

Florida Keys National Marine Sanctuary Revised Management Plan



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National Oceanic and
Atmospheric Administration

National Ocean Service

National Marine Sanctuary Program

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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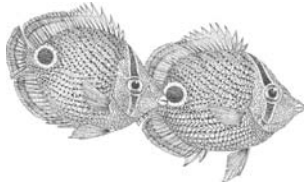
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Acronyms

| | |
|---------|---|
| 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



3.0 ACTION PLANS

What Are The Action Plans In This Document?

The following chapters are the action plans that guide every aspect of sanctuary management. Readers should note that the 1996 *Final Management Plan* for the Sanctuary included ten action plans, presented in alphabetical order to address management needs related to:

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

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

In addition to these new action plans, considerable attention was given to the strategies and activities within each action plan. A deliberate effort was made to simplify and streamline this revised management plan through:

1. Reducing the number of action plans a strategy is located under. While many strategies have relevance to multiple actions plans, each has been placed in the action plan(s) that are of greatest relevance
2. Refining the approach of strategies.
 - a. In the 1996 document many strategies were designed to be “task” or “outcome” specific. In the 2007 document a broader approach-style strategy was often adopted for use often incorporating former task specific strategies as activities under the new strategy
 - b. In the 1996 document many strategies had very specific focuses. In the 2007 document a broader, more integrated approach has been adopted resulting in the combining of one or most related strategies into a single, coordinated “umbrella” approach.
3. Removing strategies that were either completed or not likely to be addressed during the timeline for this revised management plan from action plans.

Table 3.0 provides a crosswalk of Action Plans and Strategies additions, removals or title changes from the 1996 *Management Plan* to the 2007 *Revised Management Plan*.

Management Divisions

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

Sanctuary Science

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

Education, Outreach and Stewardship

- Education and Outreach Action Pan
- Volunteer Action Plan

Enforcement and Resource Protection

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

Resource Threat Reduction

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

Administration, Community Relations and Policy Coordination

- Operations Action Plan
- Evaluation Action Plan

Table 3.0: Crosswalk of 1996 Management Plan and 2007 Revised Management Plan

ACTION PLANS AND STRATEGIES

| | 1996 Management Plan | 2007 Revised Management Plan | Status |
|--|----------------------|------------------------------|------------------------------------|
| Sanctuary Science | | | |
| Science Management and Administration Action Plan (SMA AP) | | | |
| Strategy B.11 - Issuance of Sanctuary Research Permits | ● | ● | On-going (prioritized from R&M AP) |

| | | 1996 Management Plan | 2007 Revised Management Plan | Status |
|---|---|----------------------------|------------------------------------|---|
| | Strategy W.29 – Dissemination of Findings | ● | ● | On-going (prioritized from R&M AP) |
| | Strategy W.32 – Maintaining a Technical Advisory Committee | ● | ● | On-going (prioritized from R&M and WQ AP) |
| | Strategy W.34 – Regional Science Partnerships and Reviews | | ● | New Strategy |
| | Strategy W.35 – Data Management | | ● | New Strategy (prioritized and incorporated WQ and R&M AP Strategy W.28) |
| Research and Monitoring Action Plan (R&M AP) | | | | |
| | Strategy B.2 – Habitat Restoration | ● | | Incorporated in DAR AP Strategy B.22 |
| | Strategy B.11 – National Marine Sanctuary Permits | ● | | Deferred to SMA AP |
| | Strategy F.3 – Researching Queen Conch Population Enhancement Methods | ● | ● | On-going (Refocused/re-titled) |
| | Strategy F.4 – Aquaculture Alternatives | ● | | Not included due to low likelihood of implementation (addressed as activating in Reg AP Strategy R.2) |
| | Strategy F.6 – Fisheries Sampling | ● | ● | On-going |
| | Strategy F.7 – Researching Impacts from Artificial Reefs | ● | ● | On-going (incorporates info from Vol AP) |
| | Strategy F.10 – Bycatch | ● | | Not included due to low likelihood of implementation |
| | Strategy F.11 – Evaluating Fishing Gear/Method Impacts | ● | ● | On-going |
| | Strategy F.14 – Spearfishing | ● | | Not included due to low likelihood of implementation (addressed as activating in Reg AP Strategy R.2) |
| | Strategy F.15 – Assessing Sponge Fishery Impacts | ● | ● | On-going (Refocused/retitled) |
| | Strategy R.5 – Carrying Capacity | ● | | Not included due to low likelihood of implementation |
| | Strategy W.5 – Water Quality Standards | ● | | Deferred to WQ AP |
| | Strategy W.18 – Conducting Pesticide Research | ● | ● | On-going (prioritized from WQ AP) |
| | Strategy W.20 – Monitoring | ● | | Incorporated into R&M AP Strategy W.33 |
| | Strategy W.21 – Developing Predictive Models | ● | ● | On-going (prioritized from WQ AP) |
| | Strategy W.22 – Assessing Wastewater Pollutants Impacts | | ● | Existing Strategy (moved from WQ AP) |
| | Strategy W.23 – Researching Other Pollutants and Water Quality Issues | | ● | Existing Strategy (moved from WQ AP) |
| | Strategy W.24 – Researching Florida Bay Influences | ● | ● | On-going (prioritized from WQ AP) |
| | Strategy W.28 – Regional Database | ● | | Incorporated into SMA AP |

| | | 1996 Management Plan | 2007 Revised Management Plan | Status |
|--|---|----------------------------|------------------------------------|--|
| | | | | Strategy W.35 |
| | Strategy W.29 - Dissemination of findings | ● | | Deferred to SMA AP |
| | Strategy W.32 - Technical Advisory Committee | ● | | Deferred to SMA AP |
| | Strategy W.33 - Ecological Research and Monitoring | ● | ● | On-going (Prioritized from Vol and WQ APs) incorporates R&M AP Strategy W.20 |
| | Strategy W.36 - Conducting Socioeconomic Research | | ● | New Strategy |
| | Strategy Z.2 - Ecological Reserves | ● | | Deferred to MZ AP |
| | Strategy Z.3 - Sanctuary Preservation Areas | ● | | Deferred to MZ AP |
| | Strategy Z.5 - Special-use Areas | ● | | Deferred to MZ AP |
| | Strategy Z.6 - Marine Zone Monitoring | | ● | New Strategy |
| Education, Outreach and Stewardship | | | | |
| Outreach and Education Action Plan (EOS AP) | | | | |
| | Strategy E.1 - Printed Product Development and Distribution | ● | ● | On-going (prioritized from Vol AP) |
| | Strategy E.2 - Continued Distribution of Audio-Visual Materials | ● | ● | On-going (prioritized from Vol AP) |
| | Strategy E.3 - Continue Development of Signs, Displays, Exhibits, and Visitor Centers | ● | ● | On-going (prioritized from Vol AP) incorporates EOS AP Strategy E.7 |
| | Strategy E.4 - Developing Training, Workshops and School Programs | ● | ● | On-going (prioritized from Vol AP) |
| | Strategy E.5 - Applying Various Technologies | ● | ● | On-going (prioritized from Vol AP) |
| | Strategy E.6 - Continuing the Education Working Group | ● | ● | On-going |
| | Strategy E.7 - Promotionals/Education Materials | ● | | Incorporated into EOS AP Strategy E.3 |
| | Strategy E.10 - Establishing Public Forums | ● | ● | On-going (prioritized from Vol AP) |
| | Strategy E.11 - Participating in Special Events | ● | ● | On-going (prioritized from Vol AP) |
| | Strategy E.12 - Professional Development of Outreach and Education Staff | ● | ● | On-going |
| Volunteer Action Plan (Vol AP) | | | | |
| | Strategy B.1 - Boat Access | ● | | Moved to WM AP |
| | Strategy B.2 - Habitat Restoration | ● | | Incorporated into DAR AP Strategy B.22 |
| | Strategy B.3 - Derelict Vessels | ● | | Incorporated into WM AP Strategy B.4 as an activity |
| | Strategy B.4 - Channel/Reef Marking | ● | | Moved to WM AP |
| | Strategy B.9 - Visitor Registration | ● | | Incorporated as an aspect of multiple EOS AP strategies. |
| | Strategy B.10 - Damage Assessment | ● | | Incorporated into DAR AP |

| | | 1996 Management Plan | 2007 Revised Management Plan | Status |
|--|--|----------------------------|------------------------------------|---|
| | | | | Strategy B.20 |
| | Strategy E.1 - Printed Materials | ● | | Prioritized to EOS AP |
| | Strategy E.2 - Audio-Visual Materials | ● | | Prioritized to EOS AP |
| | Strategy E.3 - Signs/Displays/Exhibits | ● | | Prioritized to EOS AP |
| | Strategy E.4 - Training/Workshops/Schools | ● | | Prioritized to EOS AP |
| | Strategy E.5 - PSAs | ● | | Prioritized to EOS AP |
| | Strategy E.7 - Promotionals/Educational Materials | ● | | Prioritized to EOS AP and incorporated into Strategy E.3 |
| | Strategy E.10 - Public Forum | ● | | Prioritized to EOS AP |
| | Strategy E.11 - Special Events | ● | | Prioritized to EOS AP |
| | Strategy F.7 - Artificial Reefs | ● | | Prioritized into R&M AP |
| | Strategy F.9 - Gear Removal | ● | | Incorporated into WM AP Strategy B.4 as an activity |
| | Strategy F.11 - Gear/Methods Impacts | ● | | Prioritized into R&M AP |
| | Strategy R.1 - SCR Management | ● | | Incorporated Reg AP Strategy R.1 |
| | Strategy R.2 - Recreation Survey | ● | | Refocused and prioritized to Reg AP |
| | Strategy V.1 - Maintaining Volunteer Programs | | ● | New Strategy |
| | Strategy V.2 - Working with Other Organization/Agency Volunteer Programs | | ● | New Strategy |
| | Strategy V.3 - Providing Support for Volunteer Activities | | ● | New Strategy |
| | Strategy W.20 - Water Quality Monitoring | ● | | Incorporated into R&M AP Strategy W.33 |
| | Strategy W.33 - Ecological Monitoring | ● | | Prioritized to R&M AP |
| Enforcement and Research Protection | | | | |
| Regulatory Action Plan (Reg AP) | | | | |
| | Strategy B.4 - Channel/Reef Marking | ● | | Prioritized to WM AP |
| | Strategy B.7 - Pollution Discharge | ● | | Prioritized to WQ AP |
| | Strategy B.11 - Special-use Permits | ● | | Incorporated as Activity into Reg AP Strategy R.2 |
| | Strategy B.13 - Salvage/Towing | ● | | Incorporated as Activity into Reg AP Strategy R.2 |
| | Strategy B.17 - Vessel Operations/PWC Management | ● | | Incorporated as Activity into Reg AP Strategy R.2 |
| | Strategy F.1 - Consistent Fishing Regulations | ● | | Incorporated as Activity into Reg AP Strategy R.2 |
| | Strategy F.4 - Aquaculture Alternatives | ● | | Not included due to low likelihood of implementation (addressed as Activity in Reg AP Strategy R.2) |
| | Strategy F.7 - Artificial Reefs | ● | | Incorporated as Activity into Reg AP Strategy R.2 |
| | Strategy F.8 - Exotic Species | ● | | Incorporated as Activity into |

| | | 1996 Management Plan | 2007 Revised Management Plan | Status |
|---|---|----------------------------|------------------------------------|---|
| | | | | Reg AP Strategy R.2 |
| | Strategy F.11 – Gear/Method Impacts | ● | | Incorporated as Activity into Reg AP Strategy R.2 |
| | Strategy F.14 – Spearfishing | ● | | Not included due to low likelihood of implementation (addressed as Activity in Reg AP Strategy R.2) |
| | Strategy L.14 – Dredging prohibition | ● | | Incorporated as Activity into Reg AP Strategy R.2 |
| | Strategy L.15 – Dredging Regulation | ● | | Incorporated as Activity into Reg AP Strategy R.2 |
| | Strategy R.1 – SCR Management | ● | | Revised/Retitled and Incorporated into (new) Reg AP Strategy R.1 |
| | Strategy R.1 – Maintaining the Existing Permit Program | | ● | Revised/Retitled and incorporates original Strategy R.1 |
| | Strategy R.2 – Regulatory Review | | ● | New “umbrella” strategy, incorporates numbers Reg AP Strategies above |
| | Strategy Z.1 – Wildlife Management Areas | ● | | Prioritized to MZ AP |
| | Strategy Z.2 – Ecological Reserves | ● | | Prioritized to MZ AP |
| | Strategy Z.3 – Sanctuary Preservation Areas | ● | | Prioritized to MZ AP |
| | Strategy Z.4 – Existing Management Areas | ● | | Prioritized to MZ AP |
| | Strategy Z.5 – Special-use Areas | ● | | Prioritized to MZ AP |
| Enforcement Action Plan (Enf AP) | | | | |
| | Strategy B.6 – Acquiring Additional Enforcement Personnel | | ● | New Strategy |
| | Strategy B.12 – Cross-deputization | ● | | Incorporated as Activity into Enf AP Strategy B.6 |
| Damage Assessment and Restoration Action Plan (DAR AP) | | | | |
| | Strategy B.18 – Injury Prevention | | ● | New Strategy |
| | Strategy B.19 – Implementing DARP Notification and Response Protocols | | ● | New Strategy |
| | Strategy B.20 – Damage Assessment and Documentation | | ● | New Strategy, incorporates Vol AP Strategy B.10 |
| | Strategy B.21 – Case Management | | ● | New Strategy |
| | Strategy B.22 – Habitat Restoration | | ● | New Strategy, incorporates Vol and R&M APs Strategy B.2 |
| | Strategy B.23 – Data Management | | ● | New Strategy |
| Maritime Heritage Resources Action Plan (MHR AP) | | | | |
| | Strategy MHR.1 – MHR Permitting | | ● | New Strategy |
| | Strategy MHR.2 – Establishing an MHR Inventory | | ● | New Strategy |
| | Strategy MHR.3 – MHR Research and Education | | ● | New Strategy |

| | | 1996 Management Plan | 2007 Revised Management Plan | Status |
|--|--|----------------------------|------------------------------------|--|
| | Strategy MHR.4 - Ensuring Permit Compliance through Enforcement | | ● | New Strategy |
| | Strategy MHR.5 - Ensuring Interagency Coordination | | ● | New Strategy |
| | Strategy R.1 -SCR Management | ● | | Incorporated into Reg AP new Strategy R.1 |
| Resource Threat Reduction | | | | |
| Marine Zoning Action Plan (MZ AP) | | | | |
| | Strategy Z.1 - Wildlife Management Areas | ● | ● | On-going (prioritized from R&M and Reg APs) |
| | Strategy Z.2 - Ecological Reserves | ● | ● | On-going (prioritized from R&M and Reg APs) |
| | Strategy Z.3 - Sanctuary Preservation Areas | ● | ● | On-going (prioritized from R&M and Reg APs) |
| | Strategy Z.4 - Existing Management Areas | ● | ● | On-going (prioritized from R&M and Reg APs) |
| | Strategy Z.5 - Special-use Areas | ● | ● | On-going (prioritized from R&M, Reg and WQ APs) |
| Mooring Buoy Action Plan (MB AP) | | | | |
| | Strategy B.1 - Boat Access | ● | | Prioritized to WM AP |
| | Strategy B.15 - Mooring Buoy Management | ● | ● | On-going |
| Waterway Management Action Plan (WM AP) | | | | |
| | Strategy B.1 - Boat Access | ● | ● | Prioritized from Vol and MB APs |
| | Strategy B.4 - Waterway Management/Marking | ● | ● | Prioritized from Vol and Reg APs |
| Water Quality Action Plan (WQ AP) | | | | |
| | Strategy B.7 - Pollution Discharges | ● | ● | Prioritized from Reg AP |
| | Strategy E.4 - Training/Workshops/Schools | ● | | Prioritized to EOS AP |
| | Strategy L.1 - Elimination of Wastewater Discharge from Vessels | ● | ● | On-going, incorporates WQ AP Strategy L.6 as an Activity |
| | Strategy L.2 - Marina Citing & Design | ● | | On-going |
| | Strategy L.3 - Marina Operations | ● | ● | On-going |
| | Strategy L.6 - Mobil Pumpout | ● | | Incorporated into WQ AP Strategy L.6 as an Activity |
| | Strategy L.7 - Assessing Solid Waste Disposal Problem Sites | ● | ● | On-going |
| | Strategy L.10 - HAZMAT Training | ● | ● | On-going |
| | Strategy W.1 - OSDS Demonstration Project | ● | | Completed |
| | Strategy W.2 - AWT Demonstration Project | ● | | Completed |
| | Strategy W.3 - Addressing Wastewater Management Systems | ● | ● | On-going |
| | Strategy W.4 - Wastewater Disposal, Key West | ● | | Completed |
| | Strategy W.5 - Developing and Implementing Water Quality Standards | ● | ● | On-going |

| | | 1996 Management Plan | 2007 Revised Management Plan | Status |
|----------------------------------|---|----------------------------|------------------------------------|--|
| | Strategy W.6 – NPDES Program Delegation | ● | | Incorporated into WQ AP Strategy W.7 |
| | Strategy W.7 – Resource Monitoring of Surface Discharges | ● | ● | On-going |
| | Strategy W.8 – OSDS Permitting | ● | | Completed |
| | Strategy W.9 – Laboratory Facilities | ● | | Not included due to low likelihood of implementation |
| | Strategy W.10 – Addressing Canal Water Quality | ● | ● | On-going |
| | Strategy W.11 – Stormwater Retrofitting | ● | ● | On-going |
| | Strategy W.12 – Stormwater Permitting | ● | | Completed |
| | Strategy W.13 – Stormwater Management | ● | | Completed |
| | Strategy W.14 – Instituting Best Management Practices | ● | ● | On-going |
| | Strategy W.15 – HAZMAT Response | ● | ● | On-going |
| | Strategy W.16 – Spill Reporting | ● | ● | On-going |
| | Strategy W.17 – Refining the Mosquito Spraying Program | ● | ● | On-going |
| | Strategy W.18 – Pesticide Research | ● | | Prioritized to R&M AP |
| | Strategy W.19 – Florida Bay Freshwater Flow | ● | ● | On-going |
| | Strategy W.20 – Monitoring | ● | | Incorporated into R&M AP Strategy W.33 |
| | Strategy W.21 – Predictive Models | ● | | Prioritized to R&M AP |
| | Strategy W.22 – Wastewater Pollutants | ● | | Moved to R&M AP |
| | Strategy W.23 – Special Studies | ● | | Moved to R&M AP |
| | Strategy W.24 – Florida Bay Influences | ● | | Prioritized to R&M AP |
| | Strategy W.28 – Regional Database | ● | | Prioritized to and incorporated into SMA AP Strategy W.35 |
| | Strategy W.32 – Technical Advisory Committee | ● | | Committee established, on-going management prioritized to SMA AP |
| | Strategy W.33 – Ecological Monitoring | ● | | Prioritized to R&M AP |
| | Strategy Z.5 – Special-use Areas | ● | | Prioritized to MZ AP |
| Administration | | | | |
| Operations Action Plan (Ops AP) | | | | |
| | Strategy OP.1 – Addressing Administrative Policy Issues | | ● | New Strategy |
| | Strategy OP.2 – Addressing Resource Policy Issues | | ● | New Strategy |
| | Strategy OP.3 – Addressing Legal Issues | | ● | New Strategy |
| Evaluation Action Plan (Eval AP) | | | | |
| | Strategy EV.1 – Measuring Sanctuary Performance Over Time | | ● | New Strategy |

Implementing Action Plans

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

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

| Implementation* with NOAA Funding | Implementation* with Partner Funding | Scenario 1: Level Funding | Scenario 2: 5% per year increase | Scenario 3: 10% per year increase |
|---|--------------------------------------|---------------------------|----------------------------------|-----------------------------------|
| ● - High ⊙ - Medium ○ - Low | ◆ - High ◇ - Medium ◇ - Low | | | |
| Sanctuary Science | | | | |
| Science Management and Administration Action Plan | | | | |
| | | ● | ● | ● |
| | | ⊙◆ | ⊙◆ | ● |
| | | ● | ● | ● |
| | | ⊙ | ⊙ | ● |
| | | ⊙◆ | ⊙◆ | ◆ |
| Research and Monitoring Action Plan | | | | |
| | | ⊙◆ | ⊙◆ | ●◆ |
| | | ⊙ | ⊙ | ● |
| | | ● | ● | ● |
| | | ●◆ | ●◆ | ●◆ |
| | | ⊙◆ | ⊙◆ | ●◆ |
| | | ⊙◆ | ⊙◆ | ●◆ |
| | | ○◇ | ○◇ | ⊙◆ |
| | | ⊙◆ | ⊙◆ | ●◆ |
| | | ○◇ | ○◇ | ⊙◆ |
| | | ●◆ | ●◆ | ●◆ |
| | | ⊙◆ | ⊙◆ | ●◆ |
| | | ⊙◆ | ⊙◆ | ●◆ |
| | | ⊙◆ | ⊙◆ | ●◆ |
| Education, Outreach and Stewardship | | | | |
| Outreach and Education Action Plan | | | | |

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

| Implementation* with NOAA Funding | Implementation* with Partner Funding | Scenario 1: Level Funding | Scenario 2: 5% per year increase | Scenario 3: 10% per year increase |
|--|---|------------------------------|-------------------------------------|--------------------------------------|
| ● - High ⊙ - Medium ○ - Low | ◆ - High ◇ - Medium ◇ - Low | | | |
| | Strategy E.4 - Developing Training, Workshops and School Programs | ○ | ⊙ | ⊙ |
| | Strategy E.6 - Continuing the Education Working Group | ● | ● | ● |
| | Strategy E.10 - Establishing Public Forums | ⊙ | ⊙ | ● |
| | Strategy E.11 - Participating in Special Events | ⊙ | ⊙ | ● |
| | Strategy E.1 - Printed Product Development and Distribution | ○ | ○ | ⊙ |
| | Strategy E.2 - Continued Distribution of Audio-Visual Materials | ⊙ | ● | ● |
| | Strategy E.3 - Continue Development of Signs, Displays, Exhibits, and Visitor Centers | ⊙ | ⊙ | ⊙ |
| | Strategy E.5 - Applying Various Technologies | ⊙ | ⊙ | ⊙ |
| | Strategy E.12 - Professional Development of Outreach and Education Staff | ○ | ○ | ⊙ |
| Volunteer Action Plan | | | | |
| | Strategy V.1 - Maintaining Volunteer Programs | ⊙ | ⊙ | ⊙ |
| | Strategy V.2 - Working with Other Organization/ Agency Volunteer Programs | ○ | ○ | ○ |
| | Strategy V.3 - Providing Support for Volunteer Activities | ○ | ○ | ⊙ |
| Enforcement and Research Protection | | | | |
| Regulatory Action Plan | | | | |
| | Strategy R.1 - Maintaining the Existing Permit Program | ⊙ | ⊙ | ● |
| | Strategy R.2 - Regulatory Review | ⊙ | ⊙ | ● |
| Enforcement Action Plan | | | | |
| | Strategy B.6 - Acquiring Additional Enforcement Personnel | ● | ● | ● |
| Damage Assessment and Restoration Action Plan | | | | |
| | Strategy B.18 - Injury Prevention | ○ | ○ | ⊙ |
| | Strategy B.19 - Implementing DARP Notification and Response Protocols | ○ | ○ | ⊙ |
| | Strategy B.20 - Damage Assessment and Documentation | ⊙◇ | ⊙◇ | ●◇ |
| | Strategy B.21 - Case Management | ◆ | ◆ | ◆ |
| | Strategy B.22 - Habitat Restoration | ◇ | ◇ | ◆ |
| | Strategy B.23 - Data Management | ○ | ⊙ | ⊙ |
| Maritime Heritage Resources Action Plan | | | | |
| | Strategy MHR.1 - MHR Permitting | ●◇ | ●◇ | ●◇ |
| | Strategy MHR.2 - Establishing an MHR Inventory | ○◇ | ○◇ | ⊙◇ |
| | Strategy MHR.3 - MHR Research and Education | ○◇ | ○◇ | ⊙◇ |
| | Strategy MHR.4 - Ensuring Permit Compliance through Enforcement | ●◇ | ●◇ | ●◇ |
| | Strategy MHR.5 - Ensuring Interagency Coordination | ●◇ | ●◇ | ●◇ |
| Resource Threat Reduction | | | | |
| Marine Zoning Action Plan | | | | |
| | Strategy Z.1 - Wildlife Management Areas | ○ | ⊙ | ● |
| | Strategy Z.2 - Ecological Reserves | ⊙ | ● | ● |

| Implementation* with NOAA Funding | Implementation* with Partner Funding | Scenario 1: Level Funding | Scenario 2: 5% per year increase | Scenario 3: 10% per year increase |
|--|--|------------------------------|-------------------------------------|--------------------------------------|
| ● - High ◎ - Medium ○ - Low | ◆ - High ◇ - Medium ◇ - Low | | | |
| | Strategy Z.3 - Sanctuary Preservation Areas | ○ | ◎ | ● |
| | Strategy Z.4 - Existing Management Areas | ● | ● | ● |
| | Strategy Z.5 - Special-use Areas | ○ | ◎ | ● |
| Mooring Buoy Action Plan | | | | |
| | Strategy B.15 - Mooring Buoy Management | ● | ● | ● |
| Waterway Management Action Plan | | | | |
| | Strategy B.1 - Boat Access | ◆ | ◆ | ◆ |
| | Strategy B.4 - Waterway Management/Marking | ◇ | ◇ | ◆ |
| Water Quality Action Plan | | | | |
| | Strategy W.19 - Florida Bay Freshwater Flow | ●◆ | ●◆ | ●◆ |
| | Strategy W.3 - Addressing Wastewater Management Systems | ◇ | ◇ | ◇ |
| | Strategy W.5 - Developing and Implementing Water Quality Standards | ◇ | ◇ | ◇ |
| | Strategy W.7 - Resource Monitoring of Surface Discharges | ◆ | ◆ | ◆ |
| | Strategy W.11 - Stormwater Retrofitting | ◇ | ◇ | ◇ |
| | Strategy W.14 - Instituting Best Management Practices | ◇ | ◇ | ◆ |
| | Strategy B.7 - Pollution Discharges | ◎◇ | ◎◇ | ●◆ |
| | Strategy L.1 - Elimination of Wastewater Discharge from Vessels | ◎◇ | ◎◇ | ●◆ |
| | Strategy L.3 - Marina Operations | ◇ | ◇ | ◆ |
| | Strategy L.7 - Assessing Solid Waste Disposal Problem Sites | ◇ | ◇ | ◇ |
| | Strategy W.15 - HAZMAT Response | ○◇ | ○◇ | ◎◇ |
| | Strategy W.16 - Spill Reporting | ○◇ | ○◇ | ◎◇ |
| | Strategy L.10 - HAZMAT Handling | ◇ | ◇ | ◇ |
| | Strategy W.17 - Refining the Mosquito Spraying Program | ◇ | ◇ | ◇ |
| | Strategy W.10 - Addressing Canal Water Quality | ◇ | ◇ | ◇ |
| Administration | | | | |
| Operations Action Plan | | | | |
| | Strategy OP.1 - Addressing Administrative Policy Issues | ◎ | ◎ | ◎ |
| | Strategy OP.2 - Addressing Resource Policy Issues | ◎ | ◎ | ◎ |
| | Strategy OP.3 - Addressing Legal Issues | ◎ | ◎ | ● |
| Evaluation Action Plan | | | | |
| | Strategy EV.1 - Measuring Sanctuary Performance Over Time | ● | ● | ● |

Action Plan Implementation Costs

Each of the Action Plans contains a cost implementation table that provides an estimate of potential costs for implementing each of the strategies contained within the Action Plan for each of the years of the Plan. These costs are low-end estimates only and the ability to afford the costs are highly dependent upon the availability of funds obtained through sources such as legislative (federal and state) appropriations, support from partner agencies, and/or external funding opportunities such as grants. Depending on the specific Action Plan and strategy, the costs can include staff, facilities, contracts, equipment, etc.