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Sea Change: Changing Management to Protect Ocean Ecosystems

Susan E. Farady

“The human race is challenged more than ever before to demonstrate our mastery - not over nature but of ourselves.” – Rachel Carson

In many ways, ocean management is the last canary in the coal mine of United States environmental issues. Since the emergence of environmental awareness in the 1970s, there has been a general understanding of the need for terrestrial environmental protection, and an established framework of state and federal laws, such as those regarding water quality, endangered species and hazardous wastes. In contrast, awareness of the need for ocean protection has arisen in piecemeal fashion over this same period of time, producing a disparate and fractured assemblage of law and policy pertaining to specific issues such as marine mammal protection or commercial fishery management, while lacking in a comprehensive focus on oceans as ecosystems. We are in a remarkable situation at the turn of the century as ocean ecosystems have been identified as at risk, and efforts are underway to articulate the appropriate laws and policies to protect them.

Ocean ecosystems present a uniquely challenging set of characteristics. Oceans are public resources, and one cannot readily “own” a piece of the ocean as one can terrestrial property. Marine environments are remote three-dimensional environments, hostile to human habitation, with resources as well as degradation largely removed from our view and understanding compared to terrestrial environments. There is no common understanding about oceans. Whereas we all live on land, learn some consistent information about terrestrial environments and sites such as National Parks in school, many people do not have access to the ocean and oceans are not necessarily part of a general ecology curriculum. In fact, one’s understanding of and relationship to the ocean environment tends to be quite personal. An individual may never have seen the ocean or may vacation there regularly, experiences vary whether one is a beachgoer, fisherman, surfer, boater, or tanker captain, and emotional reactions range from the ocean as a place of romantic tranquility to one of fearsome threats akin to “Jaws” or “The Perfect Storm.”

Regardless of our individual understanding of or interest in marine ecosystems, it has become unambiguously clear that our oceans are in trouble, we have much to lose and we need to act. In 2003, the Pew Oceans Commission, formed by the Pew Foundation, released its report, and the U.S. Commission on Ocean Policy, formed by Congress as a result of the passage of the Oceans Act, followed suit in 2004; the Joint Ocean Commission Initiative was formed in 2005 to

continue to promote implementation of these two reports.¹ These two Commissions examined American ocean policy for the first time since the Stratton Commission's work in 1969 and despite their different origins, reached similar conclusions.² Specifically: our oceans are showing increasing signs of degradation such as reduced fish landings, habitat loss, and poor water quality; our human imprint is ever increasing as more and more of us live on the coast, our interest in offshore industries increases, and our technological ability grows; and our ocean governance system is fragmented and piecemeal, incapable of responding effectively to current and future challenges, and needs to become more comprehensive and ecosystem-based.

When considering how a new system of ocean governance should work, it is important to examine how the present system functions and could fit into a new regime. One component of the current management regime is our National Marine Sanctuary Program. Since 1972, the National Marine Sanctuaries Act has provided the basis for designating discrete areas of the ocean as National Sanctuaries.³ The name "sanctuary" colloquially connotes an area of high protection, yet the Sanctuaries Act does not require strict protection and in fact contains conflicting language about whether Sanctuaries are intended to be highly protective of all resources or multiple use areas.⁴ In application, the Act has frequently been used as a prophylactic measure to halt activities deemed undesirable such as oil drilling or gravel mining, or to protect particular features such as shipwrecks while expressly not limiting activities that could harm the ecosystem surrounding that feature. The end result is that Sanctuaries often do not provide high levels of resource protection and are not necessarily expected to.

However in the post-Pew and U.S. Ocean Commission era, National Marine Sanctuaries could function as an important example of a comprehensive ecosystem-based management approach. Despite contradictions within the law, the Sanctuaries Act is currently the only ocean-related law that encompasses all aspects of the marine ecosystem as opposed to other laws that deal with particular parts of the ecosystem or certain activities. As we grapple with how to better manage the marine environment, the role of Sanctuaries within a comprehensive ocean management scheme will become increasingly important.⁵

Sanctuary sites around the country are demonstrating comprehensive management approaches. For example, the Florida Keys site has established marine protected areas with different levels of protection including no-take reserves, and the Channel Islands site off southern California is working to establish a network of no-take reserves.⁶ New England's only National Marine Sanctuary, Stellwagen Bank, is similarly engaged in processes that could dramatically change the role the Sanctuary plays in the Gulf of Maine ecosystem. During a review of the site's management plan (required of all Sanctuaries every five years by the Sanctuary Act) underway since 1998, Stellwagen Bank Sanctuary staff and constituents identified the definition and application of "ecosystem-based management" within the Sanctuary

¹ PEW OCEANS COMM'N, AMERICA'S LIVING OCEANS: CHARTING A COURSE FOR SEA CHANGE, (2003) <http://www.pewoceans.org/>; U.S. COMM'N ON OCEAN POLICY, AN OCEAN BLUEPRINT FOR THE 21ST CENTURY, (2004) <http://www.oceancommission.gov/>; <http://www.jointoceancommission.org/>

² <http://www.lib.noaa.gov/edocs/stratton/contents.html>

³ National Oceanic and Atmospheric Administration, About Your National Marine Sanctuaries: History, <http://www.sanctuaries.nos.noaa.gov/about/history/welcome.html>

⁴ "Sanctuary: a consecrated place . . . for worship . . . a place of refuge and protection; a refuge for wildlife where predators are controlled and hunting is illegal." Merriam-Webster Online Dictionary, <http://www.m-w.com/dictionary/sanctuary>; Marine Protection, Research and Sanctuaries Act, 16 U.S.C. § 1401-1445 (1972).

⁵ Susan E. Farady, *Compatible Use Within National Marine Sanctuaries: Determining Meaningful Implementation*, 12 Ocean and Coastal L.J. vol. 2 (forthcoming May 2007).

⁶ http://floridakeys.noaa.gov/resource_protection/welcome.html#zoning;
<http://channelislands.noaa.gov/marineres/main.html>

as a pressing issue.⁷ A representative stakeholder Working Group was convened in 2003 to examine the issue and make recommendations to the citizen Sanctuary Advisory Council and Sanctuary Superintendent.⁸ In 2004, the Group provided the Council and Superintendent with a definition of “ecosystem-based Sanctuary management” and related recommendations for implementation, including one to convene a separate Zoning Working Group to explore utilizing various types of zones to implement ecosystem-based Sanctuary management.⁹ This representative stakeholder Zoning Working Group was convened in 2005 and is continuing its work as of early 2007. The recommendations of this group could interact with other regional efforts to significantly change future marine resource management in New England.

There are several initiatives at the state and federal level that could affect the future framework of ocean management. Congress is currently considering “Oceans 21,” a bill designed to implement many of the U.S. Commission’s recommendations introduced by Congressman Sam Farr and sponsored by other members of the House Oceans Caucus, and the “NOAA Organic Act” to establish the National Oceanic and Atmospheric Administration’s authority in legislation.¹⁰ The California Ocean Protection Act, passed in 2004, established California’s Ocean Protection Council to “help coordinate and improve the protection and management of California’s ocean and coastal resources and implement the Governor’s ‘Ocean Action Plan’ released in October 2004.”¹¹ In 2006, New York passed the New York Ocean and Great Lakes Ecosystem Conservation Act, which authorizes the formation of a nine-member council with members from different state agencies to develop a state oceans policy by 2008.¹² The Massachusetts Oceans Act was first introduced in 2004 following the work of the Massachusetts Ocean Management Task Force, and is still under consideration by the legislature; this Act would require a comprehensive plan be developed and applied in state waters.¹³ Maine state agencies completed a two-year study of their nearshore waters in 2007, with recommendations for increased agency coordination and integrated management; a bill has been introduced in the Maine legislature in 2006 to amend an outdated Maine Coastal Policies Act to bring it in line with the study’s recommendations.¹⁴

The future health of marine ecosystems is at a crossroads as we scramble to make our fractured, inadequate management systems more responsive to increasing human impacts within a complex environment. How we revise management will continue to evolve, via existing schemes such as the National Sanctuary System or through new federal and state initiatives. The overarching challenge of ocean management before us is as Rachel Carson presciently noted decades earlier, not in our ability to master ocean resources, but rather to master ourselves.

⁷ <http://stellwagen.noaa.gov/management/mpr/mprhome.html>

⁸ <http://stellwagen.noaa.gov/management/workinggroups/ecomgtwg.html>

⁹ “Ecosystem-Based Sanctuary Management (EBSM) integrates knowledge of ecological interrelationships to manage impacts within sanctuary boundaries. The general goal of EBSM is to protect the ecological integrity of the SBNMS while recognizing that the sanctuary is nested within GOM large marine ecosystem. Effective implementation of EBSM should: (1) consider ecological processes that operate both inside and outside sanctuary boundaries, (2) recognize the importance of species and habitat diversity, and (3) accommodate human uses and associated benefits within the context of conservation requirements.”

<http://stellwagen.noaa.gov/management/workinggroups/zoningwg.html>

¹⁰ <http://www.ens-newswire.com/ens/jan2007/2007-01-04-04.asp>;

<http://www.publicaffairs.noaa.gov/releases2005/apr05/noaa05-037.html>; <http://thomas.loc.gov/cgi-bin/query/z?c109:H.R.5450>;

¹¹ <http://resources.ca.gov/copc/>

¹² <http://www.nrdc.org/media/pressreleases/060623.asp>

¹³ <http://www.mass.gov/czm/oceanmanagement/index.htm>

¹⁴ <http://www.maine.gov/dmr/baystudy/baystudy.htm>