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Evaluating U.S. Federal Marine Protected Areas Programs: A Comparative Analysis and Conceptual Framework

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EVALUATING U.S. FEDERAL MARINE PROTECTED AREAS PROGRAMS: A COMPARATIVE ANALYSIS AND CONCEPTUAL FRAMEWORK

By

Rosemarie A. Bradley

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From the days of discovery and colonization, America has looked to the sea. In times of stress the sea has been our ally, and in times of peace, a source of our prosperity. Sometimes hostile and sometimes generous in its moods, the ocean has always offered its abundant resources in countless ways. But only recently have we begun to perceive its true potential.

(U.S. Commission on Marine Science, Engineering and Resources, *Our Nation and the Sea*, 1969, p. vi)

Through inattention, lack of information, and irresponsibility, we have depleted fisheries, despoiled recreational areas, degraded water quality, drained wetlands, endangered our own health, and deprived many of our citizens of jobs. If we are to adopt and implement an effective national ocean policy, we must first understand and acknowledge the full consequences of failing to take action.

(U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21st Century*, 2004, p. 10)

Dedicated To

Joe and Allie

Marie and Vincent Nappa

~

And to all those working to protect our valuable marine resources

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I convey my deep appreciation to all the federal agencies' personnel who so willingly participated in this research, for their openly sharing information, and for their struggles to move their programs toward improved marine conservation.

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And last, but by no means least, my family. To my grandparents who came to this country with nothing, but taught their children and grandchildren that, with education, anything is possible. For my parents, Marie and Vincent Nappa, for their belief in me when sometimes I didn't believe in myself. And to my husband Joe and daughter Allie who kept me going when I felt like giving up, for their tireless support, and constant encouragement through many late night edits and who never minded reading this thesis – one more time!

Abstract

Federal area-based marine protection and management in the United States is overseen by the National Marine Sanctuary Program, the National Estuarine Research Reserve System, the National Wildlife Refuge System, the National Park Service, and the National Marine Fisheries Service. Each agency and program represents a different approach to managing the oceans. Currently, no federal agency or program is responsible for evaluating the overall effectiveness of these programs. Evaluation is needed to determine whether programs are achieving their management objectives and conservation goals. Although evaluation protocols are legislatively mandated, implementation is inconsistent across programs.

Federal agencies have been criticized for failing to protect marine resources effectively. The objective of this comparative case study is to determine whether the evaluation practices of federal area-based marine protection programs (also known as Marine Protected Area [MPA] programs) are contributing to improved marine resource protection. I investigate: (1) what methodologies federal agencies currently employ to evaluate their marine protected areas programs; (2) to what extent federal MPA program evaluation processes adhere to program evaluation theory and practice; and (3) how components of these evaluations could inform a national-scale MPA evaluation system. I also discuss whether evaluation results have been disseminated and recommendations implemented and the extent of inter-agency and intra-agency exchange of evaluation information.

The results of my research indicate that: (1) federal reporting requirements drive MPA evaluation; (2) programs fall short in Program Assessment Rating Tool (PART) program results/accountability section; (3) MPA programs utilize more output measures than outcome measures; (4) past independent evaluations focus on funding/budget rather than programmatic

success in marine conservation; (5) MPA staff face numerous evaluation challenges; (6) MPA staff are interested in a national MPA evaluation system; (7) implementation/dissemination of evaluation results is lacking; and (8) MPA cooperative efforts exclude some programs.

The U.S. National Marine Protected Areas Center is in the process of developing a national system of marine protected areas, and it has identified the evaluation of management effectiveness as one of the key components of an effective national system. My research contributes to the development of a national-scale evaluation framework for U.S. federal marine protected areas. I present a conceptual model for a national-scale federal MPA program evaluation system. Components of the model include recommendations for: (1) establishing a national MPA evaluation coordination division; (2) developing an inventory of existing MPA evaluation studies and performance measures; (3) creating a centralized MPA evaluation information database; (4) developing MPA program and system-wide performance measures; (5) promoting MPA evaluation capacity-building including developing relationships with evaluation professionals and establishing a system of inter-agency and intra-agency MPA evaluation information exchange; and (6) ensuring that any future MPA legislation includes evaluation language.

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CHAPTER 1 – INTRODUCTION

> Today, no federal entity has the mission to evaluate the vast array of federal actions affecting ocean and coastal resources and to advocate for more effective approaches, prioritized investment, improved agency coordination, and program consolidation where needed.
>
> (U.S. Commission on Ocean Policy, 2004)

The U.S. Commission on Ocean Policy (2004) proposes 211 recommendations to address the current state of U.S. Ocean and coastal resources. As a nation, in 35 years we have gone from believing our ocean resources were inexhaustible to the realization that we have over-exploited resources and degraded marine ecosystems. How did this happen when we have over 140 marine-related laws and regulations, 20 federal agencies, and over 55 congressional committees and subcommittees governing ocean and coastal management? I believe that the lack of the evaluation of marine protected area programs is one major reason for the current degraded state of marine resources.

1.1 U.S. Federal Marine Protected Areas

Area-based marine protection programs, also known as Marine Protected Area (MPA) programs, have been in existence in the United States for decades. They are receiving renewed attention as the result of the issuance of President Clinton's Executive Order 13158 (2000), which sought to increase the number and establish networks of MPAs, and from the demands of environmental groups to protect a greater percentage of the world's marine resources. The U.S. Commission on Ocean Policy (2004) concluded that marine protected areas are both useful and

controversial as a management tool for protecting and maintaining important marine ecological resources.

Executive Order 13158 directs both the Department of Commerce and the Department of the Interior to develop a national system of marine protected areas "in consultation with the Department of Defense, the Department of State, the United States Agency for International Development, the Department of Transportation, the Environmental Protection Agency, the National Science Foundation, and other pertinent Federal agencies."

The current U.S. Marine Managed Areas (MMAs) Inventory (2007) lists 367 federal sites and five federal agency programs responsible for the management of these sites: the National Marine Sanctuary Program (NMSP), the National Estuarine Research Reserve System (NERRS), the National Wildlife Refuge System (NWRS), the National Park Service (NPS), and the National Marine Fisheries Service (NMFS). These programs represent different approaches to managing the oceans, yet collectively, federal marine protection agencies are being criticized for failing to protect marine resources effectively. Figures 1 and 2 illustrate the MPA program organizational structure for both the Department of Commerce and the Department of the Interior. MPA programs identified by the National MPA Center are in boldface type.

Figure 1. Federal Marine Protected Areas Programs within the Department of Commerce

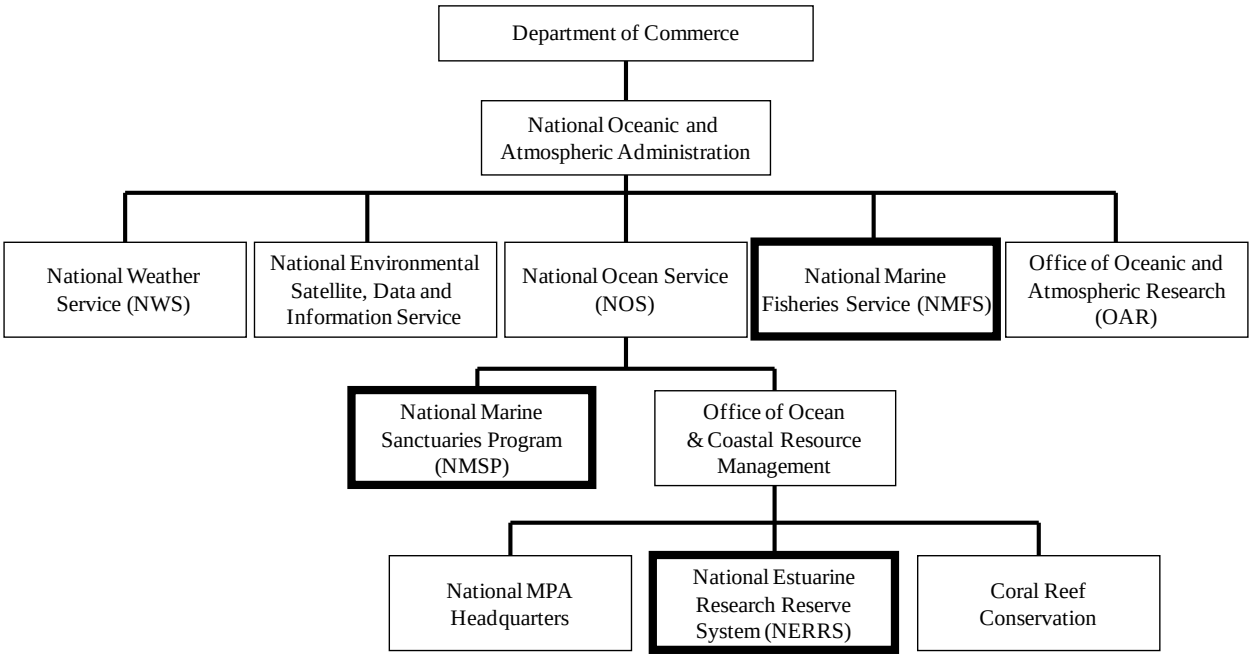
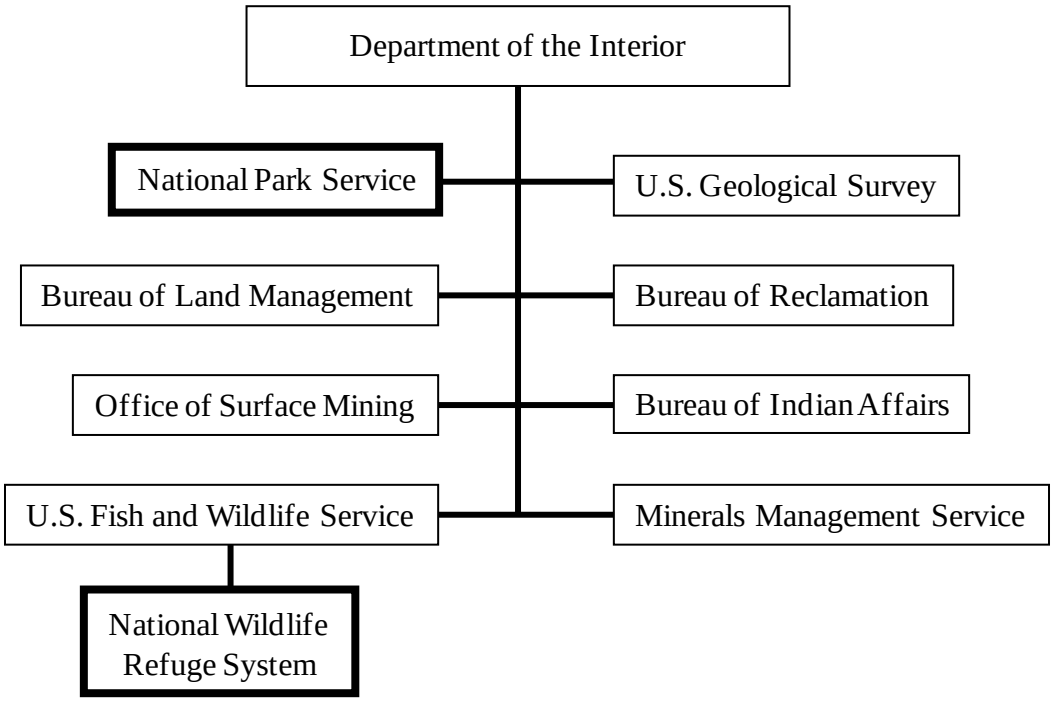


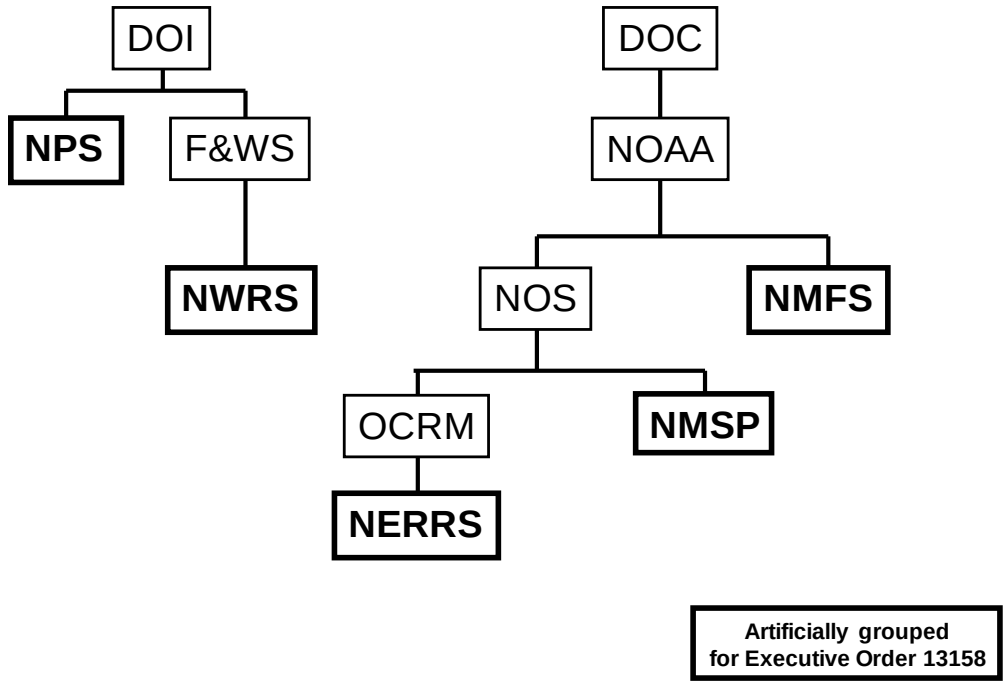
Figure 2. Federal Marine Protected Areas Programs within the Department of the Interior



1.1.1 Organizational Structure

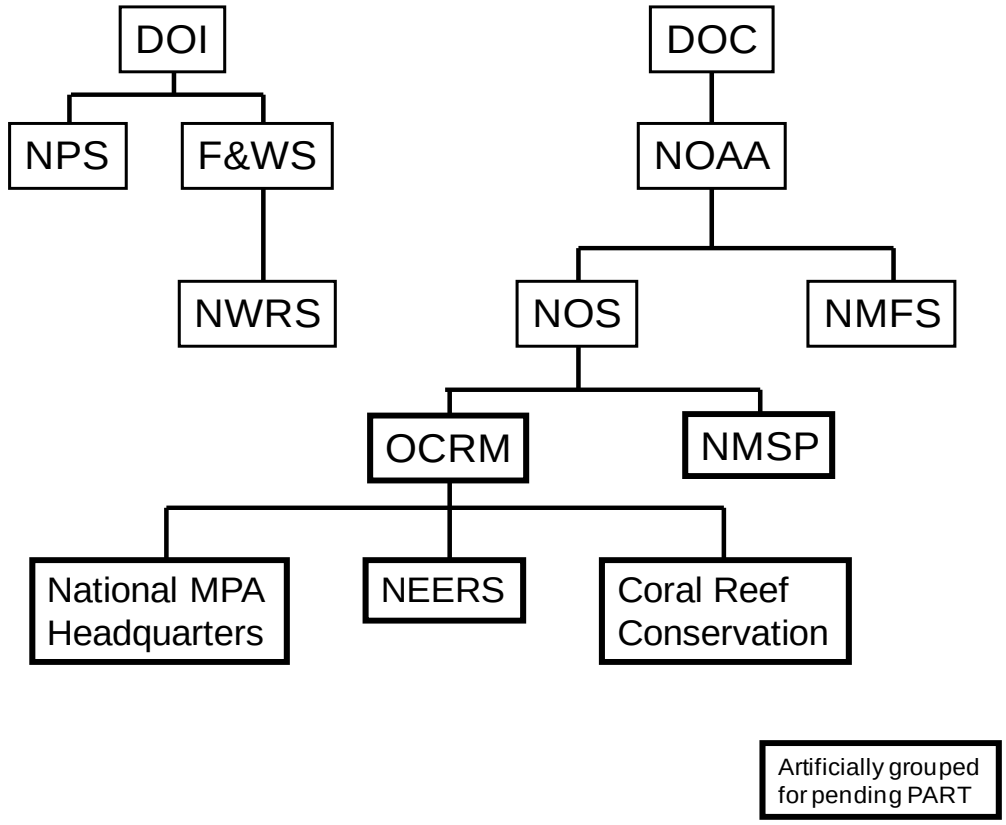
The National Research Council (NRC) (2001), Pew Oceans Commissions (POC) (2003), U.S. Commission on Ocean Policy (2004), and Congressional Research Service (CRS) (Zinn and Buck, 2005) all characterize the current approach to marine resource management and protection as "fractured," "fragmented," and "piecemeal," and they identify this organizational structure as a contributing factor to the decline in "marine environmental health" (Zinn and Buck, 2005). Several federal initiatives, including the Office of Management and Budget (OMB) Program Assessment Rating System (PART) and Executive Order 13158, have forced existing marine programs into artificial organizational groupings yet there are no guidelines to facilitate coordination across programs (Figures 3, 4).

Figure 3. Federal MPA Program Artificial Grouping



Note. MPA programs in boldface type for Department of the Interior (DOI) and Department of Commerce (DOC).

Figure 4. PART Assessment Grouping

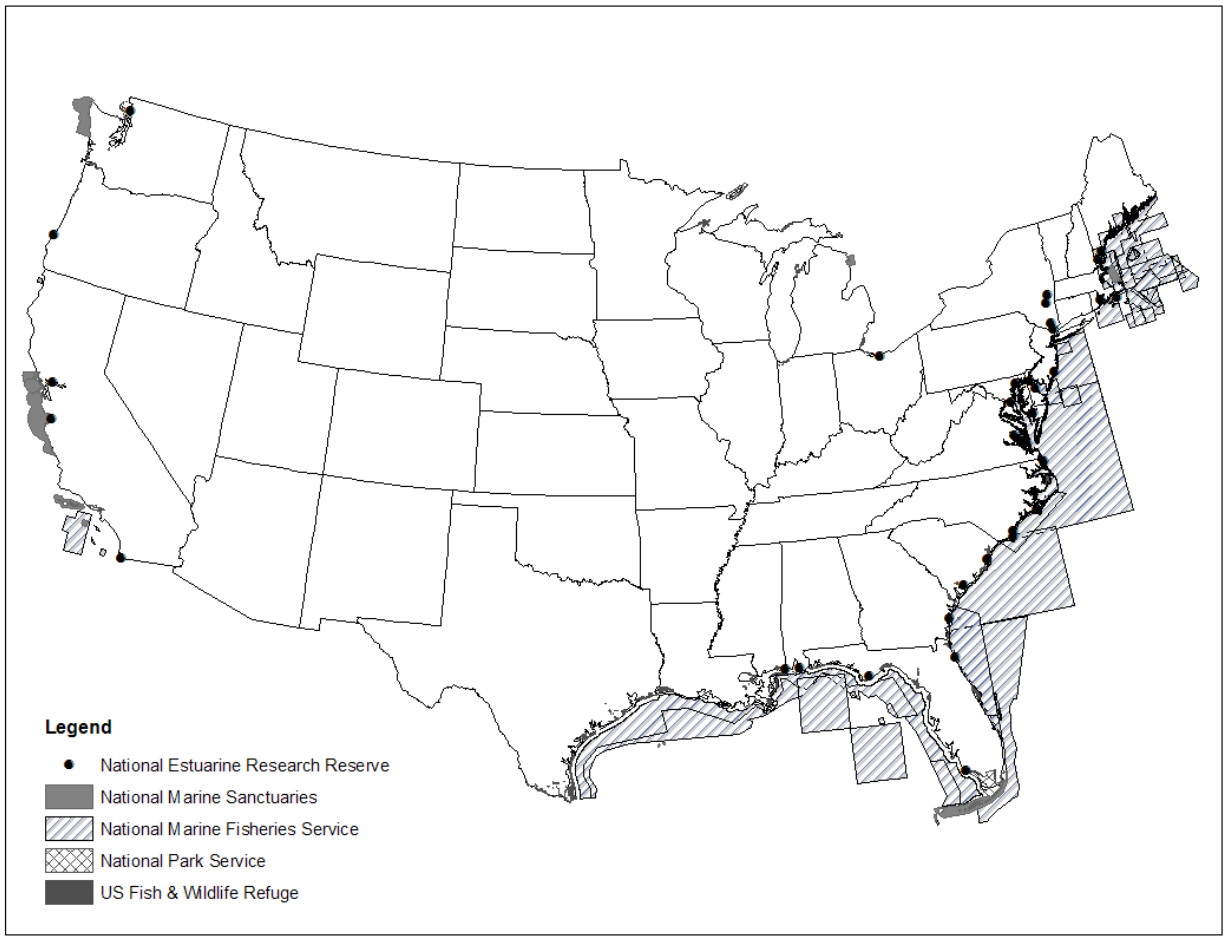


1.1.2 Overlapping Jurisdictional Areas and Authorities

Overlapping geographical and jurisdictional authority is a critical issue for U.S. marine resource protection and conservation. The current federal authority structure results in numerous instances of national wildlife refuges being situated within national park boundaries (Roeper, 2006), and national marine sanctuaries within national marine fishery management areas. There are numerous examples of the five federal MPA programs' overlapping authority within marine ecosystems (Figure 5). MPA programs operate independently and have different approaches to managing the oceans. Intra-agency and inter-agency conflict have historically been a problem

for marine fisheries policy in the United States (Hanna, 2000; Weber, 2002), and researchers question whether ecosystem management can be successful within such a multi-agency setting (Bissix and Rees, 2001).

Figure 5. Geographical and Jurisdictional Overlap of the Five Federal MPA Programs



Note. Map developed by Laura Alexander and reprinted with permission. This map is for illustrative purposes only. It does not include Alaska, Hawaii, and U.S. Territories, but issues of overlap are relevant in those jurisdictions as well.

1.2 Relevance of Research

To fulfill the requirements of Executive Order 13158, the U.S. National Marine Protected Areas Center is in the process of developing a national system of marine protected areas and has identified evaluation of management effectiveness as one of the key components of an effective national system. Attempting to develop an integrated national system of MPAs within the context of multiple agencies and often-competing charters with growing numbers of stakeholders is a governance issue that requires the development of an overarching framework for inter-agency cooperation and coordination of federal MPA programs. This need was echoed in recommendations at one of the first MPA national system planning workshops (Ecologix, 2005). I argue that evaluation is a critical piece needed to address the current state of marine protected areas programs. Program evaluation is important to the field of marine protected areas research for the purposes of improved inter-agency and intra-agency cooperation, efficient use of resources, and improved marine resource protection.

The World Conservation Union (IUCN) MPA Effectiveness Initiative has recommended that countries include evaluation systems in their national protected areas system plans and that these plans should include both agency and national scale assessments of effectiveness. Hockings, Stolton, and Dudley (2000) found that few agencies have implemented such evaluation systems. A NOAA Needs Assessment Report (2002) stated that researchers, managers, and user groups emphasized the need for MPA program evaluation, standardized evaluation frameworks, regional and national-level evaluations and suggested that the National MPA Center could play a role in developing and instituting these efforts (p. 64).

The Government Performance and Results Act of 1993 (GPRA) mandates that federal agencies evaluate their programs to improve program effectiveness. The Office of Management and Budget (OMB) utilizes the Program Assessment Rating Tool (PART) to assess federal programs. The way each agency interprets GRPA and complies with these legislative mandates varies despite the fact that programs are operating in the same marine ecosystems. Also, OMB is not necessarily geared toward assessing ecosystem-based management programs or understanding programs that have conservation goals as their primary objectives.

As the National MPA Center develops a national system of marine protected areas, it will be seeking input and advice from participating MPA programs. But if individual federal MPA programs themselves are not being evaluated effectively, the National System will be developing a flawed evaluation process. Two goals of the national MPA system are: (1) to promote the sound stewardship and improve the effectiveness of a National System of MPAs and (2) to enhance effective coordination and integration among National System MPAs and within the broader ecosystem-based management context (National MPA Center, 2006, p. 17). My research will assist with moving these efforts forward.

My research will further the field of MPA evaluative research and contribute to the development of an overarching evaluation framework for a national system of marine protected areas. It will inform program evaluation at the national level, evaluate processes for federal MPA programs, address inter-agency cooperation and program coordination, and most importantly, advance the national effort to improve U.S. marine resource protection.

My research project is not an effectiveness study of specific programs, but rather a comparative analysis of what each Federal MPA program is doing for program evaluation. I examine past evaluations and current evaluation practices, document problems, and identify

needs. I anticipate that my research will help inform a national-scale MPA evaluation system, contribute to building MPA and natural resource program evaluation capacity, improve inter-agency cooperation and program coordination, and, most importantly, advance the national effort to improve U.S. marine resource protection.

1.3 Research Questions

The development of a national MPA evaluation system cannot be successful without an assessment of whether existing federal MPA program evaluation methodologies adhere to program evaluation theory and practice. The following three research questions will guide my inquiry:

1. What methodologies do federal agencies currently employ to evaluate their MPA programs?
2. To what extent do federal MPA program evaluation processes adhere to program evaluation theory and practice?
3. How could components of these evaluations inform a national-scale MPA evaluation model?

CHAPTER 2 – POLICY BACKGROUND

Although the world's oceans comprise over 70% of the earth's surface, less than half of one percent of marine ecosystems are protected (Roberts and Hawkins, 2000). Scientists and conservationists have emphasized the value of marine protected areas in protecting critical marine habitats and important ecological resources (Agardy, 1997; Clark, 1996; Kelleher, 1999; Palumbi, 2002). Many countries have attempted to preserve their marine resources by designating sensitive areas as marine protected areas, marine parks, or marine reserves. Nevertheless, areas designated as protected often lack comprehensive management plans and enforcement strategies (Alder, 1996).

The United States has had limited success in setting aside marine areas for protection. While 4.57% of U.S. lands are protected as wilderness, only 0.0356% of marine areas within the U.S. Exclusive Economic Zone (EEZ) are similarly protected (The Ocean Conservancy, 2002). The IUCN World Commission on Protected Areas and marine researchers from around the world have called for 20% of the world oceans to be protected by the year 2010 (Kelleher, 1999). Although this figure is based on best available science and is supported by 1,600 scientists and conservationists (Roberts and Hawkins, 2000), challengers of this target number question the theoretical modeling used to calculate this figure and the potential economic impact to user groups.

Within the United States, there are over 1,500 marine managed areas, ranging in size from 0.25 square miles (Fagatele Bay National Marine Sanctuary, American Samoa) to 625,000 acres (Everglades National Park marine protected area, Florida). While these marine sites have been officially designated as protected, multiple uses still are allowed. Extractive uses, such as oil and

mineral extraction and sport fishing, are prohibited at only eight sites (data obtained from National MMA Inventory, 2005).

2.1 Genesis of a National Coordinated MPA Designation Strategy in the United States

The term "Marine Protected Areas" was first introduced in 1982 at an international workshop entitled, "Managing Coastal and Marine Protected Areas" at the Third World Parks Congress held in Bali, Indonesia. This workshop and the resulting book, *Marine Protected and Coastal Areas: A Guide for Planners and Managers* (Salm, Clark, and Siirila, 2000), focused on tropical marine ecosystems and marked the beginning of an international MPA initiative.

Within the United States, there had been an awareness of the international MPA movement, but there was little concerted effort to formally adopt a marine protected area policy until the late 1990s. There is little documentation of the chain of events leading up to the United States taking a formal position on marine protected areas. The following historical account of these events has been developed from first-hand reports.

In the early 1990's, two marine regulatory authorities, the National Marine Sanctuary Program and the National Park Service, had overlapping jurisdiction in the Channel Islands in California. Agency personnel got into a jurisdictional "turf battle" about who would regulate the marine waters. In the 1980's, this same geographical area was the source of conflict between National Marine Sanctuary Program and Department of the Interior over the right to develop oil and gas resources within the proposed national marine sanctuary (Hoagland, 1983).

The argument between the National Marine Sanctuary Program and the National Park Service in the Channel Islands became very political and was elevated first to NOAA, then up the chain of command to the Department of Commerce, ultimately reaching The White House.

The Council on Environmental Quality (CEQ) became involved in the conflict. Ellen Athas, at CEQ at the time, was interested in ocean conservation and national marine sanctuaries. Although the Channel Islands conflict was a local issue (California), the agencies' actions emphasized much bigger issues – the lack of a coordinated approach and the lack of a framework for the management and coordination of agencies.

The conflict in the Channel Islands escalated during 1999, near the end of President Clinton's second term. Experts from NOAA, the Department of the Interior, the Marine Conservation Biology Institute (a non-profit organization), and CEQ held a MPA-related workshop in 2000. They saw a window of opportunity for greater marine resource protection and program coordination for the United States, but they saw also that window beginning to close due to the approaching end of the administration.

These individuals began to draft Executive Order 13158. They held a Marine Protected Areas (MPA) workshop, drafted an Executive Order, and had it signed all within a few months. The workshop was held in February 2000, a draft appeared two months later, and President Clinton signed it by Memorial Day. "People were not expecting it so opponents didn't have time to react" (personal communication, C. Wahle, Nov 8, 2007). The drafting and signing of Executive Order 13158 is now recognized as the genesis of U.S. MPA efforts.

2.2 Federal Marine Legislative History

Nationwide, there are over 140 laws and regulations related to marine resources (Palumbi, 2002). The National Marine Protected Areas Center lists 11 Acts specifically related to marine protected areas (Table 1). A brief description of the major marine-related legislation will be

discussed in this section, while individual Federal Acts specific to agency programs will be discussed in subsequent sections of this dissertation.

Table 1. Federal MPA Legislation

Antiquities Act (1906) Coastal Zone Management Act (1972) Endangered Species Act (1973) Fish and Wildlife Coordination Act (1934) Magnuson-Stevens Fishery Conservation and Management Act (1976) Marine Mammal Protection Act (1972) National Marine Sanctuaries Act (1972) National Park Service Organic Act (1916) National Historic Preservation Act (1966) National Wildlife Refuge System Administration Act (1966) Wilderness Act (1964) Source: (National Marine Protected Areas Center, 2006)

2.2.1 Oceans Act of 2000

The Oceans Act of 2000 was introduced by Senator Ernest Hollings [R-SC] on March 29, 2000. It was passed by Congress on July 25, 2000 and was signed into law on August 7, 2000. The Oceans Act of 2000 was enacted by Congress in an attempt to develop "a coordinated and comprehensive national ocean policy" and to uncover "the most pressing issues facing the nation regarding the use and stewardship of ocean and coastal resources" (U.S. Commission on Ocean Policy, 2004). The Act established the U.S. Commission on Ocean Policy. This 16-member commission, chaired by retired U.S. Navy Admiral James Watkins, was tasked with assessing all U.S. ocean and coastal resources (including supply and demand for resources), reviewing all existing and planned ocean and coastal activities, and examining federal laws and regulations for

inconsistencies, contradictions, and cumulative effects (Public Law 106-256, as amended). The U.S. Commission on Ocean Policy traced the history of ocean-related legislation to the Marine Resources and Engineering and Development Act of 1966, from which the Stratton Commission was formed. Ultimately this Act resulted in the creation of NOAA, the nation's largest agency charged with marine resource management and protection.

The Commission held 16 public meetings, conducted 18 site visits, and collected 1,900 pages of testimony over a period of four years. The Commission documented approximately 140 federal laws, 20 federal agencies, and over 55 congressional committees and subcommittees governing ocean and coastal management (U.S. Commission on Ocean Policy, 2004).

The resulting 600-page *Ocean Commission Report* (2004), proposed 211 recommendations, including the drafting of a national ocean policy framework and the creation of a new, cabinet-level National Ocean Council that would be responsible for overseeing ocean management and conservation efforts. The Commission concluded that an effective governance system is necessary for implementation of a national ocean policy.

The Commission addressed the evaluation of marine protected areas in recommendation 6-3, which stated,

> The National Ocean Council should develop national goals and guidelines leading to a uniform process for the effective design, implementation, and evaluation of marine protected areas. This process should include periodic assessment, monitoring, and modification to ensure continuing ecological and socioeconomic effectiveness of marine protected areas (U.S. Commission on Ocean Policy, 2004, p 105).

Section 4 of the Oceans Act (2000) required the president to respond to Congress within 90 days of the release of the final report. The report to Congress, entitled The *U.S. Ocean Action Plan: The Bush Administration's Response to the U.S. Commission on Ocean Policy* (2004) recommended: establishing NOAA within the Department of Commerce with the passage of a

NOAA Organic Act and establishing, within the Committee on Ocean Policy, an interagency committee on ocean science and resource management and a subcommittee on integrated management of ocean resources.

2.3 Executive Order 13158

Title 3 of the Code of Federal Regulations codifies Presidential Proclamations and Executive Orders, although Executive Orders may be superseded, or rescinded, by subsequent presidents (Kubasek and Silverman, 2005). When President Clinton issued Executive Order 13158 on May 26, 2000, its purpose was to increase the number and establish networks of MPAs in the United States (Federal Register, 2000). The Executive Order directs both the Department of Commerce and the Department of the Interior to "strengthen and expand" a national system of marine protected areas "in consultation with the Department of Defense, the Department of State, the United States Agency for International Development, the Department of Transportation, the Environmental Protection Agency, the National Science Foundation, and other pertinent Federal agencies" (Federal Register, 2000). The Bush Administration has not rescinded this Executive Order.

2.4 MPA and MMA Definitions

For the purpose of this research, I use the definition of marine protected areas that appears in Executive Order 13158 (see below), but it is important to summarize the on-going, contentious discussions about the definition of the term "marine protected areas" (MPAs). When Executive Order 13158 was promulgated in 2000, discussions immediately began, among the scientific and academic communities and other stakeholders, as to what the term MPA really meant and how it

would affect user groups. The NOAA Coastal Services Center (2002) conducted an MPA Needs Assessment and determined the most commonly expressed "policy-and-legal-issues" need was to define MPA terms. The question of what is considered "lasting" protection is another important issue (National MPA Center, 2006).

The Navy was uncomfortable with the language "avoid harm" in the Executive Order and requested a listing and maps of marine protected area locations. Fishing and oil interests applied a great deal of political pressure on Congress, so the term marine managed area (MMA) was used to establish this initial inventory of sites (MMAs). Some MMAs eventually will be nominated for MPA status (personal communication, C. Wahle, 2007). The debate continues today. Ultimately, the national system will be defined in terms of "MPA."

Executive Order Marine Protected Area (MPA) Definition:

> Any area of the marine environment that has been reserved by Federal, State, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein (Federal Register, 2000).

Marine Managed Area (MMA) Definition:

> Any area of the marine environment that has been reserved by Federal, State, territorial, tribal or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein. IMPORTANT NOTE: While the terms "marine managed area" (MMA) and "marine protected area" (MPA) each have the same base definition, the specific definitions of the component terms of "area," "marine environment," "reserved," "lasting," and "protection" differentiate the scope of MMA and MPA. In both the MMA and MPA contexts, the terms "area," "marine environment," "reserved," and "protection" each have essentially the same meaning. The term "lasting" in the MMA context, however, is defined as, "Must provide the same protection, for any duration within a year, at the same location on the same dates each year, for at least two consecutive years. Must be established with an expectation of, history of, or at least the potential for permanence" (National Marine Protected Areas Center, 2006).

MPA Programs

Federal MPA programs are managed by DOI's National Park Service and National Wildlife Refuge System, and NOAA's National Marine Sanctuary Program, National Marine Fisheries Service, and the National Estuarine Research Reserve System (National MPA Center, 2006). For the rest of this thesis, I will be referring to these federal agencies and programs as "MPA programs."

2.5 Federal Evaluation Requirements

The federal government has established several policies that address program evaluation. The Government Performance and Results Act and the Program Assessment Rating Tool are two major evaluation initiatives that MPA programs must comply with.

2.5.1 The Government Performance and Results Act of 1993

The Government Performance Results Act (1993) was enacted to establish strategic planning and performance measurement in the federal government. The Act acknowledges that "waste and inefficiency" are problems for federal agencies, and it requires them to establish performance goals, develop performance indicators, and collect performance data to improve efficiency and effectiveness (Public Law 103-62). The Act also requires agencies to develop a strategic plan and update that plan every three years. The plan must contain a mission statement, goals and objectives, performance goals, external key factors that may affect the program's achievement of goals, a description of program evaluations used, and a schedule for future evaluations (Sec. 306).

The Act defines:

- *Outcome measure* - an assessment of program results compared to its intended purpose.
- *Output measure* - the tabulation, calculation, or recording of activity or effort expressed in a quantitative or qualitative manner.
- *Performance indicator* - a particular value or characteristic used to measure output or outcome.
- *Program evaluation* - assessment, through objective measurement and systematic analysis, of Federal programs achieving intended objectives (Sec. 1115).

The Office of Management and Budget states, "Outcome measures are the most informative measures about performance, because they are the ultimate results of a program that benefits the public. Programs must try to translate existing measures that focus on outputs into outcomes by focusing on the ultimate goal of the program" (OMB, 2007a, p.9).

2.5.2 Program Assessment Rating Tool (PART)

The Program Assessment Rating Tool (PART) was developed by OMB in 2004. PART's unit of analysis is the *program* (Kingsbury, 2006), which is defined as, "an activity or set of activities intended to help achieve an outcome that benefits the public"; OMB uses budget structure to define a program (OMB, 2007b).

There are four sections to the PART Reporting requirements:

- Section 1 – Program Purpose & Design
- Section 2 – Strategic Planning
- Section 3 – Program Management
- Section 4 – Program Results/Accountability

OMB has five PART ratings. Programs are considered to be performing if they receive a rating of "Effective", "Moderately Effective", or "Adequate"; and not performing if they receive a rating of "Ineffective", or "Results not Demonstrated." OMB has defined the terms as follows (OMB, 2007b):

Effective – programs set ambitious goals, achieve results, and are well-managed and improve efficiency.

Moderately Effective – program has set ambitious goals and is well-managed but may need to improve its efficiency, or address problems in design or management to achieve better results.

Adequate – program needs to set more ambitious goals, achieve better results, improve accountability or strengthen its management practices.

Ineffective – programs are not using their tax dollars effectively…have been unable to achieve results due to a lack of clarity in program purpose or goals, poor management, or some other significant weakness.

Results Not Demonstrated – program has not been able to demonstrate acceptable performance goals, or collect data to determine whether it is performing.

OMB has four resource management offices: Natural Resource Programs, Human Resource Programs, General Government Programs, and National Security Programs. Two of the MPA programs in this study, the National Park Service and the National Wildlife Refuge System, are under the Interior Branch of the Natural Resource Programs Division while the other three programs, the National Marine Sanctuary Program, the National Marine Fisheries Service and the National Estuarine Research Reserve System fall under the Commerce Branch of the General Government Programs Division.

The Budget for Fiscal Year 2004 (when PART was initiated) revealed that the "Federal government spends over $2 trillion a year on approximately 1,000 federal programs. Data for 2004 show that 50.4% of federal programs had shown "results not demonstrated" and only 6% were considered "effective" (Budget of the U.S. Govt. FY 2004, pp. 51, 53). Table 2 summarizes the change in effectiveness for all Federal PART reports in 2004 and 2007. The intent of PART is to continue to address these inefficiencies. The 2007 numbers show slight improvement in scores.

Table 2. Change in PART Summary of Federal Program Performance

Year	2004	2007
Effective	6%	17%
Moderately Effective	24%	30%
Adequate	14.5%	28%
Ineffective	5.1%	3%
Results not Demonstrated	50.4%	22%

(OMB, 2007b)

OMB's goal in 2004 was to have one fifth of all federal programs evaluated every year so that by 2008 every program would have been evaluated (Budget of the U.S. Govt. FY 2004). This meant that approximately 200 programs would be evaluated annually. Currently, there are over 1,000 PART reports on the government website "ExpectMore.gov" (http://www.whitehouse.gov/omb/expectmore/).

CHAPTER 3 – LITERATURE REVIEW

3.1 Program Evaluation

Program evaluation is utilized in a wide variety of professional fields including education, health and human services, and more recently, environmental management. Evaluation research is a growing area of interest for marine resource protection programs (MPA News, 2006a). The evaluation literature landscape is extremely broad, covering theory development, methodological approaches, and practical case studies.

Within the field of evaluation research, *evaluation* is defined as "the *systematic assessment* of the *operation* and/or the *outcomes* of a program or policy, compared to a set of *explicit or implicit standards*, as a means of contributing to the *improvement* of the program or policy" (Weiss, 1998, p. 4).

In protected areas literature, Hockings et al. (2000) define *evaluation* as, "the judgement [sic] or assessment of achievement against some predetermined criteria (usually a set of standards or objectives); in this case including the objectives for which the protected areas were established" (p. 3).

Wholey, Hatry, and Newcomer (2004) find two reasons to evaluate: (1) to achieve greater accountability for use of public funds and (2) to help agency officials improve their programs. The authors conclude that “the second purpose should usually be the primary one” (p. 683).

Evaluation researchers classify evaluations as either formative (process) or summative (outcome). Formative evaluations examine a program’s implementation, whereas summative evaluations assess whether a program has achieved its intended outcome (Newcomer, 1997).

3.2 Program Evaluation versus Performance Measurement

The evaluation community differentiates between performance measurement and program evaluation (GAO, 2005). Performance measurement uses indicators to explain program outputs and outcomes but cannot answer how and why questions such as, "Why are programs not delivering the expected results? Why does implementation of the same program vary across sites? How do specific program components contribute to outcomes achieved?" (Newcomer, 1997, p. 10). Performance measures/monitoring have been characterized as a management tool whereas program evaluation is a more in-depth assessment of whether a program has achieved its intended outcomes.

Wholey, Hatry, and Newcomer (2004) define program evaluation as, "the systematic assessment of program results and, to the extent feasible, systematic assessment of the extent to which the program caused those results" (p. xxxiii).

To develop a performance measure system, evaluators must first understand a program's mission and objectives and use these to develop a logic model for the program. A program logic model is used to illustrate a program's inputs, outputs and outcomes graphically. Inputs are resources required to operate a program including staff, funding, equipment, facilities, and knowledge. Outputs are results of a program such as the number of people trained or the number of reports produced. Outcomes are results that are linked to a program's objectives (McDavid and Hawthorn, 2006). Evaluation professionals argue that developing a logic model should be the first piece of information developed during program evaluation efforts.

3.3 Evaluation Capacity Building (ECB)

The concept of Evaluation Capacity Building (ECB) and the body of related literature can provide guidance in the development of MPA evaluation capacity building. A search of the MPA literature has identified this as a knowledge gap in MPA research.

The American Evaluation Association, a professional evaluation association whose mission is to increase evaluation use and improve evaluation methods and practices, has devoted an entire journal volume to the concept of Evaluation Capacity Building (ECB) (Compton, Baizerman, and Stockdill, 2002). The editors of this volume define ECB as, "the intentional work to continuously create and sustain overall organizational processes that make quality evaluation and its use routine" (p. 1). The authors emphasize the difference between ECB and program evaluation. ECB can be used to standardize data collection instruments and ensure that evaluation findings are used (p.3). The introductory chapter provides seven "lessons" for anyone considering ECB:

1. ECB requires a broad stakeholder base – all relevant systems, players, and those impacted by the programs should be considered stakeholders.
2. ECB requires broad-based demand for evaluation.
3. Demand for evaluation and the purpose of evaluation must be matched.
4. ECB operates on many levels – it identifies and integrates multiple-level, multiple-system evaluation activities (from program level to organizational level).
5. ECB requires many methods – a variety of evaluation approaches and methodologies.
6. ECB lacks resources – human and financial resources are needed for ECB.

7. ECB must be flexible – for multiple contexts and to allow for ongoing adjustments and refinement of evaluation practices (Stockdill, Baizerman, and Compton, 2002, pps. 17-21).

Arnold (2006) developed a framework for building evaluation capacity in a 4-H educational program. Her research was prompted by the fact that this group of educators had little evaluation expertise. There were four components to her framework: (1) using a logic model as a central tool for program planning and evaluation; (2) providing one-on-one consultations to educators for evaluation projects; (3) small team collaborative evaluation projects; and (4) conducting large-scale multi-site evaluations. While this article was directed at the education field, lessons drawn could be applied to MPA organizations and programs. Arnold's framework is applicable to organizations that possess minimal evaluation training as well as those with more evaluation experience. It is also appropriate for multi-site evaluations. Therefore, this framework should be explored further for appropriateness for MPA programs.

3.4 National System Evaluations

Two studies, *Development of a National Evaluation System to Evaluate CDC-Funded Health Department HIV Prevention Programs* (Chen, 2001), and *Evaluating HIV Prevention: A Framework for National, State and Local Levels* (Rugg et. al., 1999) provide potential guidance for the development of a national MPA evaluation system.

The Centers for Disease Control and Prevention (CDC) study (Chen, 2001) developed a list of activities for instituting a national evaluation system for monitoring and evaluating health department HIV prevention programs. Chen interviewed key informants who agreed that a national evaluation system was urgently needed but would be highly complex and difficult (p.

59). Problems associated with this effort included: creating additional work burden on health departments and community organizations, fear of arbitrary use of the evaluation results, fear that stakeholders wouldn't be consulted, and concern that lack of financial resources and expertise would set them up for failure. Because there were no precedents or guidance for developing such a large system, the CDC itself was skeptical. To overcome these barriers, the CDC consulted with stakeholder groups so the effort would not be perceived as a top-down approach. They included evaluation experts to examine the evaluation logic and methodology. Chen cited evaluation guidance and developing standardized data elements as foundations of this system. It took two years to develop a draft framework. The following "principles for developing an evaluation guidance" list was also generated:

1. Make guidance useful for both program accountability and improvement.
2. Satisfy the need to aggregate data at the national level.
3. Pilot test the guidance.
4. Format to increase acceptability – use a concise guidance document with supplemental material in separate volumes.
5. Phase in implementation (programs would submit evaluation planning documents, then process evaluation, then outcome evaluation information).
6. Determine required versus optimal evaluations.
7. Provide technical assistance and capacity building to develop and implement evaluation systems.

Chen states that these principles may be useful to any organization “contemplating or developing a large evaluation system” (p 68).

The second study that may have lessons to be drawn is *Evaluating HIV Prevention: A Framework for National, State and Local Levels* (Rugg et al., 1999). The authors stated the need for a comprehensive assessment of the status of HIV prevention programs. The components of their evaluation framework include: process evaluations, outcome evaluations, impact evaluations, and policy and economic evaluations. The authors recommend using management and operational program indicators, a phased approach, and developing an evaluation technical assistance system.

Both studies (Chen, 2001 and Rugg et al., 1999) provide lessons that can be utilized to develop a national MPA evaluation system.

3.5 MPA Evaluation

Scientists and conservationists emphasize the value of marine protected areas for protecting critical marine habitats and important ecological resources (Agardy, 1997; Clark, 1996; Kelleher, 1999; Palumbi, 2002), but establishment of MPAs alone does not guarantee success. Marine researchers have begun to focus on evaluative studies in response to criticisms that many MPAs lack effective management plans and enforcement strategies, and exist in name only, sometimes being referred to as "paper parks” (Alder,1996; MPA News, 2001). The IUCN blames ineffective management as the reason why some MPAs are considered to be paper parks (MPA News, 2001). Worldwide, researchers are attempting to address what effective management means and how to define "successful" or "effective" MPAs.

Researchers addressing MPA effectiveness have structured their studies based primarily on biological indicators, measuring effectiveness in terms of species abundance (Alcala, 1988; Cote, Mosqueira, and Reynolds, 2001; Murawski, et al., 2000; Garcia-Charton, et al., 2000; Roberts, 1994; Roberts and Polunin, 1991). Gerber, Kareiva, and Bascompte (2002) measured effectiveness in terms of *conservation effectiveness* – defined as the average adult fish density inside the reserve divided by the average density in the same area prior to establishment of the reserve, and *yield effectiveness* – which is the total annual harvest after a reserve is established divided by the total annual harvest before the reserve was established (p. 11). Many studies still use fish species abundance and biomass to assess the effectiveness of protected areas (Tuya, Garcia-Diez, Espino, and Haroun, 2006). While these assessments are valuable for fisheries management purposes, there are also socio-economic and governance factors which are important determinants of MPA success.

In the late 1990s, researchers began to evaluate MPAs in terms of socio-economic and governance indicators in order to augment assessments based solely on biophysical indicators. Pomeroy et al. (1997) conducted a survey of community-based coastal resource management projects at six locations in the central Visayas region of the Philippines. The authors examined 10 "success" factors including: income levels, control over and access to resources, four community indicators (conflict, participation, compliance, and influence), harvest amounts, and the "overall well-being" of the resource and households.

In a similar study, Pollnac, Crawford, and Gorospe (2001) conducted a community-based marine protected areas (CB-MPAs) study at 45 sites within four provinces of the Philippines. The Philippines was selected as a study location because it has over 400 established marine protected areas, yet only 20-25 percent of these protected areas are considered “successful”

(Crawford, 2000 in Pollnac, 2001). Researchers proposed that identifying and evaluating both individual and combined success factors would have positive implications for community-based marine protected areas. The success factors analyzed were coral health**,** community perception of resource abundance, MPA features (management plan, management committee, etc.), degree of adherence to rules, and community member empowerment to manage resources. In addition to these five factors, researchers created composite success measures that allowed them to analyze data for sites where coral health data had not been obtained.

Alder (1996) utilized a totally different methodology for analyzing success factors. This study was initiated because much of the existing literature failed to address marine protected areas management and success measures. Alder identified community, government, and non-governmental organizations' (NGOs) level of involvement in MPA planning, management, and education as crucial success factors. He classified major factors influencing marine protected areas' establishment and management into four categories: establishment, planning, management plan implementation, and stakeholder involvement and education. A total of 290 government agencies, NGOs, and academic and research institutions from 110 countries were surveyed.

All of these studies failed to analyze success factors in relation to initial goals and objectives of establishing a marine protected area. The next wave of MPA effectiveness research, "management effectiveness", addresses this knowledge gap. Hockings et al. (2000) define "management effectiveness" in terms of three components:

- Design issues relating to both individual sites and to protected area systems.
- Appropriateness of management systems and processes.
- Delivery of protected area objectives.

There are varying opinions on how to approach the question of MPA management effectiveness and little consensus on performance measurement criteria and evaluation approaches (Alder et al., 2002; Hockings, 1998). Pomeroy, Parks, and Watson (2004) have developed a guidebook of natural and social indicators for evaluating MPA effectiveness including 10 biophysical, 16 socio-economic, and 15 governance indicators. An international initiative led by the IUCN's World Commission on Protected Areas (WCPA) assesses over forty "management effectiveness evaluation systems" for protected areas management worldwide and determines "the most useful indicators" (MPA News, 2006b). This project began in 2005 and was expected to be completed in 2007. Results of this study have not yet been published.

Net benefit evaluation is another area of MPA evaluation research. Hoagland, Kaoru, and Broadus (1995) reviewed and compared methodologies of 62 studies related to net economic costs and benefits associated with individual marine reserves. The researchers examined benefit/cost sources, market values, nonmarket values, biological diversity, benefit transfers, design issues, and equity issues. The authors concluded that net benefits evaluation has important implications for marine policy decision-making and can contribute to efficient, cost-effective design, creation, and management of marine protected areas.

While the tools may become more readily available, there is still resistance on the part of site managers to conduct evaluations because they are time consuming, require financial resources, and may require identifying problem areas to supervisors (Wells and Dahl-Tacconi, 2006).

Hundreds of MPA evaluation studies have been conducted worldwide, but within the United States, marine program evaluation studies are less common. The studies that have been conducted are singular in nature, issue-specific, site-specific, or program-specific, such as what

constitutes an effective public participation process for the National Marine Sanctuary Program (Morin, 2002) or the decision-making role of regional fishery management councils (Corkett, 2005). The United States has been involved in international MPA effectiveness studies, but national efforts are not well documented. No researcher, organization, or other entity is currently assessing how U.S. federal MPA programs are evaluated (J. Kelsey, personal communication, Nov 13, 2006).

Conducting a comparative analysis of federal MPA programs to determine the extent of program evaluation will fill an existing knowledge gap and contribute to the development of a national-system MPA program evaluation framework.

Chapter 4 – Methodology

4.1 Research Methods

My research is designed as a qualitative, descriptive, multiple-case study. Qualitative research is preferred because it utilizes a wide variety of data collection methods and it actively involves participants in data collection. Research questions and paths of inquiry can evolve as the project progresses, theories can emerge from the data, and a qualitative approach allows for broad analysis (Cresswell, 2003).

The objective of this study is to determine whether evaluation practices of federal area-based marine protection programs (also known as Marine Protected Area [MPA] programs) are contributing to improved marine resource protection. I investigate: (1) what methodologies federal agencies currently employ to evaluate their marine protected areas programs; (2) to what extent federal MPA program evaluation processes adhere to program evaluation theory and practice; (3) how components of these evaluations could inform a national-scale MPA evaluation system; (4) whether evaluation results have been disseminated and recommendations implemented; and (5) the extent of inter-agency and intra-agency exchange of evaluation information.

The goal of my research is to identify evaluation knowledge gaps and sources of information that can contribute to the development of a national-scale evaluation framework for U.S. federal marine protected areas and to make recommendations for streamlining/integrating federal marine protected areas programs, increasing inter-agency and intra-agency cooperation, and improving marine resource conservation and protection.

4.2 Multiple Case Study Design

A case study, "tries to illuminate a *decision* or set of decisions: why they were taken, how they were implemented, and with what result" (Schramm, 1971, emphasis added; Yin, 2003). The advantage of the case study over other methodologies is that it allows for dealing with multiple data sources including direct observation, interviews, documents, and archival records, it can be utilized to conduct evaluation research, and its research design can be modified during data collection (Yin, 2003).

I utilized a multiple-case study research design consisting of five cases, one for each federal MPA program. According to Yin (2003) there is no standard or set number of required cases or replications. I develop case descriptions for each federal MPA program and analyze data using cross-case analysis.

Constructing a case study involves three steps as outlined by Patton (2002):

Step 1 – Assemble the raw data - all information collected about the program.

Step 2 – Construct a case record - data are organized into manageable files.

Step 3 – Write a final case study narrative - the case can be chronological or presented thematically.

4.3 The Unit of Analysis

In case study research, the case, i.e., the unit of analysis, must be clearly defined. It can be organized to focus on individuals, groups of individuals, organizations, or programs. The unit of analysis for my research is a government agency program. The scale of analysis is a critical factor in this research. My research will be conducted at the federal agency program level rather

than the individual site level. For the purpose of this research, the term "program" will refer to existing federal MPA programs.

4.4 Selection of MPA Programs

There are 367 federally-managed sites listed in the U.S. Inventory of Marine Managed Areas (MMAs) database (2007). This study focuses solely on federal MPA programs. I acknowledge that there are a greater number of state and territorial MPA sites, but State MPAs are beyond the scope of this research project.

The National MPA Center (2006) identified five federal programs overseeing these sites:

- National Marine Sanctuary Program
- National Marine Fisheries Service
- National Wildlife Refuge System
- National Park Service
- National Estuarine Research Reserve System

I examined each of these programs. To define the scope of analysis I utilized the MPA national site inventory and Office of Management and Budget's Program Assessment Rating Tool (PART) program definition.

4.5 Data Collection Procedures

I collected multiple sources of evidence. This data collection approach will address limitations in data that might occur from personal or political biases in interviews and incomplete or inaccurate document information (Patton, 2002).

Data collection sources include:

- Interviews
- Documents - both published and internal
- Archival records
- Agency meeting minutes and agendas
- Written reports - progress reports, annual reports
- Formal studies or evaluations
- Letters, memoranda, etc.
- Existing Federal legislation
- Organizational charts
- Budgets
- Court cases
- Newspaper articles
- Website data

4.5.1 Interview Sampling Strategy

I employed a chain (snowball) sampling method, through which people initially interviewed identified additional interviewees who provided valuable data and program information (Miles and Huberman, 1994, p. 28). An initial list of MPA federal contacts for each agency was generated during a preliminary interview with the National System MPA Coordinator. From initial interviews I was able to identify key agency personnel responsible for MPA initiatives, PART reporting (past and present), and programmatic evaluation.

I sampled both within and across MPA programs. Interviews were semi-structured, open-ended interviews by telephone and in person. Each interview lasted approximately one hour. Interviews sometimes exceeded an hour if the conversation was productive. Participants either signed an informed consent form (Appendix C) or e-mailed their consent prior to being interviewed. I used an interview guide (Appendix D) to guide the discussions but allowed each interviewee to expand upon any issue they were specifically knowledgeable about. I continued conducting interviews until respondent and information saturation had been reached.

I submitted my research plan to Antioch University New England's Institutional Review Board (IRB) for review and approval prior to initiating my research. I requested and received an expedited review process and exemption from further IRB review or monitoring based on the fact that my research involved interviews on non-sensitive topics.

4.5.2 Data Collection

Data were collected from the sources listed above. Documents include program strategic plans, PART Reports, Annual Performance Plans, and performance measurement training and guidance manuals, and both internal and independent evaluation reports.

I transcribed all interviews and recorded data in data collection matrices (Miles and Huberman, 1994). During the data collection phase I developed and continually edited data collection matrices for program characterization, evaluation processes, and program performance measures (Tables 3, 4, 5). I have inserted sample data categories but these matrices continually evolved as data were collected.

Table 3. Sample Data Collection Matrix –Program Characterization

Agency/MPA program office	National Marine Fisheries Service	National Marine Sanctuary	National Wildlife Refuge System	National Park Service	National Estuarine Research Reserve
Year agency established					
Year MPA program established					
Enabling legislation					
Central MPA office Y/N					
Number of regional offices					
MPA coordinator Y/N					
Number of MPA offices					
Number of total sites					
Number of marine sites					
Total acres protected					
Total marine acres protected					
Formal inter-agency communication					
Intra-agency meetings?					
How often?					
Inter-agency meetings?					
How often?					

Table 4. Sample Data Collection Matrix - Program Evaluation Processes

Agency/MPA program office	National Marine Fisheries Service	National Marine Sanctuary	National Wildlife Refuge System	National Park Service	National Estuarine Research Reserve
Evaluation processes					
Service level					
Program level					
Site level					
Evaluation office					
Evaluation guidance documents					
Formal MPA evaluation process					
Program evaluation					
Site evaluation process					
PART federal program evaluation reports					
Within program evaluation training					
Outside program evaluation training					
How were the performance measures developed					

Table 5. Sample Data Collection Matrix – Program Performance Measures

Output	Outcome	Efficiency	Other

4.6 Data Analysis

Each federal MPA program was written up as a separate, descriptive case study. The cases were then compared using cross-case analysis as outlined in Miles and Huberman (1994). This case-oriented analysis utilizes data sets generated from the data collection matrices displayed

graphically in data displays and/or arrays. I utilized a content-analytic summary table, which lists all common characteristics from the single cases. I also compared each program's evaluation system and performance measures development process to determine whether they were following program evaluation theory and practice.

Interviews were manually coded to develop themes. During data analysis each interview transcript was assigned a number to protect the identity of the interviewees.

4.6.1 Justification for Cross–Case Study and Cross-Scale Analysis

The five federal agency programs identified in my study have been artificially grouped together by Executive Order 13158 and the National MPA Center. These programs differ in their respective hierarchical organizational structures. The five federal agency programs will be working together to develop and formalize a framework for a national system of MPAs. Components of these individual programs can help inform the development of the national framework. Traditional scalar analysis will not produce the data sets needed to elucidate programmatic intricacies or subtleties that may be critical to the development of a national framework.

4.7 Research Design Tests: Validity and Reliability

Yin (2003) identifies three types of validity: construct, internal, and external and defines them as follows:

- Construct validity -"establishing correct operational measures for the concepts being studied."

- Internal validity - "establishing a causal relationship, whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships."
- External validity - "establishing the domain to which a study's findings can be generalized" (p. 34).

I used multiple sources of evidence to address construct validity. As case study methodology recommends (Yin, 2003), I also maintained a chain of evidence which documents the connection between the formulation of research questions to the final case study report, including data collection processes, analysis, and conclusions. I allowed agency personnel to review respective case reports for each of the programs for factual verification and to identify information gaps.

Internal validity does not apply to my research project because I am not attempting to establish any kind of linkage or causal relationships. All procedures and methodological approaches are clearly documented to allow for replication by other researchers, which satisfies reliability tests.

4.7.1 External Validity and Limitations

While this research might be informative for other programs, I define the domain to which it is generalizable to U.S. federal MPA programs. This research is not generalizable to other populations, agencies, or programs outside of the federal MPA program system.

4.8 The Case Report Format

Case narratives have been developed for each of the five federal programs having MPA oversight responsibilities:

- National Marine Sanctuary Program
- National Park Service
- National Wildlife Refuge System
- National Marine Fisheries Service
- National Estuarine Research Reserve System

Each case report follows the same structure and is divided into four sections: Section 1. Program Characterization; Section 2. Program Evaluation; Section 3. Performance Measurements; and Section 4. Program Improvement and Networking (see outline of sections below). A cross-case analysis/synthesis chapter follows the individual case studies.

Section 1. Program Characterization

- Organizational structure
- Response to Executive Order 13158/MPA initiatives
- Major legislation
- Funding/Budget
- Mission
- Public participation requirements

Section 2. Program Evaluation

- Program Performance/Evaluation Process Overview
- Independent evaluations

- PART Report(s)

Section 3. Performance Measures

- PART measures
- Development of performance measures
- Types of performance measures/indicators

Section 4. Program Improvement and Networking

- System-wide evaluation/monitoring
- Evaluation/monitoring information flow
- Evaluation/monitoring implementation
- Post-evaluation/monitoring dissemination leading to program improvement
- Intra-agency and inter-agency collaboration/cooperation

Chapter 5 – Case Reports

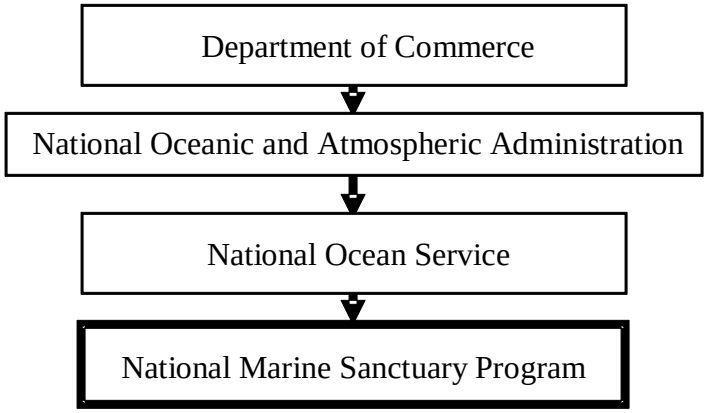
5.1 Case 1 – National Marine Sanctuary Program

5.1.1 Program Characterization

5.1.1.1 Organizational Structure

The National Marine Sanctuary Program (NMSP) was established in 1972. It is one of eight National Ocean Service program offices housed within NOAA and the U.S. Department of Commerce (Figure 6).

Figure 6. National Marine Sanctuary Program Organizational Level



The NMSP manages 14 sites within the waters of the United States (13 national marine sanctuaries and one marine national monument) protecting over 158,000 square miles of marine ecosystems in 11 states and U.S. territories (Table 6). Each site has a superintendent who reports to a regional director and, ultimately, to the National Marine Sanctuary Program Director. A National Marine Sanctuary Executive Team, composed of headquarters branch chiefs and regional directors, as well as a Leadership Team, composed of headquarters branch chiefs and site superintendents, discuss issues of programmatic relevance several times a year.

The largest and most recently designated site, The Northwestern Hawaiian Islands Marine National Monument, was established on June 15, 2006 and encompasses almost 140,000 square miles of marine ecosystem. This sanctuary is unique because it was established by a Presidential Proclamation (8031) from President Bush who used the authority given to him under the Antiquities Act (16 U.S.C. 431). This National Monument has been renamed to Papahanaumokuakea Marine National Monument and is managed cooperatively by the NMSP, the Department of Interior, and the state of Hawaii.

Table 6. List of National Marine Sanctuaries

Name	State	Date Established	Size/Area Protected (sq. miles)
Channel Islands	California	1980	1,658
Cordell Bank	California	1989	526
Fagatele Bay	American Samoa	1986	0.25
Florida Keys	Florida	1990	3,674
Flower Garden Banks	Texas/Louisiana	1992	56
Gray's Reef	Georgia	1981	23
Gulf of the Farallones	California	1981	1,255
Hawaiian Islands Humpback Whale	Hawaii	1992	1,300
Monitor	North Carolina	1975	1
Monterey Bay	California	1992	5,328
Northwestern Hawaiian Islands Marine National Monument (Papahanaumokuakea)	Hawaii	2006	139,797
Olympic Coast	Washington	1992	3,310
Stellwagen Bank	Massachusetts	1992	842
Thunder Bay	Michigan	2000	448

Note. Source data (NAPA, 2000, NOAA, 2006).

5.1.1.2 Response to Executive Order 13158/MPA Initiatives

The National Marine Sanctuary Program made no significant changes as the result of Executive Order 13158. NMSP personnel reported, "It really didn't change how we were doing things – we work in cooperation with them."

5.1.1.3 Major Legislation

Title III of the Marine Protection, Research, and Sanctuaries Act of 1972 – The National Marine Sanctuary Program was established under Title III of the Marine Protection, Research, and Sanctuaries Act of 1972. The Act has been amended and reauthorized six times. In 1992, the Act was amended and the title changed to The National Marine Sanctuaries Act. The Act calls for a "comprehensive and coordinated conservation and management of marine areas" which are of "special national significance." These interests can include conservation, recreational, ecological, historical, scientific, educational, cultural, archeological, or esthetic (Sec. 301. [16 U.S.C.1431]). The 2000 reauthorization classified the sanctuaries collectively as the "National Marine Sanctuary System."

5.1.1.4 Funding/Budget

The National Marine Sanctuary Program (NMSP) received no direct funding prior to Fiscal Year (FY) 1979 and, when they did receive funding in 1979, it was in the amount of $500,000 (GAO, 1981). Their proposed annual operating budget for FY 2008 is $51 million. Prior year funding levels were $32 million for FY 2007 and $56 million for FY 2006 (OMB, 2004a). One interviewee reported that PART funding numbers were those in the President's budget submitted

to Congress and actual funding levels were $56 million for FY 2008, $56 million for FY 2007, and $53 million for FY 2006.

5.1.1.5 Mission

The Draft Strategic Plan 2005-2015 (2005) identifies the following as the mission of the National Marine Sanctuary Program, "Identify, protect, conserve, and enhance the natural and cultural resources, values, and qualities of the National Marine Sanctuary System for this and future generations" (p.4).

5.1.1.6 Public Participation Requirements

Each Sanctuary has a Sanctuary Advisory Council (SAC) as authorized by Section 315 [16 U.S.C. 1445a] of the National Marine Sanctuaries Act. The Council's purpose is to provide advice to the sanctuary superintendent on management issues. Sanctuary Advisory Councils are limited to no more than 15 members (for sanctuaries designated after 1992) and they can be federal or state employees, members of regional fishery advisory councils, local user groups, conservation, scientific, educational organizations or any other public interest group. The SAC meets several times annually and provides input on management plans and other sanctuary business.

5.1.2 Program Evaluation

5.1.2.1 Program Performance/Evaluation Process Overview

The National Marine Sanctuary Program began to address program evaluation in 1999. Senior leadership realized the importance of evaluation and the program has been working

toward developing both site-specific and national program assessment tools since 2002. In 2002, the National Marine Sanctuaries leadership team, a group of Sanctuary Superintendents, drafted a performance measurement system entitled, The Report Card, to be used as an evaluation tool for all sanctuaries at the site level. However, the Report Card concept was replaced with a series of representative performance measures at the national level. Sanctuary personnel reported that the director supported and was committed to program evaluation. Draft performance measures were presented at Sanctuary Advisory Council meetings to obtain comments. All site management plan revisions would need to contain a performance measurement component.

In 2006, the National Marine Sanctuary program developed a draft national-level, system-wide Performance Evaluation Manual. The proposed National System of Performance Evaluation Guidance Manual (2006) lists the following reasons for its development:

- Consolidate into one document "a disparate set of documents, presentations, and other planning/reporting tools."
- Avoid staff confusion.
- Improve effectiveness and efficiency of performance measure implementation.
- Provide PART examiners and sanctuary evaluation personnel with performance data-gathering protocols.

5.1.2.2 Independent Evaluations

There have been five independent evaluations of the National Marine Sanctuary Program conducted by: (a) The General Accounting Office, (b) The External Review Team, (c) The National Research Council, and (d) two conducted by The National Academy of Public

Administration (Table 7). The first evaluation was conducted in 1981, nine years after the creation of the National Marine Sanctuary Program. Twelve years passed between the first and second external evaluations, four years between the second and third, three years between the third and fourth, and six years between the fourth and fifth external evaluations.

Table 7. NMSP Independent Evaluations

Evaluation	Year
The General Accounting Office *	1981
The External Review Team Report*	1993
The National Research Council*	1997
The National Academy of Public Administration (NAPA)*	2000
The National Academy of Public Administration (NAPA)*	2006
*Identified as "independent evaluations" in PART Report (OMB, 2004a) and NMSP website	

5.1.2.2.1 General Accounting Office (GAO) 1981

This evaluation of the National Marine Sanctuary Program was conducted by the General Accounting Office (now renamed to the Government Accountability Office) at the request of the Chairman of the Subcommittee on Fisheries and Wildlife Conservation and the Environment. The purpose of the evaluation was to determine whether the National Marine Sanctuary Program "is providing, or has the potential to provide, marine environmental protection over and above that which is or can be provided under other federal statutory authorities" (GAO, 1981, p. 5). At the time of the report there were two sanctuaries in existence, four approved, and three under future consideration.

What they evaluated:

- Statutory authority
- Legislative history

- Other federal laws related to marine protection
- Other National Marine Sanctuary studies
- NOAA policies, objectives, regulations, reports, and administrative procedures
- Interagency cooperation
- Written public comments from user groups

Findings:

The GAO determined that although there is some overlap with other federal laws and regulations, the National Marine Sanctuaries Act (then Title III) does provide additional benefits not found in the other laws and regulations. They pointed out similarities between the National Marine Sanctuary Program and the National Wildlife Refuge Program; both are designed to provide protection to specific areas. They stated that the Sanctuary Program had insufficient funding to accomplish "large-scale ecosystem monitoring." They did not evaluate program effectiveness or efficiency.

5.1.2.2.2 The External Review Team 1993

This external evaluation (Potter, 1993) was conducted at the request of NOAA's National Ocean Service. The External Review Team was a 12-member panel composed of individuals from marine institutions and organizations. They first convened in 1990 and completed the evaluation in 1993.

What they evaluated:

- Budget
- Designation Process

- Personnel - headquarters and sanctuary managers
- Cooperation with other marine programs/Inter-governmental agreements
- Program vision
- Program name
- Research and Education

Findings:

The Review Team determined that the National Marine Sanctuary Program lacked a clear mission and recommended the Program develop a clear mission statement. The researchers determined the existing budget ($4 million at the time of the review) was inadequate to operate existing sanctuaries, designate new sanctuaries, and administer the program effectively and recommended establishing regional sanctuary offices to assist with information exchange between headquarters and sanctuary sites. It was also determined that the Sanctuary program lacked "visibility" within NOAA and among other federal programs. The Review Team recommended elevating the program to "office level within the National Ocean Service (NOS) and cooperating with other agencies with marine resource management responsibilities." They also recommended evaluating other international marine programs, such as the Great Barrier Reef, as possible models for the U.S. Sanctuary Program. The evaluators commented that the Sanctuary Program shares research goals of conservation and management with the National Park Service and the Estuarine Research Reserves and should develop clear research and education goals. The final recommendation was for the Sanctuary Program to institute periodic external reviews to track progress.

5.1.2.2.3 National Research Council (NRC) 1997

The National Marine Sanctuary Program identified this report as one of its external evaluations (NMSP website, 2007) even though only one sanctuary (Florida Keys) was examined in this study. The NRC report, *Striking a Balance: Improving Stewardship of Marine Areas* was the product of a committee assembled by the Marine Board of the NRC. The 15-member committee was composed of individuals from user groups, government agencies, fisheries, marine transportation, offshore energy, and conservation groups. The committee's research focus was ocean governance and management. Three case studies were conducted: The Gulf of Maine/Massachusetts Bay, The Florida Keys National Marine Sanctuary, and the Southern California Coast. Within the report, they also examined the Coastal Zone Management Program, The National Estuary Program, fisheries management, The Outer Continental Shelf oil and gas leasing program and several state marine programs (p. viii). The NRC identified 12 "performance standards for successful ocean governance": sustainability, regional ecosystem perspective, global imperative, adaptive management, scientific validity (including risk assessment), conflict resolution, creativity and innovation, economic efficiency, equity and transparency, integrated decision-making, timeliness, and accountability (p.15). The committee emphasized the need for a coordinated ocean governance system, defining effective processes, and measuring success using a "clear system of monitoring and evaluation" (p.5).

5.1.2.2.4 National Academy of Public Administration (NAPA) Report 2000

In 2000, The National Ocean Service (NOS) requested that The National Academy of Public Administration (NAPA) "assess the achievements" of its National Marine Sanctuary Program. The study focused on the potential of the program. It involved over 200 interviews with

sanctuary personnel and advisory committee members, user groups including fishermen and divers, as well as scientific researchers, community members, and other "key program officials" (NAPA, 2000). At the time of the study there were only 12 sanctuaries in existence.

What they evaluated:

- Budgets
- Regulations and enforcement
- Management plans
- Physical resources and threats
- Research
- Education
- Sanctuary Advisory Councils
- Accomplishments

Findings:

The Academy listed 22 accomplishments for the 12 sanctuaries in existence at the time. Of the 22 accomplishments, 10 were education-related, five research-related, three volunteer-related, two regulatory/enforcement-related, one ecological/resource-related, and one legal/court-decision related. The researchers found that at the national level "new procedures and management systems do not focus on specific achievable objectives or actual results" (p. 32). The list of recommendations included: demonstrating results achieved at existing sanctuaries rather than trying to create new ones, developing periodic "State of the Sanctuaries Reports" to identify threats to sanctuaries, and to develop environmental measures for monitoring. The evaluators generated 14 recommendations in three broad categories: "show how to protect

sanctuaries effectively," "work more confidently with local communities," and "manage for results" (p. 45).

5.1.2.2.5 National Academy of Public Administration (NAPA) Report 2006

The most recent external evaluation, *Ready to Perform? Planning and Management at the National Marine Sanctuary Program*, (NAPA 2006) is by far the most comprehensive and useful of all National Marine Sanctuary Program external evaluations. This evaluation was conducted at the request of the Sanctuary Program following their 2004 PART assessment. The Sanctuary Program wanted the National Academy of Public Administration **(**NAPA) to "assess its capacity for performance-based management" (p. 10).

What they evaluated:

- Strategic plan
- PART Report (2004)
- Performance measures
- Sanctuary management plans
- System-wide monitoring
- Condition reports
- Annual operating plans
- Planning and guidance documents

Findings:

The Sanctuary Program implemented several of the recommendations presented in the original NAPA (2000) evaluation including increasing the number and use of sanctuary advisory

councils, publishing a "State of the Sanctuaries Report", and promoting awareness of the importance of the sanctuaries (NAPA, 2006). The Academy determined that demonstrating performance is critical to continued budgetary support, that the strategic plan and development of a sanctuaries performance-based management system with 19 performance measures were important steps toward demonstrating performance. The Academy recommended adding an educational activity performance measure and stressed the importance of collecting data to measure progress on performance measures rather than focus on more planning. Despite the large number of guidance documents, it is unclear how the documents contribute to more effective performance. NAPA felt that the strength of the Sanctuary Program was in its sanctuary advisory councils and working groups. It was stated that this "bottom-up" approach was unique, and the Academy made a recommendation that the sanctuary program work with other federal marine agencies to implement and measure the effectiveness of alternative marine governance structures. The most poignant statement of the report was, "It is unlikely that NOAA or Congress will allow the Sanctuary Program to expand to full build-out until it can demonstrate that it is performing effectively" (NAPA, 2006, p.7).

Each evaluation focused on different aspects of the Sanctuary Program. Table 8 summarizes what was examined in each evaluation.

Table 8. Evaluation Criteria for the National Marine Sanctuary Program

Evaluation Criteria	The Government Accounting Office - 1981	The External Review Team Report - 1993	The National Research Council - 1997	The National Academy of Public Administration (NAPA) - 2000	The National Academy of Public Administration (NAPA) - 2006
Statutory authority	X				
Legislative history	X				
Other federal marine laws	X				
Individual sanctuaries/sites			X	X	
Regulations	X			X	
Enforcement				X	
Policies, objectives	X				
Administrative procedures	X				
User group involvement	X				
Budget/funding		X		X	
Designation process		X			
Personnel		X			
Interagency cooperation		X			
Program vision		X			
Program name		X			
Research		X		X	
Education		X		X	
Management plans				X	X
Physical (ecological) resource threats/condition reports				X	X
Sanctuary advisory council					
Accomplishments				X	
Performance measures					
Performance					
Ocean governance					
Management					
Strategic plan					X
PART Report					X
Implementation					
System-wide monitoring					X
Planning/guidance documents					X
Annual operating plans					X

5.1.2.3 PART Report(s)

In 2004, the National Marine Sanctuary Program was first selected by the Office of Management and Budget (OMB) to go through the Program Assessment and Rating Tool (PART) process, commonly called "being PARTed". They were grouped with the National MPA Center under the program title "Protected Areas" for this first OMB review. Their initial review score was "ineffective" or "results not demonstrated" (NAPA, 2006).

> "We received a low score, a 35, because we didn't have a way to show we know what is working. This is where we fell short. We had no explicit performance targets and there was no evidence we were tracking our progress. We retold the story in "Pass Back" and our score shot up to 68 which was above average and we were considered "adequate."

The Sanctuary Program then worked to develop 12 performance measures for this review (see Table 10 in performance measures section). The final PART overall assessment (OMB, 2004a) rating was listed as "adequate". The scoring was categorized as follows:

- Program Purpose & Design 100%
- Strategic Planning 89%
- Program Management 100%
- Program Results/Accountability 39%

The Sanctuary Program performed well in design, planning, and management but received low scores for demonstrating results.

5.1.3 Performance Measures

There have been three sets of performance measures developed by the National Marine Sanctuary Program (Table 9).

Table 9. Performance Measures for National Marine Sanctuary Program

Developed for	Date	Number of measures	Site-specific or program-wide
PART	2004	12	Program wide
The Report Card	2002	abandoned	Site-specific
Performance Evaluation Manual	2006	19	Program-wide

The National Marine Sanctuary Program began working on performance measures, in the form of The Report Card, in 2002. The purpose was to try and develop a "comprehensive approach" to evaluating sanctuary site performance (Gray's Reef SAC, 2002). These performance measures were first presented at sanctuary advisory committee meetings to receive feedback, but as mentioned above, were abandoned during the PART assessment process.

For PART review they developed 12 performance measures (Table 10). Additional measures were added for the newly developed system-wide performance evaluation and old measures were reworded (Table 11).

Table 10. PART Performance Measures for National Marine Sanctuary Program

Type	Term	Measure
Outcome	Long-term	Number of sites in which water quality, based on long-term monitoring data, is being maintained or improved
Outcome	Long-term	Number of sites in which habitat, based on long-term monitoring data, is being maintained or improved
Outcome	Long-term	Number of sites in which select living marine resources (LMRs), based on long-term monitoring data, are being maintained or improved
Output	Long-term	Percent of the sanctuary system adequately characterized
Output	Long-term	By 2015, 100% of known historical, cultural, and archaeological resources within each national marine sanctuary boundary will be inventoried within the NOAA's ARCH database
Output	Annual	Number of sanctuaries achieving and maintaining an "optimal" management rating
Efficiency	Annual	Percent of NMSP permits handled timely and correctly
Outcome	Annual	By 2010, all education programs implemented in national marine sanctuaries will be assessed for effectiveness against stated program goals and objectives and National Science Education Standards
Output	Long-term	Percentage of natural and cultural resource characterizations for U.S. biogeographical regions completed by MPA Center
Output	Long-term	By 2010, create six regionally based management structures to link MPAs within a national system and at the local level to ecosystem based management initiatives
Output	Annual	Cumulative percent of categories completed of a comprehensive national inventory of marine managed areas for analytical purposes (to be completed by FY06)
Output	Annual	Cumulative number of national science strategies and regional research plans that address priority needs to support the creation of a national MPA system
Totals		
4 Outcome	7 Long-term	
7 Outputs	5 Annual	
1 Efficiency		
(OMB, 2004a) for NOAA protected areas (combined NMSP & MPA Center)		

Table 11. New National Marine Sanctuary Performance Measures

Type	Measure
Outcome	Number of sites in which water, based on long-term monitoring data, is being maintained or improved
Outcome	Number of sites in which habitat, based on long-term monitoring data, is being maintained or improved
Outcome	Number of sites in which select living marine resources (LMRs), based on long-term monitoring, is being maintained or improved
Outcome	By 2015, increase by 20% public awareness of national marine sanctuaries and the sanctuary system
Output	By 2015, 100% of the sanctuary system adequately characterized
Output	By 2015, 100% of known historical, cultural, and archaeological resources within each national marine sanctuary boundary will be inventoried within the NOAA's ARCH database
Output	By 2007, 100% of NMSP permits are handled timely and correctly
Output	By 2010, 100% of sites with marine zones in place have implemented a methodology for assessing their effectiveness
Output	By 2010, all sites have implemented a cooperative enforcement program and are able to demonstrate results based on stated goals and objectives
Output	By 2010, increase by 25% the number of volunteer hours dedicated to NMSP science, public awareness and resource protection activities.
Output	By 2010, all education programs implemented in national marine sanctuaries will be assessed for effectiveness against program goals and objectives and National Science Education Standards
Output	By 2007, the NMSP is assessing the effectiveness of all significant partnerships across the sanctuary system
Output	Complete final management plans for all sites currently in management plan review by 2008
Output	By 2010, decrease the average length of time to complete a draft revised management plan to 36 months
Output	By 2010, Sanctuary Advisory Councils will provide significant input on 150 priority projects across NMSP
Output	By 2015, all infrastructure needs are funded to adequately support safe and effective operations
Output	By 2010, five new collaborative projects with either new or existing international partnerships will be initiated and demonstrating protection of the marine environment
Output	By 2006, all national marine sanctuaries (excluding Monitor NMS) will be trained in the use of SHIELDS) and its components (e.g., RUST)
Output	By 2010, 100% of sanctuaries will have an ocean observing system component within their site monitoring program
Totals	4 Outcome; 15 Output (NMSP, 2006)

The types of performance measures were classified in the PART report as: four outcome measures, seven output measures, and one efficiency measure. Seven measures were listed as long-term monitoring and five measures as annual monitoring. The National Marine Sanctuary Program classified the new performance measures as four outcome and 15 output measures. NAPA Report (2006) classified the new performance measures as four impact, four outcome, and 11 output measures (p. 20).

5.1.4 Program Improvement and Networking

5.1.4.1 System-wide Evaluation/Monitoring

5.1.4.1.1 The Report Card

The National Marine Sanctuary Program drafted The Report Card in 2002. It was composed of a five-tiered scoring system and was intended to inform the Sanctuary Program director of "programmatic effectiveness in a wide variety of management categories" (NMSP, 2003, p.2). It was to provide a snapshot of Sanctuaries' status – what they were achieving and what needed improvement. The Report Card system was scheduled go into effect in October 2003. The scoring system was never implemented because PART became the focus.

Concerns of Sanctuary staff and Sanctuary Advisory Council members included:

- Was there a mechanism to conduct cost/benefit analysis?
- Will the Program office provide additional resources necessary to meet evaluation requirements?
- Evaluation assumes that priorities have been established
- Does the evaluation need to be external or would internal suffice?
- A report card could draw " undeserved, negative media attention"

5.1.4.1.2 The Performance Evaluation Manual

In order to provide clear guidance to all staff on how to track information for the program performance measures, the National Marine Sanctuary Program drafted a comprehensive program evaluation tool in September 2006 and finalized it in May 2007. *The Performance Evaluation Manual for the Office of National Marine Sanctuaries* is the first program-wide evaluation system developed by the NMSP. This tool is periodically revised as necessary; it is a dynamic document reflecting progress made on each performance measure and the need to revise them over time. This manual was used to report on each program performance measure in 2006 and 2007, with the results published in the 2006 and 2007 Progress Reports, respectively. The plan includes collection of site-specific performance measures which will then be incorporated into a system-wide evaluation.

5.1.4.1.3 Performance Evaluation Action Plans in Management Plans

The NMSP is in the process of incorporating performance measures into all individual sanctuary management plans. This system-wide, site-specific evaluation effort has begun but will be implemented in a phased approach. To date only two sanctuaries have completed their management plan reviews while another five are currently under review.

5.1.4.2 Evaluation/Monitoring Information Flow

Site-specific performance data pertinent to program performance measures are sent to the national coordinators or the headquarters staff person responsible for a performance measure who then forwards it to the strategic planning and integration team for consolidation by the national performance evaluation coordinator.

There are function-specific national coordinators for:

- Science
- Permits
- Maritime Heritage
- Education
- Volunteering
- Management Plan Review
- International Activities
- Operations

Information is collected and reviewed by each national coordinator or another headquarters staff person responsible for a performance measure. At this time there is no centralized data collection system for pooling data.

5.1.4.3 Evaluation/Monitoring Implementation

No evaluation studies have been found on the success of implementation of the National Marine Sanctuary Program Performance monitoring system or on the success of the program in meeting programmatic goals, objectives, or improved marine resource protection.

5.1.4.4 Post-Evaluation/Monitoring Dissemination Leading to Program Improvement

There are no clear findings on how evaluations have been disseminated or utilized for programmatic improvement with the exception of the three improvements noted in the NAPA

(2006) summary above. Most of the evaluative studies have primarily focused on statutory/regulatory issues and the potential benefits of the Sanctuary Program.

5.1.4.5 Intra-agency and Inter-agency collaboration/cooperation

PART and NOAA's budget planning processes have brought several NOAA programs together into one grouping identified as the Coastal and Marine Resources Program (CMRP). This grouping includes: Sanctuary Program, NERRS, MPA Center, Coastal Resources Center (CRC), and the Office of Coastal Resource Management (OCRM). There have been no formal interagency evaluation forums/meetings. There has been contact at evaluation training locations such as the Performance Institute.

In summary:

"The Sanctuary Program has a promising future if it can show that it produces results" (NAPA, 2000, p.1)

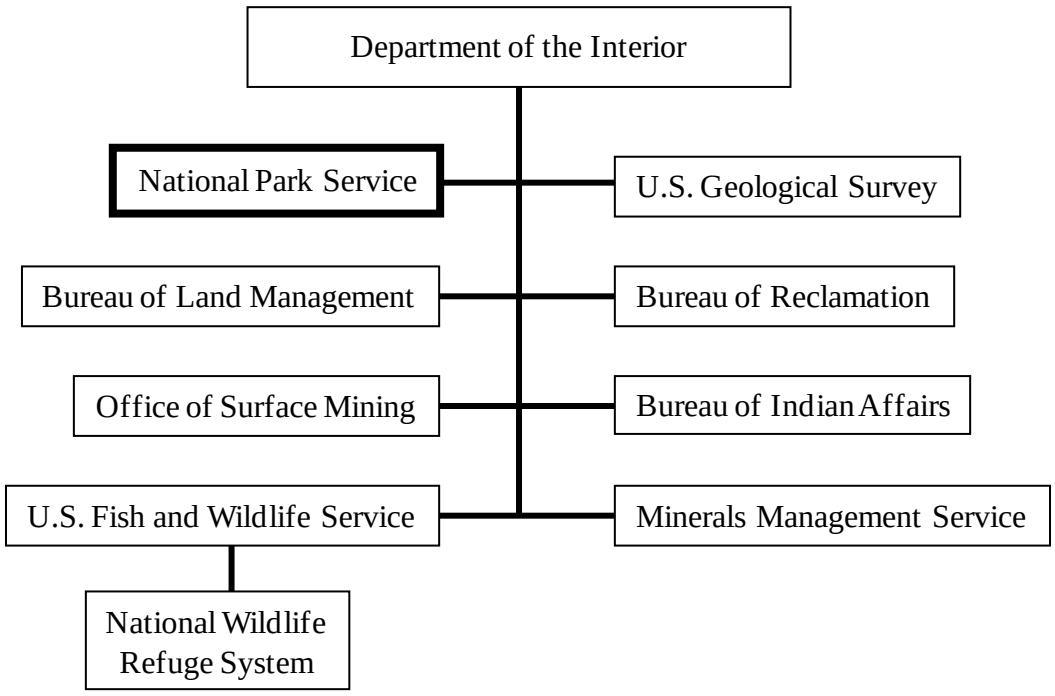
5.2 Case 2 – National Park Service

5.2.1 Program Characterization

5.2.1.1 Organizational Structure

The National Park Service was established in 1916. It is one of eight bureaus housed within the Department of the Interior (Figure 7).

Figure 7. National Park Service Organizational Level



There are 391 parks or "units," as they are referred to by the National Park Service (NPS), within the United States. Taken as a whole, these 391 units comprise the "National Park System." The entire National Park System protects over 83 million acres of ecosystem in 49 states and U.S. territories. The National Park System is divided into 7 regions and each region has a regional director. Each park has a park superintendent.

There are 74 "ocean parks" (Davis, 2004) that protect 3,176,900 acres of ocean and coastal areas in 24 states and territories (Table 12). The oldest ocean park is Cabrillo National Monument in California, established in 1913; and the most recently established is the U.S. Virgin Islands Coral Reef National Monument created in 2001. The largest ocean parks are located in Alaska. Wrangell-St. Elias National Park and Preserve in Alaska, protects 13,176,030 acres of land and coast while Katmai National Park and Preserve protects 676,975 acres of open water and coast. While the NPS maintains a separate inventory of their marine parks and has recently established an Ocean and Coastal Resources Branch, it did not separate out their marine sites for other purposes.

Table 12. List of National Park Service Ocean Parks

Name	State	Date Established	Size/Area Protected (acres)	Marine/freshwater Area Protected (acres)	Coast (miles)
Acadia National Park	ME	1916	47,400	11,900	52
Ala Kahakai National Historical Trail	HI	2000	N/A	0	175
American Memorial Park	CNMI	1978	133	0	3
Aniakchak National Monument & Preserve	AK	1978	464,118	0	70
Apostle Islands National Lakeshore	WI	1970	69,372	27,232	154
Assateague National Seashore	MD – VA	1965	39,727	31,411	86
Bering Land Bridge National Preserve	AK	1978	2,697,393	?	175
Biscayne National Park	FL	1968	172,924	168,666	50
Boston Harbor Islands National Recreation Area	MA	1996	1,482	0	?
Buck Island Reef National Monument	VI	1961	19,015	18,839	3
Cabrillo National Monument	CA	1913	160	125	1
Canaveral National Seashore	FL	1975	57,662	39,680	24
Cape Cod National Seashore	MA	1966	43,605	16,523	50
Cape Hatteras National Seashore	NC	1937	30,321	3,993	153
Cape Krusenstern National Monument	AK	1978	649,085	0	118
Cape Lookout National Seashore	NC	1966	28,243	19,674	56
Castillo de San Marcos National Monument	FL	1924	20	0	1
Channel Islands National Park	CA	1938	249,561	124,299	176
Christiansted National Historic Site	VI	1952	27	0	1
Colonial National Historic Park	VA	1939	8,677	?	30
Cumberland Island National Seashore	GA	1972	36,415	10,262	30

Name	State	Date Established	Size/Area Protected (acres)	Marine/freshwater Area Protected (acres)	Coast (miles)
De Soto National Memorial	FL	1948	27	0	1
Dry Tortugas National Park	FL	1935	64,701	64,661	4
Ebey's Landing National Historical Reserve	WA	1978	19,324	?	1
Everglades National Park	FL	1934	1,398,903	625,000	155
Fire Island National Seashore	NY	1964	19,579	4,411	52
Fort Caroline National Memorial	FL	1950	138	0	0
Fort Clatsop National Memorial	OR	1958	125	0	1
Fort Frederica National Monument	GA	1936	241	0	1
Fort Matanzas National Monument	FL	1924	300	0	1
Fort McHenry National Monument and Historic Shrine	MD	1925	43	0	1
Fort Point National Historic Site	CA	1970	29	0	1
Fort Pulaski National Monument	GA	1924	5,623	?	?
Fort Raleigh National Historic Site	NC	1941	513	0	1
Fort Sumter National Monument	SC	1948	200	125	1
Gateway National Recreation Area	NY	1972	26,607	17,989	?
Glacier Bay National Park and Preserve	AK	1925	3,224,840	601,600	1,185
Golden Gate National Recreation Area	CA	1972	74,816	3,657	28
Grand Portage National Monument	MN	1951	710	0	1
Gulf Islands National Seashore	FL & MS	1971	137,991	115,189	76
Haleakala National Park	HI	1916	29,094	0	1
Hawaii Volcanoes National Park	HI	1916	323,431	0	43
Indiana Dunes National Lakeshore	IN	1966	15,060	436	25
Isle Royale National Park	MI	1931	571,790	438,009	338
Jean Lafitte National Historical Park and Preserve, Barataria Preserve	LA	1978	20,005	156	18
Kalaupapa National Historic Park	HI	1980	10,779	2,000	1
Kaloko-Honokohau National Historic Park	HI	1978	1,161	597	2
Katmai National Park and Preserve	AK	1918	4,093,229	672,000	497
Kenai Fjords National Park	AK	1978	669,983	0	468
Klondike Gold Rush National Historical Park	AK	1976	13,191	0	1
Lake Clark National Park and Preserve	AK	1978	4,030,025	0	127
National Park of American Samoa	AS	1988	9,500	3,200	33
New Bedford Whaling National Historic Park	MA	1996	34	0	0
Olympic National Park	WA	1938	922,651	15,186	57
Padre Island National Seashore	TX	1962	130,434	32,500	66
Perry's Victory and International Peace Memorial	OH	1936	25	0	1
Pictured Rocks National Lakeshore	MI	1966	73,236	9,770	47
Point Reyes National Seashore	CA	1962	71,068	22,000	180
Port Chicago National Memorial	CA	1994	1	0	1
Pu'uhonua o Honaunau National Historic Park	HI	1955	419	0	1
Puukohola Heiau National Historic Site	HI	1972	86	4	1

Name	State	Date Established	Size/Area Protected (acres)	Marine/freshwater Area Protected (acres)	Coast (miles)
Redwood National Park	CA	1968	112,512	5,939	36
Salem Maritime National Historic Site	MA	1938	9	0	0
Salt River Bay National Historic Park and Ecological Preserve	VI	1992	978	600	1
San Francisco Maritime National Historic Park	CA	1988	50	0	1
San Juan Island National Historic Park	WA	1966	1,752	0	1
Santa Monica Mountains National Recreation Area	CA	1978	154,095	0	41
Sitka National Historic Park	AK	1910	113	50	1
Sleeping Bear Dunes National Lakeshore	MI	1970	71,199	10,400	47
Timucuan Ecological and Historical Preserve	FL	1988	46,287	38,000	1
U.S.S. Arizona Memorial	HI	1980	11	0	1
Virgin Islands Coral Reef National Monument	VI	2001	13,893	13,893	3
Virgin Islands National Park	VI	1956	14,689	5,650	22
War in the Pacific National Historic Park	GU	1978	2,037	1,000	4
Wrangell-St. Elias National Park and Preserve	AK	1978	13,175,901	0	129
Total Units:	74		34,168,777	3,171,788	5,112

Note. Site list obtained from (Davis, 2004).

5.2.1.2 Response to Executive Order 13158/ National MPA Center Involvement

One interviewee stated that Executive Order 13158 was the "seminal event" that caused the National Park Service to look at their marine resources anew. The Ocean and Coastal Resource Branch of the NPS was established administratively in January 2007 and was created to provide an institutional home for ocean park issues and technical expertise. This newly created branch is housed within the Water Resources Division of the Washington Office's Natural Resource Stewardship and Science directorate.

A second interviewee felt this branch was not created as the result of Executive Order 13158 or National MPA Center efforts, but rather from two documents: the 2001 National Park System Advisory Board Report, *Rethinking the National Parks for the 21st Century* and the Bush Administration's Ocean Action Plan. The National Park System Advisory Board Report (NPS, 2001) recommended that the NPS "expand its involvement in the protection of freshwater and marine systems" (p. 9).

> To ensure the long-term survival and health of our marine systems, we must create a strategically designed system of no-take marine reserves, covering a broad range of representative marine habitats, especially those important to spawning. The Park Service, as one of the federal agencies focusing on conserving wildlife for future generations, should play a leadership role in developing and implementing such a system. Marine protected areas, like upland parks, will only be saved in the long run by the enlightened support of the public. The Park Service should think beyond the vision of maintaining sustainable parks to encourage sustainable communities and ecosystems with parks as a part of them (p. 18).

The Bush Administration's Ocean Action Plan (2004) called for improved collaboration, coordination, and cooperation across federal agencies.

Other NPS personnel felt that Executive Order 13158 would complement what the Park Service was already doing. They reported that prior to the issuance of EO 13158 in 2000 a

"sizeable number of NPS units had already been actively engaged in the stewardship of their marine resources." They stated that the NPS was responsible for initiating the Seamless Network Agreement; a cooperative agreement with three other "federally managed marine protected areas" programs: National Marine Sanctuaries Program, National Wildlife Refuge System, and National Estuarine Research Reserve System.

5.2.1.3 Major Legislation

The Organic Act of 1916 established the National Park Service, which was created to "promote and regulate the use of the Federal areas known as national parks, monuments, and reservations … which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (NPS, 1916).

A marine or aquatic park system resource is defined as, "any living or non-living part of a marine or aquatic regimen within or is a living part of a marine or aquatic regimen within the boundaries of a unit of the National Park System, except for resources owned by a non-Federal entity" (NPS, 1916).

The General Authorities Act of 1970 – The purpose of this Act is to include all areas administered by the National Park Service into one National Park System and to clarify the authorities applicable to the system. The act states that:

> Park units though distinct in character, are united through their inter-related purposes and resources into one national park system as cumulative expressions of a single national heritage; that, individually and collectively, these areas derive increased national dignity and recognition of their superb environmental quality through their inclusion jointly with each other in one national park system preserved and managed for the benefit and inspiration of all people of the United States... (16 U.S.C. 1).

5.2.1.4 Funding/Budget

The National Park Service will be 100 years old in 2016. The Bush Administration has requested $3 billion in additional funds over ten years for The Centennial Initiative to "ensure the beauty of parks." It is unclear how these funds will be distributed and if any funds are designated for program evaluation or ocean programs specifically.

The NPS Natural Resource Stewardship and Science Program's proposed annual operating budget for Fiscal Year (FY) 2009 is nearly $232 million (NPS FY 2009 Budget Justifications). Prior year funding levels were $221 million for FY 2008, $216 million for FY 2007, and $190 million for FY 2006. The entire National Park Service's FY 2009 Budget request is $2.4 billion, a $160.9 million increase above FY 2008 enacted budget (NPS FY 2009 Budget Justifications).

5.2.1.5 Mission

The Park Service's mission is to both preserve resources and allow for public use.

> The National Park Service preserves unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations. The Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world (NPS, 2001, p.8).

5.2.1.6 Public Participation Requirements

There are 45 advisory committees for the National Park System and are established in compliance with the Federal Advisory Committee Act of 1972 (NPS, 2005a). The committees are structured around Service-wide issues as well as by park unit. One Service-wide advisory committee, The National Park System Advisory Board, first established in 1935, is comprised of

members of the scientific community and academia. The NPS' commitment to public participation and "civic engagement" is outlined in Director's Order #75A (NPS, 2007a).

5.2.2 Program Evaluation

5.2.2.1 Program Performance/Evaluation Process Overview

According to the National Park Service's Strategic Plan (NPS, 2005b), the NPS has been developing a systematic program of evaluations. It lists recent service-wide evaluation types as GAO and Inspector General Reports, focusing on fee receipts and management, park employee housing, recovery of costs for search and rescue and emergency medical services, condition of NPS infrastructure, and data on natural and cultural resources. The Strategic Plan states that assessments of natural resource programs' effectiveness and efficiency were to be completed by May 2001.

NPS staff reported there are two main evaluation tools in use within the National Park Service: OMB's Program Assessment Rating Tool (PART) and The NPS Core Operations Analysis. A second staff member identified The Park Service's Vital Signs Monitoring as an evaluation tool.

The National Park Service does not separate out or distinguish its ocean programs or sites for evaluation purposes. For the purposes of this research, evaluations cited within the 2003 PART assessment report for the Natural Resource Stewardship and Science Program will be examined.

5.2.2.2 Independent Evaluation

The NPS Natural Resource Stewardship program lists a total of seven "independent" evaluations in their 2003 PART Report (Table 13). The first evaluation was conducted in 1992 (reprinted 1993) by The National Research Council (NRC). Four years later there were two more evaluations: a historical perspective of the Park Service and a GAO analysis. There was a six-year lag before the next evaluations were conducted. The National Academy of Science focused solely on one region of the National Park Service. The National Park Service also listed a National Park Service Advisory Board Report as an independent evaluation. The last two evaluations listed in the PART Report were draft internal guidance documents for future program evaluations. The OMB examiner gave them 0% credit for this section of the report.

Table 13. Independent Evaluations Identified in PART Report

Evaluation	Year	Type
National Research Council (NRC)	1992, 1993	Independent
General Accounting Office (GAO)	1997	Independent
Richard Sellers	1997	Independent
National Academy of Science	2003	Independent
NPS Advisory Board Report	2004	Independent
NPS Peer Review Guidelines	2003	Internal
NPS natural resource program evaluation strategy	2003	Internal

(OMB, 2003b)

5.2.2.2.1 National Research Council (1992, 1993)

"If it is so easy to identify the deficiencies in the program, why is it so difficult to change or restructure it?" (NRC, 1992, p. 9).

The *Science and the National Parks* Report was conducted by the Committee on Improving the Science and Technology Programs of the National Park Service. This committee was part of the National Research Council's Commission on Geosciences, Environment, and Resources.

The initial study was conducted in 1992 and was reprinted in 1993. The committee examined "over a dozen" previous NPS science program reviews including: *Wildlife Management in the National Parks: The Leopold Report* (1963), *National Academy of Sciences Advisory Committee on Research in the National Parks: The Robbins Report* (1963), and *A Review of National Parks Science programs: The Allen and Leopold Report* (1977), and determined that, while reports repeatedly recommended strengthening the NPS science program, little has been done to accomplish these recommendations.

What they evaluated:

- Past evaluations
- Funding/budget
- Staffing
- Organizational structure
- Leadership

Findings:

The Committee on Improving the Science and Technology Programs of the National Park Service found that staffing for research was much lower (2-3%) than other federal US programs (Fish & Wildlife Service 8-10%) and that the decentralized nature of the research program made it difficult to assess. They stated research is important to determine what resources exist, to assess threats and evaluate management responses and that funding increases alone would not solve the problem. They provided three recommendations for the NPS Science program: new legislation, separate funding, and new leadership, including appointing a chief scientist and establishing a Science Advisory Board.

5.2.2.2.2 The General Accounting Office Report (GAO) (1997)

The General Accounting Office (GAO) (renamed the Government Accountability Office), prepared the report, *National Parks: Park Service Needs Better Information to Preserve and Protect Resources* (1997) for the Congressional Committee on Resources, subcommittee on national parks and public lands. They conducted site visits at 12 of the national parks within the United States in 1995 and examined eight more in 1996.

What they evaluated:

- Cultural resources
- Natural resources
- Threats to resources
- Internal threats
- External threats
- Funding

Findings:

The GAO determined that while the National Park Service understood the importance of scientific information, they lacked baseline data on the status of cultural and natural resources and threats to those resources, resulting in park managers not being able to assess trends in resource status, threats to resources, and determine effectiveness of management decisions. Less was known about NPS natural resources than cultural ones. GAO attributed the lack of this information to insufficient funding and proposed three solutions to address the funding shortfall: increase funding, limit or reduce the number of parks, or reduce the number of visitors (p. 7).

They stated that simply identifying threats to resources was not sufficient for resource protection. This report concluded that NPS has not made significant progress in correcting deficiencies identified in "more than a dozen" evaluations conducted in the past.

5.2.2.2.3 Richard Sellars (1997)

"To prepare for the future, it is important first to analyze the past with as much clarity and impartiality as can be mustered" (p.xiv).

As the title indicates, *Preserving Nature in the National Parks: A History*, was written by a National Park Service historian, Richard Sellars, Ph.D.. Sellars traced the history of the National Park Service from the late 1800s through 1995. At the time of this report publication, Sellars had been a historian with the Park Service for over twenty years.

What was evaluated:

- Legislative history
- Organizational structure
- Leadership
- Management policies
- Research and science
- Stakeholder groups
- Funding
- Bureaucratic behavior

Findings:

Sellars explained there were two types of management in the Parks – one for tourism and one for natural resources. He referred to the National Park Service's approach to natural resource management throughout history as "facade management" or protecting and preserving the natural resources of the scenery for visitor enjoyment. He stated that the National Park Service has been continually criticized for this approach and the conflict between these two objectives continues today. Sellars traced the role of science within the National Park Service and noted that, when scientific expertise was finally acknowledged and scientific capacity was growing, it was removed from the National Park Service in 1995 to staff the newly established National Biological Survey. Secretary of the Interior, Bruce Babbitt, created this agency by taking staff and funding from three federal agencies: the National Park Service, the U.S. Fish and Wildlife Service and The Bureau of Land Management. According to Sellars, the National Biological Survey resulted in transferring 168 NPS employees and $20 million in funding from the NPS to the new Bureau and "withdrew from the Park Service virtually all of its biological research capacity" (p.289). This Bureau eventually merged with U.S. Geological Survey. Sellars concluded that the Park Service must utilize scientific knowledge as a foundation for natural resource protection.

5.2.2.2.4 National Academy of Science (2003)

The National Academy of Science's *Ecological Dynamics on Yellowstone's Northern Range* (NRC, 2003) was requested by Congress, funded by the Department of the Interior, and was conducted by a 12-member Committee on Ungulate Management in Yellowstone National Park. This committee was composed primarily of ecologists from academic institutions. It is strictly

an ecological study examining the Park Service's management strategy of "natural regulation" – no direct human intervention, (no hunting and letting fires burn) for ungulates. The study area included two national parks, two wildlife refuges and six national forests.

What they evaluated:

- Population dynamics
- Ecosystem processes
- Management policies and practices
- Scientific knowledge

Findings:

The Committee determined it was impossible to determine a baseline of natural conditions, but "best available science" indicated that ungulates were not damaging the ecosystem of the northern range. They could not take a definitive position on natural regulation but recommended an adaptive management strategy and emphasized the importance of ongoing ecological monitoring and assessment.

5.2.2.2.5 National Park System Advisory Board Report (2004)

This 15-page report was prepared by the seven-member National Parks Science Committee for the National Park System Advisory Board. It was entitled, *National Park Service Science in the 21st Century: Recommendations Concerning Future Directions for Science and Scientific Resource Management in the National Parks*. Committee members were from academia, research institutions, and non-profit organizations and included members Sylvia Earle from the

National Geographic Society and Edward O. Wilson from Harvard University as well as representatives from Woods Hole Oceanographic Institution and The American Association for the Advancement of Science. It was a two-year study of the National Park Service's Natural Resource Challenge Program, requested by the Director of the National Park Service. The report documented that the Natural Resource Challenge, initiated in 1999, was designed to improve natural resource protection and management. This report acknowledged the distinction between terrestrial and ocean parks and highlighted the role NPS can play in protecting and restoring marine ecosystems (p.5).

What they evaluated:

- Funding
- Goals
- Statutory mission

Findings:

The National Park System Advisory Board stated that the NPS has been successful in providing visitor services to the public but has lagged behind in natural resource management and resource protection. It increased the NPS natural resource budget from $100 to $200 million per year. They determined that The Natural Resource Challenge fills an information gap in NPS inventorying, monitoring, and restoration. The committee determined that 65% of The Challenge goals had been met and that the Science Committee should continue periodic reviews of The Challenge.

They made six recommendations (NPS, 2004, pp 9-13): National Park Service should:

1. Be part of a national system of protected areas.
2. Expand its involvement in the protection of freshwater and marine systems.
3. Serve as both an educator and advocate…for managing cultural and natural resources.
4. Ensure its institutional capacity …and enhance existing infrastructure.
5. Tell America's story – interpret in terms of both cultural and natural values.
6. Encourage the creation of an integrated national data base on America's natural heritage.

Most importantly for marine resource protection, the committee recommended that the National Park Service become "a proactive player in a national dialogue to develop a strategy for marine resource protection and restoration" (p. 9).

Each independent evaluation focused on different aspects of the NPS natural resource stewardship program. Table 14 summarizes what was examined in each evaluation.

Table 14. Evaluation Criteria for National Park Service

Evaluation Criteria	NRC's Science in the National Parks (1992, 1993)	General Accounting Office GAO (1997)	Richard Sellar's Preserving Nature in the National Parks (1997)	The National Academy of Science (2003)	NPS Advisory Board Report (draft 2003)
Statutory authority					
Legislative history			X		
Organizational structure	X		X		
Other federal marine laws					
Individual park units		X	X		
Regulations					
Enforcement					
Policies, objectives			X	X	X
Administrative procedures	X		X		
User group involvement					
Budget/funding	X	X	X		X
Designation process					
Personnel/Staffing	X		X		
Interagency cooperation					
Program vision					
Program name					
Research	X	X	X	X	
Education					
Management plans				X	
Physical resource threats/condition reports		X		X	
Advisory council					
Accomplishments					
Performance measures					X
Performance					X
Ocean governance					
Management/Leadership	X		X		
Strategic plan					X
PART Report					
Implementation					X
System-wide monitoring					X
Planning/guidance documents					
Annual operating plans					
Previous Evaluations	X	X			

5.2.2.3 PART Report (s)

There have been 10 different PART assessments for the National Park Service as a whole (OMB, 2007a)

- Natural Resource Stewardship
- National Historic Preservation
- Land and Water Conservation Fund
- Heritage Partnership
- Cultural Resource Stewardship
- Visitor Services
- Technical Assistance
- Park Police
- Facility Maintenance
- Concessions Management

As mentioned above, for the purposes of this research project, The NPS Natural Resource Stewardship and Science Program PART assessment is examined. The NPS Natural Resource Stewardship and Science Program was selected by OMB to go through the PART process in 2003. They used seven performance measures for this review (see Table 15). The final PART overall assessment rating was "Moderately Effective." The scoring was categorized as follows (OMB, 2003b):

- Program Purpose & Design 100%
- Strategic Planning 88%
- Program Management 100%

- Program Results/Accountability 68%

The Natural Resource Stewardship and Science Program performed well in design, planning, and management but received low scores for demonstrating results.

5.2.3 Performance Measures

There has been one set of performance measures developed by the Natural Resource Stewardship and Science Program. Seven performance measures were created for the 2003 PART assessment (Table 15).

Table 15. PART Performance Measures for National Park Service

Type	Term	Measure
Outcome	Annual	Acres of disturbed park lands prepared for natural restoration per year
Output	Long-term	Percent of parks that have identified their vital signs for natural resource monitoring
Outcome	Long-term	Percent of parks containing ecosystems in good or fair condition
Output	Annual	Percent of completed data sets of natural resource inventories
Efficiency	Annual	Average cost of treating an acre of park land disturbed with exotic plants
Outcome	Long-term	Percent of disturbed parklands acres that are being restored
Outcome	Long-term	Percent of streams and rivers managed by NPS that stated and Federal water quality [*sic*]
(OMB, 2003b)		

The types of performance measures were classified in the PART report as follows: four outcome measures, two output measures, and one efficiency measure. Four were listed as long-term monitoring and three as annual monitoring measures.

5.2.4 Program Improvement and Networking

5.2.4.1 System-wide Evaluation/Monitoring

5.2.4.1.1 Vital Signs Monitoring Network

In 1981, the National Park Service began a monitoring program which was named the "vital signs monitoring program". Some park personnel identify this as a form of evaluation. One interviewee explained that while the monitoring program began in 1981, securing funding, staffing and designing and implementing monitoring programs for 270 parks required the next 27 years. Vital signs monitoring uses physical, chemical and biological indicators to determine conditions and trends of parks' natural resources. The National Park Service's vital signs monitoring website (NPS, 2007b) lists the three most common indicators; exotic plant species occurrence, changes in land cover type, and vegetation community composition and structure.

Development of the first prototype for long-term monitoring began in the early 1980s after park personnel watched species decline and fisheries management strategies fail. One Park employee noted:

> In the national park marine environment its okay to kill/remove fish, conch, kelp etc.. In the national parks, aquatic species did not receive the same level of concern as terrestrial. There used to be Grouper all over the Florida Reef - by 2000 it took 68 dives to find the first Grouper. Why? What is the impact of this? The National Park Service said we need to find another way. I started to look at this and build a long-term monitoring prototype

NPS staff determined that a 20% increase in operating budget would be needed, to monitor effectively, which at the time meant an approximately $200 million increase to conduct "performance evaluation" and to better understand park ecosystem dynamics, provide early warnings of situations that would require intervention, evaluate mitigation/restoration projects, and assure compliance with laws and policies. NPS personnel knew that obtaining this level of

funding would be problematic so they utilized a "three–pronged approach": (a) they requested a smaller amount of money, (b) looked at what expertise they already had in-house, and (c) looked for case studies they could realistically conduct. They asked NPS staff to nominate sites/cases and generated a list of about 125 cases. From this list they selected 10 cases as demonstration sites. They received $4 – 5 million in the late 1980's for the prototype and got half of the 10 up and running as demonstration projects. Based on the success of the prototype demonstration sites, the Park Service developed 12 monitoring networks which received funding in 2001/2002.

Currently, the monitoring network system has organized 270 park units (as of 2004) into 32 biogeographical networks, grouped by similar geographical and natural resources. Each network has from 3-20 parks. There is a network coordinator and all the park superintendents work together. The monitoring program has been fully funded through the NPS's Natural Resource Challenge. The monitoring system now receives $50 million per year to operate the networks. The National Park Service identifies the following benefits of the vital signs network:

- Early warning
- Program evaluation
- Adaptive management
- Collaboration
- New methods

One Park employee stated,

> It took 10 years to convince people within the agency and another 10 years to convince others outside that monitoring is important to learn more about a system and identify problems …but there is a huge pressure at sites/parks to take monitoring money and fix the ecological problems that have been identified.

5.2.4.2 Evaluation/Monitoring Information Flow

Information flow within the National Park Service is very linear. Site specific data are transferred from individual park superintendents to directors of the seven regional offices. From there, data are sent to six program centers at headquarters, to associate directors, and ultimately, if necessary, to the Director. Virtually all resource condition information is used at the site level to evaluate site specific issues and programs, not to evaluate system level conditions and issues.

5.2.4.3 Evaluation/Monitoring Implementation

The NRC Report (1992, 1993) concluded that few recommendations from a thirty-year span of evaluations of the NPS science programs have been implemented. The National Park Service has been more successful in implementing their monitoring program.

5.2.4.4 Post-Evaluation/Monitoring Dissemination leading to Program Improvement

There are no clear findings on how evaluations have been disseminated or utilized for programmatic improvement. Monitoring has been used to improve species recovery plans.

5.2.4.5 Intra-agency and Inter-agency Collaboration/Cooperation

The National Park Service staff reported two collaborative/cooperative national initiatives: an Ocean Park Stewardship Strategy and The Seamless Network. The Ocean Park Strategy was

developed into a national action plan to: (1) establish a seamless system of ocean parks, sanctuaries, refuges and reserves; (2) discover, map, and protect ocean parks; (3) engage visitors in ocean park stewardship; and (4) increase National Park Service technical capacity for ocean exploration and stewardship.

The Ocean Park Stewardship initiative, begun in 2002, was both an intra-agency and inter-agency effort started by the National Park Service. One National Park Service employee, committed to ocean stewardship, traveled to individual national parks with marine conservation responsibilities and asked respective superintendents what issues they were facing. National Park Service personnel also discussed and initiated "cooperative ocean conservation strategies" with NOAA's MPA Center, Sanctuaries, Fisheries, and International Affairs Offices.

The George Wright Society (GWS) holds biennial conferences to address issues concerning parks and protected areas. At the 2003 George Wright Society Conference, four marine workshop sessions were held over a period of two days and included sessions on the following topics: Marine Protected Area Science, Political Realities of Ocean Stewardship, Partnerships in Ocean Conservation, and An Action Plan for National Park Service. Attendees were from across disciplines and included anthropologists, ecologists, and policy personnel. Participants were assembled into groups of 8-10 and asked to discuss each topic and recommend NPS and partner action items for an ocean park stewardship strategy. A top-10 list of "impediments to effective ocean stewardship in the national park system" was generated in a series of six regional workshops with ocean park managers and their partners prior to the GWS sessions. The GWS session participants were shown the list and asked to comment on it, i.e., add or modify entries.

Below is the list that was created:

1. Denial by public and park superintendents that changes or additional conservation actions are needed.
2. Multiple jurisdictions lead to competition and conflict among governing bodies.
3. Burden of proof of environmental damage is reversed at sea – considered benign until damage is documented unlike land where no impact must be shown before activities are allowed.
4. Shifting baseline syndrome – many ocean resources have impaired conditions so lower standards set.
5. A land-based agency – Park Service lacks capacity for ocean stewardship. Site managers want more guidance regarding ocean policy.
6. Ecological restoration is more difficult, expensive, and uncertain in the sea and is often considered a lower priority.
7. Ocean issues are often contentious and controversial, especially regarding fishing.
8. Inconsistent park legislation – contains conflicting directions to both preserve parks unimpaired and allow traditional and customary exploitation.
9. Lack of knowledge about the nature and extent of human effects on the sea.
10. Last frontier unfenced – Park Service control over ocean resources perceived as threat to freedom to fish (Davis, 2004, p.32).

This Ocean Stewardship initiative opened the dialogue between marine park unit superintendents and sister agencies and revitalized an earlier NOAA Sanctuary Program-National Park Service Agreement. The Ocean Park Strategy proposes evaluating improved sustainable fishing, ecological integrity, and resilience and productivity (Davis, 2004). One

interviewee sees the Ocean Park Strategy "opening a new chapter of the Park Service – a reinvigoration of resource stewardship responsibilities."

The Seamless Network is a second marine-related cooperative initiative the National Park Service is participating in. This network will bring together representatives from the National Park Service, the U.S. Fish & Wildlife Service's National Wildlife Refuge System, and NOAA's National Marine Sanctuary Program and National Estuarine Research Reserve System. The Seamless Network agreement was formed when agency personnel acknowledged there were areas of programmatic overlap and that sharing resources made good business sense. It is designed to assist site managers at the operational level. The first Seamless Network meeting was held on March 6-7, 2008.

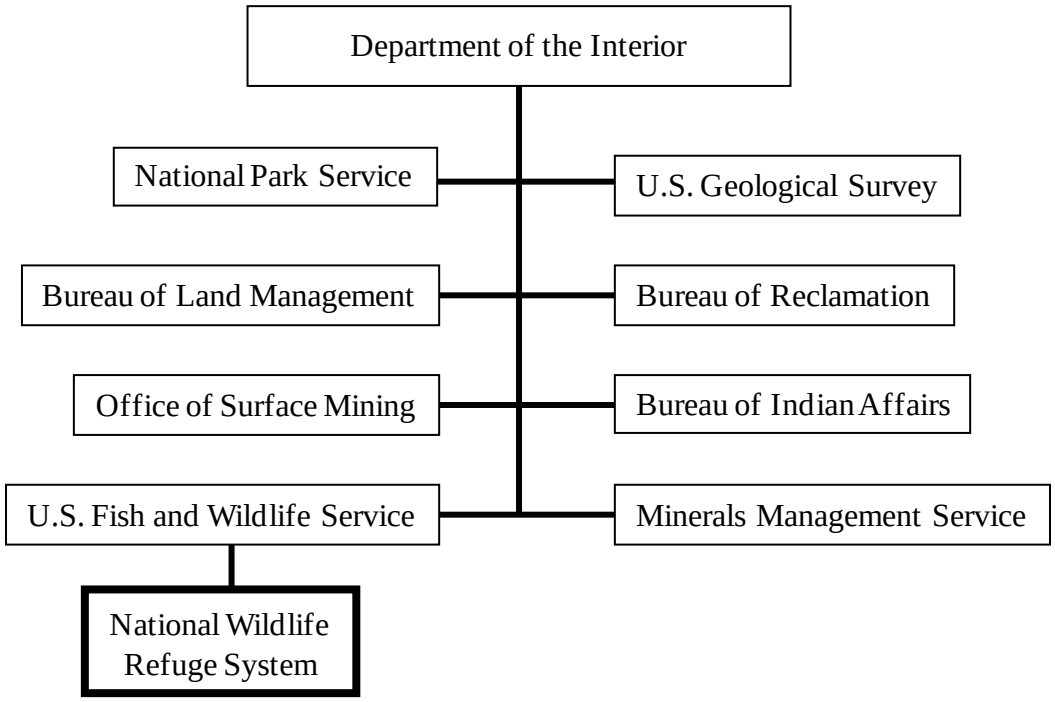
5.3 Case 3 – National Wildlife Refuge System

5.3.1 Program Characterization

5.3.1.1 Organizational Structure

U.S. Fish and Wildlife Service is one of eight bureaus housed within the Department of the Interior. The National Wildlife Refuge System (NWRS) is a U.S. Fish and Wildlife program and has six Divisions: Natural Resources Policy and Planning, Realty, Visitor Services, Law Enforcement, Budget, and Information and Technology. There are eight regions within the Refuge System: Pacific, California-Nevada, Southwest, Midwest, Southeast, Northeast, Mountain-Prairie, and Alaska.

Figure 8. National Wildlife Refuge System Organizational Level



There are a total of 548 national wildlife refuges within the United States protecting approximately 96 million acres of ecosystems in all 50 states and U.S. territories. The first refuge established was Pelican Island National Wildlife Refuge, Florida in 1903. There are 177 marine managed areas within the Refuge System, protecting approximately 20 million coastal acres and 30,000 coastal miles. A list of these marine sites appears in Appendix E.

5.3.1.2 Response to Executive Order 13158/ National MPA Center Involvement

The Refuge System responded to the MPA Executive Order 13158 and the Coral Reef Executive Order 13089 by creating a new marine program coordinator position responsible for ocean and coastal marine-related refuge issues. Informally named "the marine program," it is not officially recognized as a refuge "Program." Currently, there is one marine resource specialist and one NOAA Knauss Sea Grant Fellow housed within the Wildlife Resources Branch of the Refuge System's Washington, D.C. offices.

There is a growing interest in marine conservation within the National Wildlife Refuge System as documented in a 2004 Conservation in Action Summit Executive Committee Report (NWRS, 2004a). Refuge personnel have written several white papers on marine conservation within the Refuge System and a FY 09 Budget request for $900,000 for two marine-related refuge efforts has been submitted. Responses to marine initiatives have been mixed throughout the Refuge System and vary from one regional office to another. Although there are bi-annual meetings of senior regional managers, they have not yet met with marine resource personnel as a group or as individuals. Few regional managers or refuge supervisors have taken a proactive interest in marine refuge issues as a stand-alone item. "Historically, this is a perceptual cultural

issue both within the Department of the Interior, and its bureaus. The USFWS and NWRS have never parsed out, in detail, their marine role for rigorous performance or budgeting measures."

One interviewee commented, "Marine areas are not an emphasis for the Refuge System." Another characterized those interested in marine-related refuge issues as a "coalition of the willing."

5.3.1.3 Major Legislation

There are numerous executive orders and laws that have implications for the National Wildlife Refuge System. I have summarized five which pertain specifically to the Refuge System.

National Wildlife Refuge System Administration Act of 1966 – The National Wildlife Refuge System Administration Act of 1966 was the first major piece of legislation for the Refuge System. The purpose of this Act was to "provide for the conservation, protection, and propagation of native species of fish and wildlife, including migratory birds, that are threatened with extinction: to consolidate the authorities relating to the administration by the Secretary of the Interior of the National Wildlife Refuge System; and for other purposes" (16 U.S.C. 668). This Act serves as the Refuges Systems' Organic Act (NWRS, 2006).

National Wildlife Refuge System Improvement Act of 1997 – The National Wildlife Refuge System Improvement Act of 1997 amends The National Wildlife Refuge System Administration Act of 1966 (Public Law 105-57, 1997). The purpose of this amendment was to "improve the management of the National Wildlife Refuge System." The Act's main components include:

- A strong and singular wildlife conservation mission for the Refuge System;

- A requirement that the Secretary of the Interior maintain the biological integrity, diversity and environmental health of the Refuge System;
- A new process for determining compatible uses on refuges;
- A recognition that wildlife-dependent recreational uses involving hunting, fishing, wildlife observation and photography, and environmental education and interpretation, when determined to be compatible, are legitimate and appropriate public uses of the Refuge System;
- Compatible wildlife-dependent recreational uses are the priority general public uses of the Refuge System; and
- A requirement for preparing a comprehensive conservation plan for each refuge.

Executive Order 12996 – Executive Order 12996 (1996) identifies refuge recreational uses that are compatible with the mission of wildlife protection. There are six compatible refuge uses listed: hunting, fishing, wildlife observation, photography, environmental education, and interpretation.

National Wildlife Refuge System Volunteer and Community Partnership Enhancement Act of 1998 – This act provided two million dollars annually from 1999-2002 to the Refuge System to develop a volunteer program within the Refuge System. The Act acknowledged that while previous acts improved the laws of the Refuge System, the financial resources to carry out programs were lacking. The purpose of the Act is to develop a volunteer program and refuge education programs to facilitate partnerships with non-federal organizations and encourage donations to the Refuge System (H.R. 1856, 1998).

Refuge Recreation Act 1962 – This Act authorized the Secretary of the Interior to make determinations as to whether recreational uses are compatible with the Refuge System's primary objectives of wildlife conservation (16 U.S.C 460).

National Wildlife Refuge System Centennial Act of 2000 – This Act acknowledges that the Refuge System is the only network of federal lands dedicated first and foremost to wildlife conservation and any public use must be compatible with wildlife protection and conservation. The Act formed a Committee comprised of members of Congress and U.S. Fish and Wildlife Service. The purpose of the Act is to address "the unacceptable backlog of critical operation and maintenance needs" (Public Law 106-408).

5.3.1.4 Funding

The National Wildlife Refuge System's operating budget for Fiscal Year 2007 is approximately $395 million. Their proposed annual operating budget for Fiscal Year 2008 is $395 million. Funding for Fiscal Year 2006 was $383 million (PART, 2007). There is no specific budget designation for program evaluation. Evaluation of operations for any given refuge is considered part of routine business and is paid for from the general operating fund. The current system-wide independent evaluation (see below) is funded by the general budget.

5.3.1.5 Mission

The National Wildlife Refuge System's Strategic Plan for 2006-2010 states (NWRS, 2006):

> The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of Americans. (National Wildlife Refuge System Improvement Act of 1997; Public Law 105-57)

Earlier versions of NWRS mission statement did not include the term "restoration."

5.3.1.6 Public Participation Requirements

The National Wildlife Refuge System has an extensive volunteer program and network of Friends Groups as a result of the National Wildlife Refuge Volunteer and Community Partnership Act of 1998. There are over 200 groups that provide volunteers and financial support to refuges around the country (U.S.FWS, 2007).

5.3.2 Program Evaluation

5.3.2.1 Program Performance/Evaluation Process Overview

There have been a total of six National Wildlife Refuge System evaluations cited in PART assessments and identified in NWRS documents (Table 16). Five evaluations focused on single issues: law enforcement, maintenance, and land acquisition.

Although the National Wildlife Refuge System has been in existence for nearly 100 years, they state they have not had an independent entity conduct a program-wide assessment of effectiveness until this year (72 FR 8004). The Refuge System wanted the National Wildlife Refuge Association, a partner group of the Refuge System, to conduct this current evaluation, but the Office of Management and Budget (OMB) determined they would be too biased in their review.

5.3.2.2 Independent Evaluations

The National Wildlife Refuge System documents six evaluations (Table 16). Despite numerous attempts, I was unable to locate two reports during the course of this research:

Deferred Maintenance, US Fish & Wildlife Service Audit Report and *Science-Based Stewardship: Recommendations for Implementing the NWRS Improvement Act*.

OMB examiners gave the Refuge System no credit (0%) for their independent evaluation section in 2003 and partial credit (12%) in 2007.

Table 16. NWRS Independent Evaluations

Evaluation	Year	Type
Protecting the National Wildlife Refuge System: Law Enforcement Requirements for the 21st Century*	2000	Independent
Deferred Maintenance, US Fish & Wildlife Service Audit Report 00-I-226*	2000	unknown
Science-Based Stewardship: Recommendations for Implementing the NWRS Improvement Act*	2000	unknown
GAO Audit: Fish and Wildlife Service Agency Needs to Inform Congress of Future Costs Associated with Land Acquisitions *	2000	Independent
The Cooperative Alliance for Refuge Enhancement (CARE) Survey	2003	Independent
Management Systems International**	pending	Independent

* identified in 2003 PART Report (OMB, 2003c) as "independent evaluations"
** identified in 2007 PART Report (OMB, 2007d) as "independent evaluation"

5.3.2.2.1 Protecting the National Wildlife Refuge System: Law Enforcement Requirements for the 21st Century

The International Association of Chiefs of Police conducted this five-month evaluation at the request of the Director of the Fish and Wildlife Service. This purpose of the study was to "assess the status of public safety and resource protection provided by refuge law enforcement officers" (p. i).

What they evaluated:

- Recruitment, training, staffing, professional development, and retention of refuge officers
- Law enforcement equipment
- Assault records on refuge law enforcement officers

- Organizational and management policies related to refuge law enforcement

Findings:

The International Association of Chiefs of Police determined that, as refuge visitation numbers increased, so did crime levels. They determined that the level of staffing was insufficient and the Refuge System would need to: (a) add additional officers, (b) improve their law enforcement policies, and (c) improve organizational management practices.

5.3.2.2.2 GAO 2000

The Government Accounting Office (GAO) (recently renamed the Government Accountability Office) report, *Fish and Wildlife Service Agency Needs to Inform Congress of Future Costs Associated with Land Acquisitions* (2000), was cited as an independent evaluation in the Refuge System's 2003 PART assessment.

What they evaluated:

This GAO report examined three funds for refuge land acquisition from 1994-1998. These funds were: The Migratory Bird Conservation Fund, The Land and Water Conservation Fund and the Cooperative Endangered Species Conservation Fund.

Findings:

The GOA determined that 15 of the 23 refuges established during the study time period were established with non-federal funds and that Congress may not factor these new refuges into budget considerations in future decision-making. They recommended that the Refuge System improve their land acquisition system and processes.

5.3.2.2.3 The Cooperative Alliance for Refuge Enhancement (CARE)/KRC Research Survey

This study was conducted by a consulting firm, KRC Research, and a non-profit organization, The Cooperative Alliance for Refuge Enhancement (CARE) in 2004. The study consisted of surveying 9,400 Fish and Wildlife System employees and "scores of" refuge-related friends groups and non-profit organizations to determine attitudes about whether the National Wildlife Refuge System is effectively accomplishing its mission of conserving and managing fish, wildlife and plant resources and their habitats (NWRS, 2004b).

What they evaluated:

- Partner groups

Findings:

The study concluded that 68% of Friends groups' respondents, 56 % of non-profit organizations' respondents and 75% of employees' respondents felt the Refuge System was effective in accomplishing its mission (NWRS, 2004b).

5.3.2.2.4 Management Systems International 2007

The Fish and Wildlife Service contracted with Management Systems International in January 2007 to conduct an independent evaluation of the overall effectiveness of the Refuge System. This project involves conducting on-line surveys of 500 refuge partners and 150 follow-up interviews, site visits, performance monitoring review, and document review. They defined NWRS partners as volunteers, hunting and fishing groups, and conservation organizations. They also interviewed state fish and wildlife officials. The purpose of this project is to identify

program strengths, weaknesses, performance information gaps, and to determine whether the Refuge System is achieving its conservation mission, and to satisfy Office of Management and Budget's PART requirements. According to interviewees, this is the first independent evaluation of the Refuge System (72 FR 8004).

What they evaluated:

- NWRS partnership demographic data (type, size of organization, length of partnership)
- Quality of partnerships, type and frequency of activities
- Partner perspectives of NWRS program quality, effectiveness and progress toward long-term goals (72 FR 8004)

Findings:

The project is expected to be completed by January 2008.

Table 17 summarizes what was examined in each evaluation. This table shows the limited extent of evaluation efforts for the Refuge System.

Table 17. Evaluation Criteria

Evaluation Criteria	Protecting the NWRS: Law Enforcement Requirements for the 21st Century	GAO Costs associated with Land Acquisition	CARE Survey	Management Systems International
Statutory authority				
Legislative history				
Other federal marine laws				
Individual sanctuaries/sites				
Regulations				
Enforcement	X			
Policies, objectives	X			
Administrative procedures				
User group involvement				X
Budget		X		
Designation process				
Personnel				
Interagency cooperation				
Program vision				
Program name				
Research				
Education				
Management plans				
Ecological conditions				
Physical resource threats/condition reports				
Advisory councils/partner groups			X	X
Accomplishments				
Performance measures				
Performance				
Ocean governance				
Management				
Strategic plan				
PART Report				
Implementation				
System-wide monitoring				
Planning/guidance documents				
Annual operating plans				

5.3.2.3 PART Report (s)

The National Wildlife Refuge System was first selected by the Office of Management and Budget (OMB) to go through the Program Assessment and Rating Tool (PART) assessment process in 2003. Their initial review score was "ineffective" or "results not demonstrated" (OMB, 2003c). Their second PART assessment was in 2007 and NWRS' overall assessment rating was listed as "adequate". The individual section scores are categorized in Table 18**.**

Table 18. PART Scores

Assessment Section	2003 PART Scores	2007 PART Scores
Program Purpose & Design	100%	100%
Strategic Planning	50%	100%
Program Management	72%	86%
Program Results/Accountability	20%	26%
Rating	"Results Not Demonstrated"	"Adequate"

(OMB, 2003c, OMB, 2007d)

The Refuge System performed well in design, planning, and management but received low scores for demonstrating results.

5.3.3 Performance Measures

There have been two sets of program-wide performance measures developed by the Refuge System, one for each PART assessment (Table 19, 20). There are nine measures for the 2003 PART and 11 measures for the 2007 PART assessment. Refuge personnel report that

performance measures come from three sources: (1) GRPA measures established by the Department of the Interior, (2) those from the OMB Part program and (3) those developed by the refuge "self-developed." New measures have been developed for each PART assessment. One interviewee noted, "If we use a specific performance measure for a number of years and it's not meaningful, we get rid of it." Refuge personnel explained that performance is discussed at the regional level and is usually in terms of "acres and visitors served."

Table 19. PART 2003 Performance Measures

Type	**Term**	**Measure**
Outcome	Long-term/annual	Percent of acres of NWRS lands and waters with habitat in good or better condition (based on classification to be developed)
Outcome	Long-term/annual	Percent of populations of indicator species with improved or stable numbers
Output	Annual	Percent of NWRS recovery tasks in approved Recovery Plans that are completed
Output	Annual	Number of NWRS acres affected by aquatic and terrestrial invasive species controlled
Outcome	Long-term/annual	Percent of acres of refuges meeting Federal or State standards for air quality, water quality, and contamination
Output	Annual	Percent of refuges that provide compatible wildlife-dependent recreation programs where compatibility determinations indicate such programs can exist
Output	Annual	Percent of refuges with surface and groundwater resources protected necessary to fulfill refuge and NWRS purposes
Output	Annual	Facilities are in fair or better condition as measured by the Facility Condition Index
Output	Annual	Acres of wetlands restored per million dollars expended
Totals		
3 Outcome	3 Long-term/Annual	
6 Output	6 Annual	
(OMB, 2003c)		

Table 20. PART 2007 Performance Measures

Type	Term	Measure
Outcome	Longterm	Percent of acres of Refuge System with lands and waters with habitat in good or condition
Outcome	Longterm	Percent of all migratory bird species that are at healthy and sustainable levels
Outcome	Longterm	Percent of adult Americans participating in wildlife-associated recreation
Outcome	Longterm	Percent of populations of native aquatic non-threatened and endangered species that are self-sustaining in the wild.
Efficiency	Annual	Acres of wetlands restored per million dollars expended
Output	Annual	Percent of baseline acres infested with invasive plant species that are controlled
Output	Annual	Percent of invasive animal populations controlled
Output	Annual	Percent of NWRS recovery tasks in approved Recovery Plans that are implemented
Output	Annual	Percent of refuges/WMDs where water rights are legally protected sufficiently to maintain needed use
Output	Annual	Percent of refuges that provide compatible wildlife dependent recreation programs where compatibility determinations indicate such programs can exist
Output	Annual	Condition of priority Refuge System priority buildings and structures as measured by a Facility Condition Index (score of 0.05 or lower is acceptable)
Totals		
4 Outcome	4 Longterm	
1Efficiency	7 Annual	
6 Output		

(OMB, 2007d)

The types of performance measures were classified in the 2007 PART report as follows: four outcome measures, six output measures, and one efficiency measure. Seven were listed as annual monitoring and four as long-term monitoring measures.

5.3.4 Program Improvement and Networking

5.3.4.1 System-wide Evaluation/Monitoring

5.3.4.1.1 The Refuge Annual Performance Planning (RAPP) System

The RAPP system was developed by the Refuge System in response to deficiencies identified in their PART assessment. Data are collected on every refuge in the system. A national database is maintained and is for internal use only. It is not available to the public. One interviewee stated that the most important measure collected is classifying acres as in good, fair, or poor condition – classified as 1, 2, or 3 respectively.

5.3.4.2 Evaluation/Monitoring Information Flow

Individual refuge data are collected by regional offices for review and, if needed, are then forwarded to Washington for review.

5.3.4.3 Evaluation/Monitoring Implementation

The RAPP system was instituted as the result of PART assessment findings. There is no other evidence that recommendations made by past evaluations have been implemented.

5.3.4.4 Post Evaluation Dissemination Leading to Program Improvement

There is no evidence past evaluations have been disseminated for the purpose of program improvement.

5.3.4.5 Intra-agency and Inter-agency Collaboration/Cooperation

Refuge personnel report that they "work with a lot of different agencies on cooperative projects." The ones most related to MPA initiatives are the Seamless Network of Marine Managed Areas, the MPA Federal Agency Working Group (as part of the MPA Center's National Network of MPAs), and the U.S. Coral Reef Task Force. Refuge staff see the Seamless Network as a cooperative effort between DOI and NOAA or more specifically between National Estuarine Research Reserve System, National Marine Sanctuary Program, National Park Service and National Wildlife Refuge System "as an on-the-ground capacity-building" mechanism that will create efficiencies in shared staff and resources. The regions will decide what other political entities to invite into the process – National Marine Fisheries Service, other federal and state agencies, research groups, conservation organizations, or other interested regional entities.

Intra-agency meetings are convened three times per year for refuge regional chiefs to come together and address issues. One respondent commented, "We have plenty of meetings."

There have been two recent DOI-wide "Ocean Retreats" during which all Bureaus met to discuss ocean-related issues because, as one interviewee stated, "there has never been any true coordination of ocean actions across DOI programs."

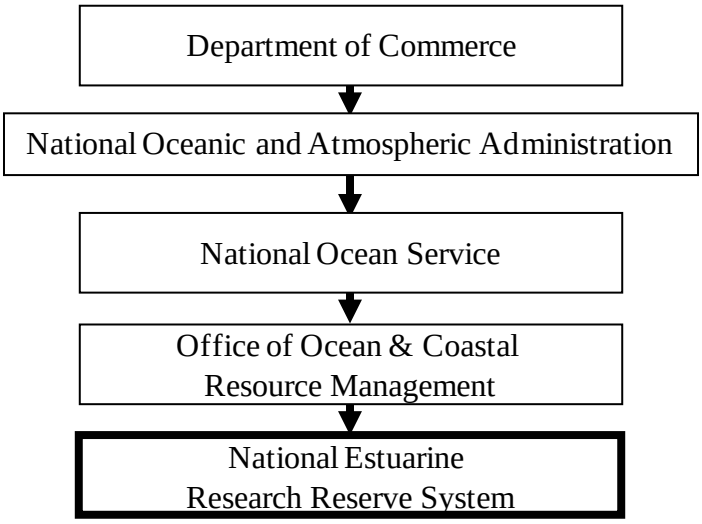
5.4 Case 4 – National Estuarine Research Reserve System

5.4.1 Program Characterization

5.4.1.1 Organizational Structure

The National Estuarine Research Reserve System was established in 1972. It is a NOAA program housed within the National Ocean Service's Office of Ocean and Coastal Resource Management (OCRM) (Figure 9). This program is unique in that it is a federal/state partnership. The program is partially funded by NOAA and partnering state agencies match federal funds and have management responsibilities for the reserves. Partnering organizations are designated by the states, and range from fish and game departments, state parks, natural resource management agencies to state universities or non-profit organizations.

Figure 9. National Estuarine Research Reserve System Organizational Level



There are 27 national estuarine research reserves within the United States protecting 2,072.8 square miles of marine ecosystem in 22 states and U.S. territories (Table 21).

Table 21. List of National Estuarine Research Reserves

Name	State/Territory	Date Established	Size/Area Protected(sq. miles)
Ace Basin	South Carolina	1992	213.4
Apalachicola Bay	Florida	1979	385.6
Chesapeake Bay	Maryland	1985,1990	7.5
Chesapeake Bay	Virginia	1991	6.9
Delaware	Delaware	1993	7.7
Elkhorn Slough	California	1979	2.2
Grand Bay	Mississippi	1999	28.1
Great Bay	New Hampshire	1989	8.3
Guana Tolomato Matanzas	Florida	1999	85.9
Hudson River	New York	1982	7.6
Jacques Cousteau	New Jersey	1998	178.1
Jobos Bay	Puerto Rico	1981	4.4
Kachemak Bay	Alaska	1999	570.3
Mission-Arkansas	Texas	2006	290.2
Naragansett Bay	Rhode Island	1980	6.7
North Carolina	North Carolina	1985,1991	15.6
North Inlet-Winyah Bay	South Carolina	1992	19.3
Old Woman Creek	Ohio	1980	0.9
Padilla Bay	Washington	1980	16.7
Rookery Bay	Florida	1978	171.9
San Francisco Bay	California	2003	5.8
Sapelo Island	Georgia	1976	9.5
South Slough	Oregon	1974	7.0
Tijuana River	California	1982	3.9
Waquoit Bay	Massachusetts	1988	3.5
Weeks Bay	Alabama	1986	13.3
Wells	Maine	1986	2.5

Note. Source data from (NERRS, 2006).

5.4.1.2 Response to Executive Order 13158/MPA Initiatives

NERRS personnel report that the signing of Executive Order 13158 did not directly impact their program. The NERRS has a designated MPA contact person and has provided information to the National MPA Center. Some NERRS sites will eventually become part of the national system of marine protected areas. The Draft National MPA Framework includes a definition of marine protected areas to not exceed mean high tide marks, thereby excluding significant portions of reserve land holdings.

5.4.1.3 Major Legislation

The Coastal Zone Management Act (CZMA) of 1972 established the National Estuarine Research Reserve System in Section 315 Subsection 1461 (16 U.S.C. 1451). The Act acknowledged that coastal areas are rich in resources and that there are competing demands for these resources. The purpose is to "preserve, protect, develop, and where possible restore or enhance, the resources of the Nation's coastal zone for this and future generations" (Sec. 303).

5.4.1.4 Funding

Coastal Zone Management Act programs, including NERRS, requested $98 million for Fiscal Year (FY) 2008. Prior year funding levels for CZMA programs were $79 million for FY 2007 and $108 million for FY 2006 (OMB, 2003a). The National Estuarine Research Reserve System received $25.5 million in FY 2007.

5.4.1.5 Mission

The mission of the NERRS is "To practice and promote coastal and estuarine stewardship through innovative research and education, using a system of protected areas" (NERRS, 2005).

5.4.1.6 Public Participation Requirements

Public participation is mandated by subsection 923.134 of the Coastal Zone Management Act (16 U.S.C. 1451). NERRS must hold public meetings and allow written and oral comments during the process of coastal states performance evaluations. Public participation is also required when reserves develop or revise management plans.

5.4.2 Program Evaluation

5.4.2.1 Program Performance/Evaluation Process Overview

Site evaluation requirements are written into the National Estuarine Research Reserve System's codifying legislation. Section 315 subsection (f) of the Coastal Zone Management Act calls for "evaluation of system performance" for each reserve. These evaluations must include information on operation and maintenance of each reserve as well as educational and research activities. Evaluations are conducted every three years.

The evaluation schedule for FY 2008 calls for 12 reserve systems to be evaluated (NERRS, 2008). Evaluation findings must then be incorporated into a summary report. Estuarine Reserve designation and/or funding can be withdrawn based on these evaluations. There is no reference to a system-wide evaluation requirement in the regulations.

The Office of Ocean and Coastal Resource Management (OCRM) has a National Policy and Evaluation Division (NPED). This office is responsible for the site evaluation requirements of

the Coastal Zone Management Act. Evaluations are conducted every three years and involve a review of operations, grant applications and performance, including a site visit. Evaluation findings are drafted and include a summary of accomplishments and a suite of recommendations for program improvement. The findings can also include "necessary actions", requiring state programs and reserves to take specific actions relevant to approved programs, management plans and regulatory requirements.

5.4.2.2 Independent Evaluations

There are three independent evaluations listed in the 2003 PART assessment report for the Coastal Zone Management Act Programs including the National Estuarine Research Reserve System (Table 22). One report, *An Assessment of the National Impacts of the Coastal Zone Management Program* (NOAA, 2001) was generated by NOAA and should be considered as an internal evaluation rather than an independent evaluation.

Table 22. NERRS/CZMA Evaluations

Evaluation	Year	Type
Evaluation of the National Coastal Zone Management Program (Brower, et al.)*	1991	Independent
US Coastal Zone Management Effectiveness Study (Herschman, et al.)*	1999	Independent
An Assessment of the National Impacts of the Coastal Zone Management Program(NOAA)*	2001	Internal
*Identified as “independent evaluations” in PART Report (OMB, 2003a)		

5.4.2.2.1 Evaluation of the National Coastal Zone Management Program (Brower et al., 1991)

This study was conducted by staff from the Center for Urban and Regional Studies at the University of North Carolina at Chapel Hill. Researchers submitted this report to the National Coastal Resources Research and Development Institute. The final report did not specify why the study was initiated.

What they evaluated:

- Federal Coastal Zone Management Act
- State-federal partnerships
- National Estuarine Research Reserve System
- Coastal Energy Impact Program
- Economic analysis of state programs expenditures
- Economics of Coastal Zone Management

Findings:

Brower et al. (1991) concluded that the Coastal Zone Management Program has successfully implemented a national program with limited resources (p.7). The researchers' cost-benefit and economic activity analyses determined that at CZMA funding has been "well spent" and that increased coastal zone funding correlates to changes in the Gross National Product (GNP) (p. 10). The study team would not determine a cost/benefit value for the NERRS since NERRS programmatic focus was on education and research.

5.4.2.2.2 The Effectiveness of Coastal Zone Management in the United States (Herschman et al., 1999)

This report was a synthesis of a two-year, Coastal Zone Management Effectiveness Study conducted jointly by NOAA's Office of Coastal and Resource Management (OCRM) and several Sea Grant College programs. The authors claimed this study differed from previous ones because it evaluated program effectiveness based on "on-the-ground outcomes" of program implementation as well as the more common process and policy indicators (Herschman, et al., 1999). The researchers examined 29 coastal programs.

What they evaluated:

- Five CZM policy objectives
- Protecting estuaries and coastal wetlands
- Protecting beaches and dunes
- Providing public access to the coast
- Revitalizing the waterfront
- Accommodating seaport development

Findings:

The researchers determined that there was insufficient data for a systematic outcome-based performance evaluation of state coastal zone management programs despite 20 years of performance assessment. Herschman et al. recommended that Congress institute a national outcome monitoring and performance evaluation system. The researchers also stated that an "external stimulus" such as mandated national-scale monitoring, as well as leadership were needed to move toward an outcome-based evaluation system.

5.4.2.3 PART Report(s)

The National Estuarine Research Reserve Program was first selected by the Office of Management and Budget (OMB) to go through the Program Assessment and Rating Tool (PART) process in 2003. They were grouped under a broad program title "Coastal Zone Management Programs" for this first OMB review. Their PART overall assessment rating score was "ineffective" or "results not demonstrated". The scoring was categorized as follows: (OMB, 2003a)

- Program Purpose & Design 100%
- Strategic Planning 25%
- Program Management 67%
- Program Results/Accountability 20%

The Coastal Zone Management Programs, which included NERRS, performed well in design and fairly well in management, but received low scores for strategic planning and demonstrating results.

Each independent evaluation focused on different aspects of the NERRS program. Table 23 summarizes what was examined in each evaluation.

Table 23. Independent Evaluations

Evaluation Criteria	Evaluation of the National Coastal Zone Management Program (Brower,et al)	US Coastal Zone Management Effectiveness Study (Herschman, et al.)	An Assessment of the National Impacts of the Coastal Zone Management Program(NOAA)
Statutory authority		X	Internal evaluation
Legislative history	X		
Other federal marine laws			
Individual sanctuaries/sites		X	
Regulations			
Enforcement			
Policies, objectives		X	
Administrative procedures			
User group involvement			
Budget/Funding/Economics	X		
Designation process			
Personnel			
Interagency cooperation			
Program vision			
Program name			
Research			
Education			
Management plans			
Physical resource threats/condition reports			
Sanctuary advisory council			
Accomplishments			
Performance measures			
Performance			
Ocean governance			
Management			
Strategic plan			
PART Report			
Implementation			
System-wide monitoring			
Planning/guidance documents			
Annual operating plans			

5.4.3 Performance Measures

The National Estuarine Research Reserve System has developed three sets of performance measures: PART (2003), the Coastal Training Program Performance Indicators, and NERRS Performance Measures (Table 24).

Table 24. NERRS Performance Measures

Developed for	Date	Number of measures	Site-specific or program-wide
PART "CZMA Programs"	2003	5	Program wide
Coastal Training Program Performance Indicators	2006	14	Program-wide
NERRS System Performance Measures	2007	43	Program-wide

5.4.3.1 PART (2003)

The PART report lists five performance measures. The types of performance measures are classified as follows: one outcome measure and four output measures. Five measures were listed as long-term monitoring and none as annual monitoring measures (Table 25).

Table 25. PART Performance Measures

Type	Term	Measure
Output	Long-term	Percent of Coastal Zone Management Program (CZMP) system completed (% of 35 coastal States and territories)
Output	Long-term	Percent of State coastal nonpoint pollution control programs approved with conditions (% of 35 coastal States and territories)
Output	Long-term	Percent of State coastal nonpoint pollution control programs fully approved (% of 35 coastal States and territories)
Output	Long-term	Percent of National Estuarine Research Reserve System (NERRS) completed (out of 36 reserves)
Outcome	Long-term	Percent of Reserve System adequately characterized for management
Totals		
4 Output	5 Long-term	
1 Outcome	0 Annual	
(OMB, 2003a) PART for Coastal Management Zone Programs (including NERRS)		

Coastal Training Program Performance Indicators (2006) – NERRS personnel refer to The Coastal Training Program (CTP) as their "flagship program for knowledge and information transfer." The goal of the CTP program is to improve coastal stewardship through better-informed decision-making by local and regional coastal decision-makers (NERRS, 2006). The CTP began working on a performance monitoring system in 2000. Draft performance indicators for CTP programs were developed in 2003 and piloted over the course of a two year period. There are 14 performance indicators for this program (Table 26). The type of indicator, output or outcome and the reporting term, annual versus long-term, have not been specified. The CTP Performance Monitoring Manual (2006) states that these indicators are designed for CTP programs in their first three to five years of operation and focus on short-term results. The manual recommends that reserves also monitor long-term outcomes which could help

"development of system-wide indicators and data collection strategies" in the future (p.4). Reserve CTP performance data are annually reviewed by the CTP Performance Monitoring Workgroup and compared to minimum performance requirements defined within the manual. The reserve system uses information gathered through performance measures to improve programs at underperforming sites using written feedback and peer assistance. Coastal Training Program performance measures are incorporated within the NERRS system performance measures and they have been used as a pilot for how the other performance measures may be used and adapted in the future.

Table 26. The NERRS Coastal Training Program (CTP) Performance Indicators

Performance Indicators
Total # of CTP activities (events & Technical Training) offered during reporting period
Total # and type of organizations, entities represented by participants during the reporting period. Organized into 8 defined organizational categories
Total # of CTP participants involved in a distinct CTP activities (Events and Technical Training) over the reporting period
Total # of contact-hours for reporting period
% of CTP participants reporting the intention to apply science-based knowledge and skills in their work related to NERRS priority issues as a result of training event
% of CTP participants reporting increased scientific understanding of NERRS priority issues as a result of training event
% of CTP respondents reporting increased access to resources relevant to their work as a result of the training event
% of CTP respondents reporting increased skills relevant to NERRS priority issues
% CTP respondents reporting the intention to apply new perspectives learned through networking and collaborations at the training event
% of respondents reporting that they intend to make new contact about NERRS priority issues as a result of this training event
% of CTP respondents reporting that are more aware of opportunities for collaboration regarding NERRS priority issues as a result of the training event
% of CTP respondents that were more than satisfied with the content of the training activity
% of CTP respondents that were more than satisfied with the format of the training activity
% of CTP respondents that were more than satisfied with the networking opportunities provided by the training activity

(NERRS, 2006)

NERRS System Performance Measures (2007) – NERRS staff convened a Performance Measures Working group in 2004 to develop a list of potential performance measures. They developed a 35-page *National Estuarine Research Reserve System Performance Measurement Guidance* document in January 2007. They have identified 43 performance measures (Table 27). These measures are broken down by the following program goals:

- Goal # 1 – Strengthen protection and management of estuarine ecosystems to advance estuarine conservation, research, and education; (6) measures
- Goal # 2 – Increase use of science and sites to address priority coastal issues;(8) measures
- Goal # 3 – Enhance people's ability and willingness to make informed decisions and take responsible actions that affect coastal communities and ecosystems; (29) measures - broken into subcategories:
    - General Education (3) measures
    - Estuary Live (6) measures
    - Coastal Training Program (CTP) (14) measures
    - Research Outreach (1) measure
    - Volunteers (5) measures

The CTP is in the early stages of implementation of this performance measurement data collection process. They have identified immediate and future uses of the data. The most immediate uses are to develop a baseline for NEERS, get reserves comfortable with a performance measurement process, and to help the Office of Coastal Resource Management (OCRM) work out a "data collection, management and analysis" process (NERRS, 2007, p.4).

Table 27. National Estuarine Research Reserve System Performance Measures

Measure
Percent of biogeographic regions represented within the NERRS
Percent of NERR sites that submit 85% or greater of the available SWMP data sets that meet established standards for QA/QC water quality, weather, nutrient data
Number and percent of reserves with complete site profiles
Number and percent of reserves with an up to date management plan
Total number of acres acquired or designated for protection
Number of acres acquired consistent with land acquisition and management plans
Total number of research projects being carried out within the reserve system
Total number of science products [*sic*] based on research and monitoring in reserves
Number of Graduate Research applicants per opening
Number of Graduate Research Fellow applicants starting in the program
Number of Graduate Research Fellow applicants completing a graduate thesis program that focuses on the NERR priority areas for research
Number of web hits to the System-wide Monitoring Program data on CDMO website
Number of downloads of System-wide Monitoring Program data on CDMO website
Number of websites hosting NERRS SWMP data
Number of students reached through NERRS education programs
Number of K-12 NERRS programs offered
Web hits on nerrs.noaa.gov and estuaries.gov education sites
Number of viewers of Estuary Live
Percentage of teachers reporting the intent to incorporate lessons and activities on estuarine ecology taken from the www.estuaries.gov Web site
Percentage of teachers who are repeat teachers to Estuary Live
Number of student and teacher participants in Estuary Live
Percentage of students who are able to locate an estuary on a map
Percentage of students who will be able to describe two important functions of estuaries
Number of Coastal Training Program contact hours delivered
Total number of participants involved in distinct Coastal Training Program activities
Total number of Coastal Training Program activities
Total number and type of organizations, entities represented by participants
Percentage of CTP participants reporting an increase in science understanding of NERRS priority issues as a result of CTP
Number and percent of CTP participants reporting increased access to resources relevant to their work as a result of CTP
Number and percent of CTP participants reporting increased skills relevant to NERRS priority issues
Percent of CTP participants reporting the intent to apply science-based knowledge and skills in their work on NERRS priority issues as a result of the CTP
Percent of respondents reporting that they intend to make new contacts about NERRS priority issues as a result of CTP

Measure
Percent of respondents reporting that they are more aware of opportunities for collaboration regarding NERRS priority issues as a result of CTP
Percent of CTP respondents reporting the intention to apply new perspectives learned through networking and collaborations as a result of CTP
Percent of CTP respondents that were more than satisfied with the content of the training activity
Percent of CTP respondents that were more than satisfied with the format of the training
Percent of CTP respondents that were more than satisfied with the networking opportunities provided by the training activity
Number of advisory or outreach actions that serve to transfer technical information about Reserve science to estuarine stakeholders
Total number of volunteer hours
- education related volunteer hours
- research, stewardship and monitoring related volunteer hours
- administrative and other volunteer hours
other volunteer hours

(NERRS, 2007)

5.4.4 Program Improvement and Networking

5.4.4.1 System-wide Evaluation/Monitoring

NERRS leadership has been working to develop system-wide performance measurement and Coastal Training Program performance monitoring systems. The Coastal Training Program is currently planning an external evaluation of their program.

The NERRS System-Wide Monitoring Program (SWMP) has been in effect since 1995, focusing on water quality and weather data collected at the reserves. Water quality parameters include pH, conductivity, temperature, salinity, dissolved oxygen, turbidity, nitrate, ammonia, ortho-phosphate, and chlorophyll. Weather-related parameters include temperature, wind speed, wind direction, relative humidity, barometric pressure, rainfall, and photosynthetic active radiation. Biological indicators have not been included in the monitoring system. The SWMP completed an external panel review in 2007.

Since the program's inception, National Estuarine Research Reserve personnel have collected and sent data to a centralized data collection office. The Centralized Data Management Office (CDMO) is housed at the North Inlet-Winyah Bay NERRS in South Carolina. The CDMO maintains records for 27 reserves and currently has 20,321,119 data records available for public access (www.cdmo.baruch.sc.edu). This system utilizes a "uniform national protocol" for data collection and reporting (Owen and White, 2005).

5.4.4.2 Evaluation/Monitoring Information Flow

Performance measurement data are collected at individual estuarine research reserves as well as at program headquarters. Performance data are stored and managed at headquarters. "The data can be used to identify and establish important trends that could influence NERRS policy and strategic planning" (NERRS, 2007, p. 3).

5.4.4.3 Post-Evaluation Monitoring/Dissemination Leading to Program Improvement

NERRS posts individual site "evaluation findings" on their website. These site evaluations consist of NEERS personnel meeting with site personnel and checking program findings.

"Eventually, we hope that NERRS performance measures can demonstrate NERRS contributions to coastal management" (NERRS, 2007).

No evaluation studies have been found on the success of implementation of the National Estuarine Research Reserve Performance Measurement System or on the success of the program in meeting programmatic goals, objectives, or improved marine resource protection. One interviewee reported,

> The Estuarine Reserve Division (ERD) has only collected information for most of the measures for one year and therefore is too early for a review. It is worth noting that ERD is gathering feedback on the collection of performance measures from across the system to refine measures and collection strategies. The CTP measures have been implemented for several years, and therefore the external evaluation planned for 2008 will be addressing these points.

5.4.4.4 Intra-agency and Inter-agency Collaboration/Cooperation

One interviewee reported that data obtained from the Coastal Training Program performance monitoring efforts are posted on an intranet website. These data are used for programmatic improvement and the public does not have access to this website.

System-wide NERRS national meetings are held twice per year. There is a program-wide annual meeting in October and then individual sectors, such as Education, Stewardship, Coastal Training Program, and Research sectors, meet during the winter as funding allows. Overlapping science and technology training workshops and cross-sector working groups are convened as the need arises.

Impending PART assessment by OMB brought several NOAA programs together in 2007 into one grouping identified as the Coastal and Marine Resources Program (CMRP). This grouping included the National Marine Sanctuary Program, the NERRS, the National MPA Center, the Coastal Resources Center (CSC), and the Office of Coastal Resource Management (OCRM). The CMRP was attempting to develop compatible performance measures for all of these programs combined. They met several times informally but were recently notified by OMB that this combined PART assessment would not take place. There have been no formal interagency evaluation forums or meetings.

NERRS staff have attended a Design and Evaluation Workshop sponsored by NOAA's Coastal Services Center in Charleston, S.C. to help them develop reliable sample data for tracking the program.

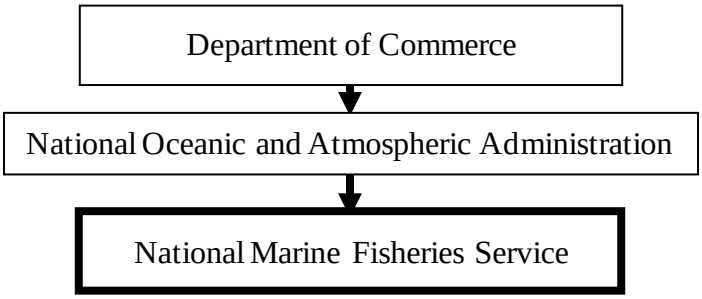
5.5 Case 5 – National Marine Fisheries Service

5.5.1 Program Characterization

5.5.1.1 Organizational Structure

The National Marine Fisheries Service (NMFS) was officially established in 1970, although its predecessors, the Bureau of Fisheries and the U.S. Commission of Fish and Fisheries, have been in existence since the late 1800's (Weber, 2002). It is one of five line offices housed within NOAA and the U.S. Department of Commerce. Figure 10 shows the organizational level.

Figure 10. National Marine Fisheries Service Organizational Level



National Marine Fisheries Service has six regions: Alaska, Northwest, Pacific Islands, Southwest, Southeast, and Northeast. NMFS has four categories of marine managed areas: Federal Fisheries Management Zones, Federal Fisheries Habitat Conservation Zones, Federal Threatened and Endangered Species Protection Areas, and Federal Marine Mammal Protected Areas (National MPA Center, 2006).

The National Marine Managed Areas Inventory lists 78 sites for NMFS (Appendix F). A NMFS MPA interviewee states that actual site numbers are closer to 162 marine managed areas (MMAs). Most sites fall into the Federal Fisheries Habitat Conservation Zones category. The

actual number of sites and combined size of these protected areas are difficult to determine because figures are not available for all sites and seasonal and rolling closures affect totals. Site numbers are dynamic and NMFS is examining "de-facto" sites, to see if they should be considered marine protected areas. De-facto sites are those that have been closed for other purposes, such as areas with underground cables or Department of Defense no-access sites.

5.5.1.2 Response to Executive Order 13158/MPA Initiatives

In response to Executive Order 13158, NMFS appointed one person as the NMFS MPA lead and there is a MPA representative in each regional office. There are internal discussions on what role NMFS will play in a national system. There is wide variation in regional council attitudes toward the concept of marine protected areas. Some want to include every fishery closure site while others are reluctant to take on the issue of marine protected areas.

5.5.1.3 Major Legislation

The most important National Marine Fisheries Service Acts are the Magnuson Fishery Conservation and Management Act of 1976 and its amendments, the Sustainable Fisheries Act of 1996, and the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006. The Endangered Species Act and the Marine Mammal Protection Act are also important to NMFS.

The Magnuson Fishery Conservation and Management Act 1976 – The Magnuson Fishery Conservation and Management Act, enacted in 1976, (later renamed the Magnuson-Stevens Fishery Conservation and Management Act) created an exclusive U.S. fishing zone, known as the Exclusive Economic Zone (EEZ), extending 200 miles offshore. The EEZ was designed to

exclude foreign fishing vessels from valuable U.S. fishing grounds. The Act also established regional fishery management councils (16 U.S.C. 1801). The Magnuson-Stevens Act was amended in 1996 by the Sustainable Fisheries Act (16 U.S.C. 1801). Section 106 of the amendment added National Standards 8, 9, and 10. There have been 96 amendments to the Act.

National Standards of the Magnuson-Stevens Act – Conservation and management measures shall:

1. Prevent overfishing while achieving optimum yield.
2. Be based upon the best scientific information available.
3. Manage individual stocks as a unit throughout their range, to the extent practicable; interrelated stocks shall be managed as a unit or in close coordination.
4. Not discriminate between residents of different states; any allocation of privileges must be fair and equitable.
5. Where practicable, promote efficiency, except that no such measure shall have economic allocation as its sole purpose.
6. Take into account and allow for variations among and contingencies in fisheries, fishery resources, and catches.
7. Minimize costs and avoid duplications, where practicable.
8. Take into account the importance of fishery resources to fishing communities to provide for the sustained participation of such communities, and minimize adverse economic impacts on such communities.
9. Minimize bycatch, and, to the extent bycatch cannot be avoided, minimize mortality from bycatch.

10. Promote the safety of human life at sea.

The Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 – These amendments to the Magnuson-Stevens Act were signed into law by President Bush on January 17, 2007. The most significant element of this amendment was the language to "end over-fishing by 2010 for fish stocks currently undergoing over-fishing and by 2011 for all other Federally-managed fish stocks" (Office of the Press Secretary, 2007).

5.5.1.4 Funding/Budget

The National Marine Fisheries Service (NMFS) proposed annual operating budget for Fiscal Year (FY) 2008 is $486 million. Prior year funding levels were $479 million for FY 2007 and $465 million for FY 2006 (OMB, 2007c). One interviewee reported that these funding numbers were for two of the six NMFS programs. Total NMFS enacted budgets were $708 million for FY 2008, $829 million for FY 2007, and $667 million for FY 2006.

5.5.1.5 Mission

National Marine Fisheries Service lists their mission as "Stewardship of living marine resources through science-based conservation and management, and the protection and restoration of healthy ecosystems" (NMFS, 2006).

5.5.1.6 Public Participation Requirements

Section 107 of the Magnuson-Stevens Fishery Conservation and Management Act requires NMFS to establish regional fishery management councils that will help develop and amend fishery management plans (16 U.S.C. 1801). There are eight fishery management councils: New

England, Mid-Atlantic, South Atlantic, Gulf of Mexico, North Pacific, Pacific Fishery, Western Pacific, and Caribbean.

5.5.2 Program Evaluation

5.5.2.1 Program Performance/Evaluation Process Overview

The National Marine Fisheries Service was a pilot program for the Government Performance and Results Act (GPRA), and, as such, has a long history of evaluation and performance measurement. GPRA was enacted in 1993 and NMFS brought on a results-based performance person in 1996. The organizational culture at the time was resistant to this new approach to assessment. The 2007 PART report states that they are planning to conduct an independent evaluation of efforts to end overfishing sometime between 2011 and 2012. This is in response to the January 2007 reauthorization mandate for ending overfishing by 2010.

5.5.2.2 Independent Evaluations

Interviewees report that because NMFS is both "visible and controversial" there have been many independent evaluations. The five independent evaluations listed in Table 28 are those cited in the 2002 and 2007 PART reports. The NAPA Reports cited past independent evaluations within their reports. One report, The Institute for Fisheries Management and Coastal Development Study, could not be located at the time of writing, except for general summary information.

Table 28. NMFS Evaluations

Evaluations	Year
The Kammer Report	2000
National Academy of Public Administration (NAPA) Courts, Congress, and Constituencies	2002
National Academy of Public Administration (NAPA) Improving Fisheries Management	2005
Government Accountability Office (GAO)	2007
Institute for Fisheries Management and Coastal Development	2007
Identified as "independent evaluations" in PART Report (OMB, 2002; OMB, 2007c)	

5.5.2.2.1 The Kammer Report

The Kammer Report is named after Ray Kammer, the person who conducted the evaluation. NMFS contracted with Kammer to "evaluate the adequacy of funding, the ability of NMFS to comply with its mandates, and the impact of litigation on NMFS operations" (Kammer, 2000).

What was evaluated:

- Resource requirements for NMFS
- NMFS mandates and associated workloads
- Budgets

Findings:

Kammer (2000) concluded that NMFS is underfunded and is vulnerable to litigation. The lack of resources constrains management choices and there is an underinvestment in research and management infrastructure.

5.5.2.2.2 National Academy of Public Administration (NAPA) 2002

The NAPA Study *Courts, Congress, and Constituencies: Managing Fisheries by Default* (2002) was an 11-month study initiated at the request of Congress in Fiscal Year 2001. This study built upon four previous studies of the National Marine Fisheries Service. Congress requested that NMFS be examined by an independent evaluator to determine its ability to "meet its legal missions and mandates." The Report stated that the federal fisheries management system was in crisis as evidenced by increasing litigation, lower fish productivity levels, an inability to adapt to recent statutory changes and competing standards.

What was evaluated:

- Regulatory system
- Legal defense capabilities
- Financial management
- Constituent relations
- Organizational structure

Findings:

The NAPA Report concluded that the fisheries management system "was in disarray" due to the large number of participants in the management process, conflicting statutory mandates, and conflicts between fishermen and conservation groups. The researchers determined the problems were "systemic" and many legal cases were lost because NMFS failed to conduct required analyses, used outdated information, and didn't analyze alternatives. Lack of accountability and leadership, and litigation and regulatory processes were also complicating factors. Concerning

the budget, several previous studies had been conducted to determine the adequacy of funding and resources. Those studies made recommendations for increased funding, which Congress did. NAPA examined whether the recommendations had been implemented since the last studies and found that implementation was "uneven." The Report stated there had been improvements in law enforcement and observer programs, but implementation of socio-economic analysis and NEPA programs had not made the same progress. They made 44 additional recommendations.

5.5.2.2.3 National Academy of Public Administration (NAPA) 2005

This NAPA Report, *Improving Fisheries Management* is a follow-up study of the 2002 evaluation. The purpose was to determine the progress made on recommendations of the previous report.

What they evaluated:

- Fishery management process
- Planning and budgeting
- Program monitoring
- Constituent relations
- Science

Findings:

The evaluators concluded that some progress had been made in implementing the 2002 recommendations, specifically in the areas of fishery management plans and processes, regional councils, and NEPA responsibilities. The Report determined that NMFS had established a new

office to better serve constituent relations and that they would be implementing a constituent survey in the future. In addressing the science issues, NMFS hired a national cooperative research coordinator to help determine research priorities and "meeting standards for science quality."

5.5.2.2.4 Government Accountability Office (GAO) 2007

This GAO Report, *NMFS: Improved Economic Analysis and Evaluation Strategies Needed for Proposed Changes to Atlantic Large Whale Protection Plan* (2007) is the most recent evaluation for NMFS. GAO conducted this one-year study for the Subcommittee on Oceans, Atmosphere, Fisheries and Coast Guard for the U.S. Senate. The purpose of the study was to examine NMFS' revisions to the Atlantic Large Whale Take Reduction Plan (ALWTR) for the scientific basis for the proposed changes, implementation issues, how NMFS assessed costs to fishing industry and impact on fishermen, and NMFS' approach to assessing effectiveness of industry compliance. This proposed plan was in response to continued entanglements and mortality after protective plans were implemented.

What was evaluated:

- Draft environmental impact statement
- Public Comments
- Fishing industry
- NMFS' evaluation strategies
- Scientific research

Findings:

The GAO concluded that NMFS cannot determine how many fewer whale injuries and deaths will occur from the proposed change in fishing gear, NMFS had not fully addressed implementation issues, NMFS economic analysis used estimates and assumptions instead of verifiable data and they did not determine impact on fishermen. GAO also found that NMFS hadn't developed a method to evaluate the effectiveness of the proposed changes.

5.5.2.2.5 Institute for Fisheries Management and Coastal Development (2007)

This study was undertaken by the Institute for Fisheries Management and Coastal Development in Denmark. They examined 33 case studies of "fish stock recovery plans" in United States, Australia, New Zealand, and Europe. They developed a list of factors associated with "successful" stock recovery. The full report was not available for review at time of writing.

Table 29 summarizes what was examined in each evaluation. Most of the evaluative studies have primarily focused on statutory, regulatory, and litigation issues.

Table 29. Evaluation Criteria for National Marine Fisheries Service

Evaluation Criteria	The Kammer Report	The National Academy of Public Administration 2000	The National Academy of Public Administration (NAPA) - 2006	The Government Accountability Office 2007	Institute for Fisheries Management and Coastal Development 2007
Statutory authority	X	X			Not available
Legislative history					
Other federal marine laws					
Litigation	X	X			
Individual sanctuaries/sites					
Regulations	X			X	
Enforcement					
Policies, objectives					
Administrative procedures					
Public participation/user groups		X	X	X	
Budget/funding	X	X	X		
Designation process					
Personnel					
Interagency cooperation					
Program vision/name					
Evaluation strategies				X	
Research			X	X	
Education					
Management plans			X		
Physical resource threats/condition reports					
Advisory councils	X				
Accomplishments					
Performance measures					
Performance					
Ocean governance					
Mgt/organizational structure		X			
Strategic plan					
PART Report					
Implementation					
System-wide monitoring			X		
Planning/guidance documents					
Annual operating plans					

5.5.2.3 PART Report (s)

National Marine Fisheries Service has gone through the Part process twice – once in 2002 and again in 2007. The 2007 PART was unexpected. They received an "adequate" rating for their first PART assessment and a "moderately effective" for their second (Table 30). There is no schedule for future PART assessments. NMFS personnel requested that OMB work out a schedule so there is some advance warning of impending PART. The most challenging issue for NMFS is finding comparable programs, as required in the assessment. The NMFS Program performed well in design and planning in their first PART Assessment, but received low scores for program management and demonstrating results. They received better scores for their second PART assessment for program management, but did not show a corresponding improvement in program results/accountability.

Table 30. NMFS PART Scores

Assessment Section	2002 PART Scores	2007 PART Scores
Program Purpose & Design	80%	100%
Strategic Planning	100%	89%
Program Management	46%	90%
Program Results/Accountability	39%	50%
Rating	"Adequate"	"Moderately effective"

(OMB, 2002; OMB, 2007c)

5.5.3 Performance Measures

There have been two sets of performance measures developed by the National Marine Fisheries Service (Tables 31 and 32). For their first PART review (OMB, 2002), NMFS used three performance measures. NMFS utilized eight measures for their 2007 PART assessment.

Table 31. NMFS 2002 PART Performance Measures

Type	Term	Measure
Outcome	Long-term	Number of overfished major stocks of fish
Outcome	Long-term	Number of major stocks with an unknown stock status
Outcome	Long-term	Number of protected species designated as threatened, endangered, or depleted with stable or increasing population levels
(OMB, 2002)		

Table 32. New National Marine Fisheries 2007 PART Performance Measures

Type	Term	Measure
Outcome	Long-term	Increase the Score of the Fish Stock Sustainability Index (FSSI)
Output	Long-term	Percentage of Living Marine Resources (LMRs) with Adequate Population Assessments and Forecasts
Outcome	Annual	Number of FSSI Stocks Not Subject to Overfishing
Outcome	Annual	Number of Fish Stocks For Which Overfishing Has Been Ended
Output	Annual	Percentage of Fish Stocks Known To Be Subject To Overfishing For Longer Than 1 Year With Improved Management Measures To End Overfishing In Place
Output	Annual	Number of Fisheries Managed Under Limited Access Privilege Programs
Efficiency	Long-term/ Annual	Number Of FSSI Stocks Not Subject To Overfishing Per Million Dollars Of Program Expenditure
Efficiency	Long-term/ Annual	Number Of Adequate Population Assessments For FSSI Stocks Per Million Dollars Of Program Expenditure

(OMB, 2007c)

5.5.4 Program Improvement and Networking

5.5.4.1 System-wide Evaluation/Monitoring

There is a system-wide evaluation planned for the 2011-2012 timeframe to assess the effectiveness of the Magnuson-Stevens Reauthorization mandates to end overfishing. No other details are available.

Each program has its own databases, but information gets integrated in a central office only for specific purposes. For example, the habitat restoration center has its own database but will forward data only as needed. One NMFS employee stated "NMFS constantly has data issues – what should they be measuring and where are they going to get the data from."

5.5.4.2 Evaluation/Monitoring Information Flow

The fishery management programs collect and post data on Biomass Maximum Sustainable Yield (BMSY). Data are used to calculate the fish stock sustainability index which is then used by headquarters to prepare performance reports.

5.5.4.3 Evaluation/Monitoring implementation

All fishery management plans are drafted and implemented by the respective regional fishery management council. Any closures areas are part of the fishery management plans. Currently there is no national effort to coordinate evaluation or monitoring efforts. There was one attempt to examine effectiveness of fisheries closure sites collectively, but it was abandoned because there were too many cross-site variables such as size limits, gear changes, seasonal closures, hook size, and days at sea.

5.5.4.4 Post Evaluation Dissemination Leading to Program Improvement

It is difficult to assess the extent to which independent evaluations have been utilized for programmatic improvement. The 2005 NAPA report documented improvements in the areas of fishery management plans and regional councils and cooperative research efforts.

5.5.4.5 Intra-agency and Inter-agency Evaluation Collaboration/Cooperation

The NMFS performance measurement person meets monthly with other NOAA counterparts to discuss budgetary and performance issues. NMFS has been included in the national system of marine protected areas, but they are not included in as many interagency efforts as some of the other programs. NMFS personnel acknowledge they have to deal with the "Black sheep of NOAA" stigma.

CHAPTER 6 – CROSS-CASE ANALYSIS

This chapter presents research findings across the five MPA programs. Section I provides a comparative overview of the programs' organizational structure, MPA initiatives, legislative language, and intra-agency and inter-agency collaboration/cooperation. I have included a summation of attitudes toward, and programmatic consequences of, Executive Order 13158 to better ground MPA evaluation discussions in the following chapter. Section II summarizes and compares evaluation history, PART reports and scores, and related interviewee responses across programs. Section III summarizes results and compares performance measures across programs. My intent in this section is to present and synthesize data sets across programs. In-depth discussions will be reserved for the next chapter.

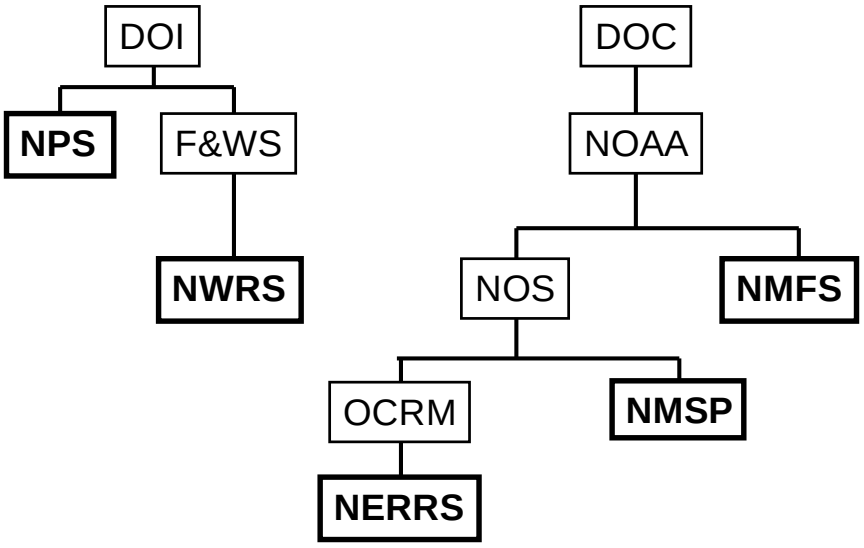
6.1 Program Characterization

6.1.1 Organizational Structure

The five MPA programs: National Marine Sanctuary Program (NMSP), National Park Service (NPS), National Wildlife Refuge System (NWRS), National Estuarine Research Reserve System (NERRS), and National Marine Fisheries Service (NMFS) have been artificially grouped together by Executive Order 13158. Figure 11 illustrates the comparative organizational levels of each program (MPA programs are indicated by heavy black borders) and these programs are operating at differing organizational levels within their respective Departments – Department of the Interior (DOI) and Department of Commerce (DOC). NPS is situated two levels down, NWRS and NMFS are three levels down, NMSP is four levels down, and NERRS is the most

organizationally imbedded program at five levels down. The implications, benefits, and disadvantages of this organizational structure will be examined in Chapter 7.

Figure 11. Organizational Levels of Federal MPA Programs within Respective Departments



6.1.2 Extent of Marine Area Protected

Table 33 summarizes the number of overall sites, marine sites, and total area protected for each of the five Federal MPA programs. The National Wildlife Refuge System (NWRS) is responsible for greatest number, 174, of marine managed areas (MMAs). Roughly 31% of their refuges have a marine component. The National Park Service (NPS) has approximately 35 million acres of marine ecosystems, the greatest percentage of total marine acres of the five programs studied. The National Marine Fisheries Service (NMFS) has been unable to establish firm numbers for the amount of marine areas they protect. NMFS is responsible for the entire Exclusive Economic Zone (EEZ), which, in terms of size, is comparable to the entire continental United States. It is also difficult for NMFS to determine total MMA numbers because of

seasonal and rolling fishery closure areas and whether areas are closed to fishing for other purposes; these are known as de facto sites and should be considered MMAs or MPAs.

Table 33. Protected Areas Summary Chart

Agency	Total Sites	Marine Sites	Total Acres (in millions)	Total Marine Acres (in millions)
National Park Service	390	74	83.6	35
National Wildlife Refuge System	548	174	96	4.4
National Marine Sanctuaries Program	14	14	11.5	11.5
National Estuarine Research Reserve	27	27	1	1
National Marine Fisheries Service	unknown	78	Unknown	unknown

6.1.3 Program Response to Executive Order 13158

All five federal programs had marine site components in their existing systems before Executive Order 13158 went into effect in 2000, but it was important to determine what (if any) programmatic changes came about as the result of the Order. Programs responded differently to the Executive Order. Responses ranged from the Executive Order having no effect to it changing the way programs dealt with their marine sites.

Sample interview responses:

"The Executive Order was the seminal event – it helped us look at our marine resources anew."

"We needed to get leadership on board – some regions were working, some not – it helped with that."

"It didn't change the way we were doing business – we now work in cooperation with them."

6.1.4 Major Legislation

Major federal legislation, related to the five federal MPA programs, goes as far back as 1916 when The Organic Act established the National Park Service. Two programs had major enabling legislation in 1972: NERRS was established as the result of the Coastal Zone Management Act and the Marine Protection, Research and Sanctuaries Act established the National Marine Sanctuary Program. National Marine Fisheries Service's first major legislative Act was The Magnuson Fishery Conservation and Management Act in 1976.

The National Estuarine Research Reserve System was the only program that has evaluation language and reporting requirements written into its regulations (16 U.S.C. 1451). It is also the only federal-state partnership program. The National Wildlife Refuge System stated that they are the only program that has legislative language giving them authority to set aside land for wildlife protection first, before all other uses. They have developed a comprehensive compatible use determination process as a direct result of this language.

6.1.5 Inter-agency and Intra-agency Coordination

All programs had system-wide intra-agency meetings. Most were on an annual or biannual schedule. These meetings were for general business purposes. In two cases, there were marine-specific workshops or breakout sessions during these meetings. The most frequently cited marine-related inter-agency coordination initiative was the "Seamless Network," a cooperative effort between the National Park Service, the National Wildlife Refuge, the National Marine Sanctuary Program, and the National Estuarine Research Reserve System. A Memorandum of Agreement (MOA-2006-036/7196) (Appendix G) was developed between these four programs to promote cooperative conservation and coordination. The purpose of this network is to share

resources and prevent organizational overlap at the site management level. The National Marine Fisheries Service was not officially part of this cooperative effort because they have "an economic component to resource management." The four participating programs felt they more closely shared a common goal of conserving and protecting sensitive marine ecosystems.

The Seamless Network is still in the planning stages. The Network is tentatively scheduled to meet in the Spring 2008 timeframe.

There is also a cooperative agreement (for law enforcement) between the National Park Service, the National Wildlife Refuge System, and NOAA. They have "cross-deputized" their law enforcement personnel to assist with staffing shortages and to deal with the large areas that need to be monitored for regulation enforcement.

6.2 Program Evaluation

I have divided program evaluation into five sections: (1) attitude toward a national MPA evaluation system, (2) evaluation history, (3) independent evaluations, (4) PART reporting, and (5) performance measures.

Several sections contain excerpts and/or quotes from interview transcripts. Interviews were conducted with each of the five federal MPA program's key personnel. Key personnel are defined as primary MPA point-of-contact(s) and individuals involved in federal and programmatic evaluation and/or performance reporting. The purpose of the interviews was to gain a broader perspective on each program's evaluation challenges and successes. Only those interview questions and responses most pertinent to my research questions are presented here. Themes are in bold followed by related question(s) and interviewee responses. No specific

program or agency personnel are identified to protect interview subjects. Issues that emerged from these data sets will be discussed in greater detail in Chapter 7.

6.2.1 Attitude Toward a National MPA Evaluation System

This section presents responses to the interview question, "Do you see a need for/value in a national marine evaluation system?" This question was critical to my investigation because it was important to determine whether there was any interest in or perceived need for such a system. Many respondents saw the need for and value in establishing and participating in a marine protected area evaluation system and sharing resources and evaluation expertise as evidenced by the following excerpts:

"Effectiveness is important. We don't know what to regulate. We can't tell what to do for enforcement, monitoring…." [We need someone/something to] "point us in a direction."

"It's important for us to do it unilaterally."

"Sure – yes I see a value in a national marine protected areas evaluation approach."

"It would be helpful to have this."

"I am interested in what others are doing, but if we get lumped together it may be easy to gut our program."

"We aren't like other programs, but we can help with what we have learned."

Some respondents added qualifiers to their statements, questioning time requirements needed versus time available, which programs would receive funding for this effort, and what program-specific value would it provide given differing program mandates.

The following statements serve as further evidence of the need for some form of MPA evaluation system and information exchange. Most interestingly, when I made initial contact

with interviewees and explained my research I received very positive comments on the necessity of this research and its timeliness. Comments included:

"No one is working on this."

"It would be really interesting to see what you find out."

"Good for you. I'm dying to find out what you find."

6.2.2 Evaluation History

When asked what their programs did for evaluation, responses varied widely as to what was considered "evaluation." I framed this question very broadly to allow interviewees to express their thoughts on what they considered to be evaluation. All of the following terms were used for evaluation: PART report, site monitoring, annual performance planning, annual performance reporting, performance measurement, and performance evaluation.

It is important to understand when and why programs began their evaluation system. Three reasons were given for programs beginning to develop an evaluation process: PART, proactive staff, and legal mandates. One respondent stated that they began evaluating their program in the early 1980's with a monitoring plan (which they considered to be an evaluation).

"In 2004 we went through the PART process…We really didn't have a system in place to assess improvements. The OMB/PART jump-started it."

"OMB was going to fail us. We had to develop performance measures."

6.2.3 Independent Evaluations

A total of 20 independent evaluations were examined across the five federal MPA programs. There were 32 different evaluation criteria used by the independent examiners. Individual evaluation criteria lists can be reviewed in each individual case report. The most common

criterion examined in these evaluations was program funding/budget (10 evaluations). The next most common evaluation criteria were research (8 evaluations) followed by policies and management/organizational structure (5 evaluations each).

6.2.4 Program Assessment Rating Tool (PART)

I examined each federal MPA program's respective PART reports to see what they cited for independent evaluations, what they used for performance measures, how they scored, and where they had problems. Table 34 summarizes PART scores across the five programs. Three of the five programs have gone through the PART process once, while National Wildlife Refuge System and National Marine Fisheries Service have been "PARTed" twice. The National Marine Sanctuary Program was assessed with the National MPA Center under the program title of "Protected Areas." The National Estuarine Research Reserve System was assessed under a broader category of "Coastal Zone Management Programs." The National Park Service has had ten different PART assessments including those for facilities, operations, concessions, and other non-environmental programs. For the purpose of cross comparison, I examined the Park Service's Natural Resource Stewardship Program.

Initial PART ratings showed that two programs, National Estuarine Research Reserve System (NERRS) (Coastal Zone Management Program) and National Wildlife Refuge System (NWRS) were not performing. National Marine Sanctuary Program and National Marine Fisheries Service were rated as adequate. National Park Service's Natural Resource Stewardship Program was rated as moderately effective. Two programs that have had two PART evaluations, National Wildlife Refuge System and National Marine Fisheries Service, increased their scores one rating.

Table 34. PART Scores Across Programs

Agency/MPA Program Office	National Marine Fisheries Service		National Marine Sanctuary Program	National Wildlife Refuge System		National Park Service	National Estuarine Research Reserve
PART reporting date(s) (year "PARTED")	2002	2007	2004	2003	2007	2003	2003
PART Rating	Adequate	Moderately effective	Adequate	Results not demonstrated, Not performing	Adequate	Moderately effective	Not performing
Program Purpose & Design	80%	100%	100%	100%	100%	100%	100%
Strategic Planning	100%	89%	89%	50%	100%	88%	25%
Program Management	46%	90%	100%	72%	86%	100%	67%
Program Results/ Accountability	39%	50%	39%	20%	26%	65%	20%
Note. Title of Program for PART Assessment			Protected Areas Program includes MPA headquarters			Natural Resource Stewardship	CZMA Programs include NERRS

PART Scoring

Section questions and summary scores are found in Tables 35-38. Scores for each of the PART assessment sections are weighted as: 20% for program purpose design, 10% for planning, 20% management, and 50% for results/accountability. The section scores are combined for a final overall rating. Programs scoring: 85-100% receive an "effective" rating, 70-84% receive a "moderately effective" rating, 50-69% receive an "adequate" rating, and 0-49% receive an "ineffective" rating. Regardless of overall score, a program will receive a "results not demonstrated" rating if they lack "acceptable" long-term and annual performance measures (OMB, 2007b).

Section One of the PART Report deals with program planning, purpose and design (Table 35). There are five questions in this section. Section 1 results indicate that each program is designed to be unique and they are free of flaws that would limit the potential of each program. The Office of Management and Budget has determined that there is no overlapping or duplication of efforts between these programs.

Section Two focuses on strategic planning and includes questions on long-term performance measures, annual measures, and independent evaluations. There are eight questions. Question 2.6 (question 2.5 for 2002) is the most relevant question for my research. The question asks, "Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need?" Three of the five programs received no credit for this question. There is a disconnect between what the marine program offices consider independent evaluation and what the Office of Management and Budget (OMB) examiner considers acceptable as evidence. NPS scored the highest for all questions in this section.

Section Three examines program management. All programs scored well in this section.

Section Four deals with program results and accountability. This section of the PART report has a total of six questions. Only NMSP and NPS received high scores for achieving long-term outcome performance goals. Four of the five programs scored low for achieving annual performance goals each year. Table 38 shows that four of the five programs scored low for this section.

Table 35. Program Purpose & Design (Section 1)

		National Marine Fisheries Service	CZMA (NERRS)	National Wildlife Refuge System	NOAA Protected Areas (NMSP)	NPS Natural Resource Stewardship Program
Program Purpose & Design	Is the program purpose clear?	Yes	Yes	Yes	Yes	Yes
	Does the program address a specific and existing problem, interest or need?	Yes	Yes	Yes	Yes	Yes
	Is the program designed so that it is not redundant or duplicative of any Federal, state, local or private effort?		Yes	Yes	Yes	Yes
	Is the program design free of major flaws that would limit the program's effectiveness or efficiency?		Yes	Yes	Yes	Yes
	Is the program effectively targeted, so that resources will reach intended beneficiaries and/or otherwise address the program's purpose directly?		Yes	Yes	Yes	Yes
	Is the program designed to have a significant impact in addressing the interest, problem or need?	Yes				
	Is the program designed to make a unique contribution in addressing the interest, problem, or need (i.e., not needlessly redundant of any other Federal, state, local, or private efforts)?	Yes				
	Is the program optimally designed to address the interest, problem or need?	No				

Table 36. Strategic Planning (Section 2)

		National Marine Fisheries Service	CZMA (NERRS)	National Wildlife Refuge System	NOAA Protected Areas (NMSP)	NPS Natural Resource Stewardship Program
Strategic Planning	Does the program have a limited number of specific long-term performance measures that focus on outcomes and meaningfully reflect the purpose of the program?	Yes	No	Yes	Yes	Yes
	Does the program have ambitious targets and timeframes for its long-term measures?		No	No	Yes	Yes
	Does the program have a limited number of specific annual performance measures that can demonstrate progress toward achieving the program's long-term goals?	Yes	No	Yes	Yes	Yes
	Does the program have baselines and ambitious targets for its annual measures?		No	No	Yes	Yes
	Do all partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) commit to and work toward the annual and/or long-term goals of the program?	Yes	No	Yes	Yes	Yes
	Are independent evaluations of sufficient scope and quality conducted on a regular basis or as needed to support program improvements and evaluate effectiveness and relevance to the problem, interest, or need?	Yes	Yes	No	No	No
	Are budget requests explicitly tied to accomplishments of the annual and long-term performance goals, and are the resource needs presented in a complete and transparent manner in the program's budget?		No	No	Yes	Yes
	Has the program taken meaningful steps to correct its strategic planning deficiencies?	Yes	Yes	Yes	Yes	Yes
	Are all regulations issued by the program/agency necessary to meet the stated goals of the program, and do all regulations clearly indicate how the rules contribute to achievement of the goals?				Yes	

Table 37. Program Management (Section 3)

		National Marine Fisheries Service	CZMA (NERRS)	National Wildlife Refuge System	NOAA Protected Areas (NMSP)	NPS Natural Resource Stewardship Program
Program Management	Does the agency regularly collect timely and credible performance information, including information from key program partners, and use it to manage the program and improve performance?	No	Yes	Yes	Yes	Yes
	Are Federal managers and program partners (including grantees, sub-grantees, contractors, cost-sharing partners, and other government partners) held accountable for cost, schedule and performance results?	No	Yes	No	Yes	Yes
	Are funds (Federal and partners') obligated in a timely manner and spent for the intended purpose?	Yes	No	Yes	Yes	Yes
	Does the program have procedures (e.g., competitive sourcing/cost comparisons, IT improvements, appropriate incentives) to measure and achieve efficiencies and cost effectiveness in program execution?	Yes	No	Yes	Yes	Yes
	Does the program collaborate and coordinate effectively with related programs?		Yes	Yes	Yes	Yes
	Does the program use strong financial management practices?		Yes	No	Yes	Yes
	Has the program taken meaningful steps to address its management deficiencies?		Yes	Yes	Yes	Yes
	Does the program have oversight practices that provide sufficient knowledge of grantee activities?		Yes			
	Does the program collect grantee performance data on an annual basis and make it available to the public in a transparent and meaningful manner?		No			
	Did the program seek and take into account the views of all affected parties (e.g., consumers; large and small businesses; state, local and tribal governments; beneficiaries; and the general public) when developing significant regulations?				Yes	
	Did the program prepare adequate regulatory impact analyses if required by Executive Order 12866, regulatory flexibility analyses if required by the Regulatory Flexibility Act and the Small Business Regulatory Enforcement Fairness Act (SBREFA), and cost-benefit analyses if required under the Unfunded Mandates Reform Act; and did those analyses comply with OMB guidelines?				Yes	
	Does the program systematically review its current regulations to ensure consistency among all regulations in accomplishing program goals?				Yes	
	Are the regulations designed to achieve program goals, to the extent practicable, by maximizing the net benefits of its regulatory activity?				Yes	

Table 38. Program Results/Accountability (Section 4)

		National Marine Fisheries Service	CZMA (NERRS)	National Wildlife Refuge System	NOAA Protected Areas (NMSP)	NPS Natural Resource Stewardship Program
Program Results/ Accountability	Has the program demonstrated adequate progress in achieving its long-term outcome performance goals?	Small Extent	No	Small Extent	Large Extent	Large Extent
	Does the program (including program partners) achieve its annual performance goals?	Small Extent	No	Small Extent	Small Extent	Yes
	Does the program demonstrate improved efficiencies or cost effectiveness in achieving program goals each year?	No	No	No	Small Extent	Large Extent
	Does the performance of this program compare favorably to other programs, including government, private, etc., with similar purpose and goals?	Yes	No	Small Extent	Small Extent	Large Extent
	Do independent evaluations of sufficient scope and quality indicate that the program is effective and achieving results?	Large Extent	Yes	No	Small Extent	Small Extent
	Were programmatic goals (and benefits) achieved at the least incremental societal cost and did the program maximize net benefits?	No			Small Extent	

Note. For Section 1-4 Summaries (Tables 35-38) blank spaces indicate that the question was not part of that specific year's PART Assessment Report.

6.3 Performance Measures

There are three types of performance measures used by the five MPA programs: output, outcome, and efficiency. OMB (2007, p. 8-9) defines these measures as:

Output measures – refer to the internal activities of a program (i.e., the products and services delivered).

Outcome measures – describe the intended result of carrying out a program or activity.

Efficiency measures – reflect the economical and effective acquisition, utilization, and management of resources to achieve program outcomes or produce program outputs.

The five MPA programs utilized a total of 35 output measures, 18 outcome measures, and five efficiency measures. Figure 12 summarizes the type of outcome measures used. The greatest number of outcome measures were fish stock-related (5 measures) followed by habitat (2 measures), and all others evenly distributed with one measure each. When these measures were grouped thematically, ecological indicators were the largest category (Figure 13). Figure 14 illustrates the breakdown of output measures and shows that management-related measures were the most common. When grouped into broader categories, management and ecological measures were the most common (Figure 15). Performance measures that were not identified as outcome, output, or efficiency measures were categorized as "other" (Figure 16). These measures were primarily from the NERRS Coastal Training Program (CTP), which would explain the large number of training performance measures.

The cross-case analysis of performance measures (Table 39) shows that there are more output measures being used by the programs than outcome measures. Measuring program outcomes are time and resource intensive but "yield stronger and more credible evidence for policymakers" (Wholey, Hatry, and Newcomer, 2004, p. 2).

The NERRS has a total of 43 performance measures, the majority of which are related to education and training. While their mission statement includes a system component, no measures assess the effectiveness of this.

The NMSP has 19 performance measures, three of which are ecologically-focused: long-term monitoring for water, habitat, and living marine resources. The remaining indicators are program planning related.

The NMFS uses eight performance measures: six are fish stock measures, one is a population assessment, and the last is an efficiency measure (number of fish stock population assessments per million dollars expended).

The NWRS developed 11 performance measures for PART assessment: (5) ecological, and one each for public use, compatible use, economic efficiency, physical facilities, and legal issues.

The NPS developed seven measures for their PART assessment: (3) ecological, (2) program planning, (1) economic, and (1) data management.

Table 39. Performance Measures Matrix

Agency/MPA program office	National Marine Fisheries Service	National Marine Sanctuary Program	U.S. Fish and Wildlife Refuge System	National Park Service	National Estuarine Research Reserve System
Number of performance measures	3 (2002) 8 (2007)	12 (2004 PART) 19 (2006 model)	9 (2003) 11 (2007)	7 (2003)	5 (2003) 43 (2007)
Number of output measures	0 (2002) 3 (2007)	7 (2004) 15 (2007)	6 (2003) 6 (2007)	2 (2003)	4 (2003)
Number of outcome measures	3 (2007)	4 (2004) 4 (2007)	3 (2003) 4 (2007)	4 (2003)	1 (2003)
Number of efficiency measures	2 (2007)	1 (2004) 0 (2007)	1 (2007)	1 (2003)	0
Type of performance measures	See Figures 12 – 16				

Figure 12. Performance Measures Outcome

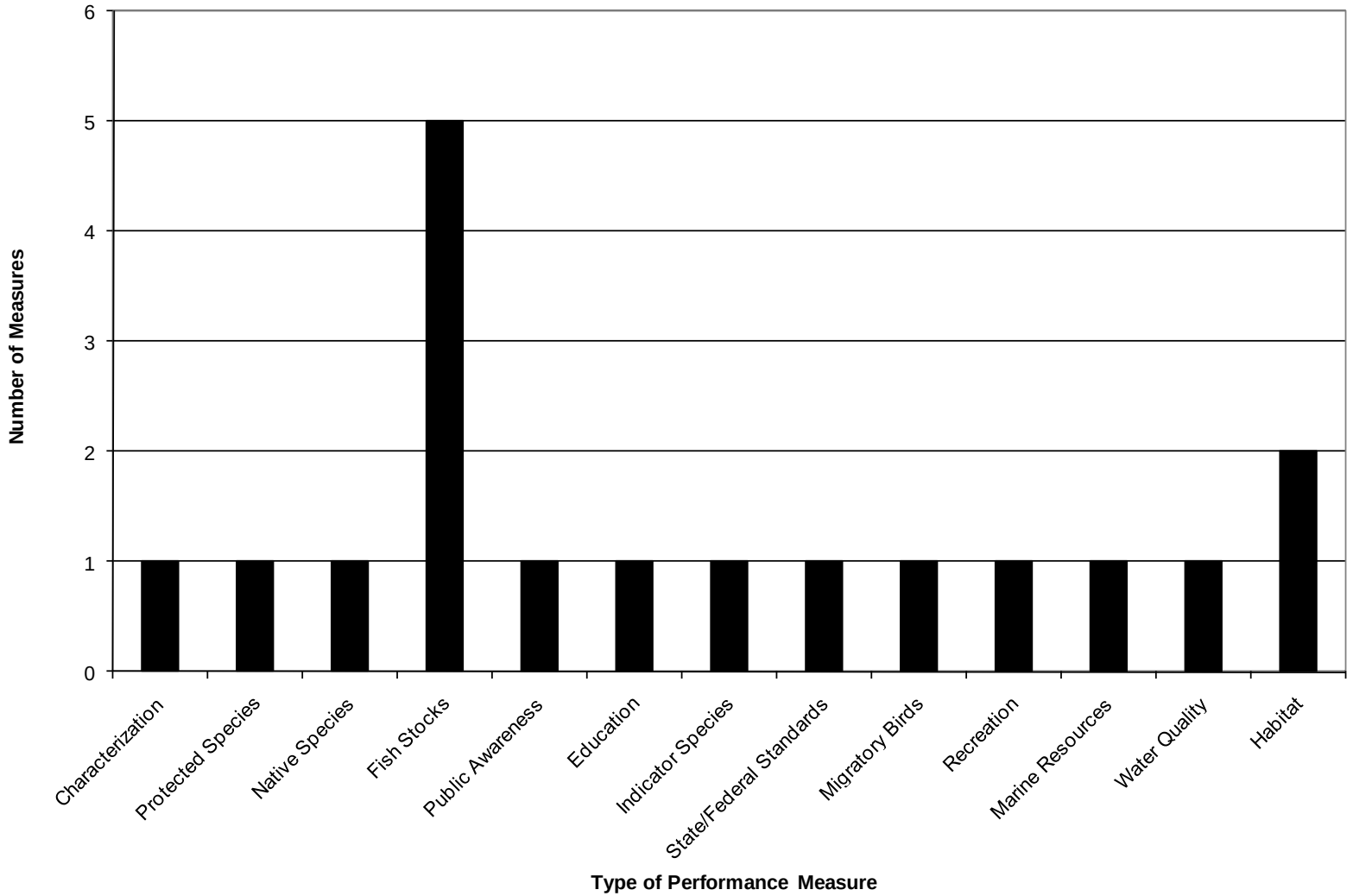


Figure 13. Performance Measures Outcome – Thematic Grouping

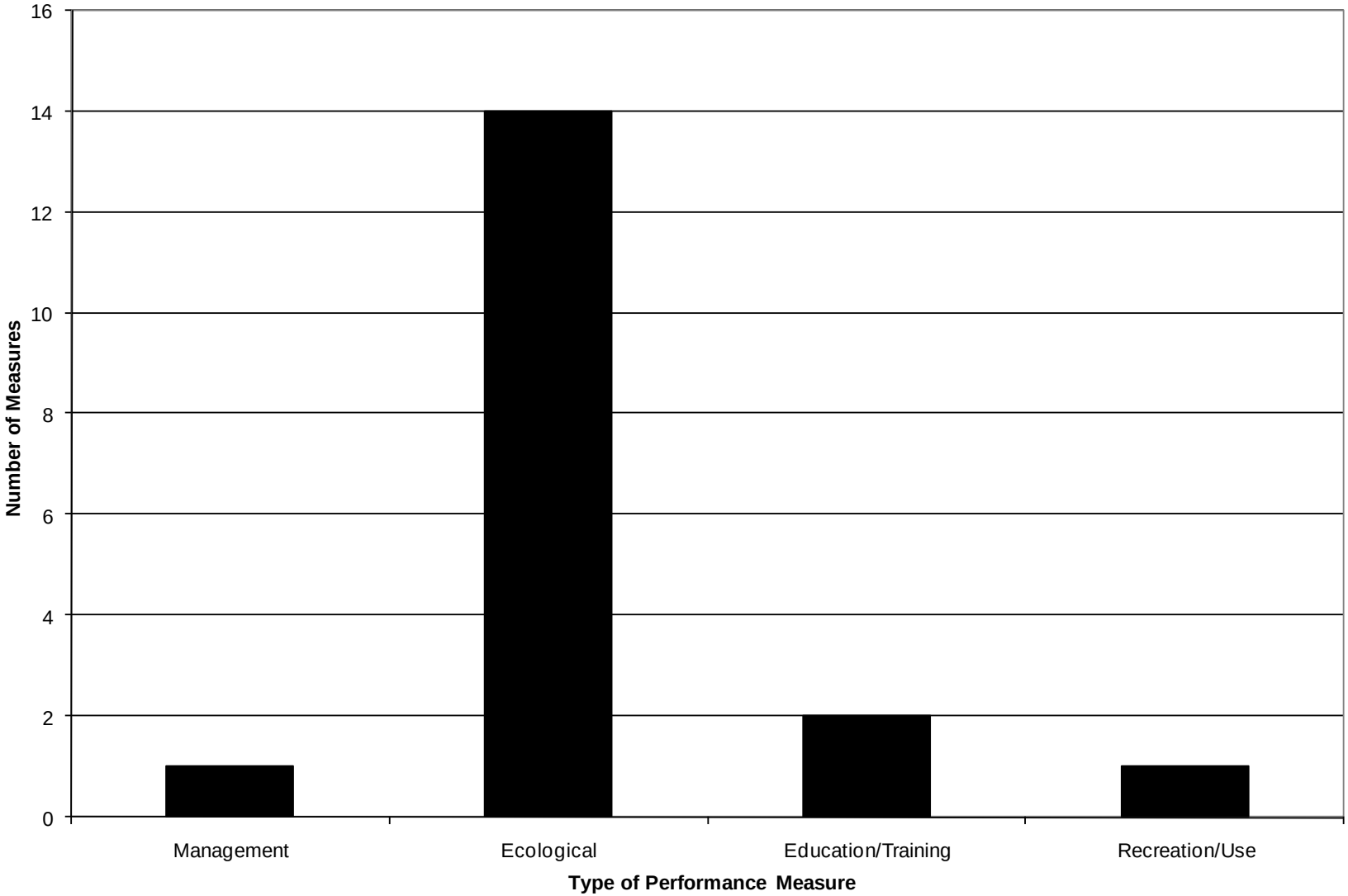


Figure 14. Performance Measures - Output

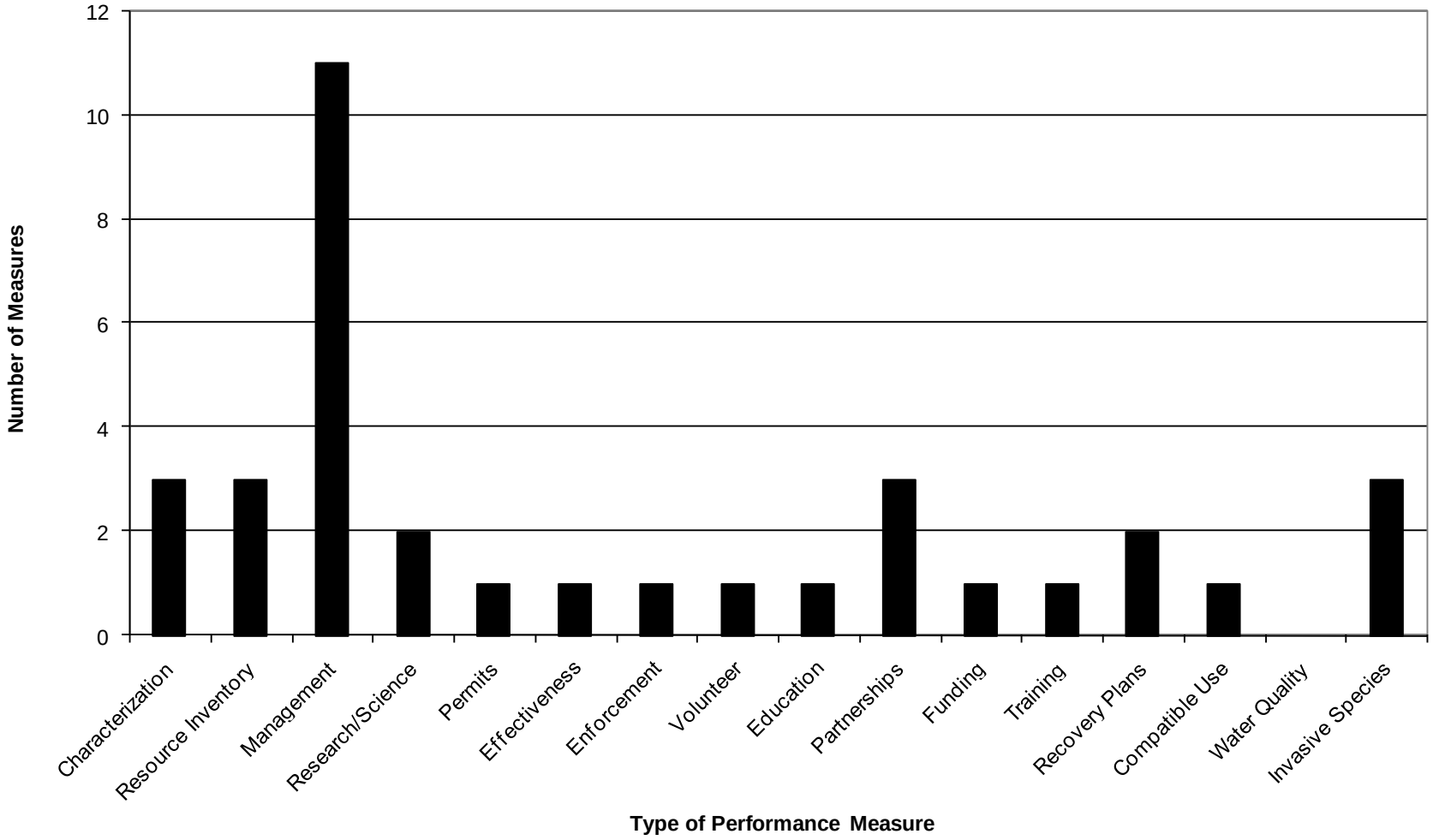


Figure 15. Performance Measures – Output Thematic Grouping

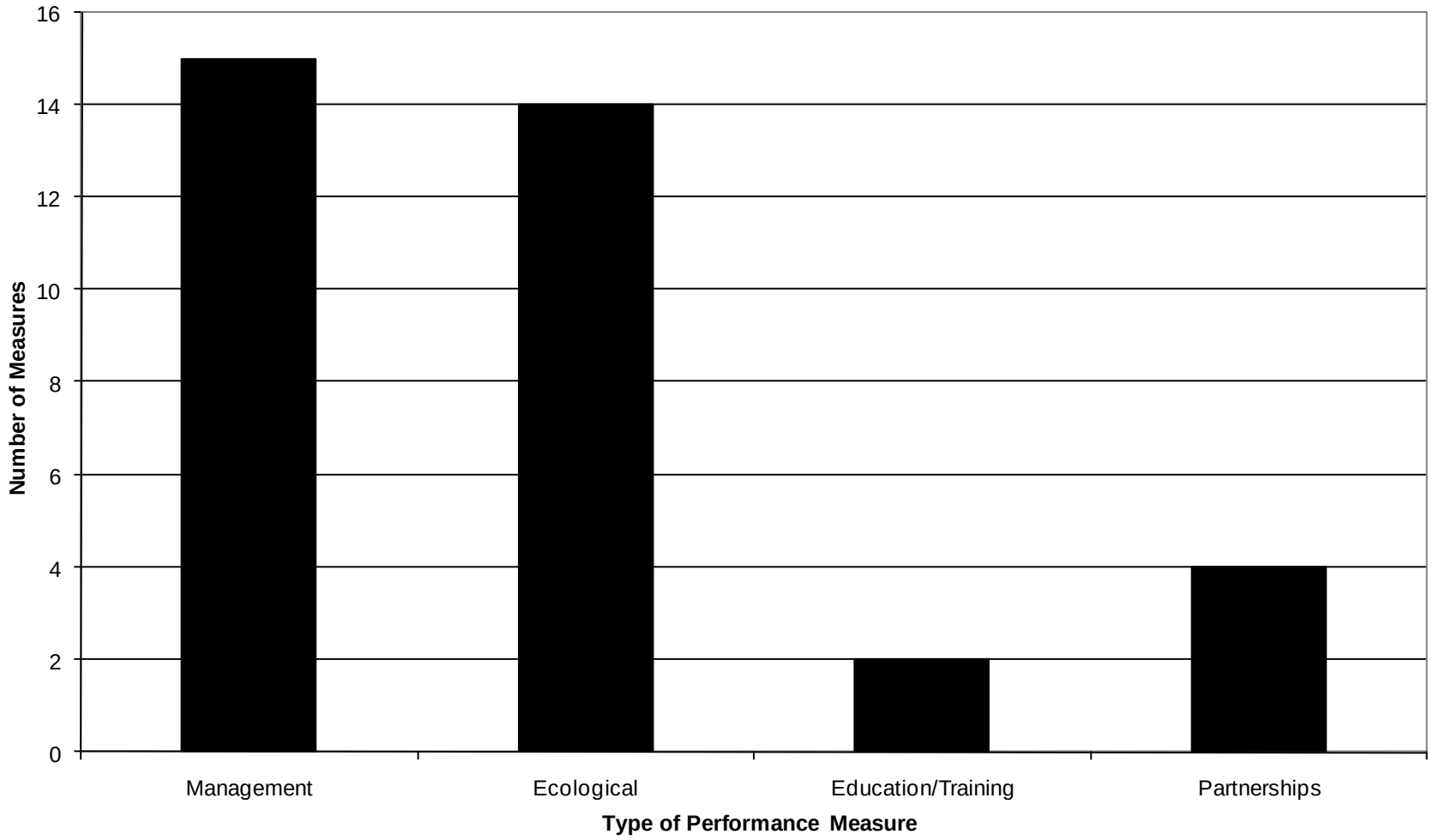
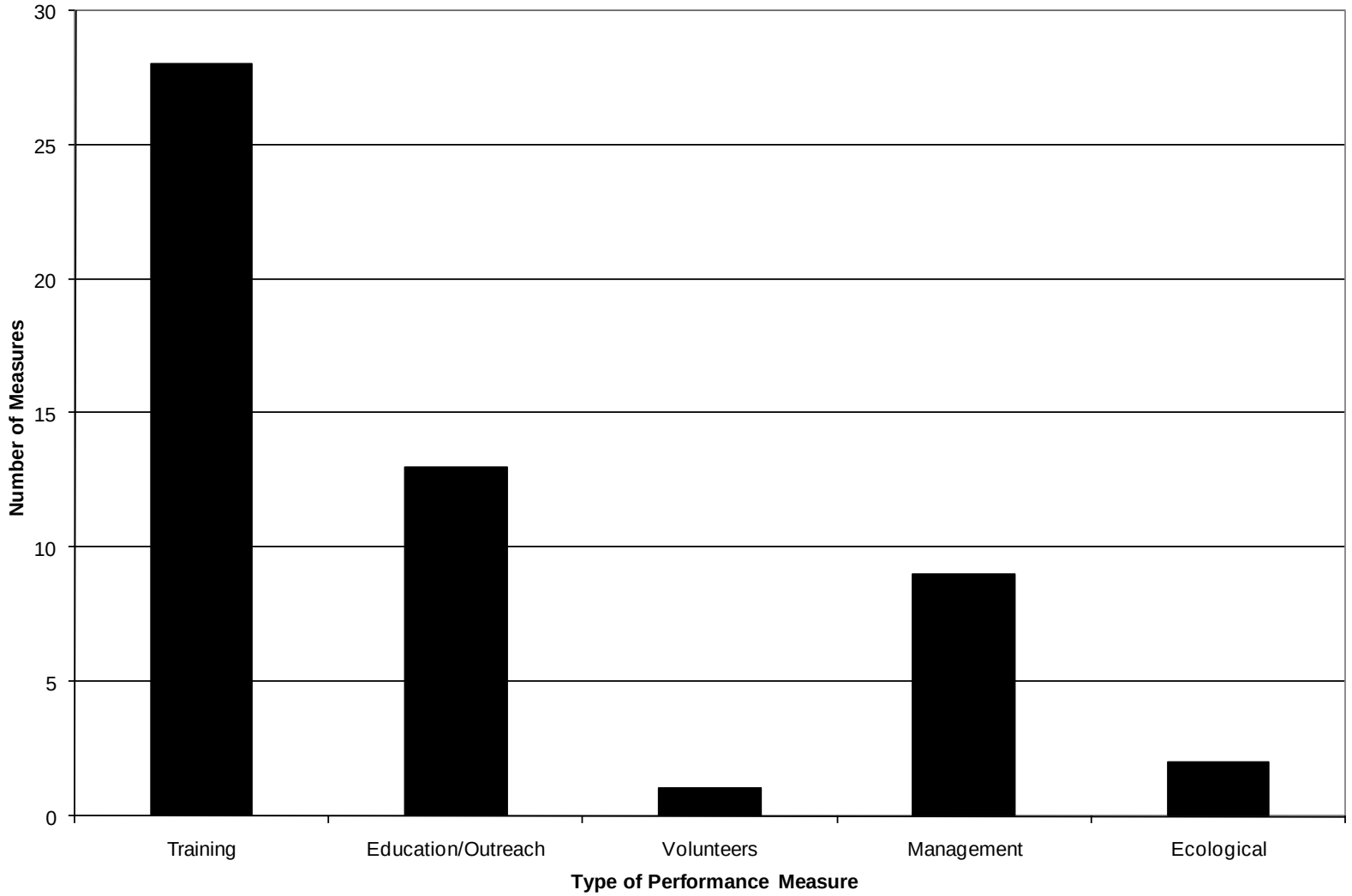


Figure16. Performance Measures - Other



CHAPTER 7 – DISCUSSION

This chapter synthesizes and discusses key findings of my research on federal MPA program evaluation history and practices. The following issues have emerged from this work: (1) federal reporting requirements drive MPA evaluation; (2) programs fall short in PART program results/accountability section; (3) MPA programs utilize more output measures than outcome measures; (4) past independent evaluations focus on funding/budget rather than programmatic success in marine conservation; (5) MPA staff face numerous evaluation challenges; (6) interviewees are keenly interested in a national MPA evaluation system; (7) implementation/dissemination of evaluation results is lacking; and (8) MPA cooperative efforts exclude some programs.

7.1 Federal Reporting Requirements Drive MPA Evaluation

Federal MPA program evaluation and performance measurement efforts can be attributed to three driving factors: federal reporting requirements, pro-active agency personnel/leadership, and language in the enabling legislation.

My research shows that Federal reporting requirements are driving MPA evaluation efforts. The most commonly voiced driving factor provided by interviewees, "federal reporting requirements," include the Government Performance and Results Act (GPRA) and OMB's Program Assessment Rating Tool (PART). Of the five programs examined, the majority began evaluation due to being targeted for PART. A PART review identifies a program's strengths and weaknesses and informs funding and management decisions. It is very time consuming. Programs either started their evaluation efforts because of being identified for PART assessment, or, if they had begun some form of program evaluation, they abandoned it because they had to focus on PART. For example, the National Marine

Sanctuary Program (NMSP), in 1999, had begun to develop a report card system of program assessment to better understand what was working or not working within their sanctuaries. This new evaluation system was almost at the implementation stage when it was abandoned because OMB selected them for PART assessment. This system could have been a useful marine resource program evaluation tool had it progressed further. While there is some discussion about whether it should be reintroduced, primary evaluation concerns are centered on PART. This illustrates one negative effect federal reporting requirements have had on MPA program evaluation.

Until 2007, all the performance measures utilized by the five MPA programs had been developed for their respective PART assessments. Two programs, NMSP and NERRS, decided to go beyond PART requirements and continue to work on developing measures that are more useful for their programs but were started due to PART. Federal reporting requirements are driving MPA evaluation, but are they also driving evaluation efforts away from improved marine resource conservation and protection? Historically, evaluative criteria have focused on legislative authority, funding, and program management. Evidence has shown that federal MPA programs have focused on developing program assessments that will result in the highest PART scores and not those evaluations that will document management and ecosystem improvement.

A second, less common, reason for instituting program assessment processes at the federal program level was attributed to proactive staff who realized that any formal monitoring was lacking and took the initiative to develop an assessment system. In one particular case, National Park Service personnel saw the need to develop a vital signs monitoring program. They tackled non-existent funding issues and skepticism. The implementation of this monitoring system would require some level of funding, but these employees felt the results would justify the expense. They started out with several demonstration

sites, and, once they proved that this assessment system could work, they were able to obtain additional funding.

MPA programs should not have to rely on the *potential* possibility of personnel taking the initiative to develop new evaluation practices given ever-increasing time demands on individual staff members. If proactive staff were to leave or if there were no other highly motivated individuals, evaluation tools may never be developed or implemented. The five MPA programs should begin developing an internal culture of fostering monitoring, program measurement, and program evaluation through capacity building, training, and education.

The third factor driving evaluation is unique to one MPA program, the National Estuarine Research Reserve System (NERRS). Sections 312 and 315 (subsection (f)) of the Coastal Zone Management Act, call for written evaluation of system performance for each estuarine research reserve (16 U.S.C. 1451). As a result of this legislative requirement, site evaluations are conducted every three years and estuarine reserve designation or funding can be withdrawn based on these evaluations. Evaluations consist of site visits and record checking. While this evaluation language has fostered site-level assessments, it has not transferred to system-wide or program level evaluations.

Two of the three driving factors provide evidence that evaluation practices were initiated due to inclusion of specific evaluation language in existing legislation. MPA legislation should be examined for potential inclusion of evaluative language. While Federal reporting requirements were the impetus for initiating most evaluation efforts, they may not be sufficient for moving MPA evaluation toward improved ecosystem and resource protection. Evidence shows that programs will evaluate elements that are most closely tied to funding. Additional evaluative language should include ecosystem management parameters. Determining the most appropriate place for such language is beyond the scope of this research effort, but this is an important area for future investigation.

7.2 PART Assessment

7.2.1 Programs Fall Short in PART Program Results/Accountability

Section Four of the PART Assessment deals with "Program Results and Accountability." This section rates programs on their progress toward achieving performance goals, cost effectiveness, improved efficiency, and their use of independent evaluations. Section Four rates programs on their effectiveness in achieving results. Four of the five programs received low scores for this section in their first PART assessment (20 – 39%). The Park Service received a grade of 68% because they instituted a vital signs monitoring program and found creative solutions to procure research and resource management services from academia, other bureaus, and other partners.

The five MPA programs have attempted, unsuccessfully, to produce evidence of results, yet not to the satisfaction of individual OMB examiners. There is a definite gap between what the programs are doing and what OMB examiners expect, but it is unclear whether OMB is correct in their ratings. MPA program evaluation needs to: (1) educate OMB on what their programs do, (2) produce better evidence of evaluation practices, or (3) improve evaluation practices.

7.3 Performance Measurement

Program evaluation theory and practice state that performance measures should relate back to the mission and objectives of a program. The Government Performance Results Act (GPRA) requires agencies to develop a strategic plan and update that plan every three years. The plan must contain a mission statement, goals and objectives, performance goals, external key factors that may affect the program's achievement of goals, a description of program evaluations used, and a schedule for future

evaluations (Sec. 306). This is the main reason why federal performance reporting requirements are the primary driver of performance measurement in the five federal MPA programs examined.

While these measures contribute to understanding the status of marine ecosystems, they don't provide insight into why certain species are declining or how management plans might be measuring the wrong indicators. For example, NMFS has performance criteria primarily based on fish stock sustainability indices. While these data sets can show declines or increases, they can't show why numbers have declined or increased or if areas set aside for essential fish habitat might be having a positive effect on populations.

NMFS' Strategic Plan (2005-2010) states that annual outcome performance measures are reported in accordance with GRPA and PART. They also acknowledge the importance of evaluation but qualify it by saying there are external factors that will influence their performance including weather conditions, environmental catastrophes, agricultural practices, land development, economic trends, and fishing practices of other nations (p.16).

Newcomer (1997) explains that performance measurement should be used to improve public programs. Program evaluation theory uses the terms performance measures and performance indicators interchangeably. There is enormous pressure for programs to show results, so the natural tendency in developing performance measures is to develop measures that show positive results.

Four of the five programs developed their performance measurement system without any professional evaluation assistance. In one instance the one interviewee commented, "We had no idea what we were doing; we just knew we were going to fail PART."

The adequacy of performance measures must be examined within the context of evaluation theory and practice to determine whether these measures are helping to inform marine resource conservation and protection. This cannot be accomplished in a single study or by one program office.

Newcomer (2007) specifies 7 "Criteria for Evaluating Performance Measures"

1. Relevance – measures are clearly linked to agency or program mission
2. Timeliness – measures are available when decisions must be made
3. Vulnerability – measures provide a fair assessment of the efforts of the organization, and are not likely to be affected so much by external factors (out of control of the organization) to be rendered useless
4. Legitimacy – internal and external stakeholders will find the measures reasonable
5. Understandability – stakeholders will understand what is being measured
6. Reliability – consistent measurement procedures are used to collect data across time and across sites
7. Comparability – when feasible, measures are similar to measures used elsewhere

The five federal MPA programs have attempted to develop performance measures that are linked to their respective program's specific missions but often these measures don't address regional or ecosystem assessments. There is no evidence that data collected from PART or other measures are utilized for programmatic improvement. Often the measures were developed by a group of staff members who came together for the purpose of PART assessment and once PART was completed measurement development efforts ended. The two exceptions to this are the NMSP and NERRS. They have begun to develop program-wide performance measures; however these two programs' performance measures illustrate the problem with no coordinated cooperative MPA evaluation effort. The NMSP has developed a total of 19 performance measures; only three have an ecological focus. The remainder are program-planning related. The NERRS has a total of 43 performance measures; the majority of which are education and training measures in keeping with their mission. While their mission statement

language includes "using a system of protected areas," there are no measures that assess system-wide effectiveness.

The five federal MPA programs fall short when considering Newcomer's 7th criteria of comparability. There are no common performance measures across all five programs; therefore there is no mechanism in place for a more comprehensive federal MPA program system-wide assessment.

7.3.1 MPA Programs Utilize More "Output" than "Outcome" Performance Measures

When examined as a whole, the five federal MPA programs utilized approximately twice as many output measures than outcome measures for either PART reporting or system-wide assessment. This is not surprising given the pressure on programs to show results and the fact that output measures lend themselves to demonstrating progress quickly. However, output measures can only show trends and not achievement of programmatic objectives.

OMB (2007a, p. 9) states:

> Outcome measures are the most informative measures about performance, because they are the ultimate results of a program that benefit the public. Programs must try to translate existing measures that focus on outputs into outcomes by focusing on the ultimate goal of the program.

Section Four of the PART assessment asks whether programs have achieved their annual performance goals and cost effectiveness or have improved efficiencies in achieving program goals each year (OMB, 2007b). The long-term outcome performance goal question only asks whether the program has "demonstrated adequate progress" in achieving its long term outcome goals.

Programs develop measures that can show results to the public and Congress as a self-preservation mechanism. Congressional members frequently ask, "What are we getting for the money we gave you?" Output measures are easier metrics when trying to show whether a program is achieving results. One interviewee stated that outcome measures can show long-term successes but they are often expensive to do and they can't show positive results in a short timeframe. Another interviewee recommended that a better option would be to develop a suite of performance measures for a range of purposes.

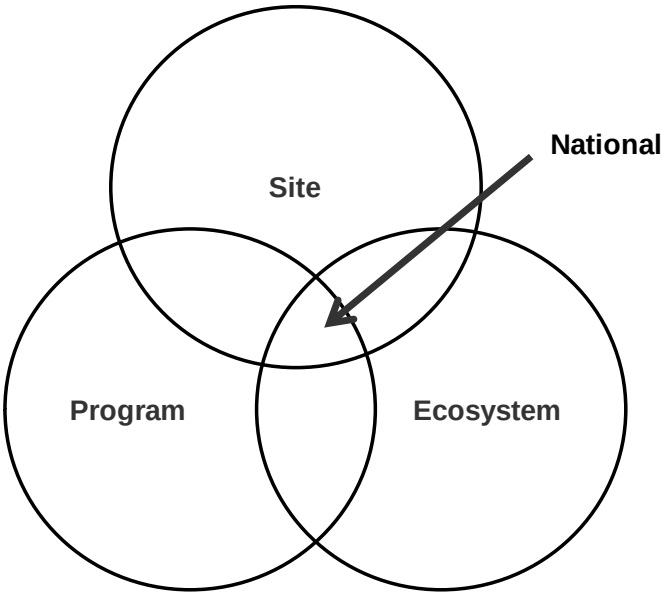
7.3.2 What Should be Measured

There are increasing numbers of studies and international efforts to determine the best indicators for MPA effectiveness (MPA News, 2006b). The temptation is to come up with a "Best Indicators List" for MPAs. While this may be a practical approach for site-level assessment of tropical, developing, international MPA sites, I argue, based on my research, that a best indicators approach is not the most appropriate method of assessment for U.S. marine protected areas programs. I believe a best indicators site-level evaluation approach does not allow for comprehensive ecosystem and national MPA program assessment and improvement.

The existing MPA literature primarily deals with tropical ecosystems in developing countries and addresses how MPA sites "are doing." Site-specific studies have an important place in MPA research, but the fragmented structure and overlapping jurisdiction of existing U.S. MPA programs require a more integrated, multi-scalar approach to evaluation.

The current segregated, linear structure of MPA program assessment should be modified for a national system assessment. MPA performance measurement and evaluation analysis at the site, ecosystem, and program levels should inform national level assessments. In addition, each individual site, program or ecosystem evaluation should have feedback mechanisms so they inform the others and allow for data exchange (Figure 17). This integrated structure would address the lack of cross-program, cross-ecosystem comparative MPA performance measurement and evaluation.

Figure 17. Levels of MPA Evaluation



7.4. Independent Evaluations

7.4.1 Past Independent Evaluations Focus on Funding/Budget Rather than Programmatic Success in Marine Conservation

Recent efforts to develop performance measures show an advancement of evaluation efforts within MPA programs, yet the lack of full evaluations leaves many marine resource questions unanswered. Very few evaluations have been conducted or even attempted due to the cost involved, the complexity of the effort, and the time requirements. In many instances, independent evaluations were initiated at the request of Congress or for providing evidence for the Office of Management and Budget. I reviewed a total of 20 independent evaluations across the five federal programs. There were 32 different evaluation criteria. The most common independent evaluation criteria were program funding and budget-related. Other common evaluation criteria included statutory authority, regulations, policies, public participation

and user groups. The closest ecological evaluations criteria were research and physical threats and conditions reports. These independent evaluations can answer program management and funding questions and even identify ecological conditions but they don't provide insight into why a marine ecosystem continues to degrade, why threatened or endangered species stocks continue to decline, or if recovery plans are working to achieve desired outcomes.

There are pros and cons to independent evaluations. Pomeroy, Parks, and Watson (2004, p. 25) concluded that independent (external) evaluators can be impartial, credible, provide a "fresh perspective", and bring technical expertise. They cited disadvantages as: (1) they may have limited local knowledge; (2) short site visits; (3) they focus on external groups such as stakeholders and funding agencies; and (4) they take away valuable information, knowledge, perspectives and skills.

The National Wildlife Refuge System has hired an independent consulting firm to conduct a system-wide evaluation. When asked to what extent marine resources would be addressed in this evaluation, the consultant replied, "Marine areas are not an emphasis for the refuge system." This is in sharp contrast to responses and documentation provided by refuge personnel who indicated marine areas were becoming a priority for the Refuge System. This disconnect illustrates the fact that independent evaluators may not fully understand the internal workings or future directions of individual programs. Building internal evaluation capacity would enable program personnel to assume some evaluation responsibilities. Independent evaluations have their merits but also limitations. The role of independent evaluations and their contribution to MPA programmatic improvement needs to be examined.

7.5 MPA Evaluation Challenges

The major reasons given by interviewees for not evaluating MPA programs were:

- Time constraints – too many other responsibilities

- Resource constraints – both personnel and funding
- Evaluation is "too hard"
- No clear directive from administration
- Fear of poor evaluation ratings

I will discuss four broad MPA evaluation challenges below.

7.5.1 OMB Examiners Do Not Understand Ecological Programs

Programs are required to develop performance measures in accordance with GPRA and PART requirements. Development of these measures is usually done in concert with OMB examiners who may not fully understand ecological programs. One respondent stated, "One of the struggles our program had when we went through the PART process was that OMB wasn't used to assessment of ecosystem-based management programs. … OMB couldn't help us. They suggested looking at the Department of Energy but they aren't like us." It was also reported that one OMB examiner spent months at one of the MPA program sites to "try to understand what it is we do."

7.5.2 Performance Measurement Is "Gamed" in Order Not to Fail

Program personnel believe that evaluation findings are tied to future funding or job security. This sets up a scenario for false reporting or designing evaluations to show results that are positive in order to retain funding. Some personnel feel it is better to measure criteria that can show quick success stories and positive results. One respondent stated, "They 'dumb it down' – an ecologist might say you can't control diversity so it's better to just report the number of reports/month." That way programs can show they are successful to funders or headquarters. Several respondents commented on the increasing pressure to show positive results.

One interviewee described this situation as:

> Managing for expectations in a dynamic environment - This is the biggest challenge of all. I'm not sure we are prepared to measure this – if we know what to expect. If you see a wild fluctuation in sea anemone population does this mean the MPA isn't working? We have to figure out the meaning of this. What to do when this indicator doesn't perform as expected. If we close off all fishing and think there will be more lobsters in 5 years and in 5 years there aren't more lobsters, does this mean the MPA did not work?

"Sunset Clauses" also illustrate the problem with the pressure to show positive results. Some MPA designations are subject to periodic reviews and if they aren't showing "success" their designation is in jeopardy. The Florida Keys National Marine Sanctuary's final management plan with the state has a Sunset Clause. One interviewee explained:

> The state wasn't sure it was happy with having a national marine sanctuary so they put in a clause that said at the end of five years they will evaluate the effectiveness of the MPA and determine if we want to keep it. So there was a mad dash to document positive changes and the opposition was working hard to show it wasn't working. The battle is not over what is the result, but what is the yardstick to measure results. The fishermen want high performing standards and the ecologists say it won't work this way. They say it takes decades – not years. There is a science fight over policy outcome. In Florida – it survived the 5-year review because the political climate was okay. They showed a positive trend so it was good. Given a different set of political factors in play it would not have been good. There are similar clauses in Hawaiian Islands Humpback Whale Sanctuary and Thunder Bay. The end result is that site managers or agency personnel develop performance measures that will show positive results in five years. The fear is that the political establishment will take it away.

As long as MPA personnel fear negative reporting retribution it will be difficult to determine whether evaluation results realistically portray accurate assessments of marine ecosystems and programs. The MPA program evaluation community must address this issue and find ways to alleviate these fears. Reporting to a central entity, such as a national evaluation coordination division which could pool data across ecosystems, could be one such solution.

7.5.3 MPA Program Staff Lack Training in Program Evaluation.

During my interviews I found that MPA Program Staff have assumed program evaluation responsibilities without receiving adequate and on-going evaluation training. Of those interviewed, only two individuals had attended an evaluation workshop. Most interviewees worked on their program's PART assessment process without any prior evaluation experience.

The PART assessment isn't necessarily geared toward assessing ecosystem-based management programs or understanding programs that have conservation goals as their primary objectives. When MPA personnel asked OMB for guidance, OMB recommended they look at Health and Human Services and Education Programs. These programs, which often utilize randomized control trials for their evaluation, may not be appropriate for MPA programs due to the dynamic processes and annual to decadal-scale variability in marine ecosystems.

MPA program personnel are also struggling with individual PART examiners. They found that the examiners were inconsistent in terms of understanding environmental programs and what they accepted as evidence of independent evaluations.

There is also a lack of existing studies providing guidance on how to approach system-wide evaluation of ecological programs. The international MPA efforts are based on evaluating site effectiveness in tropical, developing areas. The U.S. MPA community needs technical assistance to develop better forms of performance measurement and evaluation.

7.5.4 Funds Allocated for Continued Evaluation May Be Used for Other Purposes

Once funds have been allocated for specific program evaluation efforts and utilized to identify programmatic problems, the temptation is to then use follow-on evaluation funding for fixing problems that have been identified through monitoring or assessment. This was the case with the National Park

Service. Through their vital signs monitoring program they identified problems that needed remedial actions, yet funding was unavailable. Personnel were tempted to use monitoring funds for species recovery plans; to fix short-term problems at the expense of long-term monitoring.

This is a serious evaluation issue that needs to be addressed through educating program personnel on the value of on-going program assessment and evaluation to foster continual improvement.

7.6. Interviewees Are Keenly Interested in a National MPA Evaluation System

Interviewees expressed the need for, and a strong interest in, improved evaluative processes and a coordinated MPA evaluation system. Each MPA interviewee spoke of what they were doing with passion and conviction. Each spoke of wanting to work together to do a better job at marine resource conservation and protection. They expressed a desire to see what others have done for MPA evaluation, for sharing resources and expertise and wanting to know where to go to find practical solutions to broadly-experienced problems. They wanted to know how they can improve assessment and evaluation and they wanted to know "what I found." Each program spoke of jurisdictional conflicts and geographical overlap. They don't want additional workloads and they often lack funding to do the evaluation work they would like to.

Some of the respondents stated that a coordinated MPA evaluation system would have to consider the following:

- That it doesn't place extra burden on staff
- That funds are provided – one respondent commented "policy initiatives without funding are just good ideas"
- That negative findings won't impact staff/manager personnel/employment records

- That results are used and that the process is not considered as just another reporting requirement
- That it improves effectiveness and efficiency of performance measure implementation
- That it provides PART examiners and sanctuary evaluation personnel with performance data
- That guidance documents are developed for developing MPA evaluations
- That inexpensive evaluation training is provided
- That networking opportunities are available
- That it helps with consistency among OMB examiners for federal requirements
- That personnel resources are available

7.7 Implementation/Dissemination of Evaluation Results Is Lacking

"The first requisite to useful evaluation is an appreciation that the evaluation is worth doing and that the findings will be useful" (Chelimsky, 1994 in Wholey, Hatry, and Newcomer, 2004, p. 650).

When respondents were asked it they felt their performance measurement and/or evaluation efforts were leading to program improvement they said it was too soon to tell, as they had just implemented their systems or they had just gone through the PART assessment. Each PART assessment report includes a performance improvement plan. When asked when the plans would be implemented and how long they had to complete these plans, the most common answer was that it depended on when the next PART assessment would be. This illustrates the need for improved MPA program evaluation dissemination.

The majority of evaluation efforts are in performance measurement and ecosystem monitoring. Programs are ambitiously working on developing measures and collecting data, after which the MPA evaluation system breaks down. The implementation and dissemination phase desperately need

improvement. There are valid reasons why evaluation findings are not being disseminated; primary among them is fear of negative publicity or funding cuts.

In management literature the classic model is plan, implement, evaluate, and improve. MPA programs need to improve the link between evaluation and programmatic and ecosystem improvement. They must evaluate programs and processes with the goal of improving marine resource management, conservation and protection.

7.8 MPA Cooperative Efforts Exclude Some Programs

The most recent effort to bring federal MPA programs together is the Seamless Network Memorandum of Agreement (MOA) between four of the five federal MPA programs. The Seamless Network (Appendix G) includes: the National Marine Sanctuary Program, the National Park Service, the National Wildlife Refuge System, and the National Estuarine Research Reserve System. It does not include the National Marine Fisheries Service even though they are designated as a federal program with MPA site management responsibilities. The Seamless Network MOA acknowledges the existence of jurisdictional overlap, limited funding and program personnel, and the shared goal of managing coastal and marine resources and ecosystems. The purpose of the MOA is to foster inter-agency cooperation. Close examination of the MOA does not provide a clear justification for the exclusion of National Marine Fisheries Service.

The exclusion of one MPA program from inter-agency cooperative efforts is further evidence of the gaps that exist in MPA federal program coordination. If programs within this cooperative effort decided to address evaluation and effectiveness on a regional or national-level, the results would be incomplete because ecologically important factors such as essential fish habitat areas, overseen by NMFS, would be omitted from such an assessment.

CHAPTER 8 – RECOMMENDATIONS AND CONCLUSION

Evaluation efforts of the five MPA programs examined have primarily focused on regulatory/federal reporting requirements. Evaluation for meeting conservation goals and objectives is also critical to program success and to improve marine resource protection. These evaluation objectives are not being addressed by the current MPA program evaluation system. Program evaluation for federal reporting accountability and for improving marine resources and ecosystems may be two mutually exclusive evaluation efforts. There are two separate program evaluation processes and currently the federal reporting requirements are overshadowing long-term program and ecosystem effectiveness studies. While PART requirements must be addressed, programs also must address long-term goals of ecosystem management. Trying to accomplish both objectives within the current single program evaluation effort structure will not move marine conservation and protection forward.

Marine resources within the United States are historically important and too vital and valuable to the nation to be lost as the result of unforeseen "consequences of failing to take action." Effective evaluation can serve as an early warning system and indicator of what is working or not working within federal MPA programs. A national MPA evaluation system can: (1) improve marine program processes and efficiency; (2) address overlapping jurisdictions; (3) prevent duplication of effort; and (4) document and replicate effective evaluation protocols and monitoring programs.

8.1 Recommendations

In this final chapter I draw from the evidence I have presented in previous chapters to ground my recommendations for a national MPA evaluation system. I propose six recommendations for improving MPA federal program evaluation as essential components of a conceptual national-scale MPA evaluation coordination framework: (1) establish a national MPA evaluation system which includes a national MPA evaluation coordination division; (2) develop an inventory of existing MPA evaluation studies and performance measures; (3) create a centralized evaluation information database; (4) develop program and system-wide performance measures; (5) promote MPA evaluation capacity-building including developing relationships with evaluation professionals and establishing a system of inter-agency and intra-agency MPA evaluation information exchange; and (6) ensure that any future MPA legislation includes evaluation language.

8.1.1 Recommendation #1 – Develop a National MPA Evaluation System

> "A balanced multiple use of ocean areas necessitates resource management coordination" (Hoagland, 1983, p. 3)

The greatest challenge facing federal MPA programs in their effort to improve evaluation efforts is how to move program evaluation toward achieving long-term conservation goals and objectives while still needing to fulfill federal reporting requirements, all within an environment of limited resources and ever-increasing time demands. I conclude that a national MPA evaluation system can assist in evaluation coordination, support, and effectiveness.

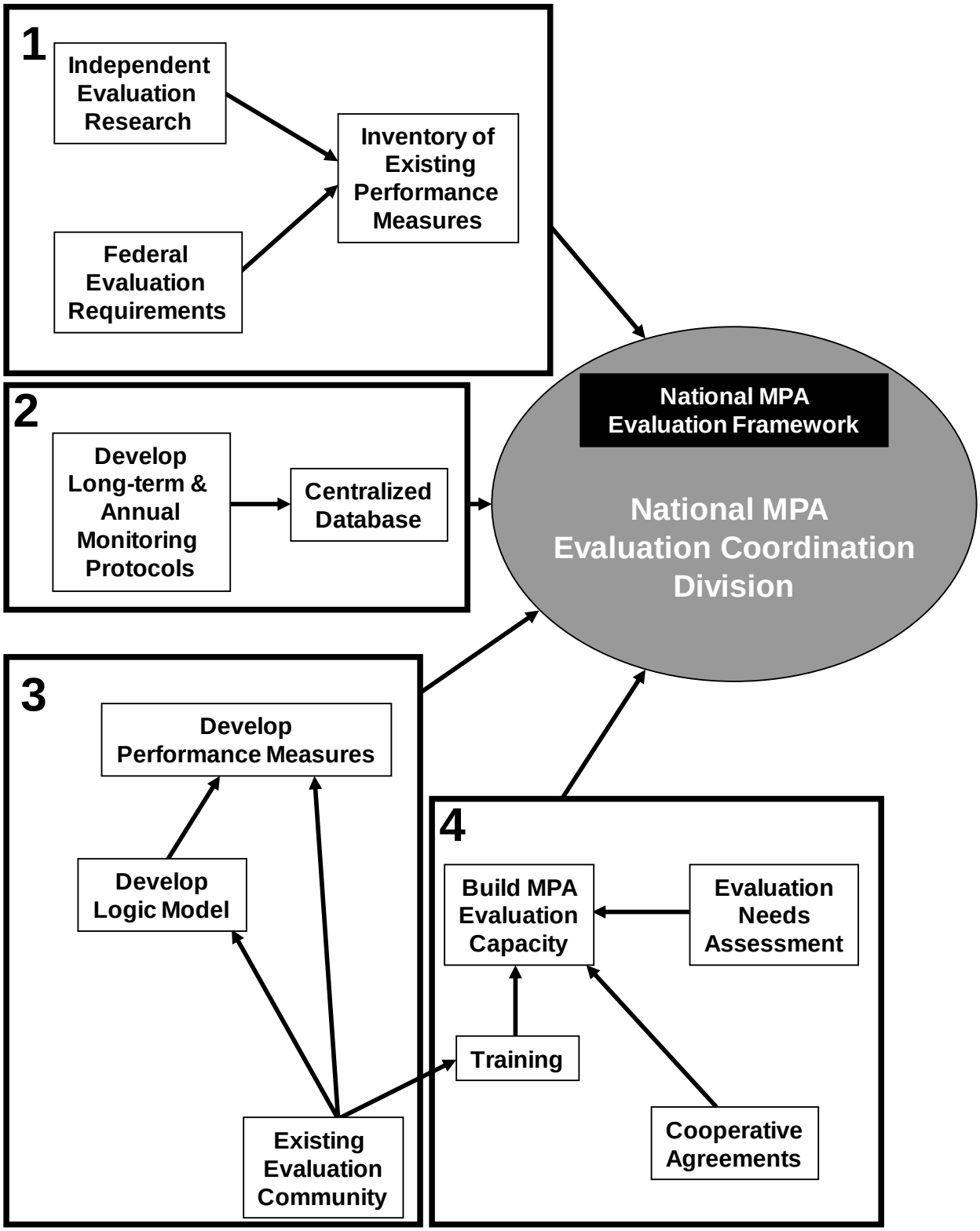
The development of a national MPA evaluation system should be complementary to existing evaluation practices with the intent to build upon what already exists, to increase inter- and intra-agency cooperation, and to improve effectiveness and efficiency. I have concluded that some of the existing

cooperative agreements exclude certain MPA programs because they are not as "conservation-minded as the rest." In one case, NMFS has been excluded because they have an economic component to their mission. A National Evaluation Coordination System (NECS) would ensure that all MPA programs are included in any MPA evaluation initiatives. Figure 18 illustrates the conceptual framework I have developed for a national MPA system of evaluation which includes a national MPA evaluation coordination division.

The National MPA Center should serve as the central focal point for the development of a national MPA evaluation framework. Their mission is "to facilitate the effective use of science, technology, training, and information in the planning, management, and evaluation of the nation's system of marine protected areas" (National MPA Center, 2007). As the result of Executive Order 13158, they are organizationally situated to serve as the leader and facilitator of this initiative.

The NECS should include the development of a National MPA Evaluation Coordination Division (ECD), which should be affiliated with the National MPA Center. It does not matter where this division is geographically located, because MPA evaluation personnel should be going into the field to develop contacts and relationships and to determine existing evaluation efforts, resources, and challenges. Currently there is no central MPA evaluation contact person or section within the existing MPA system. A newly created evaluation division could serve as the central clearinghouse and point-of-contact for all MPA evaluation efforts. It could initiate and coordinate system-wide MPA evaluation training and needs assessments studies.

Figure 18. MPA Evaluation System Conceptual Framework and Components



8.1.2 Recommendation #2 –Develop an Inventory of Existing MPA Evaluation Studies and Performance Measures (Figure 18 – Component 1)

A national MPA evaluation coordination effort would include developing an inventory of all existing MPA performance measures and evaluation studies. These will include both independent evaluation research and the resultant reports of federal reporting requirements including PART assessments. This is needed because my research has shown that no one within the MPA community knows what evaluation studies exist or what other MPA programs have used for performance measurement and evaluation. The benefit of this component is that once this information has been collected, programs can then draw from each other's evaluation experiences.

8.1.3 Recommendation #3 – Create a Centralized Evaluation Information Database (Figure 18 – Component 2)

A National MPA evaluation framework would include the creation of a centralized database for monitoring data. Four of the five programs have been developing their own monitoring systems and have collected volumes of data for multiple purposes. There is no evidence that once reporting requirements are fulfilled, these data are used again. A centralized database could help foster future MPA evaluation efforts and long-term marine ecosystem assessments.

Four of the five federal MPA programs have developed or are in the process of developing a national monitoring system. Several program respondents explained the importance of their monitoring systems in the evaluation process.

Monitoring Systems:

NERRS – "SWMP" – System-Wide Monitoring Program

NMSP – "SWiM" – System-Wide Monitoring

NPS – "Vital Signs Monitoring"

NWRS – "RAPP" - Refuge Annual Performance Planning System

In several instances, proactive staff realized that monitoring was important to their programs and took the initiative to develop an assessment system. Interestingly, the NMSP SWiM manual cites Gary Davis, the NPS researcher who co-developed the Vital Signs Monitoring Program. There are volumes of ecological monitoring data being collected. Some programs have central databases but they are internal, while other programs don't pool their data, although interviewees think "that's a good idea." One respondent said they don't pool their data sets because they were afraid the system would "collapse under its own weight" because of the volume of data. A centralized database could select specific evaluation criteria from these extensive data sets and utilize those indicators most beneficial to monitoring regional or national-scale ecosystem improvements.

A great deal of data has been generated. What are programs doing with it? Rather than trying to create something new, MPA programs should build upon what already exists. These data would, and should, be available to researchers, academia, non-profit organizations, and federal, state, and territorial entities.

NRC (2001) reported that the "most imposing barrier to a systematic evaluation of MPA performance in the United States is the shortage of baseline monitoring of physical and biological parameters within MPAs before and after their designation" (p. 153). A central data collection system would begin to consolidate data sets and identify data gaps. Silsbee and Peterson (1991) addressed the need for an "administrative structure" to coordinate long-term monitoring program data collection,

analysis, and database maintenance. A National Evaluation Coordination Division could serve this purpose.

Components of the National Park Service's monitoring network system could be examined as a possible model for the national MPA network.

8.1.4 Recommendation #4 – Develop Program and System-wide Performance Measures (Figure 18 – Component 3)

A national MPA evaluation coordination effort would draw from and utilize the expertise of the professional evaluation community to assist in developing logic models and performance measures for marine protected area programs (a logic model documents a program's inputs, outputs, outcomes, and any factors that may affect program operations (Wholey, Hatry, and Newcomer, 2004)). An MPA evaluation division would create a performance measurement working group that would be responsible for collecting and analyzing existing performance measures, developing a logic model for the national system, and assisting MPA programs with their performance measurement system. Program evaluation theory and practice states that a logic model should be the first piece of information developed during program evaluation. Only one MPA program has recently developed a logic model.

The combination of logic models, both programmatic and system-wide, and the knowledge of the evaluation community, can assist in the development of relevant MPA performance measures. When examined as a whole, the 5 federal MPA programs utilized approximately twice as many output measures as outcome measures. Output measures can show trends, but not achievement of programmatic objectives or how or why a program is failing or succeeding. Outcome measures are time and resource intensive, yet they yield stronger and more credible evidence. Having a suite of performance measures is important because they will provide a more accurate assessment of MPA

programs. Current MPA evaluation efforts have focused on performance measurement, but program evaluation is also needed to provide a more in-depth assessment of whether a program has achieved its expected results or why programs vary across sites. A national evaluation system could assist in these efforts.

8.1.5 Recommendation #5 – Promote MPA Evaluation Capacity-Building (MPA-ECB) (Figure 18 – Component 4)

As stated in the literature review of this thesis (Chapter 2), the evaluation community utilizes a concept known as Evaluation Capacity Building or ECB. I propose that the marine protected areas community adopt this philosophy and begin to develop its own subset of ECB known as MPA-ECB**.** For clarification, I will restate Compton, Baizerman, and Stockdill's (2002) definition of ECB: "the intentional work to continuously create and sustain overall organizational processes that make quality evaluation and its use routine" (p. 1).

It is important to emphasize that MPA evaluation capacity building (MPA-ECB) should not be thought of as a ground-breaking concept, but rather a process improvement system designed to capitalize on evaluation efforts that are already underway. MPA-ECB should be a coordinated, integrative, and continually evolving process. Researchers conclude that organizations are moving away from large-scale external evaluations that are rarely used and toward internal evaluation practices that can improve programs (Torres and Preskill, 2001 in Arnold, 2006).

MPA programs and a National MPA evaluation coordination division should begin building MPA evaluation capacity by developing linkages between MPA professionals and evaluation community members for the purposes of training and information exchange, sharing resources and expertise. Utilizing the skills of evaluation professional affords MPA programs access to low cost evaluation

training. My research has shown that MPA program personnel are required to do evaluation, but they do not have the expertise or necessary tools to do so. A national MPA-ECD would build evaluation capacity system-wide rather than relying on single staff members (who may leave with staffing changes). Part of this effort will be to develop a list of MPA evaluation "lessons learned" to save staff time and improve evaluation efforts.

Building evaluation capacity should include developing both informal and formal working relationships with the evaluation community. This could be achieved through several different mechanisms including participation in professional evaluation community meetings: the American Evaluation Association (AEA) and the Eastern Evaluation Research Society (EERS) to name two. The Environmental Evaluator's Network is a cooperative effort between EPA's Evaluation Support Division and the National Fish and Wildlife Foundation. This network is attempting to bring together environmental, conservation, and natural resource evaluators and researchers to better coordinate environmental evaluation research efforts, learn new approaches, share information, and foster partnerships (NFWF, 2007). These are resources which would assist in building MPA/evaluation community partnerships both informally and perhaps in some formal capacity in the future.

MPA scientists, researchers, and program personnel do not have to become evaluation experts – although at times they feel this role is forced upon them. There exists a huge body of literature and substantial human capital in the field of evaluation, and the evaluation community is well established and firmly situated in other academic disciplines. Their expertise should be better utilized by the MPA community. Program evaluation professionals' experience can help those programs developing a performance measurement system with designing logic models, identifying output and outcome measures, and determining costs and benefits of data collection options (Newcomer, 1997). By the same token, evaluators do not need to become marine, environmental, and/or natural resource management

experts. There is an increased call for environmentally-focused evaluations and these two academic and professional fields should complement each other.

MPA-ECB efforts should also involve establishing a system of inter-agency and intra-agency MPA evaluation information exchange. In one federal MPA program, an individual responsible for PART reporting sat within a few cubicles of a designated MPA person for the same program. The PART person had known the MPA person for years, but never had a conversation about their program's MPA efforts until this interview request prompted an internal information search. These are the benefits of networking. Valuable information can be exchanged, and lessons learned. Some programs have been PARTed twice while others have not. These are valuable experiences that should be shared with other programs going through the same process. The NPS has concluded that, "The critical keys to improved ocean conservation in the National Park System are partnerships with other ocean-concerned agencies and communities to facilitate cooperation, collaboration, and communication" (Davis, 2004, p. 24).

MPA-ECB should also incorporate MPA program and national-system evaluation discussions into existing MPA forums such as MPA Advisory Board meetings and Seamless Network meetings. This would begin building an MPA evaluation community. State, local, and tribal entities will also play a role in the development of a national evaluation system. NERRS is a state-federal partnership and has experience and established relationship-building capabilities with these governmental entities. NERRS may provide insights into how to most effectively involve them in the MPA evaluation process.

As we attempt to build MPA evaluation capacity, we should be careful to avoid evaluation overload/addiction. More is not always better. There is a growing awareness of the value of evaluation and that awareness should not translate into simply generating lots of meaningless program evaluations. One federal employee, outside of this study, explained at a recent workshop on performance measurement that his agency had embraced program evaluation so whole-heartedly that upper levels of

management were now requiring performance monitoring and reporting every six weeks. The evaluation professional conducting the workshop said this was ridiculous and this mindset could devalue program evaluation and performance monitoring.

8.1.6 Recommendation #6 – Include Evaluation Language in Future MPA Legislation

A final recommendation is to examine MPA legislation and determine whether additional legislation is needed, either in the form of (1) an MPA Act or (2) a new Executive Order. The National MPA Center and the development of a national system of marine protected areas hinges on a single existing executive order; which is vulnerable with each subsequent administration.

Any future MPA legislation, either in the form of another executive order or an MPA Act, should include evaluation language. This system-wide MPA evaluation initiative should include an assessment of the feasibility of a National Marine Protected Areas Act. Executive Order 13158 was instrumental in getting fragmented, federal entities to begin to come together and attempt to share information and resources. Many good things have come out of this initiative; the Federal MPA Advisory Board, The Federal Agency Working Group, and the Seamless Network, to name a few. But all these efforts are vulnerable. The Executive Order was signed by President Clinton and upheld by President Bush, but it can be superseded or rescinded by subsequent administrations. A National MPA Act would codify the advances that have been made to date and ensure the continuance of a national system, but this may be difficult to achieve within the given political climate. MPA program and national-system evaluation language should be included in an Act.

The National Marine Sanctuary Program does not have an Organic Act to codify it. It must rely on other marine protection related Acts. This makes enforcement issues difficult. The Ocean Action Plan

has recommended codifying NOAA with an Organic Act. If this does happen, evaluation language should be incorporated into this Act as well.

8.2 Areas for Further Research

My research is a first attempt to critically examine federal MPA programs' evaluation practices and challenges, and to bring program evaluation to the forefront of MPA research. Examining other U.S. MPA programs, including state, local, and tribal sites, are no less important, but beyond the scope of this research. This is one area for future MPA evaluation studies.

A second area for future research involves developing a suite of national MPA performance measures and evaluation practices for: (1) federal, state, local and tribal MPA programs; (2) a national system of MPA program evaluation; and (3) evaluation of the national evaluation coordination system itself. This suite of measures should include site-level, program-level, and national-level measures and be a participatory process, involving all concerned parties in the process (Table 40). This approach could address the dilemma of programs needing to develop uniform performance measures, which may be more efficient for OMB and PART requirements, but also utilizing measures tailored to their specific goals and objectives.

Table 40. Typology of Suite of MPA Evaluation Efforts

Monitoring - annual and long-term
Performance Measurement - site, program, ecosystem, national level
Evaluation for PART
Evaluation for ecosystem health and improvement
Process evaluation
Outcome evaluation
Independent evaluation
Participatory evaluation

Research is also needed to determine how best to ensure the future of a nationally-coordinated MPA effort. This includes conducting a comprehensive policy analysis to determine whether: (1) another MPA executive order is warranted; (2) an MPA Act shall be recommended; or (3) a single memorandum of agreement between all five federal MPA programs would be more beneficial for achieving long-term national MPA efforts.

8.3 CONCLUSION

My research provides evidence of the critical need for federal MPA program evaluation institutional reform. While MPAs, as a management tool and protective measure, have grown in number, U.S. evaluation efforts have lagged behind. The current evaluation system, specifically governmental reporting requirements, constrains efforts to adequately evaluate marine protection programs for marine conservation and protection purposes. Federal program evaluation reporting requirements that have driven MPA program evaluation efforts in the past will continue in the future. The challenge facing the MPA community is how to balance what is required and what should be utilized for improving marine conservation.

This dissertation is a first attempt to identify problems with existing MPA evaluation and performance measurement systems, to assess the need for a nationally coordinated MPA evaluation system, and to bring attention to a much needed area of marine conservation. I set out to understand three MPA evaluation research questions:

1. What methodologies do federal agencies currently employ to evaluate their marine protected areas programs?
2. To what extent do federal MPA program evaluation processes adhere to program evaluation theory and practice?
3. How could components of these evaluations inform a national-scale MPA evaluation model?

My research shows that the five federal MPA programs are utilizing performance measurement, which is a subset of program evaluation. McDavid and Hawthorn (2006) explain that performance measures can be used for two purposes: (1) to examine processes (formative evaluation) or (2) to report results (summative evaluation). Performance measurement is only one part of program evaluation and cannot show how or why a program is succeeding or failing. While the five federal programs have had

independent evaluations in the past, there is little evidence that information has been disseminated and utilized for program improvement. Program evaluation theory emphasizes the importance of utilizing evaluations to improve program practices and processes (Patton, 1997).

The five programs also conduct and collect site monitoring data, yet there is no evidence of a coordinated effort to compare these valuable data sets across MPA programs within the same geographical areas. Pooling data sets would contribute toward developing local, regional, and national marine ecosystem assessments.

My research shows that the five programs have struggled with program evaluation requirements. Fundamental principles of program evaluations including developing logic models and long-term performance measures, utilizing evaluations for program improvement, and building evaluation capacity within programs, are lacking within the five federal MPA programs. This is not unexpected, given the limited funding levels and personnel resources allocated for program evaluation.

Individual programs, in addition to time, staff, and budget constraints, also feel that negative reporting could potentially impact their job security. Reporting false positive data could result in presenting an unrealistic assessment of a particular marine ecosystem. A national system could provide non-site or program-specific data sets and thereby eliminate the need for false reporting.

Concluding Remarks

I assert that, based on my research, MPA program evaluation should be the central focus of MPA effectiveness studies within the United States. MPA researchers and international programs such as the IUCN MPA Initiative have made recent advances in the study of management effectiveness of MPA sites, but there remains a gap of knowledge in U.S. MPA program evaluation research.

Given the current marine resource conditions report from the U.S. Commission on Ocean Policy and the findings of my research, there is an immediate need for improved federal MPA programs' evaluative processes.

The U.S. Commission on Ocean Policy (2004, p. 68) has concluded that:

> No federal entity has the mission to evaluate the vast array of federal actions affecting ocean and coastal resources and to advocate for more effective approaches, prioritized investment, improved agency coordination, and program consolidation where needed.

The Commission has also recommended a uniform process for MPA evaluation (p. 105). A national MPA evaluation system could initiate or coordinate this effort. Creating a national MPA evaluation system can address many of the problems and information gaps identified in this research. My research can contribute to improving MPA program evaluation processes, inter-agency and intra-agency cooperation and coordination, and help advance U.S. marine resource conservation and protection. Networking between federal MPA programs could provide shared resources at the site/operational level as well as regional and national levels.

Developing a nationally coordinated system of MPA program evaluation can address current problems and needs and move federal MPA program evaluation beyond simply providing data for budget and funding accountability toward improving assessment of effectiveness and achieving both short-term and long-term marine resource conservation goals and management objectives.

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Appendix A

Acronyms

BMSY – Biomass Maximum Sustainable Yield

CTP – Coastal Training Program

DOC – Department of Commerce

DOI – Department of the Interior

ECB – Evaluation Capacity Building

ECD – Evaluation Coordination Division

EEZ – Exclusive Economic Zone

EPA – Environmental Protection Agency

GAO – Government Accountability Office

GPRA – Government Performance and Results Act

IUCN – The World Conservation Union

MMA – Marine Managed Area

MOA – Memorandum of Agreement

MPA – Marine Protected Area

MPA ECB – Marine Protected Areas Evaluation Capacity Building

NECS – National Evaluation Coordination System

NEPA – National Environmental Policy Act

NERRS – National Estuarine Research Reserve System

NGO – Nongovernmental Organization

NMFS – National Marine Fisheries Service

NMSP – National Marine Sanctuary Program

NOAA – National Oceanic and Atmospheric Administration

NOS – National Ocean Service

NPS – National Park Service

NWRS – National Wildlife Refuge System

OMB – Office of Management and Budget

PART – Performance and Assessment Rating Tool

RAPP – Refuge Annual Performance Planning System

SWiM – System-Wide Monitoring

SWMP – System-Wide Monitoring Program

WCPA – World Commission on Protected Areas (IUCN Commission)

Appendix B

Executive Order 13158

Federal Register/Vol. 65, No. 105/Wednesday, May 31, 2000/Presidential Documents 34909

Presidential Documents

Executive Order 13158 of May 26, 2000

Marine Protected Areas

By the authority vested in me as President by the Constitution and the laws of the United States of America and in furtherance of the purposes of the National Marine Sanctuaries Act (16 U.S.C. 1431 et *seq.),* National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-ee), National Park Service Organic Act (16 U.S.C. 1 *et seq.),* National Historic Preservation Act (16 U.S.C. 470 *et seq.),* Wilderness Act (16 U.S.C. 1131 et *seq.),* Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 *et seq.),* Coastal Zone Management Act (16 U.S.C. 1451 *et seq.),* Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.),* Marine Mammal Protection Act (16 U.S.C. 1362 *et seq.),* Clean Water Act of 1977 **(33** U.S.C. 1251 *et seq.),* National Environmental Policy Act, as amended (42 U.S.C. 4321 *et seq.),* Outer Continental Shelf Lands Act (42 U.S.C. 1331 *et seq.),* and other pertinent statutes, it is ordered as follows:

Section 1. *Purpose.* This Executive Order will help protect the significant natural and cultural resources within the marine environment for the benefit of present and future generations by strengthening and expanding the Nation's system of marine protected areas (MPA5). An expanded and strengthened comprehensive system of marine protected areas throughout the marine environment would enhance the conservation of our Nation's natural and cultural marine heritage and the ecologically and economically sustainable use of the marine environment for future generations. To this end, the purpose of this order is to, consistent with domestic and international law:
(a) strengthen the management, protection, and conservation of existing marine protected areas and establish new or expanded MPAs; (b) develop a scientifically based, comprehensive national system of MPAs representing diverse U.S. marine ecosystems, and the Nation's natural and cultural resources; and (c) avoid causing harm to MPAs through federally conducted, approved, or funded activities.

Sec. 2. *Definitions.* For the purposes of this order: (a) "Marine protected area" means any area of the marine environment that has been reserved by Federal, State, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein.

(b) "Marine environment" means those areas of coastal and ocean waters, the Great Lakes and their connecting waters, and submerged lands thereunder, over which the United States exercises jurisdiction, consistent with international law.

(c) The term "United States" includes the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands of the United States, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands.

Sec. 3. *MPA Establishment, Protection, and Management.* Each Federal agency whose authorities provide for the establishment or management of MI^3As shall take appropriate actions to enhance or expand protection of existing MPAs and establish or recommend, as appropriate, new MPAs. Agencies implementing this section shall consult with the agencies identified in subsection 4(a) of this order, consistent with existing requirements.

Sec. 4. *National System of MPAs.* (a) To the extent permitted by law and subject to the availability of appropriations, the Department of Commerce and the Department of the Interior, in consultation with the Department

of Defense, the Department of State, the United States Agency for International Development, the Department of Transportation, the Environmental Protection Agency, the National Science Foundation, and other pertinent Federal agencies shall develop a national system of MPAs. They shall coordinate and share information, tools, and strategies, and provide guidance to enable and encourage the use of the following in the exercise of each agency's respective authorities to further enhance and expand protection of existing MPAs and to establish or recommend new MPAs, as appropriate:

(1) science-based identification and prioritization of natural and cultural resources for additional protection;

(2) integrated assessments of ecological linkages among MPAs, including
ecological reserves in which consumptive uses of resources are prohibited, to provide synergistic benefits;

(3) a biological assessment of the minimum area where consumptive uses would be prohibited that is necessary to preserve representative habitats in different geographic areas of the marine environment;

(4) an assessment of threats and gaps in levels of protection currently afforded to natural and cultural resources, as appropriate;

(5) practical, science-based criteria and protocols for monitoring and evaluating the effectiveness of MPAs;

(6) identification of emerging threats and user conflicts affecting MPAs and appropriate, practical, and equitable management solutions, including effective enforcement strategies, to eliminate or reduce such threats and conflicts;

(7) assessment of the economic effects of the preferred management solutions; and

(8) identification of opportunities to improve linkages with, and technical assistance to, international marine protected area programs.

(b) In carrying out the requirements of section 4 of this order, the Department of Commerce and the Department of the Interior shall consult with those States that contain portions of the marine environment, the Common-wealth of Puerto Rico, the Virgin Islands of the United States, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands, tribes, Regional Fishery Management Councils, and other entities, as appropriate, to promote coordination of Federal, State, territorial, and tribal actions to establish and manage MPAs.

(c) In carrying out the requirements of this section, the Department of Commerce and the Department of the Interior shall seek the expert advice and recommendations of non-Federal scientists, resource managers, and other interested persons and organizations through a Marine Protected Area Federal Advisory Committee. The Committee shall be established by the Department of Commerce.

(d) The Secretary of Commerce and the Secretary of the Interior shall establish and jointly manage a website for information on MPAs and Federal agency reports required by this order, They shall also publish and maintain a list of MPAs that meet the definition of MPA for the purposes of this order.

(e) The Department of Commerce's National Oceanic and Atmospheric Administration shall establish a Marine Protected Area Center to carry out, in cooperation with the Department of the Interior, the requirements of subsection 4(a) of this order, coordinate the website established pursuant to subsection 4(d) of this order, and partner with governmental and nongovernmental entities to conduct necessary research, analysis, and exploration, The goal of the MPA Center shall be, in cooperation with the Department of the Interior, to develop a framework for a national system of MPAs, and to provide Federal, State, territorial, tribal, and local governments with the information, technologies, and strategies to support the system.

This national system framework and the work of the MPA Center is intended to support, not interfere with, agencies' independent exercise of their own existing authorities.

(f) To better protect beaches, coasts, and the marine environment from pollution, the Environmental Protection Agency (EPA), relying upon existing Clean Water Act authorities, shall expeditiously propose new science-based regulations, as necessary, to ensure appropriate levels of protection for the marine environment. Such regulations may include the identification of areas that warrant additional pollution protections and the enhancement of marine water quality standards. The EPA shall consult with the Federal agencies identified in subsection 4(a) of this order, States, territories, tribes, and the public in the development of such new regulations.

Sec. 5. *Agency Responsibilities.* Each Federal agency whose actions affect the natural or cultural resources that are protected by an MPA shall identify such actions. To the extent permitted by law and to the maximum extent practicable, each Federal agency, in taking such actions, shall avoid harm to the natural and cultural resources that are protected by an MPA. In implementing this section, each Federal agency shall refer to the MPAs identified under subsection 4(d) of this order.

Sec. 6. *Accountability.* Each Federal agency that is required to take actions under this order shall prepare and make public annually a concise description of actions taken by it in the previous year to implement the order, including a description of written comments by any person or organization stating that the agency has not complied with this order and a response to such comments by the agency.

Sec. 7. *International Law.* Federal agencies taking actions pursuant to this Executive Order must act in accordance with international law and with Presidential Proclamation 5928 of December 27, 1988, on the Territorial Sea of the United States of America, Presidential Proclamation 5030 of March 10, 1983, on the Exclusive Economic Zone of the United States of America, and Presidential Proclamation 7219 of September 2, 1999, on the Contiguous Zone of the United States.

Sec. 8. *General.* (a) Nothing in this order shall be construed as altering existing authorities regarding the establishment of Federal MPAs in areas of the marine environment subject to the jurisdiction and control of States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands of the United States, American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, and Indian tribes.

(b) This order does not diminish, affect, or abrogate Indian treaty rights or United States trust responsibilities to Indian tribes.

(c) This order does not create any right or benefit, substantive or procedural, enforceable in law or equity by a party against the United States, its agencies, its officers, or any person.

THE WHITE HOUSE,

May 26, 2000.

Appendix C

Informed Consent Form

Marine Protected Areas Evaluation Study
Dissertation research conducted by Rosemarie Bradley
James Jordan, Ph.D. Dissertation Committee Chair
Doctoral Program, Environmental Studies
Antioch New England Graduate School

Purpose of the study:
As part of my dissertation research I am conducting a study of U.S. federal marine protected areas programs to determine evaluation practices currently in use at both the site-level and program level. I will use the results of the interviews to help inform an evaluation framework for U.S. marine protected areas.

Participation
Your participation in this study is strictly voluntary. You may withdraw from this study at any time.

Interview
I anticipate this interview will last no longer than one hour. The interview will be taped and transcriptions will be made from the tapes.

Use of your material
You have four options for my use of this interview material:
1. ____ I can use it as long as you are kept anonymous
2. ____ I can use it citing you as a source
3. ____ I can use it citing you as the source as long as you review your material before releasing the paper
4. ____ I can use without any conditions

Contact Information
If you would like more information about this research or if you have questions about this interview, please contact:
Rosemarie Bradley
118 Old Bolton Road
Stow, MA 01775
Tel: (978) 897-2085
Email: rosemarie_bradley@antiochne.edu

_____ _____

Respondent **Date** **Researcher** **Date**

Appendix D

Interview Guide for Semi-Structured Open-Ended Interview

I'm interested in learning more about how federal MPA programs are organized, function at the program level, and if and how they conduct site and program evaluations.

Program Characterization
Could you tell me about the overall structure of your agency?
How did your agency respond to Executive Order 13158?
How are your MPA program offices structured?

Extent of Evaluation
Do you evaluate your programs?
If yes-
Are there any documents that guide you?
Could you tell me about your program's experience with federal reporting requirements?
Could you tell me about your performance measures?
If no -
Why not?
What does your agency do instead?
Is your agency making steps toward doing it?

Evaluation Training
What evaluation training have you received?
What MPA evaluation workshops have you attended?

Inter-agency Coordination
Have you met with other federal program members? (if so, when and how often)
Have you met with other MPA program personnel (if so, when and how often)

Level of Interest/Concern
What is your opinion of program evaluation?
Have you participated in any MPA evaluation discussions or initiatives?
Would a MPA program evaluation system be a positive or negative for your program? Why?
What is your opinion of a national-scale evaluation system?
Is there anything else you would like to tell me concerning evaluation of federal MPA programs or your program specifically?

Interview Chain
Are there any other people you think I should speak with?
Are there any other programs you think I should contact?

Thank you for your time. Would it be okay if I call you again if I have additional questions?

Appendix E
National Wildlife Refuges with Marine Component (as of 9/2007)

Region 1
Hawaiian Islands, HI
Huleia, HI
Kakahaia, HI
Kilauea Point, HI
Pearl Harbor, HI
Bandon Marsh, OR
Cape Meares, OR
Julia Butler Hansen, OR & WA
Lewis & Clark, OR
Nestucca Bay, OR
Oregon Islands, OR
Siletz Bay, OR
Three Arch Rocks, OR
Copalis, WA
Dungeness, WA
Flattery Rocks, WA
Grays Harbor, WA
Nisqually, WA
Protection Island, WA
Quillayute Needles, WA
San Juan Islands, WA
Willapa, WA
Rose Atoll, American Samoa
Guam, Guam
Baker Island, Pacific Islands
Howland Island, Pacific Islands
Jarvis Island, Pacific Islands
Johnston Island, Pacific Islands
Kingman Reef, Pacific Islands
Midway Atoll, Pacific Islands
Palmyra Atoll, Pacific Islands
TOTAL: 31

CNO
Castle Rock, CA
Don Edwards San Francisco Bay, CA
Farallon, CA
Guadalope-Nipomo Dunes, CA
Humboldt Bay, CA
Marin Islands, CA
Salinas River, CA
San Diego Bay, CA
San Pablo Bay, CA
Seal Beach, CA
Tijuana Slough, CA
TOTAL: 11

Region 2
Anahuac, TX
Aransas, TX
Big Boggy, TX
Brazoria, TX
Laguna Atascosa, TX
Lower Rio Grande Valley, TX
McFaddin, TX
Moody, TX
San Bernard, TX
Texas Point, TX
TOTAL: 10

Region 3
Detroit River Internt'l, MI
Harbor Island, MI
Huron, MI
Michigan Islands, MI
Cedar Point, OH
Ottawa, OH
West Sister Island, OH
Gravel Island, WI
Green Bay, WI
Whittlesey Creek, WI
TOTAL: 10

Region 4
Bon Secour, AL
Archie Carr, FL
Caloosahatchee, FL
Cedar Keys, FL
Chassahowitzka, FL
Crocodile Lake, FL
Crystal River, FL
Egmont Key, FL
Great White Heron, FL
Hobe Sound, FL
Island Bay, FL
J.N. "Ding" Darling, FL
Key West, FL
Lower Suwannee, FL
Metlacha Pass, FL
Merritt Island, FL
National Key Deer, FL
Passage Key, FL
Pelican Island, FL
Pine Island, FL
Pinellas, FL
St. Marks, FL
St. Vincent, FL
Ten Thousand Islands, FL
Blackbeard Island, GA
Harris Neck, GA
Savannah, GA
Wassaw, GA
Wolf Island, GA
Bayou Sauvage, LA
Big Branch Marsh, LA
Breton, LA
Cameron Prairie, LA
Delta, LA
Sabine, LA
Shell Keys, LA
Grand Bay, MS
Mississippi Sandhill Crane, MS
Alligator River, NC
Cedar Island, NC
Currituck, NC
Mackay Island, NC
Pea Island, NC
Swanquarter, NC
ACE Basin, SC
Cape Romain, SC
Pinckney Island, SC
Tybee. SC
Waccamaw, SC
Cabo Rojo, PR
Culebra, PR
Desecheo, PR
Vieques, PR
Buck Island, VI
Green Cay, VI
Sandy Point, VI
Navassa Island, Caribbean
TOTAL: 56

Region 5

Stewart B. McKinney, CT
Bombay Hook, DE
Prime Hook, DE
Cross Island, ME
Franklin Island, ME
Moosehorn, ME
Petit Manan, ME
Pond Island, ME
Rachel Carson, ME
Seal Island, ME
Blackwater, MD
Eastern Neck, MD
Martin, MD
Susquehanna, MD
Mashpee, MA
Monomoy, MA
Nantucket, MA
Nomans Land Island, MA
Parker River, MA
Thacher Island, MA
Great Bay, NH
Cape May, NJ
Edwin B. Forsythe, NJ
Supawna Meadows, NJ
Amagansett, NY
Conscience Point, NY
Elizabeth A. Morton, NY
Oyster Bay, NY
Seatuck, NY
Target Rock, NY
Wertheim, NY
Block Island, RI
John. H. Chafee, RI
Ninigret, RI
Sachuest Point, RI
Trustom Pond, RI
Back Bay, VA
Chincoteague, VA
Eastern Shore of Virginia, VA
Featherstone, VA
Fisherman Island, VA
Mason Neck, VA
Nansemond, VA
Occoquan Bay, VA
Plum Tree Island, VA
Presquile, VA
Rappahannock River Valley, VA
Wallops Island, VA
TOTAL: 48
Grand Total 177

Region 7

Alaska Maritime, AK
Alaska Peninsula, AK
Arctic, AK
Becharof, AK
Izembek, AK
Kenai, AK
Kodiak, AK
Selawik, AK
Togiak, AK
Yukon Delta, AK
TOTAL: 10

***Note*. (reprinted with permission from Andrew Gude, NWRS Marine Program)**

Appendix F
List of National Marine Fisheries Service (NMFS) Sites

Name	State	Date Established	Size/Area Protected (square miles)
Alabama Special Management Zone # (Defacto)	Ni	Ni	Ni
Cape Cod Bay Restricted Area	MA	1997	632.856
Cape Cod South Closure Area	RI	1998	Ni
Carl N. Shuster, Jr. Horseshoe Crab Reserve	MD	2001	1,570.218
Cashes Ledge Closure Area	ME	1999	541.643
Charleston Bump Closed Area	NC	2000	Ni
Closed Area I	MA	Ni	1,497.366
Closed Area II	MA	Ni	2,617.846
Closure of the Madison and Swanson Sites	FL	2000	150.504
Columbia River Salmon Conservation Zone	WA	1992	18.042
Desoto Canyon Closed Area	LA	2000	33,285.97
East Florida Coast Closed Area	GA	2000	39,395.902
Florida Middle Grounds Habitat Area of Particular Concern	FL	1984	444.553
Flynet Closure	NC	1997	5,956.816
Great South Channel Restricted Gillnet Area	MA	1997	2,850.829
Great South Channel Restricted Lobster Area	MA	1997	3,175.315
Great South Channel Sliver Restricted Area	MA	1997	40.164
Hancock Seamount	HI	1986	23,362.999
Hind Bank Marine Conservation District	VI	1999	21.078
Hudson Canyon Sea Scallop Access Area (Defacto)	Ni	Ni	Ni
Klamath River Salmon Conservation Zone	CA	1992	149.729
Kodiak Island, Trawls Other Than Pelagic Trawls - Type I Closures	AK	1987	2,647.525
Kodiak Island, Trawls Other Than Pelagic Trawls - Type II Closures	AK	1987	Ni
Lobster Closed Areas	HI	1983	133,578.814
Lobster Closed Season - Permit Area 1	HI	1992	Ni
Lobster Closed Season - Permit Area 2	HI	1983	Ni
Longline American Samoa # (Defacto)	Ni	Ni	Ni
Longline Guam # (Defacto)	Ni	Ni	Ni
Longline main HI 1 # (Defacto)	Ni	Ni	Ni
Longline main HI 2 (Defacto)	Ni	Ni	Ni
Longline Protected Species Zone	HI	1990	133,578.814
Massachusetts Bay Closure Area	MA	1998	Ni

Mid-Atlantic Coastal Waters Area	NC	1997	Ni
Mid-Coast Closure Area	MA	1998	Ni
Mudhole Closure	NY	1998	Ni
Mutton Snapper Spawning Aggregation Area	VI	1993	Ni
Nantucket Lightship Closed Area	MA	1994	2,381.003
Nearshore Bristol Bay Trawl Closure	AK	1997	24,780.5
Northeast Closure Area	ME	1999	Ni
Northeast Distant Closed Area (Defacto)	Ni	Ni	Ni
Northern Inshore State Lobster Waters Area	ME	1997	Ni
Northern Nearshore Lobster Waters Area	ME	1997	Ni
Oculina Bank Habitat Area of Particular Concern	FL	1984	Ni
Offshore Closure Area	MA	1998	Ni
Offshore Lobster Waters	NC	1997	Ni
Pribilof Island Area Habitat Conservation Zone	AK	1995	7,399.006
Red Hind Spawning Aggregation Area East of St. Croix	VI	1993	Ni
Red Hind Spawning Aggregation Areas West of Puerto Rico - Abrir La Sierra Bank	PR	1996	Ni
Red Hind Spawning Aggregation Areas West of Puerto Rico - Bajo de Cico	PR	1996	Ni
Red Hind Spawning Aggregation Areas West of Puerto Rico - Tourmaline Bank	PR	1993	Ni
Red King Crab Savings Area	AK	1995	5,198.275
Reef Fish Longline and Buoy Gear Restricted Area	MS	1990	172,300.745
Reef Fish Stressed Area	MS	1990	37,801.751
Rockfish Conservation Areas (Defacto)	Ni	Ni	Ni
SAM East	MA	2002	Ni
SAM West	MA	2002	Ni
Sitka Pinnacles Marine Reserve	AK	2000	3.211
Southeast Alaska Outside District Closed Area (Defacto)	Ni	Ni	Ni
Southeastern Right Whale Critical Habitat (delete/defacto?) [*sic*]	Ni	Ni	Ni
Southern Mid-Atlantic Waters Closure Area	MD	1999	Ni
Southern Nearshore Lobster Waters	NC	1997	Ni
Southwest Florida Seasonal Trawl Closure (Defacto)	Ni	Ni	Ni
Steamboat Lumps	FL	2000	141.637
Steller Sea Lion Critical Habitat (in review) (Defacto)	Ni	Ni	Ni

Steller Sea Lion Protection Areas, Gulf of Alaska - Groundfish, Pollock, and Pacific Cod Closures	AK	1990	Ni
Stellwagen Bank/Jeffreys Ledge Restricted Area	ME	1997	Ni
Texas closure (Defacto)			Ni
Tortugas Marine Reserves	FL	2002	132.567
Tortugas Shrimp Sanctuary (Defacto)			Ni
Walrus Protection Areas	AK	1990	Ni
Waters off New Jersey Closure	DE	1999	Ni
West and East Flower Garden Banks Habitat Area of Particular Concern	TX	1984	28.637
Western and Eastern Cowcod Conservation Areas	CA	2001	Ni
Western Gulf of Maine Closure Area	MA	1998	1,143.998
WestPac Bed	HI	1983	15
Yelloweye Rockfish Conservation Area	WA	2003	Ni
Zone 1 (512) Closure to Trawl Gear	AK	1986	10,304.002
Zone 1 (516) Closure to Trawl Gear	AK	1989	Ni

Note. "Ni" – information not indicated. Data obtained from (National MMA Inventory, 2006).

Appendix G
Seamless Network Agreement

NOS Agreement Code: MOA-2006-036/7196

GENERAL AGREEMENT

Among the

National Marine Sanctuary Program
and the
Estuarine Reserves Division
National Oceanic and Atmospheric Administration
U.S. Department of Commerce
and the
U. S. Fish and Wildlife Service
and the
National Park Service
U.S. Department of the Interior

I. PARTIES AND PURPOSE

A. The U.S. Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), through the National Marine Sanctuary Program (NMSP); the DOC, NOAA, NOS, through the National Estuarine Research Reserve System (NERRS), administered, in partnership with coastal states, through the Estuarine Reserves Division (ERD) of the Office of Ocean and Coastal Resource Management (OCRM); the Department of the Interior (DOI) through the National Park Service (NPS); and the DOI, through the U.S. Fish and Wildlife Service, National Wildlife Refuge System (NWRS) share a common goal of conserving sensitive coastal and marine resources and ecosystems through the management of national marine sanctuaries, national parks and seashores, estuarine research reserves, and national wildlife refuges. In some cases, the NMSP, NPS, NERRS, NWRS (Agencies) respective jurisdictions and responsibilities either overlap or are adjacent, such as where a national marine sanctuary is near, adjacent to, or overlays a national park, wildlife refuge, or estuarine research reserve. The agencies could benefit from additional sharing of resources and expertise in carrying out their management responsibilities. These agencies are all operating with increasing responsibilities with limited funding and staffing resources.

B. The Agencies recognize that cooperative conservation efforts will enhance their abilities to protect and conserve the marine resources subject to their jurisdictions. This General Agreement (Agreement) is intended to:

1. Articulate and establish a formal working relationship to provide the

means for cooperation that can be carried out at national, regional, and local levels;

2. Facilitate inter-agency communication and coordination of programs; and

3. Provide a means to share knowledge, resources, and staff, consistent with the authorities and missions of the Agencies.

C. Collaborations established and enhanced under this Agreement are consistent with Executive Order 13158 regarding Marine Protected Areas and Executive Order 13352 regarding Facilitation of Cooperative Conservation.

II. LEGISLATIVE AUTHORITY

This Agreement is entered into under the authorities of the National Park Service Organic Act (16 U.S.C. 1, *et seq.,* as amended and supplemented); the National Marine Sanctuaries Act (NMSA; 16 U.S.C. 1431 *et seq.*); the Coastal Zone Management Act (CZMA; 16 U.S.C. 1456c), and the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (16 U.S.C. 668dd-668ee). Cooperative management efforts are authorized under the authority of the Fish and Wildlife Coordination Act (72 Stat. 563; 16 U.S.C. 661) and Section 311(e) of the NMSA, 16 U.S.C. § 1442(e), which allows the Secretary of Commerce to, whenever appropriate, enter into an agreement with a State or other Federal agency to use the personnel, services, or facilities of such agency on a reimbursable or non-reimbursable basis, to assist in carrying out the purposes and policies of the NMSA.

III. STATEMENT OF WORK

A. Outcomes and Strategies

1. The Agencies, while recognizing individual agency mandates, will form a working partnership to achieve a higher level of coastal and marine resource protection and conservation through effective interagency coordination. To this end, in areas where the Agencies' protected areas lie near, adjacent to, or overlap each other; where areas managed by the Agencies share a particular management focus irrespective of geographical proximity; and/or whenever feasible and within the budgetary constraints of each agency, the following outcomes will be sought:

a. *Improved management and operational efficiencies:* The Agencies will strive to reduce management costs and improve operational

efficiencies.

b. *Increased understanding of important natural and cultural resources within the areas managed*: The Agencies will share technical expertise and resource knowledge to improve the agencies' understanding of the extent and condition of the natural and cultural resources to be protected and conserved.

c. *Increased effectiveness of joint planning efforts:* The Agencies will coordinate and cooperate in planning resource management actions in order to reduce duplication of effort, increase efficiency, conserve fiscal and personnel resources, and enhance conservation of coastal and marine resources.

d. *Enhanced public awareness and education:* In order to strengthen coordination of outreach and education programs, the Agencies will work together to inform and educate visitors, interested parties, constituents, media, and the general public concerning their shared ocean and coastal stewardship responsibilities.

e. *Improve Law Enforcement and Rescue Capabilities*: In August 2005, the NOAA's National Ocean Service and National Marine Fisheries Service and the Department of the Interior's National Park Service and Fish and Wildlife Service entered into an agreement titled "Memorandum of Agreement for General Enforcement" (NOS Agreement Code MOA-2005-021/6876). The Agencies will support the coordination of law enforcement pursuant to that agreement. In addition, the Agencies will work together to coordinate search and rescue activities where managed areas lie near, adjacent to, or overlap each other.

B. Implementation

1. The Agencies will, within sixty days of date of signature of this Agreement, each identify a point of contact (POC) at the national level for inter-agency coordination in the dissemination and implementation of this Agreement. Implementation will, at a minimum, include:

a. Working with the points of contact of the other Agencies to facilitate interagency cooperation and identify national, regional, and site level personnel and mechanisms to achieve the outcomes, strategies and priorities identified in this Agreement. Initial

priorities could include one or more of the following as agreed to by the Agencies:

i. Joint review of financial and administrative processes, to facilitate the exchange of funds between the Agencies or sharing use of personnel, equipment and facilities as needed

ii. Joint emergency response to groundings, oil spills, disasters

iii. Marine mammals stranding response, research, and monitoring

iv. Law enforcement

v. Coordinated management plan review, where partner sites are undergoing management plan reviews, to the extent that there is simultaneous, parallel, or complementary added value

vi. Boundary mapping, marine habitat mapping, and resource characterization

vii. Monitoring, observation, research

viii. Marine and coastal habitat restoration

ix. Marine invasive species monitoring and control

x. Education, agency "in-reach," outreach, ocean literacy, particularly focused on identifying and articulating consistent messages related to the Agencies' ocean and coastal stewardship responsibilities

xi. Coordinated land acquisition, as appropriate.

2. Interagency working groups, as appropriate, should be formed based on these priorities in the first year of implementation. Their recommendations should be included in the first year evaluation as required in Sec. III.C.

3. The POCs should, in the first year of implementing this Agreement, evaluate the need for, or potential benefits of, including additional partners into this collaboration. If appropriate, this analysis may include

recommendations for a process or additional mechanisms by which such additional partners might be incorporated. The findings of this analysis should be included in the first year evaluation as required in Sec. III.C.

4. The POCs should, as part of implementing this Agreement, undertake the following:

   a. Work with the points of contact of the other Agencies to identify potential workshops, conferences, and other opportunities for the sharing of each Agency's methods, knowledge, and experience;

   b. Identify, pursuant to Executive Order 13352 on Cooperative Conservation, appropriate States, territories, academic institutions, non-governmental organizations, interested parties, and local community groups to participate in cooperative conservation efforts;

   c. Disseminate this Agreement, and associated agency guidance, to all operational offices and protected areas that are potentially affected by the activities outlined by the Agreement; and

   d. Assist, as necessary and appropriate, the field unit level with the implementation of the Agreement.

C. Evaluation

1. The Agencies' POCs will meet annually to evaluate the progress of the implementation of this Agreement. Factors to be considered for measuring the effectiveness of this Agreement will include:

   a. Results and outcomes of cooperative efforts to share resources and expertise among the Agencies (e.g., mechanisms identified and implemented to streamline financial and administrative collaboration, joint sessions at workshops and conferences, details of personnel, and cross-agency training);

   b. Products or outcomes from joint projects and agreements on a site level in areas where the Agencies' protected areas lie near, adjacent to, or overlap each other; and

   c. Progress toward mutually agreed upon national, regional, and site level priorities and projects as identified the prior year.

2. The annual evaluation meeting will result in a brief written report that: (1) summarizes the conclusions of the discussion; (2) makes recommendations for improving implementation of the Agreement as may be identified; and (3) identifies the next year's priorities for cooperation and coordination. This report will be provided to the POCs for further processing by the Departments of the Interior and Commerce, as appropriate.

IV. FINANCIAL ADMINISTRATION

1. Performance of the activities outlined in this Agreement is subject to the availability of appropriated funds.

2. This Agreement does not authorize the transfer of funds. If future activities require the transfer of funds, a Support Agreement to this Agreement will be entered into by the Agencies involved in the transfer of funds. Courtesy copies of the executed Support Agreement will be provided to the Agencies not involved in the transfer of funds. The Support Agreement must include a detailed statement of work, estimated budget, legal authorities, and all required OMB fiscal data and be executed only by the Agencies involved in the transfer of funds.

V. DURATION, MODIFICATION, AND TERMINATION

1. This Agreement will become effective upon the completion of signatures of the agency approving officials and will remain in effect for five years from the date of the last signature, unless terminated pursuant to Subsection 3 of this section.

2. This Agreement may be amended at any time within the scope of the Agreement, or extended at any time through written approval of each Party.

3. Any Agency may terminate its participation in this Agreement with 90 days written notice to the other Agencies.

VI. OTHER PROVISIONS

1. Nothing herein is intended to conflict with current NWRS, NERRS, NMSP, NPS, DOC, or DOI regulations, directives, or policies. If the terms of this Agreement are inconsistent with existing regulations, directives, or policies of any of the Agencies, those portions of this Agreement that are determined to be inconsistent

shall be invalid but the remaining terms and conditions not affected by the inconsistency shall remain in full force and effect. All necessary changes will be accomplished by either a modification to this Agreement or by execution of a new agreement.

2. Should disagreement arise as to the interpretation of the provisions of this Agreement, or modifications thereto, that cannot be resolved at the operating level, the area(s) of disagreement shall be stated in writing by each Agency and presented to the other Agencies for consideration. If agreement on interpretation is not reached within thirty days, the Agencies shall refer the matter to respective higher officials for appropriate resolution.

NOS Agreement Code: MOA-2006-036/7196

ACCEPTED AND APPROVED FOR THE
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

BY: _____ DATE: 8/21/06
Timothy R.E. Keeney, Deputy Assistant Secretary
for Oceans and Atmosphere

BY: _____ DATE: 8/21/06
John H. Dunnigan, Assistant Administrator
for Oceans and Coasts

BY: _____ DATE: 8/21/06
Daniel J. Basta, Director
National Marine Sanctuary Program

BY: _____ DATE: 8/21/06
David M. Kennedy, Director
Office of Ocean and Coastal Resource Management

ACCEPTED AND APPROVED FOR THE
U.S. DEPARTMENT OF THE INTERIOR

BY: _____ DATE: 8/21/06
Kameran Onley, Assistant Deputy Secretary
Department of the Interior

BY: _____ DATE: 8/21/06
Fran P. Mainella, Director
National Park Service

BY: _____ DATE: 8/21/06
Dale Hall, Director
U.S. Fish and Wildlife Service