

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.

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

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



3.2 EDUCATION, OUTREACH, & STEWARDSHIP

There are currently two action plans that fall into this management division: the Education and Outreach Action Plan and the Volunteer Action Plan. While the purpose of these two action plans is different, each is more effective when they are integrated with one another because greater understanding leads to a greater desire to volunteer time for conservation goals, and *vice versa*.

Successful Sanctuary management relies on a well-informed public who understand their role in the overall management of the Sanctuary. The Education and Outreach Action Plan outlines management tools to reach key audiences, such as students or first-time visitors, with critical messages that enlist their support in protecting Sanctuary resources.

The Volunteer Action Plan addresses people wishing to spend time protecting and conserving Sanctuary resources. Volunteer efforts provide beneficial services and information to the Sanctuary as well as provide opportunities to increase a sense of stewardship among Florida Keys' constituencies.

3.2.1 Education and Outreach Action Plan

Introduction

Education and outreach have played a primary role in resource protection since the 1975 designation of Key Largo National Marine Sanctuary. Over the decades, the Sanctuary has worked to help ever-growing and changing user groups learn and practice sustainable ways of enjoying the Sanctuary's beauty and bounty. This Action Plan seeks to raise conservation awareness among target audiences, positively affect public attitudes and increase the value people place on the Florida Keys ecosystem.

The challenges of education and outreach include reaching 80,000 permanent residents of Monroe County with broad ethnic and cultural backgrounds and millions of tourists who spend approximately 13.3 million visitor-days in the region each year. Many visitors hail from overseas, therefore education and outreach activities must be sensitive to language and culture. The Sanctuary also serves as a national and international information resource for scientists, students, teachers, and the general public on coral reefs and tropical marine ecosystems. Global communications augment this role by increasing the ease by which people can access information without ever visiting the Florida Keys.

Goals and Objectives

The goals of the Education and Outreach Action Plan are to:

- Promote protection and sustainable use of Sanctuary resources;
- Promote public understanding of marine resources, and related watersheds;
- Promote public understanding of the national marine sanctuaries; and,
- Empower citizens with the necessary knowledge to make informed decisions that lead to the responsible stewardship of aquatic ecosystems.

The objective of this Action Plan is to:

- Deliver educational programs and products on environmental, natural, historical, cultural, and socio-economic issues, so that the public is able to base its decisions on consistent, accurate scientific information.

Accomplishments

In coordination with related action plans, the Sanctuary's Education and Outreach Program has achieved many of the 1996 *Management Plan's* objectives. Highlights include:

- Awarded Monroe County teachers, through the Teacher Awards Program, \$26,000 to implement environmental education.
- Conducted scores of Coral Reef Classrooms, reaching over 5000 students in fourteen years who learned about the coral reef ecosystem and collected water-quality data through sampling.
- As a founding member, helped initiate and continue to actively support Monroe County Environmental Education Advisory Council by participating in Teacher Workshops and other County-wide activities.

- Supported the Sustainable Seas Expedition by developing web materials, conducting a Student Summit, holding open houses, and leading “Student/Teacher at Sea” days.
- Organized and conducted numerous Adult Environmental Education events.
- Team OCEAN volunteers donated more than 15,000 hours to raise awareness among Sanctuary users about safe public access and resource protection.
- Distributed educational materials to businesses and served as a community liaison.
- Held annual Maritime Community Meetings throughout the Keys.
- Attended scores of local, regional, and national trade shows.
- Established an Education Advisory Board.
- Played a leading role in founding and continuing the statewide Seagrass Outreach Partnership.
- Developed a Sea Smart - Dive Smart program for employees of the dive and snorkel industry.
- Published the *Florida Keys Dive and Snorkel User’s Guide* for businesses and customers.
- Participated annually in The Great Annual Fish Count.
- Increased demand for Sanctuary information through product development and media contacts.
- Developed and produced a wide variety of educational products, many bilingual.
- Wrote, edited and produced quarterly editions of *Sounding Line*, a newsletter.
- Placed information, articles, and images in numerous periodicals and publications.
- Produced two editions of *The Florida Keys Environmental Education Resource Directory*.
- Expanded and catalogued audio and video libraries.
- Developed and continue to maintain the FKNMS Web site (floridakeys.noaa.gov).
- Given scores of presentations to civic groups and various trade groups throughout the Keys.
- Assisted in hosting of international visitors and interpreting the Sanctuary and its resources as well as explaining the importance of the FKNMS education and outreach programs.
- Participated in the planning and hosting of the Annual Florida Keys Birding Festival for the past 4 years.
- Staff have participated in and lead the teams planning, designing and operating the interagency visitor center, the Florida Keys Eco-Discovery Center, in Key West.

Strategies

There are 9 strategies in this action plan:

- E.4 Developing Training, Workshops and School Programs
- E.6 Continuing the Education Working Group
- E.10 Establishing Public forums
- E.11 Participating in Special Events
- E.1 Printed Product Development and Distribution
- E.2 Continued Distribution of Audio-Visual Materials
- E.3 Continue Development of Signs, Displays, Exhibits and Visitor Centers
- E.5 Applying Various Technologies
- E.12 Professional Development of Education and Outreach Staff

Each of these strategies is detailed below. Table 3.4 provides estimated costs for implementation of each strategy over the next five years.

Table 3.4 Estimated costs of the Education and Outreach Action Plan

Education and Outreach Action Plan Strategies	Estimated Annual Cost (in thousands)					Total Estimated 5 Year Cost
	YR 1	YR 2	YR 3	YR 4	YR 5	
E.4: Developing Training, Workshops and School Programs	200	200	250	300	300	1,250
E.6: Continuing the Education Working Group	1	1	1	1	1	5
E.10: Establishing Public Forums	-	1	1	1	1	4
E.11: Participating in Special Events	-	110	125	125	125	485
E.1: Printed Product Development and Distribution	100	242	226	281	281	1,130
E.2: Continued Distribution of Audio-Visual Materials	2	2	2	2	2	10
E.3: Continue Development of Signs, Displays, Exhibits, and Visitor Centers	75	250	115	125	600	1,165
E.5: Applying Various Technologies	-	-	-	25	10	35
E.12: Professional Development of Education and Outreach Staff	6	7	8	9	10	40
Total Estimated Annual Cost	<i>384</i>	<i>813</i>	<i>728</i>	<i>819</i>	<i>1280</i>	4,124

Strategy Summary

This strategy will enhance the knowledge base of local educators, both formal and informal, through environmental education workshops regarding the Keys' natural and cultural resources, and will ensure that the education community within the Keys is receiving consistent, accurate scientific information. Activities will be bi-lingual when and where appropriate.

Activities (6)

(1) Promote and Support Environmental Education. Education programs will enhance cognitive development and skill-based knowledge. FKNMS staff will continue to provide grade-appropriate materials, facilitate field trips, and provide up-to-date information to public- and private-school educators. For all activities, staff uses a well-developed network of educators, programs, and institutions, including Monroe County School District, and government and non-government agencies. Coral Reef Classroom, Build-An-Ocean, and Envirothons may be expanded. A high school level (grades 9 through 12) monitoring program and a maritime heritage resource-based program may be developed. FKNMS staff will regularly facilitate activities such as poster contests, Kids' Week, Kid's Expo, and other special events. Highlights of well-received programs are below.

The Coral Reef Classroom teaches basic coral reef biology and concepts of habitat interdependence through activities such as water quality sampling, data collection, and analysis and evaluation. The exercises encourage analytical thinking, demonstrate the role that management plays in protecting natural resources, and inform about careers in environmental science. Each Coral Reef Classroom session includes a shore-side presentation and a boat trip to the coral reef.

Build-An-Ocean for lower-elementary school students teaches how to identify mangroves, seagrasses, fish, and coral reefs – many of the plants and animals of the ecosystem. This is a hands-on, interactive program in which students cooperate to “build an ocean” with color laminated pictures of the various organisms and elements of the ecosystem.

Envirothons are competitive events for middle through high school aged students that tests their knowledge of environmental issues, flora and fauna, and habitats of the Florida Keys and South Florida.

Status: Implemented and on-going.

Implementation: FKNMS and educators cooperate to provide these programs.

(2) Provide or Support Environmental Education Workshops for Educators. This activity will enhance the knowledge base of educators through environmental education workshops about the Keys' natural and cultural resources and ensure that the education community receives consistent, accurate scientific information. FKNMS will continue to co-sponsor these programs when appropriate.

Status: Implemented and on-going.

Implementation: FKNMS and educators cooperate to provide these programs. Using *The Florida Keys Environmental Education Resource Directory*, staff will identify needs, design programs and partner with others to implement workshops.

(3) Sponsor and Support Adult Environmental Education. This activity will continue to sponsor and support environmental education opportunities for community leaders, decision makers and organized user groups. Organizations offering adult education, such as the Florida Keys Community College, the Power Squadron, and the U.S. Coast Guard Auxiliary, will be identified. Education staff will support guest organizations' guest lectures, field trips, and brochures. When environmental education is not part of an organization's program, staff confers with organizers to determine if such information may be included and what form it may take. FKNMS staff facilitates activities (for example, a photo contest) when appropriate.

Status: Implemented and on-going.

Implementation: FKNMS will identify and contact adult education organizations to determine how the Sanctuary may support their efforts and/or establish an environmental education focus.

(4) Provide Mechanisms Outside the Law Enforcement Sector that can Deliver Resource Education at the Site of the Resource. Since 1995, Team OCEAN volunteers have donated more than 15,000 hours to promote the safe and enjoyable public access to and use of the Sanctuary, while advocating resource protection. On high-use days at busy reef sites, teams of volunteers and staff distribute brochures, answer questions, and assist the boating public. Team OCEAN will expand to serve the Florida Keys from five base locations.

Status: Implemented and on-going.

Implementation: FKNMS continues to train volunteers and facilitate this program. Volunteer, Enforcement and Damage Assessment and Restoration activities are coordinated with this activity.

(5) Offer Teacher Awards. Teacher Awards, a competitive program, offers Monroe County teachers an opportunity to supplement curricula with funding for field trips, scientific equipment, and reference material. FKNMS issues a Request for Proposals for educational services. The proposals are evaluated on a competitive basis and funding is administered through an agreement with a nonprofit organization such as the National Marine Sanctuary Foundation (NMSF).

Status: Implemented and on-going.

Implementation: FKNMS is responsible for implementing this activity.

(6) Coordinate Voluntary Certification Programs. FKNMS will work with leaders in various businesses (e.g. dive and snorkel, marine mammal viewing, kayak, eco-tours, fishing, etc), other agencies and non-government groups to design and implement Voluntary Certification Programs for the targeted business. The goal of the certification programs will be to ensure the staff and customers receive accurate information about the sanctuary and the coral reef ecosystem, and how they can protect it through good etiquette. The Blue Star and Dolphin Smart programs currently under

development and/or being implemented with the dive and snorkel businesses and the dolphin “encounter” businesses will serve as the pilot programs.

Status: On-going.

Implementation: FKNMS, partners, businesses, and agencies will identify needs and methods of implementation.

STRATEGY E.6 CONTINUING THE EDUCATION WORKING GROUP

Strategy Summary

The Education Working Group (formerly the Education Advisory Board) will continue to work with the Sanctuary Advisory Council to introduce new ideas into the Education and Outreach Action Plan. Working group members have been drawn from the Monroe County Environmental Education Advisory Council, Florida Keys Community College, Schools in Monroe County, other institutions of higher learning, and Florida Keys non-formal educational institutions. Working Group members also include representatives of public television and radio stations, entities that provide information and education programs to user groups, commercial interests, and federal and state agencies. The Sanctuary will continue to work with other groups not based in the Keys but which have been willing and able to support FKNMS education. These include agencies with jurisdictional interests in or directly related to the Sanctuary, national and international conservation and environmental organizations, state education and teacher organizations and educational organizations that hold meetings in the Keys.

Activities

Working group activities will continue to include, but not be limited to: 1) providing information on current activities in the education community; 2) encouraging cooperative efforts; 3) providing direction for the Sanctuary Education Program; 4) preventing the duplication of effort; 5) promoting stewardship; and, 6) guiding development of natural and cultural resource education products.

Status: Implemented and on-going.

Implementation: FKNMS staff, Sanctuary Advisory Council, and working group members.

STRATEGY E.10 ESTABLISHING PUBLIC FORUMS

Strategy Summary

The purpose of this strategy is to ensure public involvement throughout South Florida in Sanctuary activities by holding public meetings and promoting FKNMS awareness to extracurricular groups. Public meetings are an important mechanism for disseminating resource management information to the community. During the last five years, the education staff has sponsored public meetings highlighting an array of timely subjects and issues. In addition, FKNMS educators have regularly participated as guest speakers for lectures sponsored by community organizations.

Activities (2)

(1) Conduct Public Meetings. Public meetings are held throughout the Keys on topics deemed important and on an as needed basis. FKNMS staff and guest speakers present information and encourage a dialogue between staff members and the public. The FKNMS superintendent and state manager are present whenever possible.

Status: Implemented and on-going.

Implementation: FKNMS will have the primary responsibility for implementing this activity. Meetings continue to be held as needed throughout the Keys. Meetings are announced using local media and other appropriate forms of communication.

(2) Conduct Lecture Series. FKNMS staff are encouraged to speak at public lectures that are organized by civic and community organizations. FKNMS educators coordinate with and offer logistical support to organizers of lecture series such as the “The Dagny Johnson Key Largo Hammock Botanical State Park Lectures.”

Status: Implemented and on-going.

Implementation: FKNMS and local community and civic organizations.

STRATEGY E.11 PARTICIPATING IN SPECIAL EVENTS

Strategy Summary

The purpose of this strategy is to organize, support, and/or participate in special events (e.g., trade shows, expositions, etc.) that allow for the exchange of Sanctuary information. FKNMS currently coordinates and will continue to coordinate with other agencies and organizations at events (e.g. NPS, FWC, Seagrass Outreach Partnership, etc.)

Activities (3)

(1) Develop and Maintain Trade Show Information Booths. FKNMS staff attend trade shows, local festivals and other events with materials that provide the public with information about Sanctuary resources. Education staff will continue to identify festivals and trade shows that provide the most effective and efficient use of Sanctuary resources.

Status: Implemented and on-going.

Implementation: FKNMS and event organizers.

(2) Participate in and support National Marine Sanctuary Program Activities. FKNMS continues to participate in National Marine Sanctuary Program education and outreach efforts. The National Education Plan will be implemented locally.

Status: Implemented and on-going.

Implementation: FKNMS.

(3) Establish Partnerships. The Sanctuary will continue to explore and establish partnerships with government and non-government agencies to meet the Sanctuary goals and objectives. Partnership opportunities will be evaluated and established on an individual basis.

Status: On-going.

Implementation: FKNMS and partners.

STRATEGY E.1 PRINTED PRODUCT DEVELOPMENT AND DISTRIBUTION

Strategy Summary

Printed products will be developed based on a needs assessment designed to define audiences, develop messages, designate the most appropriate tool, and identify the best means of distribution. Staff will continue to seek partners when developing and distributing products to reduce costs by sharing expenses, providing consistent messages, and reducing redundancy. Products will be bilingual where appropriate to help non-English speaking visitors and residents learn about the Sanctuary, the human impacts on Sanctuary resources and environmental quality.

Activities (13)

(1) Design and Print Sanctuary Brochures. A series of brochures that contain comprehensive information about the Sanctuary has been produced. Information is regularly reviewed, updated, refined and reprinted as needed. Brochures are available on the FKNMS Web site (floridakeys.noaa.gov) as appropriate

Status: Implemented and on-going.

Implementation: FKNMS and partners as appropriate.

(2) Produce a Sanctuary Newsletter. FKNMS staff will regularly evaluate *Sounding Line* newsletter to define the target audience, purpose, messages, and distribution. Methods of dissemination such as web publishing, hard copy mailings, and e-mail will be regularly assessed. The newsletter includes information about current developments in management and feature projects and programs in the Sanctuary. Guest articles are invited from partners and community organizations.

Status: Implemented and on-going.

Implementation: FKNMS has primary responsibility for design and content. All program disciplines are asked to contribute articles and provide input on content and theme.

(3) Produce The Florida Keys Environmental Education Resource Directory. The directory lists natural and cultural resources in the Keys and descriptions of the groups involved. It is periodically updated and may be made available via the Internet.

Status: Implemented and on-going.

Implementation: FKNMS oversees this project and maintains the directory on the FKNMS Web site (floridakeys.noaa.gov).

(4) Provide Information to Shipping Businesses. Shipping businesses will continue to be alerted about Sanctuary regulations, such as vessel waste discharge and ATBA, PSSA, and other information. Target audiences are large importers/exporters, port authorities, commercial fishing companies, and ship insurers. Methods of distribution include NOAA nautical charts, trade publications and newsletters, trade shows, and direct mailings.

Status: Implemented and on-going.

Implementation: FKNMS education staff and NMSP headquarters. National headquarters and the NOAA Office of General Counsel contact U.S. and international shipping interests. Field education staff contact local port authorities and large-vessel operators. NOAA headquarters, field and General Counsel staff, DEP, the Office of Coastal and Aquatic Managed Areas, and FWC's Division of Law Enforcement cooperate.

(5) Provide Interpretive Information to Periodicals and Publications. Specific groups such as: the diving and fishing industries, research community, local naval facilities, and the Spanish-speaking community, regularly receive targeted information about programs, research findings, and regulations. The internet, the FKNMS Web site (floridakeys.noaa.gov), and CD-ROMs are regularly evaluated as ways to provide information to writers and editors. A greater focus will be made on publications and periodicals that serve Spanish-speaking populations.

Status: Implemented and on-going.

Implementation: Education staff continues to research and identify topics, authors, and media contacts for written pieces to be submitted for publication and respond to requests for articles, information, and images from various periodicals and publications.

(6) Provide Information to Businesses about Sanctuary Resources and Activities. Information about regulations and resources is provided to local on-the-water businesses. FKNMS staff currently visit over 400 businesses from south Miami-Dade County to Key West to distribute brochures and other informational materials and serve as liaisons between the businesses and Sanctuary management. FKNMS staff will also educate business personnel about environmentally sensitive business practices through personal contacts and distribution of specific educational materials.

Status: Implemented and on-going.

Implementation: FKNMS staff coordinates this activity with businesses.

(7) Provide Multilingual Information to Marine Rental Businesses. Multilingual information about Sanctuary activities will be provided to marine-related businesses, such as boat and personal watercraft rental operations and marina gas facilities, in order to educate patrons about environmental issues, stewardship skills, and the Sanctuary in general. Materials will be revised and updated as necessary. Possible cultural barriers will be explored and addressed where appropriate.

Status: Implemented and on-going.

Implementation: FKNMS staff will continue to develop and distribute multilingual educational information.

(8) Distribute Information in Utility Bills, Newsletters, and Annual Vehicle and Vessel Registrations. Through this activity, all residents of the Keys would receive information about FKNMS regulations, issues, and stewardship skills. Other avenues will be evaluated, including partnerships and messages on billing envelopes.

Status: Implemented and on-going.

Implementation: FKNMS staff, partners, agencies, and companies.

(9) Develop an Outreach Component with the Tourist Development Council. Provide potential visitors with general ecosystem descriptions and information about environmental damage that may result from inappropriate actions. The audience for this activity will be identified through the local Tourist Development Council, business owners, and employees or business clientele. Use of alternate technologies, such as a link to the FKNMS Web site, will be explored.

Status: To be implemented as staff availability and budgets will allow.

Implementation: FKNMS education and outreach staff will identify audiences and determine effective methods of outreach.

(10) Produce a Color Environmental Atlas for the Sanctuary. FKNMS education and outreach staff will work with NOAA, DEP, FWC/FWRI and FKNMS science staff to produce a color atlas including habitat types, populations, hurricane paths, and other environmental or social themes. New technologies will be explored.

Status: To be implemented as staff availability and budgets will allow.

Implementation: As information is gathered, NOAA will update existing benthic habitat maps. Concurrently, education and outreach and science staff will consult with NOAA, DEP, and FWC/FWRI to identify themes for the atlas. Education staff will identify methods and locations for distribution.

(11) Print Marine Etiquette on Marine-Related Materials Packaging. Messages about on-the-water etiquette printed on marine-related materials packaging is expected to heighten awareness and improve behavior. The messages would appear on materials used for water-related activities, such as ice bags, water buckets, and bait boxes. Partnerships with other agencies and partners will be explored.

Status: To be implemented as staff availability and budgets will allow.

Implementation: FKNMS staff and partners would identify products for marine-related messages and contact manufacturers to propose conservation messages on their packaging. Staff would design the message for approval by the manufacturer. The manufacturer would cover the cost of printing and producing the packaging.

(12) Develop Educational Materials. Educational materials such as posters, CD-ROMs, videos, and fact sheets are regularly developed for targeted audiences and messages. Before products are developed, a needs assessment will be conducted to define the audience, create the message and

determine the most appropriate tools. Outside funding and partnerships are pursued. Prior to a project being reproduced a second time, its effectiveness will be evaluated. Some current products include: Florida's Coral Reef Ecosystem poster, Reef Fish ID poster, Keeping Your Bottom Off The Bottom, and Teall's Guides.

Status: Implemented and on-going.

Implementation: FKNMS staff and contractors as needed for the technical aspects of layout and design.

(13) Expand the Shipwreck Trail. The Shipwreck Trail provides an on-water and on-land interpretive exhibit for the public. FKNMS education and outreach staff will continue working with the dive community, schools, and the public to evaluate and expand the Shipwreck Trail program. If determined to be appropriate, new trail sites with historical or recreational significance will be evaluated; volunteers will help collect data.

Status: Implemented and on-going as funding is identified.

Implementation: Education and outreach staff will work with FKNMS Maritime Heritage staff on implementing this activity. In addition, NOAA and the Florida Department of Historical Resources provide assistance and help determine monitoring protocols for any expansion. This activity is coordinated with the Maritime Heritage Resources Action Plan and volunteers. In 2006 the FKNMS began developing photomosaics of several of the Shipwreck Trail vessels for use as education and outreach materials.

STRATEGY E.2 CONTINUED DISTRIBUTION OF AUDIO-VISUAL MATERIALS

Strategy Summary

Videos, films, and audio-visual environmental education materials portraying activities in the Florida Keys and their impacts on Sanctuary resources have been collected and catalogued. The materials are stored in libraries at the three FKNMS offices and loaned to the public for educational purposes. Several videos, including Spanish language versions, have been produced and distributed.

Activities (2)

(1) Maintain the Audio-Visual Library. FKNMS staff continues to collect, catalogue, and lend audio-visual materials from Sanctuary libraries. New contributions to slide and video libraries are accepted from amateur and professional photographers and additional audio-visual materials are acquired as budget allows.

Status: Implemented and on-going.

Implementation: FKNMS staff and contributors.

(2) Develop Audio-Visual Presentations. Staff will continue to develop topic-oriented audio-visual presentations for specific age groups and target audiences. Products range from short instructional

pieces to longer presentations that detail the Sanctuary's history, development, regulations, research, water quality and other issues. Materials will be bilingual where appropriate.

Status: Implemented and on-going.

Implementation: FKNMS staff works and partners to produce educational presentations.

STRATEGY E.3 CONTINUED DEVELOPMENT OF SIGNS, DISPLAYS, EXHIBITS, AND VISITOR CENTERS

Strategy Summary

Signs and displays continue to be developed for high-use areas, including public and private boat ramps, and public beaches. The displays inform participants in water-based activities about regulations and environmentally sound practices, provide navigation information, and promote awareness of nearby sensitive areas. Visitor information booths continue to be established throughout the Keys, including FKNMS offices and Chamber of Commerce visitor centers. Portable displays provide information about Sanctuary resources, regulations, and environmental quality. Signs are multilingual as needed.

Activities (7)

(1) Develop Wayside Exhibits. Wayside exhibits are an effective means of educating the public about the Sanctuary. More than one exhibit may be established for location at popular fishing and disembarkation points in the Keys. The exhibits will provide information about FKNMS boundaries, resources, and regulations. Coordination and partnerships with other local, state, and federal agencies in the Florida Keys regarding wayside exhibits will provide consistency in messages, reduce over signage and reduce costs through sharing expenses. Wayside exhibits will be included in exhibit planning for the Florida Keys Eco-Discovery Center in Key West. Signs will be bilingual when appropriate.

Status: To be implemented as funding is identified.

Implementation: FKNMS staff will coordinate with local, state, and federal agencies to develop, produce, and install exhibits.

(2) Develop Mobile Displays. Each mobile display is unique to its context such as a convention, trade show, educational meeting, or scientific gathering. General information may be communicated along with educational opportunities or research findings. Grant funding and donations are sought to support display development and construction. Volunteers with appropriate expertise assist in design and construction. Existing displays are updated regularly.

Status: Implemented and on-going.

Implementation: FKNMS staff, professionals and volunteers.

(3) Develop Interactive Educational Exhibits. Interactive educational displays that convey information about boundaries, regulations, resources, education programs, research programs, and volunteer opportunities will be developed. The Florida Keys Eco-Discovery Center, which is part of the Dr. Nancy Foster Florida Keys Environmental Complex in Key West, will serve as home for prototype displays, including an interactive computer program, allowing staff to evaluate design

effectiveness and further develop exhibits. Funding from private and nonprofit organizations will be sought for placement.

Status: Began implementation as the Florida Keys Eco-Discovery Center in Key West was developed.

Implementation: FKNMS staff will work with funding partners, exhibit designers and other professionals for the Florida Keys Eco-Discovery Center in Key West to define the content for a long-term interactive computer program.

(4) Design and Install Roadside Signs. Roadside signs will be installed in the Homestead and Key Largo areas to alert travelers that they are entering or leaving the Sanctuary watershed. Partnerships with other agencies will be explored for possible development of multi-logo signs (for example, a Sanctuary Program logo on the Florida Heritage Trail signs.)

Status: To be implemented as funding is available.

Implementation: Education and outreach staff will design roadside signs. Sanctuary management staff will coordinate with the Florida Department of Transportation and county and local municipalities for location approval and installation.

(5) Establish Visitor Booths/Displays to Distribute Educational Materials. Visitor booths and displays will be developed to provide multilingual educational materials about resources, on-the-water etiquette, and environmental awareness. Sanctuary offices have a limited space for distribution of materials to walk-in visitors. Other locations might include rental car agencies, visitor centers, chambers of commerce, and airports.

Status: Implemented and on-going; to be expanded as staff and budgets allow.

Implementation: Staff continues to ensure displays of materials in FKNMS offices and consults local chambers of commerce and other outlets to determine if space is available for displays. Financial support is sought from chambers of commerce and the local Tourist Development Council.

(6) Establish Florida Keys Eco-Discovery Center in the Upper Keys. A Florida Keys Eco-Discovery Center will be established in cooperation with local, state and federal agencies to provide an orientation for visitors and residents about protected and managed areas. Cooperative efforts will pool resources and provide lowest-cost options for a special center. One goal of the orientation program is to inform visitors about education programs offered throughout the Florida Keys.

Status: To be implemented as staff and budgets will allow.

Implementation: FKNMS will secure an interagency agreement with agencies interested in establishing a visitor center in the Upper Keys. FKNMS will consult with agency managers, and other agency personnel to determine types of exhibits to be included in the visitor center. Activities will be divided among participating agencies. FKNMS will either develop the exhibits in-house or through contract. A staff person will also be hired to manage the visitor center, with salary funding coming from all agencies.

(7) Establish a Florida Keys Eco-Discovery Center in Key West. The Florida Keys Eco-Discovery Center, located at the Dr. Nancy Foster Florida Keys Environmental Complex, will be established in cooperation with the U.S. Fish and Wildlife Service (USFWS), NPS, SFWMD and the NMSF to provide

visitors and residents with orientation information on various protected and managed areas. Cooperative efforts will pool resources and provide lowest-cost options. A goal will be to inform visitors about the extent of education programs offered throughout the Florida Keys.

Status: On-going. In the first six month of operations the Center has hosted more than 20,000 visitors from 50 US states and 20 countries on 6 continents.

Implementation: FKNMS, USFWS, SFWMD, NPS, NMSF and contractors cooperated to plan, design, and implement. The Florida Keys Eco-Discovery Center opened to the public in October 2006. Exhibit design, outreach and visitor education activities continue to be developed and implemented as needs and funding are identified.

STRATEGY E.5 APPLYING VARIOUS TECHNOLOGIES

Strategy Summary

This strategy establishes a program to promote FKNMS goals and activities through the use of the latest technologies. Materials shall be multilingual when appropriate and possible.

Activities (3)

(1) Establish VHF Radio Stations. The NMSP and local staff will work to secure a VHF radio-information frequency dedicated to providing multi-language information about boating and related activities. The broadcasts will include information about regulations, navigation, resources, weather, and reef conditions. Messages will seek to help boaters, divers, and fishermen avoid negatively impacting the ecosystem. Cost and target area assessments will be conducted. Grant funding will be sought to support implementation costs.

Status: To be implemented as staff time and funding allow.

Implementation: FKNMS will work with NOAA and the NMSP to establish VHF radio stations and locate grant funds.

(2) Maintain and Enhance a Sanctuary Web Site. An Internet Web site (floridakeys.noaa.gov) has been developed to disseminate information about the Sanctuary's natural and cultural resources, regulations, Sanctuary Advisory Council, current issues, education, and research. Site reviews and information updates are continuous. New technologies, such as video streaming, will be implemented as appropriate.

Status: Implemented and on-going.

Implementation: A web master works with FKNMS staff to determine content and ensure timely updates.

(3) Explore, Develop, and Implement New Technologies. As new technologies are developed, they are reviewed, evaluated, and implemented into FKNMS programs and products as appropriate. Examples of potential technologies include: telepresence, distance learning, etc.

Status: Implemented and on-going.

Implementation: FKNMS and technical experts as needed.

STRATEGY E.12 PROFESSIONAL DEVELOPMENT OF EDUCATION AND OUTREACH STAFF

Strategy Summary

Conferences have been one of the primary ways that new technologies and methodologies are shared among educators in the field of natural resource education. Participating in national, state, and local conferences has been a high priority for Sanctuary educators. Conferences and workshops provide opportunities for FKNMS to reach out to the education community and have introduced Sanctuary educators to highly effective means of program evaluation and implementation.

Activities (1)

(1) Attend Conferences. Sanctuary educators continue to represent FKNMS annually at one national (or regional) professional conference and one state professional conference or program. Local conferences and workshops are attended when possible and appropriate.

Status: Implemented and on-going.

Implementation: FKNMS

3.2.2 Volunteer Action Plan

Introduction

The FKNMS Volunteer Program began as a formal partnership between The Nature Conservancy and NOAA from 1992 to 2004. In 2004, FKNMS took over the management of the volunteer program. Its programs are coordinated from all three Sanctuary offices and function as an important source for recruiting, training, placing and recognizing volunteers. Volunteers are a vital mechanism for involving the community and a valuable resource for accomplishing a variety of tasks, including research and monitoring, education and outreach programs, underwater projects, representation at certain events and functions, and administrative tasks. Volunteers support many activities that would otherwise not be accomplished as efficiently or cost effectively. There are numerous volunteer programs in the Florida Keys, many of which predate the FKNMS. In a holistic sense, some of these volunteer programs are enhancing Sanctuary resources. It is not the intent of this action plan to subsume or usurp these excellent programs. The FKNMS plans to continue to collaborate on volunteer activities within the Sanctuary with other volunteer organizations.

The FKNMS volunteer program works closely with other Sanctuary programs, outside organizations and agencies. Volunteers are matched to activities that align their interests and backgrounds. Because of the territory covered and the diversity of projects, project managers are also volunteer coordinators for their specific projects. The strength of the Volunteer Action Plan is its commitment to partnerships. Additional partnerships with the state, universities, and other non-governmental organizations have dramatically expanded the work begun by FKNMS staff. Volunteers today form an integral part of Research and Monitoring, Mooring Buoy, Water Quality, Education and Outreach, Maritime Heritage Resources, Damage Assessment and Restoration, and Administration action plans.

Goals and Objectives

The goals of the Volunteer Action Plan are to:

- Assist staff in accomplishing management objectives.
- Build a stewardship ethic in the community.

The objective of the Action Plan is to:

- Develop a system of public involvement that supports the Sanctuary in a “hands-on” manner.

Accomplishments

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

- Volunteers have donated over 180,000 volunteer hours to the Sanctuary between 1996 and 2006, the equivalent of \$2.9 million in cash contributions, based on a national formula.
- The Sanctuary has implemented many successful volunteer efforts including Adopt-A-Reef, Coral Reef Classroom, Reef Medics, Team OCEAN, Maritime Heritage Resources Inventory, and other projects.

- Some volunteer programs in the FKNMS such as Team OCEAN have been implemented nationwide in the NMSP.
- Mote Marine Laboratory Center for Tropical Research uses volunteers in the Marine Ecosystem Event Response and Assessment (MEERA) and the Coral Bleaching Watch Program
- The Ocean Conservancy’s Reef Ecosystem Condition (RECON) RECON program trains volunteers to collect information about the reef environment and its health.
- Florida Fish and Wildlife Conservation Commission enlists volunteers for the Queen Conch Restoration Project and Lobster Watch.
- Old Dominion University and Florida State University use volunteers for the Spotted Lobster Population Study and Lobster Watch.
- Volunteers support the University of North Carolina, Wilmington with coral spawning research.
- The Dolphin Ecology Project: Atlantic Bottlenose Dolphin Study uses volunteers.
- Reef Environmental Education Foundation relies almost entirely on qualified volunteers to perform fish surveys and the Great Annual Fish Count.
- The Nature Conservancy continues to benefit from volunteer assistance with Florida Bay Watch and Sea Stewards Monitoring.

Strategies

There are three strategies in this Volunteer Action Plan:

- V.1 Maintaining Volunteer Programs
- V.2 Working with Other Organization/Agency Volunteer Programs
- V.3 Providing Support for Volunteer Activities

Each of these strategies is detailed below. Table 3.5 provides estimated costs for implementation of each strategy over the next five years.

Table 3.5 Estimated costs of the Volunteer Action Plan

Volunteer Action Plan Strategies	Estimated Annual Cost (in thousands)					Total Estimated 5 Year Cost
	YR 1	YR 2	YR 3	YR 4	YR 5	
V.1: Maintaining Volunteer Programs+	1	1	1	1	1	5
V.2: Working With Other Organization/Agency Volunteer Programs++	-	-	-	-	-	-
V.3: Supporting Volunteer Activities	75	75	85	85	85	405
Total Estimated Annual Cost	76	76	86	86	86	410
+ Funding for some of the activities in Strategy V.1 are accounted for in other action plans with related activities						
++ Funding does not reflect expenditures by organizations other than the NMSP.						

Strategy Summary

The FKNMS volunteer programs are as varied as the people who donate their time. The activities range from assisting the vessel maintenance staff to picking up litter on a reef by participating in the Adopt-A-Reef program. There are several activities associated with this strategy.

Activities (9)

(1) Coordinate the Reef Medics Program. Reef Medics is an innovative, hands-on program designed to use volunteers to assist in FKNMS restoration efforts. Volunteers have experience in vessel navigation and operation, snorkeling, and SCUBA diving. The Damage Assessment and Restoration Program (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 specifically formulated for 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 repaired sites for 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.

Status: Implemented and on-going.

Implementation: FKNMS

(2) Promote and Support Environmental Education in Monroe County and State Schools. Volunteers assist the education and outreach staff in bringing environmental education to schools in Monroe County. Coral Reef Classroom volunteers chaperone middle-school students during a snorkel trip to the reef and help students with water quality testing. The program is offered in the spring and fall. Volunteers are trained in the use of the equipment and procedures. Volunteers are also used to take programs such as Build a Coral Reef, Build a Seagrass Community, and Coral Reef Play to elementary classes in Monroe County.

Status: Implemented and on-going.

Implementation: FKNMS, The Nature Conservancy, the Ocean Conservancy, and Monroe County Schools.

(3) Provide Mechanisms Outside of the Law Enforcement Sector that can Deliver Resource Education at the Site of the Resource - Team OCEAN. Team OCEAN volunteers donate their time promoting safe and enjoyable public use of the marine environment of the Florida Keys National Marine Sanctuary, while advocating the protection of our natural resources. Trained volunteer teams using Sanctuary owned vessels are stationed at heavily visited reef sites during the peak recreational boating seasons. They educate and inform the public about the FKNMS, and encourage proper use of Sanctuary resources and basic safety precautions. Team OCEAN volunteers directly prevent groundings by being present, watching for errant boaters, and waving them off when they attempt to cross the shallow reef crest.

Status: Implemented and on-going.

Implementation: FKNMS

(4) Coordinate the Adopt-A-Reef Program. Local dive operators and volunteer divers “adopt” a reef and run special trips to the site so scuba divers can remove trash, fishing line and other debris. Many shops offer substantial discounts or social events to mark the clean-up. Certified divers are briefed on proper methods of cleaning the reef without damaging resources.

Status: On-going; looking for opportunities to expand.

Implementation: FKNMS, The Ocean Conservancy, and dive operators.

(5) Maintain the Maritime Heritage Resources Inventory. A bibliographic database has been created in a standard format and made accessible over the Internet. Volunteers and Sanctuary staff survey and identify site locations and site characteristics including name, age, integrity, and historical and cultural significance, sensitivity, and recreational value. Volunteers assist staff in collecting existing 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: Continue with assistance from Florida Department of Historical Resources.

This activity is conducted in conjunction with the Maritime Heritage Resources Action Plan.

(6) Provide Support for Vessel, Dock, and Mooring Buoy Assistance and Maintenance. Volunteers assist Sanctuary staff with marine and dock maintenance activities including mooring buoy installation, repair, and cleaning; vehicle and boat maintenance, grounds maintenance, and storage and dock cleaning. Qualified volunteers also assist as captains and mates. This activity is also included in the Waterway Management Action Plan.

Status: Implemented and on-going.

Implementation: FKNMS

(7) Gather Support for Geographic Information Systems. Geographic information systems (GIS) technology can be used for scientific investigations, and resource management. Volunteers work with Sanctuary staff using GIS software and imagery to provide FKNMS managers with information and photographs. Some of volunteer products include:

- Aerial photographs of sea bottom features near coral reefs that provide baseline data on the percent of coral cover at the various reefs.
- Research regarding the location of monitoring stations in relation to benthic cover, and assistance to the mooring buoy specialists in pinpointing a location of a mooring buoy anchor when the mooring balls have been torn away.
- A comparison between the 1995 and 1999 color infrared photographs that show the damage over time of seagrass destruction and turbidity increases by boats transiting shallow areas.
- Baseline information on the current status of nearshore areas as baseline information to measure future changes.
- Satellite views of the entire Florida Keys that can be used to show areas of Sea Steward monitoring and other monitoring efforts.
- Nearshore aerial photos of research areas where benthic habitat studies are being conducted.

Status: Implemented and on-going.

Implementation: FKNMS and other non-governmental organizations also included in numerous other Action Plans.

(8) Maintain the Eyes On the Water Program. This new Program will provide professionals on the water, such as dive-boat captains and crew, with the opportunity to be the Sanctuary’s “eyes and ears,” by letting staff know when someone is behaving in a manner that may be inconsistent with Sanctuary regulations. The Sanctuary will follow up on the report with a letter and educational materials to the vessel owner. This activity also included in the Damage Assessment and Restoration, Education and Outreach and Enforcement Action Plans.

Status: Implemented and on-going.

Implementation: FKNMS trains volunteers and facilitates this program. Project lead and partners include the FKNMS, non-governmental organizations, and the public,

(9) Maintain Support For Other Volunteer Projects. Volunteer assistance is an integral part of FKNMS projects not associated with specific strategies, such as general office and computer support tasks, maintenance activities, fundraising, and other special projects.

Status: Implemented and on-going.

Implementation: FKNMS

STRATEGY V.2 WORKING WITH OTHER ORGANIZATION/AGENCY VOLUNTEER PROGRAMS

Strategy Summary

The National Marine Sanctuary Program has a history of using volunteers to assist with activities ranging from maintenance to public education. Volunteers also work with organizations not associated directly with the Sanctuary but whose interests coincide with Sanctuary goals. The volunteer programs and projects are an integral part of the Sanctuary and the community, providing information relating to the overall health of the ecosystem. The information presented by the organizations assists FKNMS managers in making better resource management decisions.

Activities (11)

(1) Assist Florida Keys Watch. (formerly Florida Bay Watch). This program trains volunteers to collect seawater samples and environmental data using standard scientific methods. Florida Keys Watch is designed to augment and assist scientific studies conducted by universities, agencies, and other institutions. This activity is also included in the Water Quality and Damage Assessment Action Plans.

Status: A redesign of this project is underway.

Implementation: The Nature Conservancy and Florida International University

(2) Assist Reef Environmental Education Foundation. The Reef Environmental Education Foundation (REEF) is a grassroots, nonprofit organization that uses recreational divers who regularly conduct fish biodiversity and abundance surveys in the Keys and the Caribbean. These surveys are conducted as part of REEF's Fish Survey Project (The Great Annual Fish Count) and become part of a publicly accessible database. This activity is also included in the Research and Monitoring Action Plan.

Status: Implemented and on-going.

Implementation: REEF, FKNMS

(3) Assist Queen Conch Restoration Activities. Volunteers assist with raising juvenile queen conchs at a hatchery located at Keys Marine Lab in Long Key, Florida. They also locate and tag wild adult conchs for population and reproduction studies and help relocate nearshore populations and monitor their progress. This activity is also included in the Research and Monitoring Action Plan.

Status: Implemented and on-going.

Implementation: FWC and The Nature Conservancy

(4) Assist Dolphin Ecology Project. Throughout the year, Dolphin Ecology Project staff, scientists and volunteers photograph individual dolphins for identification, observe their activities, sample environmental parameters, and identify and measure the abundance of important dolphin prey. Volunteers and experienced boat operators conduct photo-identification surveys of Atlantic Bottlenose Dolphin. The project's educational goal is to increase public awareness about dolphins, the interrelated nature of the Keys' habitats, and the importance of South Florida ecosystem restoration. This activity is also included in the Research and Monitoring Action Plan.

Status: Implemented and on-going.

Implementation: Dolphin Ecology Project, FKNMS staff, The Nature Conservancy

(5) Assist Reef and Coastal Cleanups. Reef and coastal cleanups are supported by a network of environmental and civic organizations, government agencies, industries, and individuals who volunteer to remove debris and collect information on the amount and types of debris. The information serves to educate the public on marine debris issues and encourage behavior that will reduce debris along beaches, coastal areas, reef tracts, and in the open ocean.

Status: Implemented and on-going.

Implementation: A partnership among FKNMS, FKNMS volunteers, Sombrero Reef Sweep, Barley Bay Festival, Clean Florida Keys, The Ocean Conservancy, Reef Relief, Friends and Volunteers of Refuges, The Nature Conservancy.

(6) Assist Marine Ecosystem Event Response and Assessment (MEERA). The MEERA Project seeks to provide early detection and assessment of biological events occurring in the Sanctuary and surrounding waters. The goal is to help the scientific community better understand the nature and causes of events, such as coral bleaching and disease outbreaks, fish kills, harmful algal blooms, “red tides,” and other events that adversely affect marine organisms. Understanding the events will help scientists and managers determine if the events are natural or linked to human activities. The project relies on observations made by people who are frequently on the water, such as captains, recreational boaters, environmental professionals, and law enforcement personnel. This activity is also included in the Research and Monitoring Action Plan.

Status: Implemented and on-going.

Implementation: Mote Marine Lab’s Tropical Research Center

(7) Assist Sea Turtle Activities. Sea turtles are protected under the U.S. Endangered Species Act (ESA) and Florida law. Volunteers protect and preserve sea turtles and their habitats. Volunteers monitor known and potential nesting beaches in the Keys. They mark and record the location of nests and document nest success. Volunteers staff a sea turtle stranding network. Injured turtles are ministered to and returned to the marine environment.

Status: Implemented and on-going.

Implementation: Save-A-Turtle, The Turtle Hospital, see also the Research and Monitoring Action Plan.

(8) Assist Save the Manatee Club. Manatees are endemic throughout South Florida waters. Save the Manatee Club has volunteers in the Keys and is active locally for education and monitoring. Volunteers regularly assist in removing monofilament line, a particular danger for the species.

Status: Implemented and on-going.

Implementation: Save the Manatee Club, Dolphin Research Center, Monroe County.

(9) Assist Marine Animal Rescue Activities. Volunteers throughout the Florida Keys regularly offer ready assistance to distressed marine mammals. Each stranding is unique, and the specific course of action depends upon individual circumstances. Volunteers assist marine mammal stranding to reduce the animal’s pain and suffering, provide appropriate first aid, minimize possible threats of marine mammals to human health and safety, derive maximum scientific and educational benefits from both live and dead stranded marine mammals, and collect consistent, high-quality data to facilitate marine mammal conservation.

Status: Implemented and on-going.

Implementation: NMFS’ Marine Mammal Health and Stranding Response Program and permitted partners.

(10) Assist Wild Bird Rehabilitation. Several wildlife rescue organizations in the Keys respond to injured birds, including sea gulls, pelicans, egrets, herons, osprey, and eagles. Volunteers rescue and rehabilitate birds at major rehabilitation centers in Tavernier, Marathon and Key West.

Status: Implemented and on-going.

Implementation: Florida Keys Wild Bird Rehabilitation Center, Marathon Wild Bird Center, and Wildlife Rescue of the Florida Keys.

(11) Assist Reef Ecosystem Condition (RECON). RECON trains volunteer divers to collect information about the reef environment, the health of stony corals, the presence of key reef organisms and obvious human-induced impacts. The goals of RECON are to broaden the scope of available information about the bottom-dwelling organisms on coral reefs, to alert local researchers and managers of changing reef conditions, such as coral bleaching and nuisance algal blooms, and to increase public understanding of the threats to coral reef ecosystems. This activity is also included in the FKNMS Research and Monitoring Action Plan.

Status: Implemented and on-going.

Implementation: The Ocean Conservancy, EPA

STRATEGY V.3 SUPPORTING VOLUNTEER ACTIVITIES

Strategy Summary

The Volunteer Program requires staff and administrative support for the program to function efficiently. Thus, FKNMS project managers strive to recruit, place, orient, train, evaluate, and recognize volunteers who work on a project. Just as each project requires specific training and orientation, each volunteer requires unique evaluation and recognition. Volunteers are asked to report to the project manager the number of hours worked on each project.

Because volunteers are capable of assisting FKNMS managers in diverse ways, this strategy helps identify future volunteer programs. As management needs change over time, the volunteer program continues to identify future projects to recruit volunteers to accomplish objectives. FKNMS staff determines where and how volunteers can assist in fulfilling management objectives. The staff continues to form partnerships with other organizations to use volunteers in a variety of projects. Areas that may be evaluated in the near future include volunteers for artificial reef monitoring and Sanctuary-wide ecological monitoring.

Activities (9)

(1) Recruit and Place Volunteers. Volunteers are recruited based on particular skills, experience, aptitude and especially their interest. Recruitment sources include community groups, churches, neighborhood associations, other volunteer groups, governmental agencies, universities, and local schools. Once recruited, volunteers are paired with a program matching their desire, expertise, and experience.

Status: Implemented and on-going.

Implementation: FKNMS

(2) Orient and Train Volunteers. Orientation is necessary so that volunteers become part of the Sanctuary program. Orientation allows new volunteers to feel welcomed and appreciated, and provides information that assists them in performing their work effectively. Training is specific to the volunteers and the project.

Status: Implemented and on-going. Orientation occurs two to three times a year in the Upper, Middle, and Lower Keys. Specific project training packages for volunteers and skills building training for project managers will be developed.

Implementation: FKNMS

(3) Ensure Volunteer Safety. Volunteer safety is a priority for every project manager. Each project has its own set of safety measures of which the project manager must be aware. Project managers and staff strive to recognize work place hazards and to improve working conditions to the greatest extent possible.

Status: Development of safety manuals for volunteer activities will be a priority in the next five years.

Implementation: FKNMS

(4) Recognize Volunteers. Recognition begins with placing the volunteer in a fulfilling position. Thereafter, formal and informal recognition and awards include an annual party, notes, cards, plaques, uniforms, and similar appropriate items associated with the service.

Status: Implemented and on-going.

Implementation: FKNMS

(5) Evaluate Volunteer Projects. The benefits of evaluation include identifying a project's strengths and weaknesses; anticipating project issues and dealing with them in advance; improving morale and involvement of volunteers and staff; discovering which staff or projects have the highest volunteer turnover; and uncovering new opportunities.

Status: Implemented and on-going.

Implementation: FKNMS

(6) Maintain Communication with Volunteers. Program managers, via a wide range of mechanisms including letters, telephone calls, and e-mail, communicate with volunteers. Volunteers are regularly highlighted through news articles, television specials and series, such as "Waterways," radio interviews and magazine articles that enhance recognition, funding, and recruiting. In addition e-mail and Internet sites are used to communicate goals and achievements. FKNMS maintains an information database about volunteer interests and skills, project activity, service hours, and other relevant data.

Status: Implemented and on-going.

Implementation: FKNMS

(7) Identify and Maintain Funding. Funding for the FKNMS volunteer projects is complex and achieved through a variety of partnerships and a range of sources.

Status: FKNMS regularly assists in developing funding sources for volunteer projects that provide FKNMS management information.

Implementation: FKNMS

(8) Identify and Coordinate Internships. FKNMS project managers regularly develop a wide variety of internships for a broad range of programs as well as educational or training levels. The managers provide project descriptions, supervision, training, scheduling, and support activities for the intern.

Status: Implemented and on-going.

Implementation: FKNMS

(9) Develop and Enhance Volunteer Programs. Opportunities to use volunteers in the Sanctuary on both long and short term situations will be developed on an as-needed basis.

Status: Implemented and on-going.

Implementation: FKNMS

PREVIOUS STRATEGIES

This review of the FKNMS Management Plan identified some Action Strategies that no longer warranted the priority attention they originally received in 1996. These strategies have not been removed from the plan; rather, they have been incorporated into the new strategies under broader headings. Many of the previous strategies listed in the original plan were tied to activities in other action plans that did not occur and others were not feasible due to liability. It was found that to have the majority of the Plan simply list specific ways that volunteers can be utilized was not very useful due to changing needs. In the revised Plan, the mechanisms to identify volunteer opportunities and needs are identified rather than the activities themselves.