

T-PAGE Case Study for Teleconference #2

Florida Keys: Establishing Marine Protected Areas

Introduction

The creation of marine reserves provides one of the most important and effective ways to protect the ocean. Like national parks and wilderness areas, marine reserves are areas where nothing can be taken out and only recreational and research activities are permitted. Marine reserves prohibit destructive activities like dredging and oil exploration, and they safeguard marine wildlife by excluding fishing. The result is a more diverse underwater realm, relative to exploited areas, with more large fish and pristine habitat. Hundreds of scientific articles have shown the benefits of marine reserves and other protected areas around the world.

—from the Executive Summary to NRDC’s “Keeping Oceans Wild: How Marine Reserves Protect Our Living Seas”¹

This case study summarizes the history of and process for creating and monitoring the Florida Keys National Marine Sanctuary. This sanctuary is located within the Florida Keys, an island chain located on the southern tip of Florida that are 202 miles (356 km) to the south and west and ending 90 miles north of Cuba.² This area also contains North America’s only living coral barrier reef which is the third largest in the world.³ In addition to the reef, this area is considered one of the “most biologically diverse assemblages of marine life in North America.”⁴ Given the vast diversity of environments within the Florida Keys National Marine Sanctuary, this case study also highlights the additional benefits that marine protected areas (MPAs) and networks of MPAs provide in the United States. This case study concludes with a few discussion questions to provoke debate on the key lessons learned from Florida Keys MPA experience.

Establishing Protection for the Florida Keys

Starting in 1957, when a group of conservationists and scientists began discussing the status of coral reefs and marine resources in the Florida Keys, this region spent the next few decades fraught with management problems amid various attempts to establish effective sanctuaries. By 1981, when the Looe Key National Marine Sanctuary was established, following the Key Largo National Marine Sanctuary in 1975, these two sanctuaries signified an important step in

¹ Weblink to full Report: <http://www.nrdc.org/water/oceans/kow/kowinx.asp>

² National Marine Protected Areas Center, “Case Studies- Florida Keys National Marine Sanctuary”, http://mpa.gov/helpful_resources/florida_keys.html.

³ Id.

⁴ Id.

protection for the region even though they only accounted for a small portion of the area's marine environment.⁵

However, the problems in the region continued and the area saw significant deterioration throughout the 1980s due to causes that included, coral bleaching, seagrass die-offs, declines in reef fish populations, spread of coral diseases, and the running aground of three large ships.⁶ This led to the introduction of Congressional bills in November 1989 for greater protection in this area.

Within one year from the introduction of bills calling for more protection in the Florida Keys, Congress passed a bi-partisan bill and President George Bush signed the Florida Keys National Marine Sanctuary and Protection Act into law on November 16, 1990. The act resulted in approximately 2,800 square nautical miles of state and federal waters designated as the Florida Keys National Marine Sanctuary and recognized the need to provide comprehensive protection and management of the Florida Keys' biologically diverse marine environment. This effort also recognized previous attempts to manage the resource by focusing on small sections of the coral barrier reef in a "checkerboard fashion"⁷ which only led to further decline in the coral reef resources. It was further determined that allowing the continued decline of this resource by taking a status quo management approach would result in an economic collapse given the close relationship between economic benefits and healthy marine ecosystems.

Therefore, the Sanctuary and Protection Act directed NOAA to develop a comprehensive management plan and implementing regulations for the Sanctuary in consultation with appropriate Federal, State and local governments with the Sanctuary Advisory Council.⁸

Developing a Management Plan for the Sanctuary

Developing the management plan for the sanctuary took six years to complete. The key issues addressed in the plan came from a variety of sources, including technical workshops, public meetings and surveys, and Sanctuary Advisory Council members which consisted of members of the public, and federal, state, and local agency officials.

As noted by the National Marine Protected Areas Center,

One innovative component of the sanctuary management plan is the combination of sanctuary-wide regulations with a system of marine zoning. Approximately 6 percent of the sanctuary is set aside as fully protected

⁵ National Marine Protected Areas Center, "Case Studies- Florida Keys National Marine Sanctuary", http://mpa.gov/helpful_resources/florida_keys.html.

⁶ Id.

⁷ NOAA, Florida Keys National Marine Sanctuary, "Marine Resource Protection," http://floridakeys.noaa.gov/resource_protection/welcome.html.

⁸ Id.

zones known as ecological reserves, sanctuary preservation areas and special use areas. Stringent restrictions on harvesting marine life and harming natural resources govern these zones to ensure their long-term survival. Twenty-four fully protected zones exist within the sanctuary. They protect critical habitat, preserve species diversity and relieve pressure from some coral reef areas.

In 2001, the sanctuary zoning scheme outlined in the management plan was completed with the establishment of the Tortugas Ecological Reserve. This no-take reserve is located in a remote area, about 70 miles west of Key West and over 140 miles from mainland Florida and is an incredibly biologically diverse marine environment.⁹

The process to create this reserve is considered a model of collaborative reserve design. This is because it was the result of a close collaboration among the National Park Service, NOAA and the Florida Keys National Marine Sanctuary to designate a type of no-take area called a Research Natural Area located within Dry Tortugas National Park and that is compatible with the Tortugas Ecological Reserve.¹⁰ Furthermore, the Tortugas Ecological Reserve plan was based on a proposal drafted by the Tortugas 2000 working group and adopted by the Sanctuary Advisory Council. The 25-member working group included commercial and recreational fishermen, divers, scientists, conservationists, citizens-at-large and resource managers.

Management of the Sanctuary: Regulations and Zoning

The sanctuary is subject to a variety of regulations aimed at protecting and preserving “ecological, recreational, research, educational, historical, and aesthetic resources” while minimizing conflicts among users.”¹¹ In addition to specific regulations, marine zoning is also implemented in the sanctuary. This section will discuss how both these methods are employed.

The sanctuary employs specific regulations and techniques to ensure that these regulations are followed. For example, in the Tortugas Ecological Reserve, regulation in the reserve prohibits the taking of marine life and restricts vessel discharges. In one section of the reserve designated “Tortugas North,” regulations allow diving and snorkeling but require visitors to have a permit which helps ensure that all vessels have access to mooring buoys, eases enforcement and helps monitor human-caused impacts.¹² In another section, “Tortugas South,” the regulation prohibits diving and requires vessels to be continually in transit through the area and to have the fishing equipment stowed.

⁹ Florida Keys National Marine Sanctuary, “What’s Special,” <http://floridakeys.noaa.gov/tortugas/whatspecial/welcome.html>.

¹⁰ Id.

¹¹ National Marine Protected Areas Center, “Case Studies- Florida Keys National Marine Sanctuary”, http://mpa.gov/helpful_resources/florida_keys.html.

¹² Id.

Techniques used in the sanctuary to ensure that regulations are followed included:

- Marking with highly visible buoys areas that are designated no-wake or that have shallow reefs to warn boaters of these critical areas and help them avoid groundings, propeller damage, or other damage to coral reefs and other habitat.
- Using mooring buoys in areas of high recreational use so boaters do not need to drop anchors that can also do similar damage.
- Educational outreach to tourists, residents, students, and recreational users of the sanctuary is also a key part of management.
- Research and monitoring the area to track resource use and changes in the status of the marine ecosystem.

In addition to the regulations and Existing Management Areas in the Florida Keys (such as national parks, state parks, national wildlife refuges, and aquatic preserves), the sanctuary includes Wildlife Management Areas, Ecological Reserves, Sanctuary Preservation Areas, and Special-use Areas. Each of these “zone types is designed to reduce damage to resources and threats to environmental quality while allowing uses that are compatible with resource protection.”¹³ And in the unzoned sections of the sanctuary, management efforts are focused on improving water quality and protecting habitat.¹⁴

Types of Zones in the Sanctuary¹⁵

- Wildlife Management Areas- established to minimize disturbance to especially sensitive wildlife populations and their habitats to ensure protection and preservation consistent with the Sanctuary designation and other applicable laws. Such areas include bird nesting, resting, or feeding areas and turtle nesting beaches. 20 of the 27 areas are under management of the U.S. Fish and Wildlife Service and are contained in this plan as an integrated ecosystem management approach to resource protection.
- Ecological Reserves- designed to encompass large, diverse habitats. They are intended to provide natural spawning, nursery, and permanent residence areas for the replenishment and genetic protection of marine life and to protect and preserve all habitats and species particularly those not protected by fishery management regulations.

¹³ Florida Keys National Marine Sanctuary, “Marine Resource Protection,” http://floridakeys.noaa.gov/resource_protection/welcome.html.

¹⁴ National Marine Protected Areas Center, “Case Studies- Florida Keys National Marine Sanctuary”, http://mpa.gov/helpful_resources/florida_keys.html.

¹⁵ This summary is from the section “Zone Types” found at: Florida Keys National Marine Sanctuary, “Marine Resource Protection,” http://floridakeys.noaa.gov/resource_protection/welcome.html

- Sanctuary Preservation Areas- focus on the protection of shallow, heavily used reefs where conflicts occur between user groups, and where concentrated visitor activity leads to resource degradation. They are designed to enhance the reproductive capabilities of renewable resources, protect areas critical for sustaining and protecting important marine species, and reduce user conflicts in high-use areas. Management of this area includes prohibition of consumptive activities and are chosen based on the status of important habitat, the ability of a particular area to sustain and protect the habitat, the level of visitor use, and the degree of conflict between consumptive and nonconsumptive users.
- Existing Management Areas- identifies areas that are managed by other agencies where restrictions already exist. These zones delineate the existing jurisdictional authority of other agencies (i.e., State parks, aquatic preserves, sanctuaries, and other restricted areas). Management of these areas within the Sanctuary may require additional regulations or restrictions to adequately protect resources. Any additional management measures will be developed and implemented in coordination with the agency having jurisdictional authority. Their function is not to establish another layer of bureaucracy, but to recognize established management areas and, at a minimum, to complement the existing management programs, ensuring cooperation and coordination with other agencies.
- Special-use Areas- are zones used to set aside areas for scientific research and educational purposes, restoration, monitoring, or to establish areas that confine or restrict activities such as commercial personal watercraft operations and establish live-aboard mooring fields. These areas will minimize impacts on sensitive habitats and reduce user conflicts. Special management programs (e.g., monitoring, research, special-use permits and restoration) can be conducted without impediment in these areas. They can be used to set aside areas for specific uses such as long-term research and monitoring and/or minimizing the adverse environmental effects of high-impact activities. These zones will be limited in their length of duration.

Benefits to Marine Protected Areas and Network MPAs¹⁶

Marine protected areas and network MPAs provide a variety of benefits from natural resource protection to social and economic benefits. This section briefly highlights such benefits and encourages further discussion on how to scale up and strengthen these benefits.

- **Natural Resource Protection¹⁷**: MPAs can address the continually deteriorating state of the marine environment, including fish stocks and

¹⁶ National Marine Protected Areas Center, "Archives-What MPAs Provide the Nation", http://mpa.gov/helpful_resources/archives/benefits.html.

wetland losses, by managing human activities in specific areas and by providing a more focused, ecosystem-based approach to resource management. They provide a mechanism to prohibit activities permitted or regulated outside the MPA, such as oil exploration and fishing.

- **Historic and Cultural Resource Protection**¹⁸: MPAs protect and preserve important cultural and historic resources of US marine heritage such as shipwrecks. These MPAs reduce the potential for artifacts to be removed or damaged from today's marine technology.
- **Social and Economic Benefits**¹⁹: There are several social and economic benefits to MPAs and network MPAs. These include: (1) enhancing non-consumptive uses; (2) savings to tax payers because agencies are sharing resources; (3) maintaining fisheries; and (4) providing opportunities for research and education.
- **Benefits of Network MPAs**²⁰: According to the National Marine Protected Areas Center, a network of MPAs can address the problem of how to protect important and/or representative areas without limiting human uses of vast areas of coast and ocean. They share and enhance many of the benefits of individual MPAs, such as the ones mentioned above. However, networks allow scientists to use MPAs more effectively for research and opportunities for replication. Networks can also be used to protect the entire range of habitat types within a region when all habitat types are not concentrated in a single MPA. Further, networks can serve as a link to land areas and their protected area networks.

Conclusion

As discussed in this case study, previous management efforts in the Florida Keys National Marine Sanctuary left a patchwork of piecemeal protections that were generally not effective. Today, the Florida Keys has integrated its planning efforts with the Federal, State, and local agencies. With multiple agencies involved in management and better coordination among them, the Florida Keys MPA experience is a lesson in understanding the need for integrated management as an important tool for marine ecosystem improvement.

¹⁷ Id.

¹⁸ Id.

¹⁹ Id.

²⁰ Id.

Discussion Questions

- Where else is the zoning approach being used and should this become the trend in MPA management?
- Does integrated planning and implementation streamline the use of public funds for MPA management? Does this make for more effective management?
- How can the US and EU strengthen and scale up the benefits resulting from MPAs and networks of MPAs?