

## ***Marine Protected Areas***

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## **MARINE PROTECTED AREAS**

Some areas are so important for the marine ecosystem and how it functions that they require special protection. Marine protected areas safeguard living resources, biodiversity, landscapes and seascapes to ensure that our marine environment can meet the challenges of the future. This may mean managing uses or limiting pollutant effects on those areas. Marine protected areas offer one method to protect ecologically important areas but they are by no means the only method. This paper discusses the theory behind marine protected areas and how this concept could be applied in Maine's marine waters.

### **I. The Importance of Marine Protected Areas**

Marine protected areas can help to preserve an ecologically sensitive area that is an essential or unique habitat or important seed source. Marine protected areas are based on the fundamental ecology of marine organisms and offer benefits to both fishery and nonfishery interests. Marine protected areas can include a spectrum of management regimes from sanctuaries where no disturbance is allowed to species-specific conservation areas where only minor conflicting uses are managed. Management can be tailored to the specific ecosystems and conflicting uses of those ecosystems and may occur only during specific times.

Although marine protected areas are primarily intended to protect or enhance fisheries by protecting the quantity and quality of reproductive output, they also help protect biodiversity and reduce user conflicts by separating incompatible uses. They also can act as reference areas for study of natural processes with limited human disturbance. Finally, marine protected areas can provide an insurance policy against fishery collapse by offering a source for replenishing overfished stocks (Bohnsack, 1993).

### **II. National Marine Sanctuary Program**

The mechanism for designating marine protected areas in federal waters is the Marine Sanctuary Program. The Marine Protection, Research and Sanctuaries Act of 1972 authorized the Secretary of Commerce to designate special areas as National Marine Sanctuaries to preserve or restore their ecological, historical, recreational or aesthetic resources while allowing uses compatible with that protection and preservation. Thirteen National Marine Sanctuaries have been designated within the United States to date: Florida, Texas, California, American Samoa, North Carolina, Massachusetts, Hawaii, and Georgia. These sanctuaries range in size from .5 square kilometers to almost 16,000 square kilometers. Michigan, Virginia and Washington have areas that are expected to be included in this program soon.

The primary goal of the National Marine Sanctuary Program is to protect threatened coastal and marine resources by balancing conflicting interest. The challenge for these

sanctuaries has been integrating multiple uses with preservation efforts. Increasingly they are designed with uses prohibited only in certain areas rather than throughout the sanctuary.

National Marine Sanctuaries offer states the opportunity to influence federal management of resources outside their state waters (3 miles), and often translate into additional funds for research and management. National Marine Sanctuaries are most important where offshore threats and use conflicts exist. Extractive uses, waste disposal and conflicts over use can be addressed through designation as a National Marine Sanctuary. Stellwagen Bank and the Florida Keys provide good examples of how these reserves are managed and the framework for developing management plans.

### **A. Stellwagen Bank**

In 1993, Stellwagen Bank, off the coast of Massachusetts was designated a National Marine Sanctuary. It is the only National Marine Sanctuary within New England. An undersea sand and gravel deposit, the bank's topography creates upwelling of nutrient-rich water to support a diverse fish, invertebrate, and whale population. It is prime feeding ground for right, humpback and fin whales. NOAA's management plan for Stellwagen Bank contains several simple but important regulations that prohibit:

- \* Sand and gravel mining;
- \* Ocean dumping and discharging;
- \* Alteration of or construction on the seabed;
- \* Taking of marine mammals, reptiles and seabirds;
- \* Placing submerged pipelines or cables; and
- \* Vessel lightering (transfer of oil at sea).

NOAA also is empowered to take action against pollution that enters the sanctuary to the detriment of its resources. The management plan supports multiple uses of the area including fishing activities (Eldredge, 1993). This sanctuary exemplifies how designation provides a mechanism for a state to address offshore threats to important resources.

### **B. Florida Keys**

In 1990, the US Congress designated the Florida Keys National Marine Sanctuary. It extends from just south of Miami to the Dry Tortugas, encompassing almost 8,898.5 square kilometers of the most heavily used coral reef tracts in the world. Attracting over one million divers a year, the sanctuary has many competing, often conflicting uses and overlapping jurisdictions and interests. Needless to say, the development of the Sanctuary Management Plan has proved a difficult process. NOAA formed an advisory group of public agencies, citizens, and public interest groups to augment the input of scientists, experts, managers and other decision-makers. The plan incorporated an operational level of detail that specified who would implement specific tasks, how much it would cost, and the expected results. NOAA was directed to consider ocean zoning as a management strategy within the plan and identified small, well-defined preservation areas and replenishment reserves to protect areas that represent the full range of the sanctuary's resources and habitat diversity (Ehler and Basta, 1993).

### III. Why Designate Marine Protected Areas in Maine?

Some marine areas provide such a vital link in ecosystem functions that they require additional protection to guard against degradation or habitat destruction. Marine protected areas can provide this protection on a broader scale than can be afforded under Maine's current marine resource management scheme.

Maine has recognized some important marine areas, however, their management is not comprehensive. While DMR can designate conservation areas, protection is through a species-by-species approach and effects only harvesting and gear use. For example, the Jordan River mussel seed conservation area only addresses mussel harvesting. There are no guidelines for other uses within the river or land use considerations for land fronting the river even though other activities could impair water quality significantly affecting seed viability.

DEP's current water classification system also recognizes areas of ecological importance, but this designation only addresses water discharges. Areas that are designated SA for ecological reasons are not afforded wider protection from other threats, such as dragging or dredging. A broader, more comprehensive system is needed.

### IV. Marine Protection in Maine

Maine has several important marine areas that are protected or managed in some way. Within State waters, the Department of Marine Resources (DMR) is empowered to restrict uses and the taking of specific species in certain areas for marine conservation within three miles of shore (12 MRSA §6171).

There are four mussel seed conservation areas designated by DMR: Jordan River, West Bay, Narraguagus Bay and the Harrington River. Mussel harvesting in these areas is prohibited without a permit. Similar restrictions apply to marine worm conservation areas. The DMR also manages 11 seed clam areas that are closed to the taking of clams, quahogs, mussels or marine worms. A portion of Sheepscot Bay, Booth Bay, Linniken Bay, and the Sheepscot River that is an important codfish spawning area, has been protected since 1907 when the area was closed to netting. The area currently is closed to the taking of any groundfish (DMR regs. 34.05). Between 1959 and 1979, an area stretching from Cape Small to Pumpkin Island was closed to dragging (P.L. 1959, ch. 363).

Maine also has pursued the creation of a federal National Marine Sanctuary. In the early 1980s, DMR and the Bigelow Laboratory submitted a proposal to designate a mid-coastal Maine marine sanctuary in the area extending seaward from the mouths of the Kennebec, Sheepscot, and Damariscotta Rivers (**reference**). This area was proposed because it exemplifies the coast of Maine; hosted features of biological interest including endangered and threatened species, spawning areas, marine mammals and unique species locations; and supports multiple uses including commercial and recreational fishing, light commercial marine traffic and recreational boating. The two overriding objectives of the proposal were to protect a unique juvenile cod

spawning area and to protect against potential sand and gravel mining. (The mouth of the Kennebec offers a clean plentiful source of sand ideal for concrete, roads and other uses.)

This proposal was not acted on by NOAA because local fishermen were concerned that the federal government would close the area to fishing (the statute does not allow this). Also, the program went into remission during the Reagan administration. The area remains on a list of possible candidate sites but it is not active. At a public hearing sponsored by a private citizen in 1993, the local fishing industry voiced strong opposition to the sanctuary concept.

This proposal differs from other sanctuary designations in that this area is within state waters. Creating a federal sanctuary in state waters raises several jurisdictional issues that need to be carefully considered. While the sanctuary designation has the potential to bring in federal dollars, it would also involve the federal government in management of state waters. A federal presence is seen by many as the first step toward regulating fishing in the area.

Because the proposed sanctuary is within state waters, Maine can protect these areas on its own. As noted above, DMR does regulate some types of fishing in this area. A state approach to marine protection allows us to define our own objectives and use protection strategies that are most appropriate for these areas. The drawback of a state approach is the lack of federal monetary support. Given the severe cuts DMR has been forced to make in recent years, this is an important concern.

## **V. Implementation Concerns**

Developing, designating, and implementing a system for marine protected areas is difficult and controversial. This section identifies six major efforts that need to take place.

### **A. Expand Marine Habitat Classification and Research on the Ecology of Nearshore Environments**

The marine habitat classification, designed by the Natural Areas Program, represents a first step in understanding the importance, abundance and significance of marine areas. The document, *"A Classification System of Marine and Estuarine Habitats in Maine: An ecosystem approach to habitats. Part 1: Benthic habitats,"* (Brown, 1993) needs additional work to fill in the gaps. This program is funded by the Coastal Program through FY 1994-95, but additional support will be needed. Currently we don't know what areas are most important and how extensive they are. The Maine Coastal Program should explore funding for the program through FY 1995-96.

### **B. Develop a Ranking System or Priority List of Resources of Concern**

As part of the 1994-1995 program year, the Natural Areas Program, in conjunction with the State Planning Office is developing a system to identify important features and types of marine communities that warrant protection. The criteria used to rank marine communities include:

- \* Biodiversity;
- \* Economic value and the linkages an area provides;
- \* Uniqueness and its importance in the ecosystem;
- \* Essential habitats for marine species, including spawning habitats, nursery areas and other habitats critical during specific stages of marine species life cycles. This review should include information on noncommercial species as well as commercial species;
- \* Replenishment sources, such as important seed areas or nursery grounds; and
- \* Potential threats to these resources.

Based on these criteria, a cross-disciplinary group with marine resource expertise should be brought together to identify resources worthy of protection.

### **C. Development Management Guidelines**

A set of management guidelines needs to be developed for marine protected areas to minimize disturbance to important areas. These management guidelines may include land use recommendations, gear use constraints or harvesting restrictions. In addition, enforcement or management tools need to be explored. Any program for marine protected areas must also provide a mechanism for local technical assistance. The Maine Coastal Program and Natural Areas Program currently are working with the Damariscotta River Estuary Project to determine if such guidelines can be developed. If these are successful, additional work needs to be done to see if they can be translated to other areas.

### **D. Research the Legal and Governmental Issues**

Maine needs to review the legal implications of developing a system for marine protected areas that explores the best mechanism for management. If marine protected areas are designated, a system for developing a management plan needs to be established. Enforcement issues must also be addressed.

### **E. Build Public Awareness about the Need to Protect These Resources**

The state must build a constituency for marine protected areas. Any discussion on restricting uses on a working coast is bound to stimulate controversy. Consensus, outreach and public education are needed to build the networks and support necessary to move forward. We need to work with the existing network of educational institutions to educate people on the importance of our near-shore resources and the need for their protection.

### **F. Monitor the Need For Additional Protection Around Sheepscot Bay**

The Sheepscot River area proposed for designation as a Marine Sanctuary should continue to be monitored to ensure that the resources that make this area so special are not at risk.

## **VI. Summary**

Marine protected areas offer a mechanism for states to ensure the integrity of ecologically important species and habitats. To some extent Maine protects important marine resources within state waters now, however these efforts are usually on a species by species approach and not comprehensive. Designation as a National Marine Sanctuary affords protection for areas outside state territorial waters and has the potential to bring funds for management and research into the state. However, any federal designation within State waters can raise jurisdictional issues with the federal government. This section recommends preliminary steps to expand marine protection for a more comprehensive approach.

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