlantic and Gulf of Mexico fishery management councils, Sanctuary managers will determine if there is a need to revise these regulations and proceed accordingly. If restrictions are deemed appropriate they might include provisions such as gear or tournament prohibitions or the closure of selected areas, such as around residential areas. Further scientific review of the impacts of spearfishing may be needed in the future.

**(12) Consider Need for Fish Feeding Regulations.** In November 2001, the FWC voted to prohibit divers from fish feeding in state waters. In compliance with the Protocol for Cooperative Fisheries Management, the Sanctuary will initiate the public rule-making process to consider a prohibition of fish feeding by divers or any persons in federal waters beginning with the regulatory review process to be initiated in 2007/2008.

Initial stages of this process will include an assessment of the biological and behavioral impacts of fish feeding by divers in Sanctuary waters. The results of this assessment will be used in the regulatory review process for possible implementation of an appropriate fish-feeding strategy. Regulatory alternatives to be considered may include: (1) Status quo - no regulation, or (2) Prohibiting fish feeding within the federal waters of the Sanctuary to have consistent federal and state regulations. Working with the Sanctuary Advisory Council, Sanctuary managers will determine if there is a need to develop regulations and proceed accordingly.

**(13) Consider Need for Bait Fishing Regulations.** During the scoping period and at regulatory working group meetings, it was recommended that FKNMS managers consider amending regulations to eliminate the provision for bait fishing in Sanctuary Preservation Areas. The regulatory working group determined that there is a need to assess the impact of bait fishing in the areas before regulatory action can be considered.

As such, an assessment of the impact of bait fishing will be conducted. Should such an assessment demonstrate impacts FKNMS managers working with the Sanctuary Advisory Council and FWC will determine if there is a need to develop regulations and proceed accordingly. Assuming a regulatory need is identified a set of alternatives will be considered that will include consideration of user conflicts, enforcement difficulties, and ecological impacts.

**(14) Consider Regulations to Govern Catch and Release Trolling in Four Sanctuary Preservation Areas.** Currently, catch-and-release fishing while trolling is allowed in the Conch, Alligator, Sombrero Reef, and Sand Key preservation areas. During the scoping period and at regulatory working group meetings, it was recommended that this activity be re-evaluated and possibly eliminated.

An assessment of the impact of catch-and-release trolling in Conch, Alligator, Sombrero Reef and Sand Key SPAs will be conducted. After the assessment of the impact of catch-and-release trolling is completed, various alternatives will be considered during the NEPA process to establish regulations

and will be undertaken in consultation with FWC, the Sanctuary Advisory Council, and the general public.

**15) Consider Need for Dredging Regulations.** Currently, dredging is addressed by CFR 922.163(a)(3) which, with certain exceptions, prohibits alteration of the seabed; 922.163(a)(4), which prohibits discharging or depositing materials or other matter (with exceptions); 922.166, which sets forth a permitting mechanism for allowing otherwise prohibited activities in the Sanctuary; 922.168, which sets forth requirements and procedures for the certification of preexisting leases, licenses, permits, approvals, other authorizations, or rights to conduct a prohibited activity; and 922.49 which requires the notification of and review of applications for leases, licenses, permits, approvals, or other authorizations to conduct a prohibited activity. Revising these regulations could help to eliminate negative resource impact dredge-and-fill activities within the Sanctuary. Revising these regulations could also help to promote the use of low-impact technologies for maintenance dredging and potentially prohibit such dredging in areas where significant reestablishment of sensitive benthic communities has occurred (e.g., seagrass and coral habitats).

Dredge-and-fill activities may be allowed if in the public interest (as determined by USACE and the State of Florida on its sovereign submerged lands) and if little or no environmental degradation is likely to occur. An example of this would be directly after a hurricane to remove or move large quantities of sand or dirt from the waterways. FKNMS will work with the Sanctuary Advisory Council, USACE, and the State of Florida to determine if there is a need to revise these regulations and proceed accordingly.

**(16) Consider Regulations Specific to Touching Coral.** Currently, touching coral is addressed by CFR section 922.163(a)(2), which prohibits removal, damage, distribution, or injury of any living or dead coral or coral formation and section 922.164, which prohibits touching coral in Sanctuary Preservation Areas and Ecological Reserves. This activity proposes to review the potential need to further protect coral communities from damage by prohibiting the touching of coral in high-use, sensitive, and vulnerable areas. Working with the Sanctuary Advisory Council, FWC, Southeast Atlantic and Gulf of Mexico Fishery Management Councils Sanctuary managers will determine if there is a need to revise these regulations and proceed accordingly.

**(17) Evaluate Allowable Activities in Existing Zones and Make Regulatory Changes as Needed.** There are five types of zones in the Sanctuary: Sanctuary Preservation Areas, Ecological Reserves, Special-use (Research-only) Areas, Wildlife Management Areas, and Existing Management Areas. Each type of zone has specific regulations for certain activities. Allowable activities for each area require periodic evaluation and may need to be changed to address issues of concern (also see the Marine Zoning Action Plan). For example, if data indicates conflicts with wildlife in an area that has allowed idle-speed-only/no-wake access, the possibility of changing the zone to no-motorized access will be evaluated.

The activities currently allowed within the zones have yet to be evaluated. FKNMS is the agency responsible for this activity and will undertake regulatory assessments and associated changes as resources permit.

## 3.3.2 Enforcement Action Plan

### *Introduction*

#### *Overview*

When the Key Largo and Looe Key National Marine Sanctuaries were designated in 1975 and 1981 (respectively), it became clear to Sanctuary managers that a major enforcement presence would have to be maintained in order to protect and conserve resources. This same level of commitment has been necessary for the entire Florida Keys National Marine Sanctuary since it was established in 1990.

Sanctuary enforcement has traditionally been accomplished through a Cooperative Enforcement Agreement between NOAA and the State of Florida. Beginning in 1981, NOAA and the state entered into an agreement in which the Florida Park Service (FPS), previously responsible for managing the John Pennekamp State Park, continued to provide management services to NOAA, including enforcement of Sanctuary regulations. The state, now in the form of FWC, continues as the primary enforcement arm in the FKNMS.

FKNMS relies heavily on “interpretive enforcement,” which seeks voluntary compliance primarily through education. The goal of interpretive enforcement is to gain the greatest level of compliance through understanding and public support of sanctuary goals. Interpretive enforcement emphasizes informing the public through educational messages and literature about responsible behavior before resources can be adversely impacted. Officers talk directly with users and distribute brochures in the field and throughout the community; such encounters allow officers to make direct, informative contact with visitors and local residents while conducting routine enforcement activity.

Preventive enforcement is achieved by maintaining sufficient presence within the Sanctuary to deter violations. Successful enforcement relies on frequent water patrols and routine vessel boardings and inspections. Water patrols ensure that Sanctuary users are familiar with regulations in order to deter willful or inadvertent violations and provide quick response to violations and emergencies.

#### *Legislative Authorities*

Besides the National Marine Sanctuaries Act, NOAA has sole or shared primary jurisdiction for the Magnuson-Stevens Fishery Conservation and Management Act, the Atlantic Tunas Convention Act, the Marine Mammal Protection Act (MMPA), the ESA, and the Lacey Act.

Among federal conservation laws enforced primarily by other agencies but of concern to NOAA, are the Oil Pollution Act, the Clean Water Act, the Marine Plastic Pollution Research and Control Act, the Abandoned Shipwreck Act, the Archaeological Resources Protection Act, the ESA, the MMPA, and the Migratory Bird Treaty Act

Also relevant are state laws including: the Beach and Shore Preservation Act, the Florida Environmental Land and Water Management Act, the Florida Air and Water Pollution Control Act, the Florida Aquatic Preserves Act of 1975, and the Florida Clean Vessel Act.

#### *Sanctuary Enforcement Funding*

Since 1980, the Enforcement Program and all other management programs in the Sanctuary have been fully funded through a cooperative agreement with the State of Florida. Seventeen Sanctuary officers



currently working in the Sanctuary are state employees. Sanctuary officers are assigned to FWC's Division of Law Enforcement, with operations coordinated among NOAA, FWC, and DEP. In addition to state laws and local ordinances, Sanctuary officers have statutory or delegated authority to enforce the NMSA and other statutes administered by NOAA.

#### *Integrating Enforcement Efforts*

Across the nation, federal, state, and local agencies are increasingly joining forces and targeting whole coastal ecosystems, including rivers, bays, estuaries, and coastlines, to develop and implement comprehensive management and enforcement. Federal, state, and local laws provide a variety of tools to protect coastal resources. In so doing, these laws strengthen enforcement capabilities by allowing agencies to utilize each other's expertise, share resources and problem solve collectively. Federal, state, and local agencies in the Florida Keys are continually working to integrate efforts. Additionally, residents, volunteers and visitors help by detecting and reporting violations and groundings, monitoring water quality, and submitting witness statements.

Successful and efficient Sanctuary enforcement depends largely on how well the region's federal, state, and local enforcement assets are directed and coordinated. A clear vision of the interagency mission and an understanding of the assets and resources available for an interagency effort are essential. An assessment of existing federal, state, and local enforcement assets in the Keys has demonstrated that most of the assets on the water belong to FWC and USCG. Although other agencies have assets, they are either limited or the agencies operate in areas specific to their mission. Consequently, the goal of interagency agreements with USFWS, NPS and FPS to cross-deputize officers has not occurred, to the detriment of enforcement capabilities. Interagency agreements with these agencies and local enforcement may be sought in the future.

#### *Goals and Objectives*

The goal of this Action plan is to:

- Protect resources by achieving compliance with the applicable laws.

To achieve this goal, the objectives are:

- To increase public understanding of the importance to comply with regulations;
- To achieve voluntary compliance; and
- To promote public stewardship of the historical, cultural, marine resources through interpretive enforcement.

#### *Implementation*

There are several mechanisms that the FKNMS uses to achieve the enforcement goals and objectives identified above including:

##### *A) Agreements and Cooperative Efforts in order to:*

- Strengthen existing enforcement partnerships with the State of Florida.
- Develop partnerships with federal and local enforcement agencies in order to provide a strong enforcement presence throughout the Sanctuary.
- Maintain an active relationship with international, federal, state, and local enforcement agencies to identify mutual concerns and develop cooperative and unified responses.

- Explore cooperative relationships with foreign governments.
- Enter into memoranda of understanding, cooperative enforcement agreements, and joint operations plans with other agencies as appropriate.
- Facilitate communication to avoid duplication of effort.
- Promote cooperation, standardization of gear, and coordination of limited resources such as vessels, radios, radio frequencies, and training.
- Promote training, cooperation and cross-deputization among enforcement agencies.

*B) Community Involvement in order to:*

- Encourage public involvement by encouraging site-specific interpretive patrols by volunteers.
- Involve USCG, civil aeronautical patrols, power squadrons, dive operators and fishing organizations in promoting compliance.
- Maintain an active relationship with citizen groups interested in compliance.
- Encourage compliance through community outreach programs.
- Encourage information sharing and networking with local law enforcement.

*C) Education in order to:*

- Emphasize education as a tool to achieve compliance with regulations.
- Promote voluntary compliance and stewardship through outreach programs.
- Train user groups about regulations and procedures for reporting violations.
- Identify major user groups and develop and disseminate specific materials.
- Increase the officer's capabilities and response to critical incidents such as large vessel groundings or oil and chemical spills.

*D) Operations that:*

- Maintain an investigative capability to ensure quick response to willful unlawful acts.
- Develop and maintain the capability to effectively respond to violations and emergencies.
- Establish an enforcement advisory committee of regional law enforcement organizations.
- Develop enforcement operation plans that identify strategies and priorities and outline the best means of achieving them.
- Develop regulations for the sanctuary that are comprehensible to the general public and are easily enforced.

***FKNMS Enforcement Operations***

Coordination of FKNMS enforcement occurs through the coordination of FKNMS managers, FWC, NOAA Office of Law Enforcement (NOAA/OLE), and USCG. Enforcement since FKNMS regulations took effect in July of 1997 has been largely the domain of the designated Sanctuary Officers and NOAA/OLE with heavy support of other FWC assets and assistance from USCG when groundings and violations involving large vessels have occurred.

The 1996 management plan called for the funding of a NOAA/OLE special agent designated as the Sanctuary agent. The Sanctuary agent was hired prior to implementation of the management plan, and in addition to authoring the enforcement action plan, the officer initiated coordination among enforcement agencies and was responsible for case processing. When the agent moved to another agency, funds were redirected to hire an enforcement technician to manage summary settlement cases and assure proper routing of other cases to an enforcement attorney within NOAA/OLE. Other

duties originally assigned to the Sanctuary agent have been split among OLE Special Agents, the Sanctuary Captain and Lieutenants and Sanctuary managers.

Sanctuary officers patrol the Upper, Middle, Lower Keys, and Tortugas region with emphasis on Sanctuary Preservation Areas and Ecological Reserves. Patrol priorities are based primarily on resource protection and the time of the year (seasons) as opposed to user conflicts.

The Sanctuary Enforcement team now consists of a Captain in overall command while the other positions are as follows.

- Upper Keys: One supervisory Lieutenant and four officers.
- Lower Keys: One supervisory Lieutenant and four officers.
- Tortugas Patrol: An offshore patrol crew consisting of one Lieutenant in command with three additional officers. Patrols are conducted on board a 57 foot high performance catamaran vessel specifically designed for the task.

As part of the continuous management process, an enforcement review program has been established for the Sanctuary. This program ensures management issues are addressed by all agencies involved in enforcement, and that the proper equipment, training and marine resource identification and protection methods reach the enforcement staff.

### *Accomplishments*

There have been several accomplishments in FKNMS enforcement since implementation of the 1996 management plan, including:

- Funding of a Law Enforcement Technician at NOAA's National Marine Fisheries Service (NMFS) Office in St. Petersburg, Fla., has facilitated case management.
- The FWC's pilot has contributed greatly to patrol efforts as well as response and documentation to groundings.
- USCG training has taken place and the USCG continues to enforce Sanctuary regulations when possible.
- The USCG and US Geological Survey (USGS) continue aerial and vessel surveillance in the Sanctuary.
- The USCG has been helpful in boarding and reporting ships anchored in a "no anchor area" in the Tortugas Ecological Reserve. Additionally, in the first 7 months of the implementation of the Tortugas Ecological Reserve, the USCG cited 3 shrimp boat operators for illegal shrimping in the Reserve.
- A 31-foot Manta has been obtained and refitted for offshore patrol primarily in the Tortugas Ecological Reserve. Acquisition of this vessel has dramatically improved enforcement in the Tortugas Ecological Reserve, allowing more 2-3 day patrols that have substantially increased the detection and apprehension of violators.
- Four new patrol vessels have been obtained and are operating in the Sanctuary.
- An interagency agreement between NOAA and FWC establishes the authority for all FWC officers to enforce Sanctuary regulations.
- The enactment of Rule 68B-6 by FWC parallels FKNMS rules pertaining to Ecological Reserves and SPAs as well as the designated boundaries of SPAs, Ecological Reserves and Research-only Areas within state waters. Rule 68B-6 is enforceable by all state, county and municipal officers within their jurisdictions.

- The establishment and posting of regulatory markers delineating no-entry, no-motor and no-wake zones facilitates enforcement of those zones by all state, county and municipal officers within their jurisdictions.
- An interagency agreement, not involving cross-deputization, between NOAA, FWC and NPS, is currently being worked on that will facilitate enforcement in the Tortugas ecological reserves and the 46 square mile Research Natural Area no take zone established in 2006.
- Cooperative relationships have been established between NOAA/OLE Special Agents, USCG, FWC, NPS, USFWS, DEP, Monroe County Sheriff and Key West Police Department, Key Colony Beach Police Department and the Village of Islamorada Policy Department.
- An initiative to further involve USCG was established in July 2001. As a result, the Sanctuary Captain will coordinate with NOAA/OLE and USCG's Fisheries Enforcement Training Section in Charlestown, S.C., to establish a Sanctuary enforcement training curriculum for USCG personnel stationed in the Florida Keys.
- FKNMS staff has undertaken on-going training in the Incident Command Structure (ICS) as a result of the mock assessment for Safe Sanctuaries 2005.
- FKNMS staff has coordinated with federal, state and local governments in an effort to remove marine debris and derelict or abandoned vessels due to the six hurricanes that impacted Monroe County in 2004 and 2005.
- FKNMS staff has worked to develop cooperative relationships with the commercial fishermen (stone crab and lobster) in the attempt to recover trap property after the 2004 and 2005 hurricane seasons.
- Additional NOAA funding increased the number of sworn officers from 6 to 17 during the management plan review period.
- FKNMS acquired a state of the art 57 foot high speed catamaran to patrol the Dry Tortugas Ecological Reserve as well as the Lower Keys. This vessel is the first ever designed and purchased by NOAA exclusively for National Marine Sanctuary law enforcement patrols and mission.
- FKNMS staff has increased international participation to assist other countries in the development of enforcement plans for marine protected areas. The countries include Korea, Brazil, Malaysia and the Seychelle Islands.

**Strategies**

There is one strategy associated with this action plan:

- B.6 Acquiring Additional Enforcement Personnel

This strategy is detailed below. Table 3.7 provides estimated costs for implementation this strategy over the next five years.

**Table 3.7 Estimated costs of the Enforcement Action Plan**

Enforcement Action Plan Strategy	Estimated Annual Cost (in thousands)*					Total Estimated 5 Year Cost
	YR 1	YR 2	YR 3	YR 4	YR 5	
B.6: Acquiring Additional Enforcement Personnel	2,900	3,025	3,290	3,560	4,000	16,775
<b>Total Estimated Annual Cost</b>	2,900	3,025	3,290	3,560	4,000	<b>16,775</b>

\* Contributions from outside funding sources also anticipated.

**Strategy Summary**

As identified in the original management plan (1996) FKNMS needs 43 Sanctuary enforcement officers for high-use and sensitive areas. Six support personnel will be required to provide clerical, mechanical, and dispatch duties. FKNMS current employs 17 officers and 2 support personnel. This will require additional funding for 26 officers and 4 support personnel. This strategy seeks to (1) increase the presence of law enforcement officers on the water to protect resources and reduce user conflicts, (2) provide resources to aid officers in long-term investigations and (3) adequately staff enforcement of the Tortugas Ecological Reserve. Remote observation techniques may be used to aid enforcement efforts.

**Activities (5)**

**(1) Develop Remote Observation Techniques to Aid Enforcement Efforts.** Floatplanes, tethered aerostats, etc., may be used to aid enforcement.

*Status:* Initiated and on-going. Surveillance radar has been installed on Smith Shoal Light by NOAA/OLE. The radar is used to monitor federal and state shrimp sanctuaries; an additional radar installation is planned for the Tortugas. A remote-camera system for use within Sanctuary protected areas is being developed by NOAA/OLE. An “Eyes on the Water” program will give users a formal method for notifying the Sanctuary of observed violations. Education to assist the public in reporting violations to FWC’s dispatch center is one year from completion.

*Implementation:* NOAA is the lead agency with assistance from other agencies.

**(2) Develop Interagency Agreements Establishing Cross-agency Enforcement Authority.** These agreements would set forth federal, state, and local enforcement authority among all officers. The agencies include:

- NOAA/OLE, in close consultation with the Sanctuary Superintendent and the Sanctuary Captain, will coordinate enforcement operations.
- FWC and Sanctuary enforcement officers are supervised by FWC under an agreement that allows officers to enforce provisions of the National Marine Sanctuaries Act and other NOAA statutes. FWC’s Sanctuary detachment is the primary enforcement in the Sanctuary. A new interagency agreement allows other FWC officers to enforce statutes that apply within the entire Sanctuary, including the NMSA and relevant federal statutes; however, participation is limited by operational parameters.
- USCG is fully empowered by the NMSA to enforce Sanctuary regulations.

Interagency agreements to cross-deputize officers among NOAA and USFWS, and NOAA and the NPS have been explored but not consummated. USFWS currently enforces FKNMS regulations in Wildlife Management Areas that it manages and assists Sanctuary officers by reporting violations of which they become aware. NPS currently patrols only within the area of its national parks. NPS has been the primary source of information concerning Sanctuary violations in the Tortugas. An interagency agreement to cross-deputize Florida Park Service (FPS) officers has been established.

Historically, FPS officers and Sanctuary officers regularly assist each other with enforcement near park borders, especially during vessel groundings.

Status: USCG has full authority to enforce Sanctuary regulations. NOAA has established an interagency agreement that cross-deputizes FWC officers. The two agencies conduct most of the law enforcement within the Sanctuary. NOAA continues to evaluate the possibility of additional agreements.

Implementation: NOAA is the lead agency.

**(3) Develop Standard Operating Procedures.** This will increase the efficiency and effectiveness of enforcement. It will establish coordination and cooperation among agencies and increase communication by scheduling staff and equipment efficiently, developing a process for handling violations, standardizing radio communications, promoting cooperation with the military and determining priority enforcement areas.

Status: Implemented and on-going.

Implementation: NOAA/OLE coordinates joint operations of USCG and FWC. The Sanctuary captain coordinates routine operations of Sanctuary officers and joint operations with other FWC assets. In addition, a process for handling Sanctuary violations has been established for USCG and FWC. Joint USCG and FWC operations use VHF radio communications; otherwise FWC and USCG use systems unique to each agency. FWC has been issued two Nextel units that are a part of the NOAA/OLE communications network. Use of military equipment has been limited to identifying high-use areas. Priority enforcement areas have been identified and priority areas are revisited each month via conference call between the Sanctuary, NOAA/OLE and USCG.

**(4) Develop a Standardized Training Program.** A training program is being developed to enable enforcement agencies to educate each other about statutes and codes. The cost to implement is estimated at up to \$3.6 million in capital expenses and an additional \$1 million for operation and maintenance, primarily salaries and equipment, to be distributed among participating agencies. The funding will come primarily from NOAA and will be used to hire up to 26 additional enforcement officers, two clerks and two radio-duty officers. If 26 additional officers are hired, 24 will require a high-performance vessel. Each officer will have enforcement gear at approximately \$5000 per officer. Each officer must initially attend the FWC Law Enforcement Academy and then participate in FWC annual training.

Status: The standardized training program for USCG will be complete within six months. Revision and updating activities are continuous.

Implementation: A standardized training program is in effect within FWC. The Sanctuary captain will work with USCG's Fisheries Training section to establish standardized training for its personnel.

**(5) Develop System to Evaluate Effectiveness and Efficiency.** A system will be designed for evaluating the effectiveness of enforcement. Evaluating efficiency will be done monthly and annually. Regional managers assess efforts in known hot spots and coordinate enforcement coverage accordingly. On a yearly basis, the heads of the cooperating agencies will meet to discuss issues.

Status: Implemented and on-going

Implemented: Computer Automated Dispatch (CAD) Center within FWC communications can compile and track information on a monthly and annual basis.



### 3.3.3 Damage Assessment and Restoration Action Plan

#### *Introduction*

According to FWC official dispatch records, there is an average of over 500 vessel groundings reported in the Sanctuary annually. In addition, there are many grounding incidents that damage resources but are not reported. Groundings often result in significant injury to coral, seagrass and hard-bottom resources. Although large-vessel groundings often result in immediate resource devastation with long-term impacts, the vast majority of grounding incidents are caused by small, recreational vessels. An individual, small-vessel grounding often results in minimal damage to the resources, but the cumulative detrimental effect of many such grounds can have long-lasting impacts.

FKNMS staff use a database to assess trends in vessel groundings, identify “hot spots” where education and outreach activities can be enhanced, and determine what solutions, such as waterway marking, may be appropriate. At this time it is difficult to determine if groundings are increasing or decreasing. As the public becomes more aware of the issue the number of reports has increased, making it difficult to determine in only five years if there is a real increase in groundings or merely an increase in reporting. The number of boats in operation affects this statistic as well.

FKNMS is authorized to assess civil penalties and recover the cost of response, assessment and restoration from the responsible parties. The FKNMS has Damage Assessment and Restoration Program (DARP) teams in the Upper Keys and the Lower Keys. In conjunction with FKNMS education and outreach staff, managers, and law enforcement personnel, DARP staff develop grounding prevention measures, minimize impacts, assess impacts, repair injuries where possible, and support the associated legal processes. Although this action plan is new to the management plan, many strategies and activities have been on-going since 1982.

#### *Accomplishments*

- Sanctuary staff conducted 261 biological assessments of vessel groundings that damaged greater than 10 square feet of coral or 10 square yards of seagrass from 1995 to 2005.
- Between 2002 and 2005, 145 assessments were conducted on injuries that fell beneath the 10 square feet of coral/10 square yards of seagrass threshold, resulting in the issuance of summary settlement citations in each of those instances.
- Establishment of a vessel grounding database to document grounding locations, assessment, restoration and monitoring data, and to track case phases.
- Assessment of eleven freighter anchoring injuries in the Tortugas from 1997 to 2005.
- Assessment of nine freighter groundings since 1989 including some occurring prior to that date.
- FKNMS has established two damage assessment and restoration teams in the Sanctuary whose mission is to respond to, document and report injuries to seagrass, hard ground and coral reef resources within the FKNMS. These teams also provide the information and expertise for development and implementation of restoration plans for the injured sites.
- FKNMS staff has assisted with live-aboard mooring assessment in Cow Key Channel.
- FKNMS staff continues to conduct monitoring of injured and restored sites.
- FKNMS staff helped prepare a Regional Restoration Plan for the damaged seagrass meadows in the Florida Keys.

- FKNMS staff conducted or managed major structural restoration of coral reef areas at large-vessel damage sites at Molasses Reef, South Carysfort Reef, near American Shoal, and Looe Key Reef. Small vessel injury restoration sites include areas at Carysfort Reef, Newfound Harbor, and Western Sambo.
- Completion of multiple restoration and coral restabilization efforts at other sites.
- FKNMS staff have developed and implemented monitoring programs at many of the grounding sites.
- FKNMS staff assists in all aspects of resource management including permitting, research, vessel grounding protocol development, and grounding prevention.
- FKNMS staff has assisted in numerous seagrass restoration projects.
- FKNMS DARP Team members have assisted other NMS units and other parts of NOAA in damage assessment and restoration projects.
- DARP Team members have been so thorough in the development of their casework in conjunction with NOAA attorneys and economists that the FKNMS has yet to lose a case by legal challenge.
- FKNMS staff has implemented the Reef Medics Volunteer Coral Salvage and Restabilization Program in order to address sites where no responsible party can be identified. The program also provides a response team for small-vessel groundings where restoration costs may not be incorporated into the penalty assessed to the responsible party.
- FKNMS staff has partnered with other agencies and commercial fishermen in trap retrieval and removal following storm events.
- FKNMS staff has assisted in the development of Education and Outreach products that target user groups whose activities have the potential for causing injury to Sanctuary resources.

### ***Goals and Objectives***

The goals of this action plan are to:

- Prevent or at least minimize vessel grounding impacts
- Assess and document Sanctuary resource injuries caused by vessel groundings and other human impacts
- Restore resources
- Support Law enforcement and grounding litigation teams.

The objective of this action plan is to:

- Manage the program in a manner that protects and restores Sanctuary resources
- Manage litigation cases.

### ***Strategies***

There are six non-regulatory management strategies in this Damage Assessment and Restoration Action Plan.

- B.18 Injury Prevention
- B.19 Implementing DARP Notification And Response Protocols
- B.20 Damage Assessment and Documentation
- B.21 Case Management
- B.22 Habitat Restoration
- B.23 Data Management

Each of these strategies is detailed below. Table 3.8 provides estimated costs for implementation of these strategies over the next five years.

**Table 3.8 Estimated costs of the Damage Assessment and Restoration Action Plan**

Damage Assessment and Restoration Action Plan Strategies	Estimated Annual Cost (in thousands)*					Total Estimated 5 Year Cost
	YR 1	YR 2	YR 3	YR 4	YR 5	
B.18: Injury Prevention	25	26	30	32	33	146
B.19: Implementing DARP Notification and Response Protocols	50	53	59	62	65	289
B.20: Damage Assessment and Documentation	135	142	164	172	180	793
B.21: Case Management	105	110	115	129	135	594
B.22: Habitat Restoration	168	176	191	201	220	956
B.23: Data Management	60	63	68	71	75	337
<b>Total Estimated Annual Cost</b>	<b>543</b>	<b>570</b>	<b>627</b>	<b>667</b>	<b>708</b>	<b>3,115</b>

\* Contributions from outside funding sources also anticipated.

**STRATEGY B.18**      **INJURY PREVENTION**

**Strategy Summary**

Prevention of resource injury is preferred to restoration. Working with the education and outreach staff, enforcement officers, volunteers, and federal, state and local agencies, the Sanctuary's damage assessment teams carry out a broad range of activities to prevent injuries to Sanctuary resources whenever possible.

**Activities (6)**

**(1) Assist Waterway Marking/Management.** The staff will continue to coordinate with appropriate agencies to mark waterways, provide input and assistance regarding regional patterns and frequency of incidents to identify "hotspots" including seagrass, coral reef and hard-bottom areas that display patterns of chronic vessel grounding, and assist the waterway marking and management working group in developing and fine tuning activities to address these issues.

Status: Implemented and on-going.

Implementation: Primarily Monroe County and the USCG, assisted by Waterway Management team, FKNMS/DARP staff, and cooperating agencies.

**(2) Assist Education and Outreach.** The program staff assists the FKNMS Education and Outreach program to produce information and educational products aimed at preventing groundings. Products and information are provided to the media, boating interest groups, periodicals and publications, and environmental education organizations that disseminate the information. Information in products includes grounding statistics, avoidance techniques, and the legal and financial consequences to insurance companies. The program seeks to provide technical support, background information, quantitative data, videos and photographs.

Status: Implemented and on-going.

Implementation: FKNMS staff

**(3) Assist Programs Concerned with Direct Contact or Intervention.** There are several existing site programs that address injury prevention, such as:

**(A) Law Enforcement** - Believing that that law-enforcement presence is an effective deterrent to groundings, FKNMS staff will provide technical support, data, and professional advice to assist the Sanctuary's law enforcement team.

Status: Implemented and on-going

Implementation: FKNMS and FWC.

**(B) Team OCEAN** - The Team OCEAN program is a body of trained volunteers who spend time on the water disseminating information about the environment, boating practices, regulations, and local navigation. Team members have prevented numerous vessel groundings through direct intervention by hailing operators, for example. Team OCEAN has the full support of the damage prevention program, including sharing vessel and equipment resources.

Status: Implemented and on-going; schedule is as requested.

Implementation: FKNMS and cooperating agencies.

(C) *Professional Guides Association* - The damage assessment program lends its full support to the Florida Keys Professional Guides Association's "Guides Educating Guides" initiative. The initiative enlists the services of professional backcountry fishing guides to instruct others in their profession on the ecological and economic value of seagrasses and how they and the public can better preserve and protect them. A by-product of this activity is that with increased awareness of the value of the seagrass habitat to their livelihoods, fishing guides become community leaders in protecting resources and preventing vessel groundings.

Status: Implemented and on-going.

Implementation: FKNMS and professional organizations.

(4) *Operating Permits for Towing and Salvage Professionals*. Staff will assist with the review for the need of a permitting system that would require towing and salvage operators in Sanctuary waters to notify injury response personnel about groundings to which they respond and to use minimal-impact gear and procedures when removing a grounded vessel. Should such a need be determined staff will coordinate with other Florida Keys and South Florida marine protected areas to develop best management practices for grounded vessel salvage. FKNMS management, education and outreach, and law-enforcement personnel would develop procedural requirements and guidelines, assist in developing training materials, and administer a mandatory operators' permitting course.

Status: Awaiting implementation.

Implementation: FKNMS with assistance from law-enforcement.

(5) *Minimize or Eliminate Impacts from Live-aboard, Derelict or Sunken vessels*. In an effort to reduce vessel impacts, staff will assist Sanctuary management and other state and local water quality and regulatory programs to create mooring fields, install pump-out stations, etc., and provide technical and logistical support for the removal of derelict vessels when requested.

Status: Implemented and on-going.

Implementation: FKNMS and other agencies.

(6) *Assist with Development of Oil and Hazardous Spill Response*. DARP staff coordinates with the USCG's Area Committee and other South Florida marine management and enforcement agencies to develop unified response protocols to deal with containment and cleanup of spills to prevent and minimize impacts on the ecosystem. This activity will include participation in the development of best management practices that can be implemented in the instance of an oil- or hazardous-material spill to protect mangroves, coral reefs and seagrasses and minimize the adverse impacts. Additionally, all FKNMS staff participated in Sanctuary's Hazardous Incident Emergency Logistics Database System (SHIELDS) training as well in the Safe Sanctuaries 2005 drill conducted at the FKNMS in April 2005.

Status: Implemented and on-going.

Implementation: Primarily USCG; FKNMS participates as needed.

**Strategy Summary**

The first step in a damage assessment action is incident notification from Sanctuary enforcement personnel, the USCG, other agencies and the general public. Once notification has been received, DARP personnel implement an appropriate response. This strategy addresses the technological and legal requirements of damage assessment and restoration by establishing injury assessment protocols. Detailed and repeatable procedures for assessing injury to natural resources must be adaptable, yet conform to accepted industry standards and advancements. Developing advanced methodologies will provide scientifically sound and legally defensible Natural Resource Damage Assessment (NRDA) claims and subsequent restoration planning efforts.

**Activities (5)**

**(1) Further Develop and Fine Tune the Chain of Notification for Grounding Incidents.** This will be accomplished by coordinating with FWC, Sanctuary law enforcement, NOAA administrators and state partners to determine the level of notification following a vessel grounding, establish criteria and thresholds to determine degree of response by the Sanctuary, and determine criteria and thresholds for notification above the Sanctuary and FWC level such as NOAA, state attorneys, economists, litigation case team members or marine protected area managers based on the scale and nature of each incident.

Status: In progress.

Implementation: NOAA, FWC, the State of Florida, and other cooperating agencies.

**(2) Coordinate with Other Management and Enforcement Agencies to Develop Standardized Vessel Grounding and Spill-Response Protocols.** DARP coordinates with other management and enforcement agencies to develop standardized, uniform vessel grounding and spill response protocols that are adopted and followed within and among the various agencies managing South Florida's marine protected areas. This on-going activity is shared with FWC, enforcement managers and includes discussion, planning and cooperative implementation with South Florida marine safety, resource management and environmental protection agencies. Agencies include, but are not limited to, USCG, EPA, USFWS, NPS, FWC, FPS, DEP, and Monroe County.

Status: Implemented and on-going.

Implementation: FKNMS, FWC and other agencies as appropriate.

**(3) Implement "Eyes on the Water."** FWC's law enforcement dispatch records indicate that more than 500 reported groundings occur annually in the Florida Keys. It is suspected that hundreds more undoubtedly go undetected or unreported. To effectively document injuries, allocate funds and distribute resources, DARP has joined with volunteer and education staff to develop and implement a volunteer training program for those who spend a significant amount of time on and around Keys waters. Training includes incident recognition, documentation, and notification. The volunteers include, but are not limited to Team OCEAN, Reef Medics, and Mote Marine Laboratory volunteers, area charter-boat personnel, professional fishing guides, and other volunteers.

Status: Implemented and on-going.  
Implementation: FKNMS and FWC

**(4) Gain public involvement in grounding notification.** DARP will assist the Education and Outreach and Enforcement programs to develop and implement public notification campaigns. Staff will promote use of FWC law enforcement dispatch as the clearinghouse for reporting groundings, in short, the creation of a “grounding hotline.” This activity is being instituted in an effort to reinforce with the general public the vital role it plays in notification and to eliminate confusion as to which agency needs to be contacted.

Status: Awaiting implementation by FWC.  
Implementation: FKNMS and FWC

**(5) Gain towing and salvage operator cooperation in grounding notification.** This is an on-going activity that seeks to establish rapport with local operators and includes regular meetings and training sessions to emphasize the importance of an operator’s cooperation in the vessel grounding notification network.

Status: Awaiting full implementation.  
Implementation: FKNMS.

## **STRATEGY B.20            DAMAGE ASSESSMENT AND DOCUMENTATION**

### ***Strategy Summary***

This strategy addresses the technological and the legal requirements of damage assessment and restoration by establishing assessment protocols, methodology and documentation necessary support for case management.

### ***Activities (6)***

**(1) Respond to and assess injuries to natural resources within the FKNMS resulting from vessel groundings; further develop and fine-tune associated protocols and methodologies for these kinds of injuries.** Various methodologies and protocols are recognized, including:

- (a) *Damage to live coral dominated substrate* - FWC law enforcement is authorized to issue summary settlement citations to vessel operators responsible for groundings that result in injury of 10 square feet or less to live coral substrate. The fines issued do not require involvement of DARP staff, NOAA, or state legal counsel. Coral injuries of greater than 10 square feet require a biological assessment by the Sanctuary through DARP staff, using a variety of assessment techniques to quantify, describe, illustrate, and document the injury. Depending upon the size and extent of the injury, the assessment is forwarded to either NOAA’s Office of General Counsel for Law Enforcement to be processed as a simple civil penalty or NOAA’s Office of General Counsel for Natural Resources for processing as a Natural Resources Damage Action (NRDA) claim. The latter may include response and assessment cost recovery, restoration, monitoring, and compensatory components.

Status: Implemented and on-going

Implementation: FKNMS and FWC law enforcement

- (b) *Damage to seagrass dominated substrate* - FWC law enforcement is authorized to issue summary settlement citations to operators responsible for groundings that cause 10 square yards or less of injury to seagrass dominated substrate. Seagrass injuries of greater than 10 square yards require a biological assessment by DARP staff, using a variety of assessment techniques to quantify, describe, illustrate, and document the injury. Depending upon the size and extent of the injury, the assessment is forwarded to either NOAA's Office of General Counsel for Law Enforcement to be processed as a simple civil penalty or NOAA's Office of General Counsel for Natural Resources for processing as a NRDA claim. The latter may include response and assessment cost recovery, restoration, monitoring, and compensatory components.

Status: Implemented and on-going

Implementation: FKNMS and FWC law enforcement

- (c) *Damage to mixed substrate* - The DARP team provides technical input to NOAA and state legal counsel and the litigation team, which is composed of attorneys, economists, research biologists and FKNMS administrators, in order to determine appropriate legal action under Section 307 (civil penalty action) or 312 (natural resource damage assessment action) of the NMSA for vessel grounding injuries to mixed seagrass and hard-bottom communities or mixed *Thalassia* (turtle grass) and *Porites* (finger coral) shoals and banks. Current assessment is based largely on protocols used in coral and seagrass injury assessment. The DARP team, in conjunction with the litigation team, determines if special or modified assessment techniques are needed.

Status: Implemented and on-going

Implementation: FKNMS and FWC law enforcement

- d) *Damage to non-living coral reef framework* - The DARP team provides technical input to NOAA and state legal counsel and the litigation team to determine appropriate legal action under Section 307 (civil penalty action) or 312 (natural resource damage assessment action) of the NMSA for vessel grounding damage to the non-living skeletal remains of reef-building corals that comprise the structural framework and attachment places for living reef components. The DARP team, in conjunction with the litigation team determines if special or modified assessment techniques are needed.

Status: Implemented and on-going

Implementation: FKNMS and FWC law enforcement

**(2) Respond to and assess injuries to natural resources within the FKNMS resulting from large vessel (primarily freighter) anchoring activity; further develop and fine tune assessment protocols and methodologies for these kinds of injuries.** This is a problem that has only recently received close scrutiny by Sanctuary management and DARP personnel and is almost exclusively confined to the remote reaches of the Tortugas region, usually in greater than 25 meters of water. Freighters anchor weigh tons and are secured by extremely large chain. When freighters drop anchor, the heavy chain can drag along the bottom causing extensive, catastrophic damage to corals and other sessile benthic



organisms. As anchored vessels swing with the wind and wave action, continuing damage can occur. Current methodologies borrow largely from coral reef injury assessment procedures and valuation formulae. Likewise, restoration and monitoring methodologies and protocols will closely follow those currently used in shallow reef situations, while incorporating special planning for diving and working at greater depths.

Status: A no-anchor zone was established in the Tortugas region in 1998; assessment protocols and methodologies implemented and on-going.

Implementation: FKNMS, State of Florida legal counsel, FWC law enforcement

***(3) Respond to and assess injuries to natural resources within the FKNMS resulting from live-aboard and derelict vessels; further develop and fine tune assessment protocols and methodologies for these kinds of injuries.*** The DARP team will provide technical input to NOAA and state legal counsel and litigation team to determine appropriate penalty schedules for injuries to seagrasses, corals and hard-bottom habitat due to the shading effects or direct contact by permanently or semi-permanently moored live-aboard vessels and derelict vessels.

Status: Implemented and on-going.

Implementation: FKNMS, in conjunction with the litigation case team, will determine if special or modified assessment techniques need to be developed established for addressing injuries to these types of habitat.

***(4) Respond to and assess injuries to natural resources within the FKNMS resulting from near-shore construction and repairs or modifications to existing structures, such as public utility structures, bridge pilings, and seawalls; further develop and fine tune assessment protocols and methodologies for these kinds of injuries.*** As a result of the permitting of improvements or alterations to existing coastal structures or features, or the construction of new structures or features, the DARP team will be called upon to assess coral, seagrass, or hard-bottom resources that may be impacted during the construction, repair or alteration phase of the project. The data and documentation gathered from such assessments may be used in the permit decision-making process, and in planning for possible mitigation or restoration. The current methods and procedures for coral and seagrass site characterization or assessment will be used, but the over-all process will differ significantly from grounding assessments in that an initial assessment is conducted before construction or alternation, followed by a post-project evaluation.

Many of these permitted construction projects result in the removal and relocation of sessile organisms to a suitable substrate by FKNMS staff or the permittee, as required.

Status: Implemented and on-going.

Implementation: FKNMS will be requested by the permitting agency to make an assessment of the marine resource impacted during construction, repair or alteration phase of the project.

***(5) Respond to and assess injuries to natural resources within the FKNMS resulting from fishing gear; further develop and fine tune assessment protocols and methodologies for these kinds of injuries.*** The DARP team will collect data and conduct assessments of injuries to various substrate types resulting from fishing gear. The information will be provided to federal and state fisheries management and law enforcement personnel. DARP staff will also provide technical support to the Sanctuary litigation team cases involving illegally placed artificial finfish or shellfish aggregating structures. The

frequency of this type of assessment may increase over time in support of increased enforcement efforts.

Status: Implemented and on-going.

Implementation: FKNMS will collect data and conduct assessments of injuries to various substrate types resulting from the placement of fishing gear. Technical support will be provided to the Sanctuary litigation case team as requested.

***(6) Respond to and assess injuries to natural resources within the FKNMS resulting from natural events; further develop and fine tune assessment protocols and methodologies for these kinds of injuries.*** Current assessment techniques are borrowed from coral reef and seagrass methodology, but no uniform or standardized protocols have been developed. Infrequency of injury by catastrophic natural events (primarily hurricanes) has provided little momentum to establish assessment protocols. Rapid assessment methodologies developed by other agencies or private institutions for coral reef observations may be utilized to assess large-scale catastrophic events.

Status: Implemented as needed

Implementation: FKNMS.

## **STRATEGY B.21            CASE MANAGEMENT**

### ***Strategy Summary***

Case management involves sharing information and documentation regarding an injury incident so that the litigation team may proceed with legal action against the responsible party. This strategy identifies the activities necessary to carry out case management.

### ***Activities (3)***

***(1) Provide vessel grounding litigation case management participation.*** Vessel grounding case management involves processing the information and documentation gathered during the assessment phase of an injury to Sanctuary resources into a legal action against the responsible party. In instances where the size of the injury does not exceed the threshold of a summary settlement, DARP involvement will be minimal (an occasional verification of an FWC Officer's evaluation of the injury), if required at all. Cases that fall under NMSA Section 307 (civil penalty action) categorization will require at a minimum the production of an injury assessment report by a DARP biologist, and some processing by NOAA's Office of General Counsel for Law Enforcement. Grounding cases that will be handled as NMSA Section 312 (natural resource damage assessment action) cases require the most DARP staff involvement, necessitating considerable coordination and information sharing NOAA's Office of General Counsel for Natural Resources and other members of the designated case team.

Status: Implemented and on-going.

Implementation: This is a joint FKNMS and litigation team activity that occurs with most cases.

***(2) Provide vessel grounding litigation case management support.*** This is an on-going activity. DARP team is involved in the on-going task of providing reports, documentation, site reconnaissance, depositions, expert witness testimony, etc. in support of vessel grounding case litigation.

Status: Implemented and on-going.

Implementation: Depending on the severity of the incident, each case requires various portions of this activity. In addition a contract position was created in 2006 to provide overall specific case management support and coordination.

**(3) Document Costs.** In conjunction with administrative staff, the DARP team tracks expenditures associated with response, field assessment work, reporting, etc. for each case. Recently developed procedures for more accurate and efficient cost documentation are being implemented. Future activity in this area includes development of a cost documentation reporting sheet for Sanctuary law enforcement.

Status: Implemented and on-going.

Implementation: FKNMS and case administrator are developing additional procedures and reporting requirements.

## **STRATEGY B.22            HABITAT RESTORATION**

### ***Strategy Summary***

The National Marine Sanctuaries Act permits NOAA to recover the cost of restoring resources that are damaged by human activities. Restoration may involve re-stabilization of damaged but viable corals, seagrasses or hard-bottom components, and/or the replacement of substrate, structure and habitat. This strategy describes the on-going efforts of the DARP teams to restore Sanctuary resources damaged by human activity. In this Strategy when reef restoration techniques are discussed, the FKNMS means restoration to the reef framework that is already there, although damaged. It does not mean the usage of any artificial structures that were not already located at the injury site.

### ***Activities (8)***

***(1) Salvage, restabilize and repair living hard corals and octocorals, seagrasses, and the non-living reef framework injured by groundings or other non-natural impacts.*** FKNMS uses several resources to salvage and/or repair Sanctuary resources, including:

- (a) Salvage, maintenance and restabilization of injured Sanctuary resources by DARP staff and private contractors - DARP team members, FKNMS staff, and private contractors can be mobilized to take part in "rescue" and "first aid" activities following a grounding. Efforts will focus on the salvage and restabilization of large, viable fragments or entire colonies of stony corals *in situ*, or as closely as possible to the injury site on uncompromised stable substrate. If the substrate within the immediate vicinity of the injury site is deemed too heavily fractured or otherwise unstable, the dislodged fragments and/or intact colonies may be relocated temporarily to protected "nursery" areas for holding until the original substrate is restabilized, reconstructed or replaced.*

Alternatively, if it is deemed impractical or unfeasible to restore the original substrate to a degree that would adequately support the dislodged colonies or fragments, or if the time required to restore the original substrate would surpass the expected survivability horizon of

the salvaged material, then a Sanctuary restoration biologist may choose to transplant this material elsewhere. One such alternative can be a nearby site from a previous vessel grounding that did not receive restorative measures and has a suitable substrate for reattachment.

The DARP team participates in developing strategies for streamlining the acquisition of funds from litigation case settlements to implement restoration as swiftly as possible, especially when emergency salvage and restabilization is necessary. Improved materials/methods and other innovations are continually being developed, evaluated and incorporated into the program. Among these will be a Programmatic Environmental Impact Statement that will expedite the NEPA process for restoration planning and implementation.

- (b) *Salvage, maintenance and restabilization of injured Sanctuary resources by Reef Medics Program and Other Volunteer Groups* - Reef Medics is an innovative, hands-on program designed to use volunteers to assist in Sanctuary restoration efforts. Volunteers have experience in vessel navigation and operation, snorkeling, and SCUBA diving. The DARP staff trains the volunteers in salvage and restabilization techniques. Currently, SCUBA certification is required for restoration efforts and DARP staff assists with the necessary approvals for diving through the NOAA Dive Program, The Nature Conservancy, Mote Marine Lab and other agencies. Reef Medics primarily assist DARP staff if the injury size falls below the threshold of a Natural Resources Damage Action claim or the responsible party is determined to be unviable or unknown, as in "hit and run" or "orphan" sites. Salvage and restabilization efforts of smaller viable fragments can be conducted by Reef Medics and trained volunteer divers using hand tools and cement or adhesives appropriate for use with living organisms in marine applications.

Reef Medics support comes from compensatory funds from vessel grounding settlements, grants, and Sanctuary Friends of the Florida Keys, including contributions to purchase equipment and supplies, and vessel support.

Reef Medics are involved in follow-up documentation and monitoring of repaired sites for up to two years after repairs. Expansion of the Reef Medics program will include activities not requiring SCUBA diving, with opportunities for participation by non-divers and volunteers. Mote Marine Laboratory has conducted a pilot Reef Medics "Base Camp" project and further development is underway. The content and materials for a new volunteer training course has been developed.

- (c) *Salvage or removal of living corals by researchers and public aquaria.* Vessel groundings on coral reef substrate often produce fragments of living coral colonies too small or too compromised to be viable in the natural environment. Likewise, permitted repair or replacement of submerged or partially submerged structures sometimes sacrifices encrusting corals and other sessile marine organisms. The removal of un-permitted or deleterious structures, such as illegally placed fishing gear and derelict vessels, also may result in the loss of hard corals and gorgonians. In such cases, the preferred alternative is to transplant the material to a suitable substrate within the reef ecosystem. However, if size, fragility or other factors make successful relocation and restabilization unlikely or impossible, then the FKNMS

superintendent may allow the material to be collected by researchers and public aquaria with permits to procure coral specimens from Sanctuary waters.

DARP works with permit personnel to include language that requires utilization of “sacrificial” material as primary source, removal of intact specimens from manmade structures as a secondary source, and using natural reef sources only if the target species cannot be found on artificial structures. DARP investigates lab or aquarium propagation for subsequent return to the ecosystem.

Status: Implemented and on-going.

Implementation: FKNMS management, DARP, private contractors, and volunteer groups. Sub activities are currently in various stages of implementation.

**(2) Restore injured or destroyed coral reef framework.** The DARP team uses funds from case settlements to reconstruct or replace coral reef framework structures that have been compromised or destroyed. The goal of this activity is to restore the ecological and structural functionality of the injured reef framework and to reestablish lost aesthetic aspects. The DARP team participates in developing strategies for streamlining the acquisition of funds from litigation case settlements to effect restorative efforts as swiftly as possible, especially when emergency salvage and re-stabilization is required.

In cooperative situations, private contractors may also be engaged to restore or replace impacted or destroyed coral reef framework.

Status: Implemented and on-going within the limitations of funding, human resources, and technology.

Implementation: DARP, FKNMS managers, litigation case managers, private contractors

**(3) Restore grounding-impacted seagrass meadows.** FKNMS DARP personnel participate or facilitate seagrass restoration in damaged areas. These cases are handled on a case-by-case basis and involve coordination among seagrass scientists, DARP personnel, DEP personnel, and other resource managers. Other seagrass restoration efforts occur by:

- (a) *Use of Sanctuary Staff and Private Contractors.* The DARP team participates in on-going projects utilizing settlement funds to restore seagrass dominated substrate injured in vessel groundings. Activities by staff or contractors includes backfilling prop scars, trenches and excavation craters (“blowholes”), installing seabird attracting roosts (bird stakes) placed to promote the concentration of natural fertilizer; replanting pioneer seagrasses in denuded areas, sodding with nursery-grown and mechanically planted shoal-grass plugs, and the development, evaluation and implementation of other innovative methods and technologies.
- (b) *Use of Volunteer Groups.* DARP personnel direct trained volunteers to begin “first aid” measures following grounding damage to seagrass meadows using hand tools to return unnaturally banked or piled sediments back into scars, trenches and excavation craters created by grounded vessels.

(c) *Use of Regional Restoration Programs.* The DARP team uses various funding sources to identify seagrass areas in need of restoration, and to implement restoration efforts, especially of orphan sites that would otherwise not receive treatment. Other members of this regional restoration group include representatives from the NOAA Beaufort Lab/Seagrass Research Team, the NOAA Damage Assessment Center, and DEP

Status: Related sub-activities are currently in various stages of implementation.

Implementation: NOAA Damage Assessment Center, NMFS Beaufort Lab, FKNMS, DEP, private contractors, and volunteers.

(4) *Monitor restoration.* DARP staff schedules regular field visits to monitor restoration sites. The monitoring data gathered is used for the scientific evaluation of methodologies. Based on the evaluations, mid-course corrections can be made at existing restoration sites and future restoration planning will reflect the knowledge gained.

Status: Currently established for many existing incident locations.

Implementation: FKNMS and cooperating agencies.

(5) *Acquire blanket permits for DARP activities.* DARP staff will work with other restoration team members, including NOAA's Beaufort Lab/Seagrass Research Team, NOAA's Damage Assessment Center, and DEP to obtain blanket permits from regulating agencies (USACE, DEP, and others as appropriate) for damage assessment and restoration projects.

Status: Applications are under review by issuing agencies.

Implementation: A joint activity requiring various agency (e.g. USACE, DEP, etc) approvals.

(6) *Reintroduce indigenous living corals and seagrass.* DARP staff participate in the review of policies and regulations regarding the re-introduction of living corals and seagrasses indigenous to the Florida Keys, which were held or propagated in laboratories, aquaria, or nurseries. Concerns exist about the possibility of introducing exotic or foreign strains of diseases or parasites, and/or the possibility of reintroducing corals or seagrass with weakened immune and defense mechanisms, or defective genetic material.

Status: This activity is currently under development. A workshop on the reintroduction of organisms from enclosed systems is targeted for mid to late 2007.

Implementation: Multi-agency DARP personnel are making preparations to convene a workshop of experts to assess the biological and ecological ramifications of reintroducing corals and seagrasses and to develop criteria regulating these and related activities. A research project has been permitted by the FKNMS to define health certification and reintroduction protocols. However, due to setbacks resulting from problems with coral aquaculture techniques and recipient partners, the project was delayed until just recently. The project partners have been re-established and research is underway, with a field re-introduction activity initiated in 2006. It will be critical to conduct the proposed workshop with all coral nursery partners involved in handling FKNMS corals, and ideal to hold it after this initial research is completed in 2007.

**(7) Development of seagrass donor beds.** The DARP team will determine appropriate sites for developing, maintaining and enhancing donor beds of shoal grass for transplanting into restoration sites.

*Status:* This activity is currently under development. Donor site identification is on-going.

*Implementation:* Donor site identification has evolved through discussions with FKNMS permitting staff working on reviews of US Army Corps of Engineers (USACE) permits. Seagrass beds subject to destruction due to small maintenance dredge projects in access channels to sub-divisions and public access waterways are appropriate donor sites available for beneficial use projects, such as seagrass restorations. USACE is developing permitting language that will require their applicants to coordinate with FKNMS for the rescue of seagrass imperiled by maintenance dredging projects.

**(8) Work with public outreach coordinator to inform the public about habitat restoration activities.** This is an on-going DARP team activity in which DARP personnel regularly provide the Sanctuary Communications Manager with information, photos, videos, and other materials for use in press releases, TV and radio spots, and magazine articles to inform the public about restoration projects and successes.

*Status:* Implemented and on-going.

*Implementation:* FKNMS will provide information for media output to keep the public informed on restoration projects.

## **STRATEGY B.23          DATA MANAGEMENT**

### **Strategy Summary**

This strategy describes the DARP efforts to document groundings in the Florida Keys National Marine Sanctuary in order to determine trends and implement prevention strategies. Additionally, this information is used to track restoration, repairs and monitoring in the Sanctuary to determine the success of restoration efforts.

### **Activities (3)**

**(1) Create and maintain vessel grounding database.** There are several tasks associated with this activity, including:

- (a) *Refine and Maintain Vessel Grounding Database and provide adequate staffing for on-going management.* FKNMS and FWC data are archived in a multitude of formats gathered with varying degrees of detail. Archived data needs to be reevaluated and reprocessed to allow queries to fields and subcategories. DARP staff developed a consistent format, document parameters, and standardized reporting. Once the data are reprocessed, they are shared with other Sanctuary programs such as Mooring Buoy, Waterway Marking/Management, and Regulatory. This data is incorporated as an element of the SHIELDS database.
- (b) *GIS component development and maintenance.* DARP staff assigned to database development and management has received ArcView Geographic Information System (GIS) training and the

processing of archived data has begun. The DARP team will investigate new databases and geospatial analysis technology to evaluate the feasibility of incorporation into DARP data management.

- (c) *Products for management, case tracking, outreach and research application.* Full implementation is pending the complete development of a new database. Original data has limited value. DARP personnel will work with other FKNMS program staff to create a database that is both useful and user-friendly.

Status: Partially implemented and on-going. Sub-activities are currently in various stages of implementation and most DARP personnel have received basic GIS training. In 2006 a case administrator contract position was created to facilitate this activity.

Implementation: FKNMS, FWC, law enforcement, cooperating agencies, and reporting sources, including the public and volunteers.

**(2) Develop GIS and database for tracking restoration, repairs and monitoring.** NOAA Damage Assessment Center's seagrass injury assessment team has implemented this data management component. This technology is currently being adapted to other FKNMS and DARP applications.

Status: This activity is in progress. Most DARP personnel have basic GIS training.

Implementation: FKNMS and related agencies.

**(3) Acquire and incorporate satellite and aerial photo images into GIS databases.** The DARP team participates in the acquisition of high-resolution, low-altitude aerial photographs of all special management areas and known grounding "hotspots" as baseline documentation in support of natural resource injury litigation, basic research, and managerial decision-making. These images are shared with all Sanctuary program staff to facilitate and enhance Sanctuary-sponsored projects.

Status: Implementation will commence upon acquisition of funds

Implementation: Funding is being sought and site planning is underway.



## 3.3.4 Maritime Heritage Resources Action Plan

### *Introduction*

The Maritime Heritage Resources Action Plan includes a close partnership of the state, NOAA and the Advisory Council on Historic Preservation that resulted in a 1998 programmatic agreement for historical resources management. After five years of implementation, all parties renewed this Agreement in 2004 for an additional five years (see Appendix F for more information and a link to the full text of the Agreement). Overall, the Maritime Heritage Resources Action Plan demonstrates excellent progress in balancing resource protection, investigation and interpretation. This is the result of uniform implementation and enforcement of the federal and state standards formalized in the Programmatic Agreement.

Maritime Heritage Resources (MHR) are defined as underwater items and sites that have historical, cultural, archaeological, or paleontological significance. This includes sites, structures, districts, and objects associated with or representative of earlier peoples, cultures, human activities and events. In this plan, the terms “historical resources,” “cultural resources,” and “maritime heritage resources” are used interchangeably and may include artificial reefs, shipwrecks that are part of both U.S. and world history, as well as the remains of prehistoric cultures.

Maritime heritage resources in the Sanctuary encompass a broad historical range. Because of the Keys’ strategic location on early European shipping routes, the area’s shipwrecks reflect the history of the entire period of discovery and colonization. This richness of historical resources brings a corresponding responsibility to protect and preserve resources of national and international interest. Accordingly, the resources are managed for public benefit and enjoyment, while the historical and cultural heritage is preserved for the future.

Long-term protection requires a precautionary approach to historical resource management, particularly when information or artifacts may be destroyed or lost through direct and indirect activities. The Federal Archaeological Program or equivalent standards of conservation, cataloguing, display, curation, and publication must be assured before permitting their disturbance. Such projects are expensive and labor-intensive, sometimes requiring specialists in the fields of archaeology, conservation, museum work, historic shipwreck research, and recovery. FKNMS will continue to explore all public and private partnerships for management and consider private-sector implementation, when appropriate.

FKNMS’ policy is to protect sanctuary resources, including maritime heritage resources. The Sanctuary and its resources are managed to facilitate multiple uses that are compatible with resource protection. Compatible uses include research, education, recreation, fishing and other uses.

Maritime heritage resources are managed in close partnership among NOAA, the State of Florida, and the Advisory Council on Historic Preservation (ACHP). During development of the 1996 management plan, this was an area of considerable controversy and conflict. Since then, there has been much progress in achieving a balanced level of resource protection, investigation, and interpretation. Further, FKNMS works closely with cultural resource managers in Biscayne and

Everglades National Parks. An Interagency Agreement was established with Biscayne National Park in 2006 to facilitate enhanced collaboration.

### *Goals and Objectives*

FKNMS has a trustee responsibility for current users and future generations. Because maritime heritage resources are non-renewable, decisions are made with a precautionary approach after careful and deliberate analyses of the potential consequences of long-term preservation. With this in mind, the goals of this Action Plan are to:

- Gather sufficient information about cultural resources to allow informed decisions.
- Interpret the history and culture of the area for the public.
- Allow private-sector participation, research, documentation, recovery, and curation, when appropriate.
- Develop community-based stewardship.
- Develop MHR Interagency Agreements with other federal agencies such as the NPS.

To achieve these goals, the following objectives have been identified:

- Continue to inventory the FKNMS maritime heritage resources.
- Create a database consistent with resource protection and business confidentiality.
- Interpret the resources for the public through on-site and land-based exhibits and materials such as brochures, web pages and videos.
- Develop public partnerships for research, interpretation, and management.
- Foster and enhance a stewardship ethic.

### *Implementation*

FKNMS and the Florida Division of Historical Resources (FDHR) are primarily responsible for implementing the MHR Management Plan. NOAA and the state jointly manage FKNMS resources, while FDHR retains title to abandoned shipwrecks on state-owned submerged lands. If excavation is involved, permission may also be required from DEP/FDSL (Division of State Lands, Board of Trustees of the Internal Improvement Trust Fund) and the USACE (e.g., dredge and fill permit), depending on the location of a given site.

FDHR, through its Bureau of Archaeological Research, has developed a range of management tools that can be used as a guideline within the Sanctuary. FDHR's role, although sometimes regulatory, typically involves inventory, assessment, research, education, public interpretation, and grant assistance for historic preservation projects.

FKNMS' primary role is to protect the historic resources through permitting and enforcement, provide overall policy direction, and coordinate research by institutions and individuals. In this capacity, FKNMS will ensure that research is well-designed and consistent with Sanctuary policies. FKNMS will also work with the FDHR to inventory resources consistent with appropriate laws and guidelines.

### *Geographic Focus*

Although MHRs may be located anywhere in the Florida Keys National Marine Sanctuary, areas of known concentration and high probability occur especially in shallow water with proximity to shipping routes, on and near reefs, in the Straits of Florida, in other historically used channels, and

near historical sources of freshwater. Management will focus on selected shipwreck sites, with the particular characteristics of a site determining the types of management tools to be applied.

### *Personnel*

While full implementation of the revised management plan would best be achieved with a fully developed archaeological staff, FKNMS believes it is important for an underwater archaeologist to be hired to implement the high priority activities under the plan. Volunteers have proved to be very effective in assisting with cultural resource management. FKNMS will continue to seek out and use volunteers.

### *Equipment*

FKNMS currently owns and operates a variety of vessels that may be used by archaeological staff to conduct fieldwork. The program also owns several underwater cameras that can be used for photo-documentation. A personal computer with ArcView GIS software is also available. Contracting or cooperating with other organizations for field support equipment may also be useful.

### *Contingency Planning for a Changing Budget*

If funding is below the level needed for full implementation, cuts may need to be made in staffing and equipment purchases. Staffing the marine archaeologist position is, however, critical for effective implementation and will be given the highest funding priority possible under this plan. Contracting for archaeological services or equipment can be explored to conduct interim activities. Other staff members could potentially fill part-time positions within the MHR program after training in archaeological methods. A core staff technician could be shared with the biology or damage assessment staffs, as both positions include underwater mapping and documentation skills.

### *Commercial Salvage*

One of the issues this Action Plan addresses is commercial salvage. The actions being implemented to address this issue are the result of a long public process, including scoping meetings, workshops, and consideration of numerous and diverse comments from the public and the Sanctuary Advisory Council.

Commercial salvage may be permitted under certain conditions, in consultation with the state, which owns abandoned shipwrecks in all state waters, including approximately 65 percent of the Sanctuary, and consistent with the Abandoned Shipwreck Act (ASA) in those areas. However, commercial salvage of abandoned shipwrecks has been determined not to be a compatible use in areas where there is coral, seagrass or other significant natural resources. In areas relatively devoid of significant natural resources, commercial salvage may be permitted for those applicants that have met the criteria outlined in the Sanctuary regulations and the Programmatic Agreement. The recording and reporting of archaeological findings and recovery operations is required, as is the curation of representative samples of artifacts consistent with the Programmatic Agreement for MHR Management and the Federal Archaeological Program or equivalent standards. The federal program was developed by the National Park Service by Presidential Order, and includes a collection of historical and archaeological resource-protection laws to which federal managers are required to adhere. The National Historic Preservation Act (NHPA) requires federal agencies to develop programs to inventory and evaluate historic resources. NHPA Section 106 requires review of each recovery permit by the State Historic Preservation Office and the Advisory Council on Historic Preservation. Permits within the scope of, and adhering to, to all provisions of the Programmatic Agreement need not go through an additional NHPA 106 review process.

The Abandoned Shipwreck Act encourages states to manage shipwreck sites in ways that protect the historical information, as well as any natural resources and habitat areas, and that guarantee recreational access to shipwreck sites. The guidelines issued by NPS to implement the Act indicate a preference for prohibiting commercial salvage, which is followed in zoned areas and in areas where there is coral, seagrass or other significant natural resources. Commercial salvage is permitted only when applicants meet strict requirements, and only in areas relatively devoid of significant natural resources. There will be no commercial salvage and deaccession of MHRs of high historical significance. The FKNMS regulations and Programmatic Agreement provide for private-sector recovery conducted in an archaeologically and environmentally sound manner. Thus, management also preserves selected shipwrecks in the Sanctuary for research and recreation. Other shipwreck sites may contain artifacts more appropriate for recovery and preservation in museums with public access.

Finally, the plan provides for the deaccession and distribution of certain recovered resources to private parties. Private benefit is available through public display, as well as from the sale of gold, silver, jewels, and other redundant, and/or duplicative, objects of low historical significance after proper archaeological recording, analysis and reporting. The Programmatic Agreement provides further details on the criteria and process for decisions regarding recovery and preservation *in situ*.

### ***Accomplishments***

There have been a number of accomplishments in the management of maritime heritage resources since implementation of the 1996 management plan, including:

- A Programmatic Agreement for Historical Resource Management in the Sanctuary among NOAA, ACHP, and the State of Florida was executed in June of 1998, establishing principles of joint management and guidelines for permits. The Programmatic Agreement was renewed for an additional five years in 2004.
- Establishment of a standardized permitting system with resulting issuance of 50 Archaeological Survey and Inventory and 25 Archaeological Research and Recovery Permits, amendments and / or renewals.
- Forty-four permit reports have been submitted and accepted as complete by NOAA and the state covering 23 different MHR investigations. Significant new information on the location, type, age and condition of historic resources has resulted.
- Permit information has been incorporated into a GIS database to facilitate management decision-making.
- The Sanctuary established a Shipwreck Trail for public access to and education about cultural resources in the Sanctuary; nine sites are included in this program.
- Sanctuary staff has educated the general public, diving community, and the marine archeology community through development of a series of presentations and materials on the Shipwreck Trail program.
- Establishment of a Maritime Heritage Resources Inventory Team staffed by volunteers to document and inventory shipwreck sites within its boundaries. This team has performed a vast amount of underwater and archival research, which has resulted in documenting hundreds of historical artifact sites in the five-volume set, *Underwater Resources of the Florida Keys National Marine Sanctuary Northeast Region*.
- To date, 174 Heritage assets have been professionally conserved, incorporated into a heritage asset database and display at the FKNMS Upper Region Office. Several of these artifacts were deemed to be threatened, triggering management recovery actions.

- A research plan was implemented to document and interpret a previously unknown wreck in 230 ft. of water that was brought to the Sanctuary’s attention by the recreational diving community. Results indicate the, now identified, remains of the ship *Queen of Nassau* to be of historical significance commensurate with listing in the National Register of Historic Places.
- The USCG *Duane* artificial reef was listed in the National Register of Historic Places on May 16, 2002. Indiana University Underwater Science and Educational Resources Program prepared the nomination. Direction, coordination, funding and logistical support for this and other field school efforts were provided by FKNMS during the period.
- A joint underwater archaeological field investigation of a “mystery wreck” was conducted by members of FKNMS and the State of Florida, Bureau of Archaeological Research in June 2005.
- Several underwater archaeological field schools have been conducted through FKNMS support and permitting.

**Strategies**

There are five non-regulatory management strategies in this Maritime Heritage Resources Action Plan.

- MHR.1 MHR Permitting
- MHR.2 Establishing an MHR Inventory
- MHR.3 MHR Research and Education
- MHR.4 Ensuring Permit Compliance
- MHR.5 Ensuring Interagency Coordination

Each of these strategies is detailed below. Table 3.9 provides estimated costs for implementation of these strategies over the next five years.

**Table 3.9 Estimated Costs of the Maritime Heritage Resources Action Plan**

Maritime Heritage Resources Action Plan Strategies	Estimated Annual Cost (in thousands)*					Total Estimated 5 Year Cost
	YR 1	YR 2	YR 3	YR 4	YR 5	
MHR.1: MHR Permitting	100	100	100	100	100	500
MHR.2: Establishing an MHR Inventory	50	100	100	100	50	400
MHR.3: MHR Research and Education	50	100	100	100	100	450
MHR.4: Ensuring Permit Compliance through Enforcement	5	5	5	5	5	25
MHR.5: Ensuring Interagency Coordination	5	5	5	5	5	25
<b>Total Estimated Annual Cost</b>	<i>210</i>	<i>310</i>	<i>310</i>	<i>310</i>	<i>260</i>	<b>1400</b>

\* Contributions from outside funding sources also anticipated.

## *STRATEGY MHR.1 MHR PERMITTING*

### *Strategy summary*

A permit system facilitates access and multiple uses compatible with resource protection. Non-intrusive access is not prohibited and does not require a permit. Resource disturbance without a permit is prohibited. Such permits are based on the regulations for all permits, as well as factors and criteria in the regulations for MHR permits, which are detailed in the Programmatic Agreement. Criteria considered in the review include a site's: historical/cultural value and significance, recreational value, and environmental impact of the activity. Additionally, the professional qualifications of the applicants, proposed methods of research, recovery, conservation, and public benefit are considered. No permits will be issued for excavation in areas where coral, seagrass, or other significant natural habitats exist.

FKNMS requires permits for activities prohibited by Sanctuary regulations. Such permits may be granted only in accordance with existing laws and policies. FKNMS encourages uses that do not adversely affect resources (including archaeological information) or interfere with other Sanctuary uses.

A Survey and Inventory permit is not required for remote-sensing activities, but a Survey and Inventory report is required before considering the issuance of a Research and Recovery permit. Those who conduct remote sensing without a permit are encouraged to report results to the Sanctuary.

A factor considered in evaluating a research and recovery permit is whether the applicant has demonstrated professional and scientific abilities in the survey and inventory phase. An archaeological research and recovery permit is required to remove historical resources. The historic resources that are not deaccessioned must be maintained in a museum or similar institution where public access for research, education and viewing enjoyment is provided.

A deaccession and transfer permit is required to privatize the public resources recovered under a research and recovery permit. The deaccession and transfer permit is subject to the requirements for Special-Use permits. Removal of historic resources requires a substantial justification of public interest, consistent with the purposes and policies of the Sanctuary described in the NMSA, the FKNMSPA, Programmatic Agreement, the Abandoned Shipwreck Act guidelines and the Federal Archaeological Program.

The NMSP, Florida Division of Historic Resources (FDHR) and legal staff have worked together to develop a framework for MHR management of submerged lands within the Sanctuary consistent with the NMSA, the Abandoned Shipwreck Act guidelines, and state law. This framework is formalized in the Programmatic Agreement among NOAA, the Advisory Council on Historic Preservation, and the State of Florida.

The regulations, MHR Programmatic Agreement and permit guidelines have been completed. Subsequent guidelines and other activities discussed below are under consideration. This activity will have a high level of action and be on-going.

### *Activities (3)*

**(1) Create An MHR Field Unit.** A field unit would be established to conduct field research and coordinate permitted research activities. FKNMS recognizes the need to develop field expertise relating to archaeological investigations in the Sanctuary and will seek the funding to hire an underwater archaeologist and provide necessary support staff and equipment.

Status: This activity will have a high level of action in the first year after adoption of this revised plan. Depending on funding, it may require longer to complete. Contracting archaeological services in the field will be considered as an interim measure in addition to the continued use of volunteers to carry out field activities.

Implementation: FKNMS will be the lead agency; FDHR will assist.

**(2) Monitor MHR Site Degradation.** Conduct long-term monitoring of selected sites based on significance and recreational value to determine if environmental conditions and human use affect site integrity to provide information for permit decision-making.

Status: Implemented and on-going.

Implementation: FKNMS will be the lead agency; FDHR will assist.

**(3) Evaluate Excavation and Mitigation Techniques.** Evaluate emergent technologies that lead to less disturbance and more efficient recovery. These technologies include but are not limited to turbidity screens, sediment removal equipment, and seagrass restoration or relocation protocols.

Status: Implemented and on-going.

Implementation: FKNMS will be the lead agency. FDHR will assist.

## **STRATEGY MHR.2 ESTABLISHING AN MHR INVENTORY**

### ***Strategy Summary***

The purpose of this strategy is to create a bibliography and computerized database in a standard format and, where appropriate, make it publicly accessible over the Internet. It also seeks to identify and survey site locations and characteristics including name, age, integrity, historical and cultural significance, sensitivity, and recreational value. The database will interface with the NOAA NMSP's ARCH II Archaeological Site database. The inventory is a long-term management goal and will be a continuous project for the Sanctuary.

FKNMS, FDHR, several nonprofit organizations, and the private sector have completed some survey and inventory activities. Together, they have compiled and organized data on the location, identity, and significance of certain historical shipwrecks. The Cultural and Historic Resources section of the Description of the Affected Environment chapter (Volume II of 1996 Final Management Plan) contains additional information on many of the known significant cultural resources within the Sanctuary. The *Maritime Heritage Inventory* volumes are available from the Sanctuary. Currently, staff is working to develop prioritized plans for known sites that cover management, research, interpretation, and access strategies.



## *Activities (7)*

**(1) Create An MHR Field Unit.** A field unit would be established to conduct field research and coordinate permitted research activities. FKNMS recognizes the need to develop field expertise relating to archaeological investigations in the Sanctuary and will seek the funding to hire an underwater archaeologist and provide necessary support staff and equipment.

Status: This activity will have a high level of action in the first year after adoption of this revised plan. Depending on funding, it may require longer to complete. Contracting archaeological services in the field will be considered as an interim measure in addition to the continued use of volunteers to carry out field activities.

Implementation: FKNMS will be the lead agency; FDHR will assist.

**(2) Use MHR Information Developed in Permits, Authorizations or Certifications.** Part of the permit process generally includes assessment of the natural and cultural resources in the area. The plan also provides for public and private surveys and inventories of the resources. FKNMS does not release information protected by law.

Status: On-going.

Implementation: FKNMS will be the lead agency in consultation with the FDHR.

**(3) Survey and Collect Anecdotal Information.** Community knowledge will be cultivated through surveys of fishermen, recreational divers, recreational dive facilities, salvors and others with local knowledge. A program of professional and amateur public participation will be developed. This information, when verified, will be incorporated into the resource inventory for periodic updating to the master inventory.

Status: Implemented and on-going.

Implementation: FKNMS will be the lead agency with assistance from FDHR.

**(4) Use Volunteer Assistance in Cultural Resources Inventory.** The Sanctuary's volunteer coordinator, using volunteers, will continue to assist staff in collecting information, locating unrecorded sites, recording and documenting sites, assessing site significance, and developing sites for improved public access, interpretation, and protection.

Status: Implemented and on-going.

Implementation: FKNMS; FDHR will assist.

**(5) Conduct Public Participation Projects Inventory.** Research and educational institutions (using students and volunteers) will conduct maritime heritage resources inventory projects, involving the public in the inventory phase of the investigations.

Status: Implemented and on-going.

Implementation: FKNMS will be the lead agency responsible for implementing this activity; FDHR will assist.

**(6) Develop a Site Database.** A central database of shipwreck information will be maintained by the FKNMS, in cooperation with the Florida Site File at the FDHR. Projects will be designed that are appropriate for grant funding by NOAA, FDHR, Florida Coastal Management Program, and other sources. The data collected for non-sensitive sites may also be incorporated with other geological, biological, and census data into a GIS in order to analyze relationships among the resources and facilitate management.

Status: Implemented and on-going.

Implementation: FKNMS will be the lead agency; FDHR will assist. The database will interface with the NOAA NMSP's ARCH II Archaeological Site database.

**(7) Create a Public Awareness Program.** Develop educational tools such as brochures, posters, videos, and an Internet site to inform the public about volunteer opportunities and training. Distribute protocols for the public when a MHR is located within the Sanctuary in coordination with the Education and Outreach Action strategies.

Status: Implemented and on-going.

Implementation: FKNMS will be the lead agency; FDHR will assist.

### **STRATEGY MHR.3      MHR RESEARCH AND EDUCATION**

#### **Strategy Summary**

NOAA and the State of Florida have been addressing research and education considerations throughout the initial management plan period. Contractors have performed a significant amount of research through the development of the Shipwreck Trail. The Sanctuary has supported marine archaeological field schools, made presentations at professional meetings, and held public workshops on the program. This strategy includes seven activities.

#### **Activities (7)**

**(1) Train Volunteers.** A volunteer training program for general public involvement in research, documentation, and management will be continued. Emphasis is to be placed on increasing effectiveness through curriculum development and enhancement.

Status: Implemented and on-going. The FKNMS volunteer coordinator is responsible for implementing cooperation with a staff or contract archaeologist and the Shipwreck Trail's education coordinator.

Implementation: FKNMS. The FDHR will assist.

**(2) Manage Public Participation Projects.** A series of projects to involve the public in the long-term management of maritime heritage resources and promote stewardship through public involvement will be continued. Currently, the Maritime Heritage Resources Inventory volunteer program is most active in the Upper Region and will require greater emphasis in the Lower and Middle Keys.

Status: On-going.

Implementation: FKNMS is the lead agency; FDHR will assist.

**(3) Coordinate with University Field Schools.** FKNMS will facilitate archaeological research by providing scientific, logistical, and other support, including materials available on the Internet.

Status: On-going.

Implementation: FKNMS and the FDHR will be the lead agencies; DEP will assist.

**(4) Expand The Shipwreck Trail.** The Shipwreck Trail, developed to provide an on-water and on-land interpretive exhibit for the public, will be evaluated to improve effectiveness. The Shipwreck Trail education coordinator will work with the dive community, schools and the public to expand the activities. The appropriateness of adding new trail sites with historical or recreational significance will be examined. The possibility of monitoring existing sites using volunteers to gain information about impacts will also be evaluated. The Sanctuary Education Action plan has incorporated maritime heritage resource education activities.

Status: On-going.

Implementation: FKNMS will lead the education staff. FKNMS and the FDHR will assist lead determinations about monitoring protocols and expansion proposals.

**(5) Develop an Interpretive Exhibit.** An interpretive exhibit of the archaeological sites and their historic context will be developed in conjunction with the development of the Dr. Nancy Foster Florida Keys Environmental Complex in Key West to provide the public with information about maritime heritage resources in the Sanctuary. This exhibit may take various forms including a permanent display, a temporary or rotating display and/or display designed to travel. Long-term plans will include provisions for increasing public access to information.

Status: On-going.

Implementation: The FDHR and FKNMS will be the lead agencies.

**(6) Develop a Scientific Research Study Program.** The FKNMS Maritime Heritage Program will encourage and coordinate scientific studies by recognized research groups and institutions. A plan outlining the MHR research priorities will be developed and incorporated into the overall scientific research study program.

Status: Implemented and on-going.

Implementation: FKNMS will be the lead agency; DEP, FDHR, and a state Historic Preservation Officer will assist. Opportunities to collaborate with the National Park Service will be explored.

#### **STRATEGY MHR.4      ENSURING PERMIT COMPLIANCE THROUGH ENFORCEMENT**

##### **Strategy Summary**

The purpose of this strategy is to ensure compliance with statutes, regulations, and permit requirements through intensive on-site patrols by authorized law enforcement officers. Currently, NOAA, the state, and other agencies are cross-deputized with Sanctuary law enforcement authority.

Sanctuary and other pertinent regulations and laws are enforced jointly with an emphasis on public education as a tool for compliance. Officers will receive training to facilitate interpretive enforcement.

### *Activity*

**(1) Develop an MHR educational program for law-enforcement personnel.** This program will be part of a standardized training program for cross-deputized enforcement agencies and is included in the cross-deputization strategy of the Enforcement Action Plan.

Status: Implemented and on-going.

Implementation: FKNMS, FWC, and FDHR.

## **STRATEGY MHR.5      ENSURING INTERAGENCY COORDINATION**

### **Strategy Summary**

The purpose of this strategy is to facilitate comprehensive coordination among federal, state, and local agencies involved in the management of maritime heritage resources to explore collaborative projects and sharing of information. Currently, NOAA and the FDHR collaborate under the Programmatic Agreement. The terms of the Programmatic Agreement and the final Management Plan specify the responsibilities and roles of various parties to ensure the timely and effective coordination of activities.

### **Activities (6)**

**(1) Develop a Flow Chart.** The flow chart will include all agencies that participate in managing maritime heritage resources, indicating roles, responsibilities and time lines. It will also describe procedures for assessment and notification for shipwrecks of possible sovereign interest, and notify permit holders of changes in procedures and policies.

Status: New activity; 18 months to complete.

Implementation: FKNMS will be the lead agency; FDHR will assist.

**(2) Develop Cooperative Projects and Programs.** NOAA will seek to develop cooperative projects, share information, and combine resources with other agencies involved in historical research as well as with the NMSP Maritime Heritage Program (MHP) as coordinated from the Maritime Archaeological Center in Newport News, VA. NPS, which conducts similar programs in other parks, has significant expertise and experience in this area and shares significant common borders with the Sanctuary. Enhanced interagency coordination can directly benefit the development of the Sanctuary's management and resources and MHR Research and Study Program.

Status: On-going.

Implementation: FKNMS will be the lead agency with assistance from DEP and FDHR.

**(3) Use Volunteer Assistance in Cultural Resources Inventory.** The Sanctuary's volunteer coordinator, using volunteers, will continue to assist staff in collecting information, locating

unrecorded sites, recording and documenting sites, assessing site significance, and developing sites for improved public access, interpretation, and protection.

Status: Implemented and on-going.

Implementation: FKNMS volunteer coordinator; FDHR will assist.

**(4) Conduct Public Participation Projects Inventory.** Research and educational institutions (using students and volunteers) will conduct maritime heritage resources inventory projects, involving the public in the inventory phase of the investigations.

Status: Implemented and on-going.

Implementation: FKNMS will be the lead agency responsible for implementing this activity; FDHR will assist.

**(5) Develop a Site Database.** A central database of shipwreck information will be maintained by the Sanctuary, in cooperation with the Florida Site File at the FDHR. Projects will be designed that are appropriate for grant funding by FDHR, Florida Coastal Management Program, and other sources. The data collected for non-sensitive sites may also be incorporated with other geological, biological, and census data into a geographic information system in order to analyze relationships among the resources and facilitate management.

Status: Implemented and on-going.

Implementation: FKNMS will be the lead agency; DEP and FDHR will assist. The database will interface with the NOAA NMSP's ARCH II Archaeological Site database.

**(6) Create a Public Awareness Program.** Develop educational tools such as brochures, posters, videos, and an Internet site to inform the public about volunteer opportunities and training. Distribute protocols for public when an MHR is located within the Sanctuary in coordination with the Education and Outreach Action strategies.

Status: Implemented and on-going.

Implementation: FKNMS will be the lead agency; FDHR will assist.