

Monitor National Marine Sanctuary

Draft Revised Management Plan
April 2012

2012 Draft Management Plan

Monitor National Marine Sanctuary



United States Department of Commerce
National Oceanic and Atmospheric Administration
Office of National Marine Sanctuaries

DRAFT REVISED MANAGEMENT PLAN

Monitor National Marine Sanctuary

April 2012





Front Cover: NOAA archaeologist surveys *Monitor* wreck site, summer 2011 (NOAA).

Back Cover: Portion of *Monitor* drawing published in 1862 (The Mariners' Museum).

Monitor National Marine Sanctuary
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ABOVE: *Monitor* officers on deck. Photo taken on July 9, 1862, by James Gibson (Library of Congress).

About This Document

This document is a result of the Office of National Marine Sanctuaries' (ONMS) periodic review of the strategies and activities detailed in the 1992 Final Management Plan and the emerging resource protection issues for Monitor National Marine Sanctuary (MNMS or sanctuary).

Between 1998 and 2002, NOAA and the United States Navy conducted a major archaeological recovery effort which resulted in over 2,000 artifacts being excavated, conserved and curated from the shipwreck of the USS *Monitor*. Most notably, this project resulted in the recovery of the Civil War ironclad's revolving gun turret and engine. During this recovery period, the sanctuary was guided by an alternate management plan, which dealt specifically with the archaeological recovery titled *Charting a New Course for the Monitor*, which was released in 1997. Typically a management plan review is conducted at a sanctuary every five years.

A sanctuary management plan is a site-specific planning and management document that describes the goals, objectives, policies, management strategies, and activities for a sanctuary. This document is the result of numerous public hearings, many years of effort by the sanctuary advisory council and sanctuary staff.

This document is the revised Draft Management Plan (DMP) for Monitor National Marine Sanctuary. When approved, the Final Management Plan will outline the program activities for MNMS over the next five years and beyond, along with staffing and budget needs, and performance measures.

Comments or questions on this Draft Management Plan should be directed to:

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NATIONAL MARINE SANCTUARY SYSTEM



Scale varies in this perspective. Adapted from National Geographic Maps.

Figure 1: National Marine Sanctuary System



ABOVE: The first encounter of Iron-Clads. *Terrific engagement between the "Monitor" and "Merrimac."* Published-Chicago : The McCormick Harvesting Machine Co., c1891 Mar. 2 (Library of Congress).

OPPOSITE PAGE: Map depicting location of the Monitor National Marine Sanctuary (NOAA).

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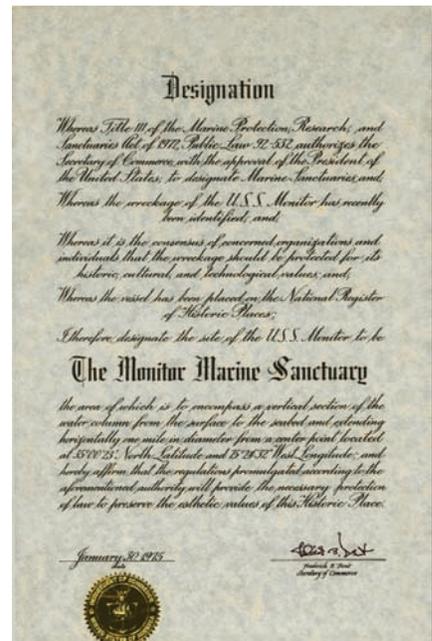
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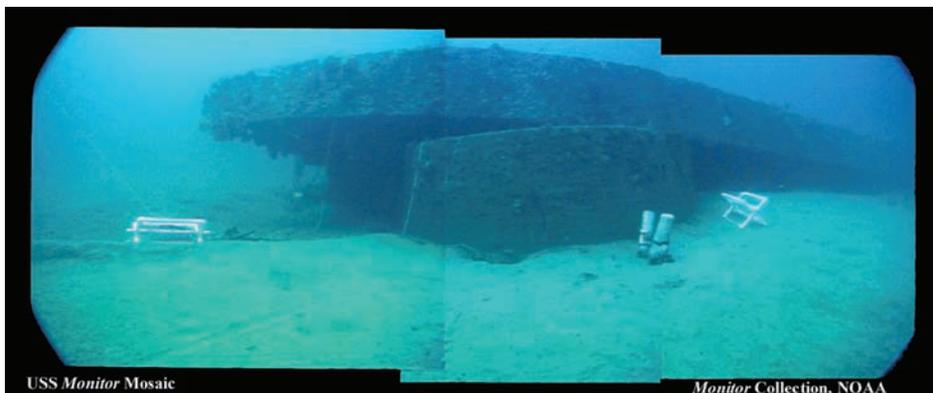
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Abbreviations

ARCH	Maritime Archaeological Resources
ARPA	Archaeological Resources Protection Act of 1979
AUV	Autonomous Underwater Vehicle
CFR	Code of Federal Regulations
FAP	Federal Archaeological Program
GIS	Geographic Information System
JPAC	Joint POW/MIA Accounting Command
MHP	Maritime Heritage Program
MNMS	Monitor National Marine Sanctuary
MOA	Memorandum of Agreement
MPRSA	Marine Protection, Research, and Sanctuaries Act of 1972
NARA	National Archives and Records Administration
NDBC	NOAA National Data Buoy Center
NHPA	National Historic Preservation Act
NMSA	National Marine Sanctuary Act
NMSP	National Marine Sanctuary Program
NMSS	National Marine Sanctuary System
NOAA	National Oceanic and Atmospheric Administration
NOS	National Ocean Service
NPS	National Park Service
NRHP	National Register of Historic Places
OLE	Office of Law Enforcement
ONMS	Office of National Marine Sanctuaries
ROV	Remotely Operated Vehicle
SAC	Sanctuary Advisory Council
SWiM	System-Wide Monitoring
TMM	The Mariners' Museum
USCG	U.S. Coast Guard
UNESCO	United Nations Educational, Scientific and Cultural Organization
USN	United States Navy



LEFT TO RIGHT: John Ericsson (TMM), Battle of Hampton Roads (J. O. Davidson, TMM), Loss of the Monitor (Hapers Weekly, Jan. 1863), Designation Document (NOAA), USS Monitor, ca. 1987 (NOAA)



USS Monitor Mosaic

Monitor Collection, NOAA

“The rights of posterity take precedence over the desires of the present.”

FREDERICK LAW OLMSTEAD, PUBLIC PARK DESIGNER

Executive Summary

The Sanctuary

On January 30, 1975, the National Oceanic and Atmospheric Administration (NOAA) designated the wreck of the USS *Monitor*, lying off the coast of Cape Hatteras, N.C., as the Nation’s first national marine sanctuary. The *Monitor* was the prototype for a class of U.S. Civil War ironclad, turreted warships that significantly altered both naval technology and marine architecture in the nineteenth century. Designed by the Swedish-American engineer John Ericsson, the vessel contained all of the emerging innovations that revolutionized warfare at sea.

The *Monitor*’s career as a warship was significant, though short-lived. On March 9, 1862, she battled the CSS *Virginia* (former USS *Merrimack*) in one of the most celebrated naval battles in history. On December 25, 1862, the ironclad received orders to proceed, under tow, to Beaufort, N.C. En route, the *Monitor* encountered a severe gale and began to take on water. On December 31, 1862, less than a year after her commissioning, the *Monitor* sank with a loss of sixteen men.

For over a century the *Monitor* lay undiscovered. In August, 1973, scientists aboard Duke University’s research vessel *Eastward* located the *Monitor* in 230 feet of water, 16 miles off Cape Hatteras, N.C. The wreck was in generally good condition, although some structural damage and deterioration was apparent.

Over the years, numerous research expeditions have visited the sanctuary. Between the years of 1998-2002, NOAA and the United States Navy mounted



LEFT: A US Navy diver works to secure the spider to the *Monitor's* turret in preparation for lift (NOAA).

several major archaeological expeditions to the wreck site recovering the ship's propeller, revolving gun turret, cannons, engine and over 1,500 other artifacts. Many of these artifacts are on display at The Mariners' Museum in Newport News, Va., the principal repository for the conservation, storage and exhibition of *Monitor* artifacts and at the Graveyard of the Atlantic Museum in Hatteras, N.C. Other traveling and temporary exhibits have also been displayed at various museums, conferences and special events across the country.

Today the *Monitor* represents a unique legacy from our nation's past. The shipwreck and its contents comprise an irreplaceable historical record and represent a monument to the American naval tradition that the vessel itself helped to create. Archaeological investigations of the *Monitor* have provided an opportunity to examine aspects of our past that are not recorded in surviving manuscript sources. Artifacts from the ship's stores and personal property of the crew have greatly enhanced our understanding of life aboard the United States Navy's first prototype ironclad warship. The shipwreck also serves as an important bridge to the future. As we face challenges from a changing world impacted by climate change, ocean acidification and a host of other environmental problems, the *Monitor* and the National Marine Sanctuary System can help the American public better understand these changes through science, monitoring, education and outreach.

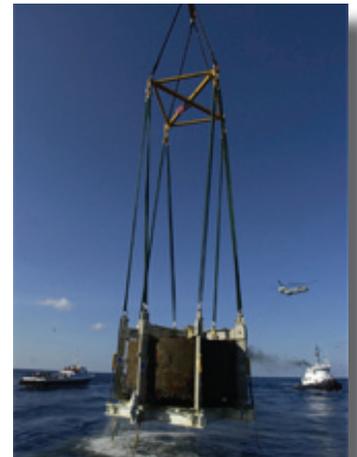
The National Marine Sanctuary Act (NMSA) requires NOAA to periodically review the management plan for each of the 14 National Marine Sanctuaries

(www.sanctuaries.noaa.gov/about/legislation/) to reevaluate site-specific goals and objectives and to develop management strategies and activities to ensure the sanctuaries continue to best protect their resources. Scoping comments were received for this review between December 2008 and February 2009. This revised management plan would provide an integrated program of resource protection, research, education and interpretation. The plan outlines comprehensive management objectives that have been revised and expanded, based upon new knowledge of the site and upon new opportunities for research and education. This plan defines a framework for continued resource protection and preservation, as well as for an expanded program of on-site research that will contribute to the basic store of knowledge regarding this unique resource and its surrounding environment.

This management plan also provides for an expanded education program for the sanctuary. Because it is difficult for most people to visit the site, other than SCUBA divers, an effective, innovative education program offers an opportunity to “bring the *Monitor* to the public” through such means as lectures, films and exhibits. The education program also addresses the need to inform users (e.g. divers, fisherman, boaters, etc.) of the *Monitor*’s significance in order to limit inadvertent damage to the wreck, while still encouraging those that can to visit the site. To reinforce these educational efforts and to further protect the site, the plan outlines NOAA’s agreement with the U.S. Coast Guard for enforcement of the sanctuary’s regulations. Lastly, this plan outlines options for increasing access to the sanctuary for non-research purposes.

Scope of the Issues

During the initial scoping phase of the draft management plan review, MNMS staff collected and summarized input from the public on potential resource protection and management issues to be addressed in the revised management plan and regulations. Taking into consideration the advice and recommendations from the MNMS Advisory Council, sanctuary staff identified eight priority issues: resource protection; education and outreach; archaeology; resource monitoring and science; identification of human remains recovered from USS *Monitor*; conservation of *Monitor* artifacts, site expansion, and finally, site administration and operations. These issues were further characterized and discussed in working groups, at advisory council meetings, and through public workshops. They have been addressed in the development of the revised management plan and are summarized below.



ABOVE: The turret breaks the surface of the water on Aug. 5, 2002, for the first time in nearly 140 years (NOAA).

Resource Protection

Potential impacts on sanctuary resources from visitation by SCUBA divers are an ongoing concern as the wreck is extremely fragile. Although the removal of artifacts and site alteration by visiting divers is a concern, there is no direct evidence of either activity. Sanctuary staff lack quantitative information on direct and indirect human impacts to sanctuary resources from diving activities, and specifically, on whether there are any differences between impacts from recreational diving activities and scientific diving activities. The collection of information on diving impacts is addressed in the Resource Protection Action Plan, as is the outreach program to better educate divers about sanctuary resources and responsible diving practices. MNMS works closely with local dive operators and charter operators to assure a positive dive experience for visitors to the sanctuary. Diving in the sanctuary is done through a permitting system and MNMS works hard to promote access and minimize the time it takes to obtain a permit.

Enforcement at MNMS is difficult due to the distance of the sanctuary from shore and limited site access. The primary enforcement presence is the U.S. Coast Guard (USCG) Group Hatteras. However, as NOAA is working to increase its presence on the water using the NOAA Small Boat R/V 8501, the sanctuary will provide additional on-water presence and opportunity to augment the USCG and NOAA Office of Law Enforcement (OLE) efforts in the sanctuary.



LEFT: NOAA divers swim over the remains of the Captain's quarters on the *Monitor's* bow (NOAA).

Some fishing activities may negatively affect and threaten the fragile archaeological resources of MNMS, but most pose no threat. The primary concern from fishing activities is the use of bottom gear and anchoring (which is prohibited within the sanctuary) and marine debris in the form of derelict fishing gear becoming entangled on the wreck.

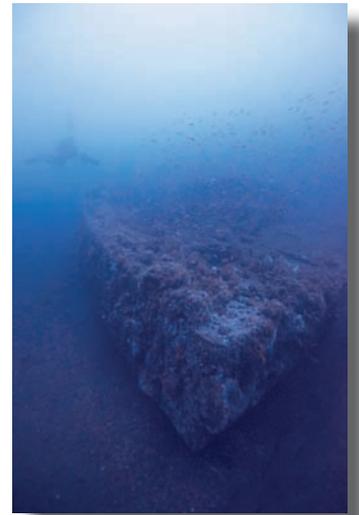
Many vessels enter the sanctuary for diving, fishing and research. Pollution concerns from visiting and transiting vessels include exhaust, oil spills, fuel spills, human waste and bilge discharge from fishing vessels. The discharge of untreated sewage from vessels is not allowed within or into the sanctuary.

The primary visitors to MNMS are recreational SCUBA divers and recreational fisherman. Although the precise status and trends of visitor use in the sanctuary are not known, visitation by SCUBA divers and fisherman is estimated to be relatively low compared to other sanctuaries. This is primarily due to the distance of the site from shore, the depth, as well as possibly a lack of public awareness about the sanctuary. However, observations from sanctuary staff, long-time users of the sanctuary, and others suggest that the level of fishing activity has been increasing in recent years. In addition, NOAA has been working to make the wreck site more accessible to SCUBA divers through greater outreach efforts and by encouraging new permit applications.

As interest in, and use of the sanctuary increases, potential conflicts among users may surface. However, this risk can be reduced through education, good coordination with the USCG during dive operations and adherence to safe diving protocols. Further, increased visitation may also increase demand for mooring buoys. These combined pressures make minimizing user conflict, promoting safe practices and protecting sanctuary resources top management priorities.

Education and Outreach

The *Monitor* played a significant role in Naval and Civil War History, as well as the local histories of New York, Virginia and North Carolina. Sanctuary education and outreach programs are designed to raise public awareness about the sanctuary and its resources, encourage public involvement in resource protection, increase knowledge about maritime history, and expand ocean and climate literacy. Education and outreach at the Monitor National Marine Sanctuary includes both formal and informal programs for sanctuary visitors and constituents, including user groups impacting sanctuary resources. Education and outreach at the sanctuary also includes increasing public awareness of the sanctuary,



ABOVE: Diver on bow of USS *Monitor* during an expedition summer 2011 (NOAA).

The Mariners' Museum, and the Graveyard of the Atlantic Museum. While education and outreach efforts are concentrated in and around Virginia and North Carolina, they extend out to the broader region and nation with initiatives in maritime heritage, archaeology, and ocean and climate literacy.

Archaeology

Although major archaeological recovery work at the MNMS has finished, the current archaeological objective of the sanctuary will be site stabilization, characterization and *in-situ* preservation. However, future recovery of artifacts is not ruled out. NOAA will continue to study and document the on-going condition of the shipwreck and to assure that the many thousands of hours of film and video records, along with tens of thousands of archival records are properly documented and preserved. Any future recovery of artifacts from the site would be considered only after a strong scientific justification or justification based on imminent threat to the resource had been made. Additionally, no recovery shall be made until such time as a detailed archaeological research design is proposed or initiated by NOAA or other research entity. Lastly, NOAA, through the ONMS Maritime Heritage Program, will work to complete the final archaeological report on the *Monitor* recovery work to date.

Research and Monitoring

Science in MNMS plays a vital role in making informed resource management decisions. Scientific understanding of the sanctuary is developed through archaeological assessment, general exploration and habitat characterization, investigations of specific research questions, and routine monitoring of resource health. Information gathered by the sanctuary science team and its partners is essential for expanding upon existing baseline data, comparing the current state with past conditions and targeting the most important management issues.

Continual research and monitoring of the sanctuary's biological and cultural resources, and a greater understanding of the physical and chemical characteristics that define the environment in which these resources are located, are primary goals of Monitor National Marine Sanctuary. Sanctuary staff conducts, supports, promotes and coordinates all research with an aim toward characterization of the unique cultural and natural resources located within and adjacent to the sanctuary. Characterization is the process through which sanctuary resources are inventoried, located, documented, and ultimately analyzed within



ABOVE: Section of the *Monitor's* armor belt covered in marine life (NOAA).

a broader context. Knowledge acquired through research is used to evaluate existing management practices, enhance future management decisions, and educate the public about the importance of the USS *Monitor* and the environment in which she is located.

USS *Monitor* Sailors

In 2002, NOAA and the United States Navy recovered the remains of two US sailors lost on December 31, 1862, the night the *Monitor* sank. NOAA is working closely with the Navy and the Joint POW/MIA Accounting Command (JPAC) to try to identify these two service men. NOAA is leading the effort with genealogical research and facial reconstructions and has named this project *Monitor* Crew Investigations. NOAA and the Navy hope to identify the two individuals, and secure a proper burial at Arlington National Cemetery for these crewmen. This project intends to honor these two men and all who were lost the night the *Monitor* sank. It may also solve an important historical mystery about the identity of these two sailors.

Conservation

Between 1998 and 2002, NOAA and the Navy recovered almost 400 tons of material from the *Monitor* including her revolving gun turret, engine, 11-inch Dahlgren guns and thousands of smaller artifacts. These materials are currently being conserved in the Batten Conservation Laboratory at The Mariners' Museum. It is estimated that the total conservation process to treat all of the artifacts will take up to thirty years and many millions of dollars. Funding for this effort has been a mix of public and private monies.

These artifacts once treated, provide a permanent record of life aboard the iron-clad USS *Monitor* and serve as national treasures. NOAA and The Mariners' Museum will continue to work together to assure these artifacts are properly conserved and archived. Conservation funding will continue to be a challenge, however NOAA is investigating new ways to seek private dollars for conservation.

Sanctuary Expansion

The *Monitor* lies in an area known as the "Graveyard of the Atlantic." This region has claimed thousands of ships over the centuries and is known by mariners the world over as one of the most treacherous bodies of water in the Atlantic Ocean.

BELOW: The Mariners' Museum's Conservator, Dave Krop, inside the turret (NOAA).





LEFT: In 1998, USS *Monitor*'s steam engine was raised from the wreck site (U.S. Navy Photo, *Monitor* Collection, NOAA).

The unique oceanographic and meteorological conditions of the region, numerous historic events and battles at sea and the many ships that have been lost in these waters have all contributed to its reputation. These shipwrecks offer a unique opportunity to study and better understand our maritime history. From pre-colonial shipwrecks to pirate ships, and Civil War ironclads to ships from both World Wars, the waters off North Carolina are literally a museum in the sea. These shipwrecks also serve as a valuable economic resource for local and regional economies and provide opportunities for historians, educators, wreck divers and fisherman.

During the 2008 scoping meetings for the Monitor National Marine Sanctuary management plan, many of the commentors expressed an interest in expanding the sanctuary to include additional shipwrecks off the coast of North Carolina. Many comments from the North Carolina university community also recommended expansion of the Monitor National Marine Sanctuary based on the natural resources and unique features of the waters near Cape Hatteras. Further, the Monitor National Marine Sanctuary Advisory Council has recommended that NOAA start a formal process to consider expansion and develop a cultural resource assessment to identify resources that may warrant greater protection. NOAA will work with local and state officials, the general public, the fishing and dive communities and other stakeholders to study the possibility and implications of an expanded sanctuary.

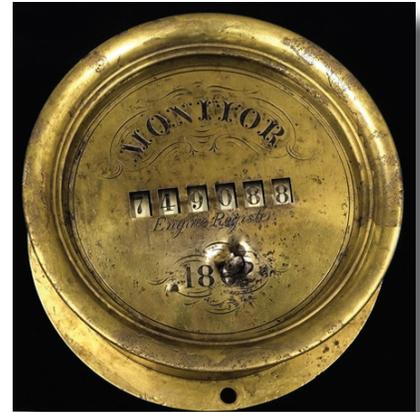
Operations and Administration

In recent years, NOAA has directed additional resources to the State of North Carolina to improve sanctuary education and research efforts along the coast.

NOAA has provided significant financial support to several state museum and underwater archaeology projects including the Graveyard of the Atlantic Museum and Queen Anne's Revenge shipwreck project. In 2010, NOAA moved one MNMS staff person to Manteo, N.C., and is working with several partners to explore permanent office space for additional staff in years to come. Enhanced staffing and infrastructure resources are required to meet the expanded public demands and expectations raised by the management plan review process and to respond to legal mandates and policies. Strengthening the sanctuary's base level staffing, facilities infrastructure and program support to effectively meet the basic needs of sanctuary management is one of the priorities of this management plan.

Organization of this Document

This management plan is organized into four sections. Section 1 provides background information on the National Marine Sanctuary System, MNMS, and the purpose and need for updating the management plan, as well as a description of the condition of the *Monitor* and the environment in which the sanctuary lies. Section 2 is an overview of the institutional setting in which the sanctuary operates. Section 3 contains the action plans, which detail the management strategies and activities to address the priority issues of MNMS and meet the purposes and policies of the National Marine Sanctuaries Act (NMSA) (Appendix I). Section 4 includes the appendices and references cited in this document.



ABOVE: The conserved engine register was removed from the *Monitor* steam engine. It was the first piece of the ship recovered with the vessel's name on it. (TMM).



LEFT: *Monitor*'s bow (*Monitor* Collection, NOAA/ Joe Poe).

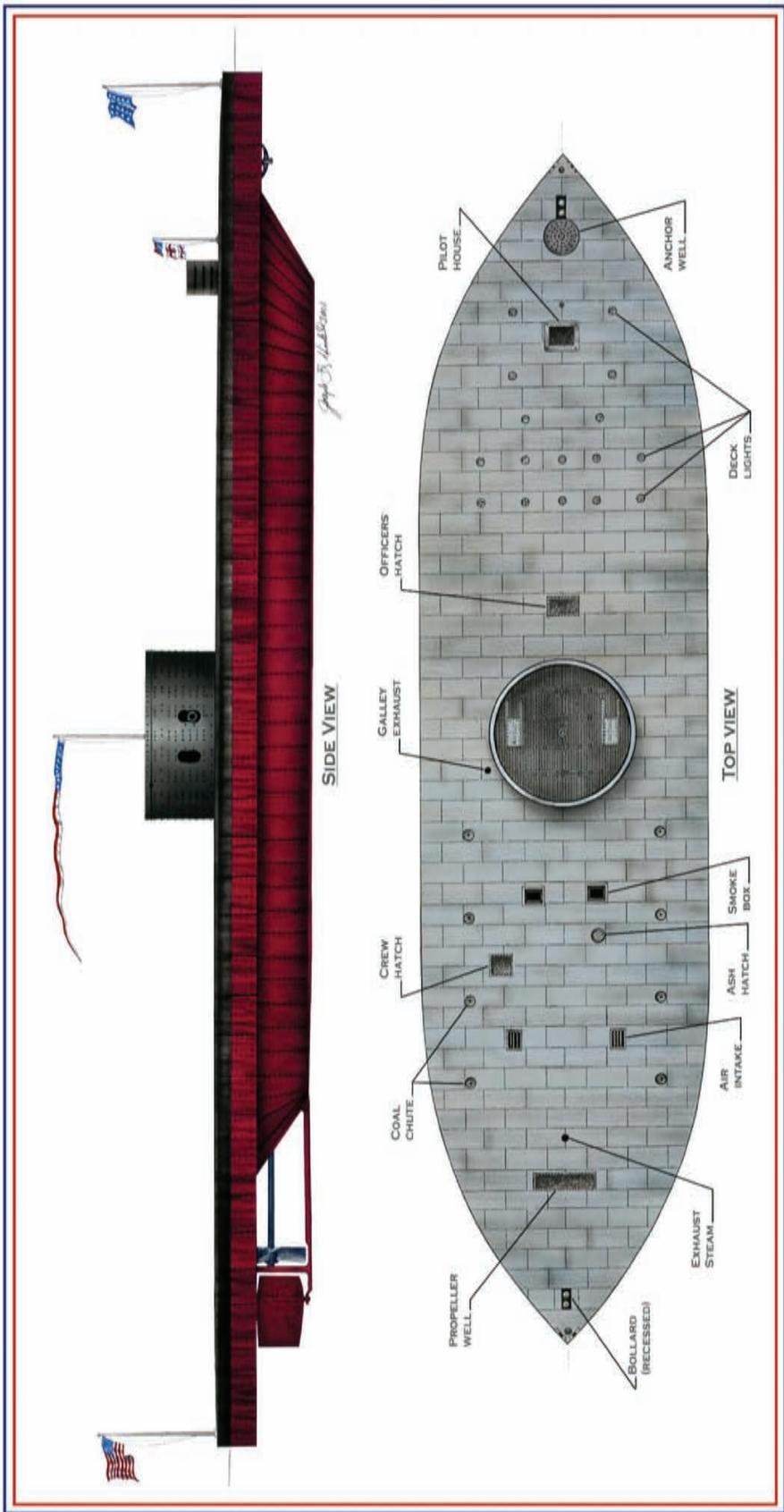
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RIGHT: Photo taken by James Gibson on July 9, 1862, of the USS *Monitor's* crew on deck (Library of Congress).



 **U.S.S. MONITOR** 

THE U.S.S. MONITOR WAS THE PROTOTYPE, TURRETED, ARMORED WARSHIP THAT CHANGED THE COURSE OF NAVAL HISTORY FOREVER. MADE FAMOUS BY ITS DUEL WITH THE CSS VIRGINIA ON MARCH 9, 1862, THIS VALIANT AND INNOVATIVE SHIP MET DISASTER IN A GALE OFF CAPE HATTERAS AND SANK WITH A GREAT LOSS OF LIFE IN LATE 1862.

HULL LENGTH: 172'-0" BEAM: 41'-0" DRAFT: 10'-5" SPEED: 8 KNOTS CREW: 59 ARMOR: 11" TURRET, 5" SIDES, 1" DECK, 9" PILOTHOUSE. ARMAMENT: TWO 11" DAHLGREN SMOOTHBORES



ABOVE: Conservators at The Mariners' Museum work on the *Monitor's* steam engine (TMM).

“It continues to amaze and delight us, that evidence resting on the ocean floor for nearly two centuries, helps reveal our collective history.”

JAMES DELGADO, DIRECTOR, NOAA'S ONMS MARITIME
HERITAGE PROGRAM

Introduction

The Office of National Marine Sanctuaries

The National Marine Sanctuaries Act (formally the Marine Protection, Research, and Sanctuaries Act of 1972 (16 U.S.C. 1431-1435) (MPRSA), authorizes the Secretary of Commerce to designate discrete areas of the marine environment as national marine sanctuaries based on their special conservation, recreational, ecological, historical, scientific, educational, cultural, archaeological and aesthetic qualities, which give them special national, and in some cases, international significance. National marine sanctuaries may be designated in coastal and ocean waters, in submerged lands and in the Great Lakes and their connecting waters. The NMSA is administered by the National Oceanic and Atmospheric Administration (NOAA) through the Office of National Marine Sanctuaries (ONMS).

The ONMS serves as the trustee for a system of 14 marine protected areas, encompassing more than 150,000 square miles of ocean and Great Lakes waters from Washington State to the Florida Keys, and from Lake Huron to American Samoa. NOAA's National Ocean Service manages the national marine sanctuaries through the authority of the National Marine Sanctuaries Act of 1972 (MPRSA), (www.sanctuaries.noaa.gov/about/legislation/).

National marine sanctuaries contain deep ocean gardens, coral reefs, whale migration corridors, deep-sea canyons, historically significant shipwrecks and other underwater archaeological sites. Sites managed by ONMS range in size from one-quarter-square-mile in Fagatele Bay, American Samoa, to more than 134,000 square miles at the Papahānaumokuākea Marine National Monument, located in the northwest Hawaiian Archipelago.

The ONMS fosters public awareness of marine resources and maritime heritage through scientific research, monitoring, exploration, education and outreach and works closely with its many partners and the public to protect and manage sanctuaries. Sanctuaries protect biologically diverse marine environments, water quality and maritime heritage resources, while maintaining recreational and commercial activities that are sustainable and compatible with long-term preservation.

Office of National Marine Sanctuary Program Goals

The Office of National Marine Sanctuaries' (ONMS) goal is to establish a system of National Marine Sanctuaries based on the identification, designation and comprehensive management of special marine areas for the long-term conservation and protection and use of these resources by the public. The overall purposes and policies of the National Marine Sanctuaries, as identified in the National Marine Sanctuaries Act are to:

Office of National Marine Sanctuaries' Mission: Identify, protect, conserve, and enhance the natural and maritime heritage resources, values and qualities of the National Marine Sanctuary System for this and future generations throughout the nation.

- Identify and designate as national marine sanctuaries areas of the marine environment which are of special national significance and to manage these areas as the National Marine Sanctuary System;
- Provide authority for comprehensive and coordinated conservation and management of these marine areas, and activities affecting them, in a manner which complements existing regulatory authorities;
- Maintain the natural biological communities in the national marine sanctuaries, and to protect, and where appropriate, restore and enhance natural habitats, populations and ecological processes;
- Enhance public awareness, understanding, appreciation and wise and sustainable use of the marine environment, and the natural, historical, cultural and archeological resources of the National Marine Sanctuary System;
- Support, promote and coordinate scientific research on, and long-term monitoring of, the resources of these marine areas;
- Facilitate to the extent compatible with the primary objective of resource protection, all public and private uses of the resources of these marine areas not prohibited pursuant to other authorities;

- Develop and implement coordinated plans for the protection and management of these areas with appropriate Federal agencies, State and local governments, Native American tribes and organizations, international organizations, and other public and private interests concerned with the continuing health and resilience of these marine areas;
- Create models of, and incentives for, ways to conserve and manage these areas, including the application of innovative management techniques; and
- Cooperate with global programs encouraging conservation of marine resources.

The National Marine Sanctuary System

Thirteen national marine sanctuaries and one marine national monument have been established since the program's inception in 1972. The sanctuaries harbor a fascinating array of plants and animals from whales to brightly colored sea snails. In many cases, these protected waters provide a secure habitat for species close to extinction. Some of the sanctuaries protect significant historical and cultural resources, as well as natural resources.

Many of the sanctuaries are also cherished recreational spots for diving and fishing in addition to supporting valuable commercial industries, such as the harvesting of fish and kelp. A major part of the challenge of managing these areas is balancing compatible multiple uses of the resources. These sanctuaries are a public trust to be managed for the use and enjoyment of present and future generations.

The following descriptions of the existing National Marine Sanctuaries (NMS) and Marine National Monuments (MNM) are given in the order of their designation:

- **Monitor National Marine Sanctuary** was designated the nation's first national marine sanctuary in 1975. The site protects the wreck of the famed Civil War ironclad USS *Monitor*, best known for its 1862 battle with the Confederate ironclad CSS *Virginia* at Hampton Roads. It is located approximately 16 miles southeast of Cape Hatteras, N.C. and consists of a column of water one mile in diameter extending from the sea bed to the surface, centered on the shipwreck. Established January 30, 1975.



Monitor



Channel Islands

- **Channel Islands National Marine Sanctuary** encompasses the waters surrounding San Miguel, Santa Rosa, Santa Cruz, Anacapa and Santa Barbara islands off the coast of California. The combination of warm and cold water currents around the Channel Islands results in a great variety of plants and animals, including large forests of giant kelp, flourishing populations of fish and invertebrates, and abundant and diverse populations of whales, dolphins, sea lions, harbor seals and seabirds. Established September 22, 1980.

- **Gray's Reef National Marine Sanctuary** surrounds one of the largest live bottom reefs in the southeastern United States, located just off the Georgia coast. The 22-square-mile sanctuary consists of rocky outcroppings separated by sandy troughs, resulting in a complex habitat of ledges covered by a “living carpet” of algae and invertebrates ranging from sponges to sea stars. Gray's Reef also supports loggerhead sea turtles, migrating right whales and a wealth of fish species, making the sanctuary a popular sport fishing and diving destination. Established January 16, 1981.



Gray's Reef

- **Gulf of the Farallones National Marine Sanctuary** covers nearly 1,300 square miles of coastal and ocean wilderness west of San Francisco. The sanctuary is home to some of the largest concentrations of white sharks and blue whales on Earth, along with one-fifth of California's breeding harbor seals and hundreds of thousands of breeding seabirds. The sanctuary also protects numerous estuaries, bays and beaches for the public to enjoy. Established January 16, 1981.



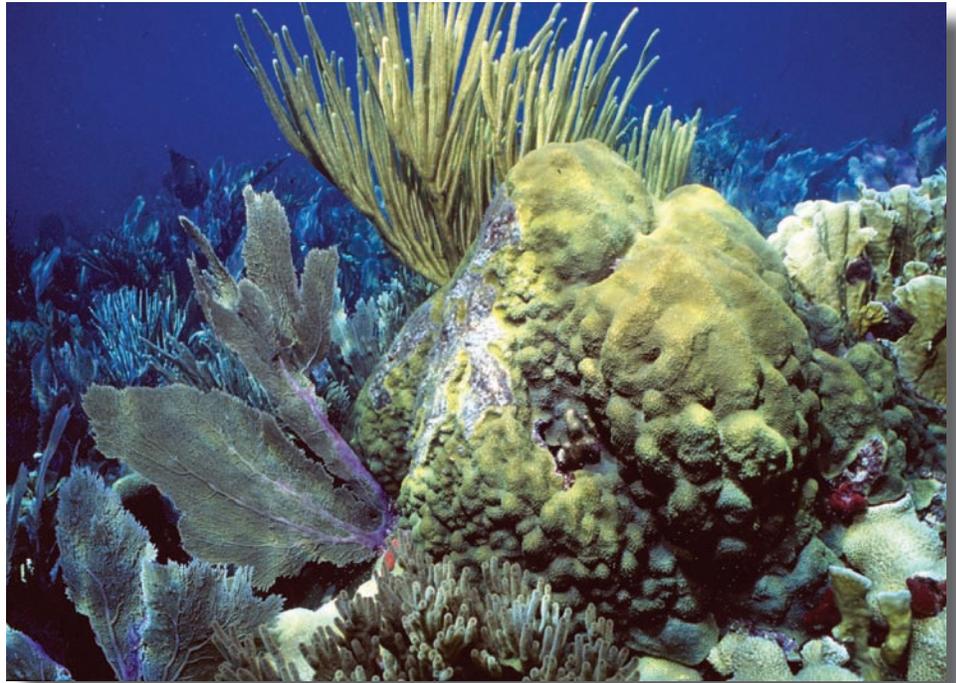
Gulf of the Farallones



TOP: Fagatele Bay

RIGHT: Cordell Bank

BOTTOM: Florida Key



- **Fagatele Bay National Marine Sanctuary** embraces a fringing coral reef ecosystem contained within an eroded volcanic crater in American Samoa. Fagatele Bay is the nation's smallest marine sanctuary at one-quarter-square-mile and contains the nation's only true fringing tropical reef. Hundreds of species of corals, colorful reef fish, algae and other invertebrates can be found in the warm waters of the sanctuary, along with sea turtles, dolphins, sharks, giant clams and migratory humpback whales. Established April 29, 1986.

- **Cordell Bank National Marine Sanctuary** gets its name from the underwater mountain that rises to within 115 feet of the ocean's surface off Point Reyes, California. Upwelling of nutrient-rich deep water supports a flourishing ecosystem on and around Cordell Bank, making the 529-square-mile sanctuary a productive feeding destination for diverse marine creatures. Common sanctuary inhabitants and migratory visitors include whales, dolphins, sea lions, seabirds, rockfish and Pacific salmon. Established May 24, 1989.

- **Florida Keys National Marine Sanctuary** surrounds the Florida Keys archipelago and supports one of the most diverse marine ecosystems in North America. The sanctuary is home to the continent's only living coral barrier reef and beckons divers from around the world. The shallow waters of the 2,900-square nautical mile sanctuary also contain mangrove-fringed islands and lush seagrass meadows. Together, these complex ecosystems provide the basis for the valuable tourism and fishing industries that are vital to Florida's economy. Established November 16, 1990.



- **Flower Garden Banks National Marine Sanctuary** lies 70 to 115 miles off the Texas- Louisiana coast, where underwater “gardens” emerge from the depths of the Gulf of Mexico. The sanctuary encompasses three submerged features called salt domes that harbor the northernmost coral reefs in the continental United States. These premier diving destinations feature numerous Caribbean reef fish and invertebrate species and are frequented by majestic whale sharks and graceful manta rays. Established January 17, 1992.



Flower Garden Banks

- **Monterey Bay National Marine Sanctuary** is the nation’s largest national marine sanctuary, spanning more than 6,000 square miles of coastal waters off central California. Within its boundaries — which were expanded to include the Davidson Seamount in 2009 — are a variety of habitats, from rocky shores and lush kelp forests to an underwater canyon over 10,000 feet deep. The sanctuary’s diverse marine life includes 33 species of marine mammals, 94 species of sea-birds, 345 species of fish and thousands of invertebrates. Established September 18, 1992.



Monterey Bay

- **Hawaiian Islands Humpback Whale National Marine Sanctuary** lies within the shallow, warm waters surrounding the main Hawaiian Islands and is one of the most important humpback whale habitats in the world. Scientists estimate that two-thirds of the entire North Pacific humpback whale population migrates to Hawaiian waters each winter to breed, calve and nurse their young. The continued protection of humpback whales and their habitat is crucial to the long-term recovery of this endangered species. Established November 4, 1992.



Hawaiian Islands
Humpback Whale



Stellwagen Bank

- **Gerry E. Studds Stellwagen Bank National Marine Sanctuary** sits at the mouth of Massachusetts Bay, just 25 miles from the busy port of Boston. The 842-square-mile sanctuary is one of the world’s premier whale watching destinations and a historically important fishing ground. Its waters support a rich assortment of marine life, including the critically endangered North Atlantic right whale and the economically important Atlantic cod. A plethora of shipwrecks, representing more than 400 years of maritime travel rest on the sanctuary seafloor. Established November 4, 1992.



Olympic Coast

- **Olympic Coast National Marine Sanctuary** spans 3,310 square miles of marine waters off the rugged Olympic Peninsula. The sanctuary is home to many marine mammals and seabirds, diverse populations of kelp and intertidal algae, and thriving invertebrate communities. This sanctuary is also rich in cultural resources, with more than 180 documented historical shipwrecks and the vibrant contemporary cultures of the Makah, Hoh and Quileute Tribes and the Quinault Indian Nation. Established July 16, 1994.

- **Thunder Bay National Marine Sanctuary** boasts nearly 100 shipwrecks preserved by the cold, fresh waters of Lake Huron within its 448-square-mile boundary. Thunder Bay’s unpredictable weather and treacherous shoals have earned it the nickname “Shipwreck Alley,” and its collection of wrecks represents a cross-section of the diverse vessels that have traveled the Great Lakes



Thunder Bay

since the 19th century. From wooden schooners to modern freighters, these cultural treasures provide a window into the region's rich maritime history. Established October 7, 2000.

- **Papahānaumokuākea Marine National Monument** contains one of the last large-scale, predator-dominated coral reef ecosystems on the planet. The monument's waters are home to more than 7,000 marine species — a quarter of which are found only in the Northwestern Hawaiian Islands — including endangered and threatened species like Hawaiian monk seals and green sea turtles. Encompassing nearly 134,000 square miles of ocean and coral reefs, the monument has great cultural significance to Native Hawaiians and blends the management of terrestrial, marine and cultural resources with a focus on the connections between land and sea. Established June 15, 2006.



Papahānaumokuākea



ABOVE: John Ericsson, “Father” of the
USS *Monitor* (TMM)

Monitor National Marine Sanctuary

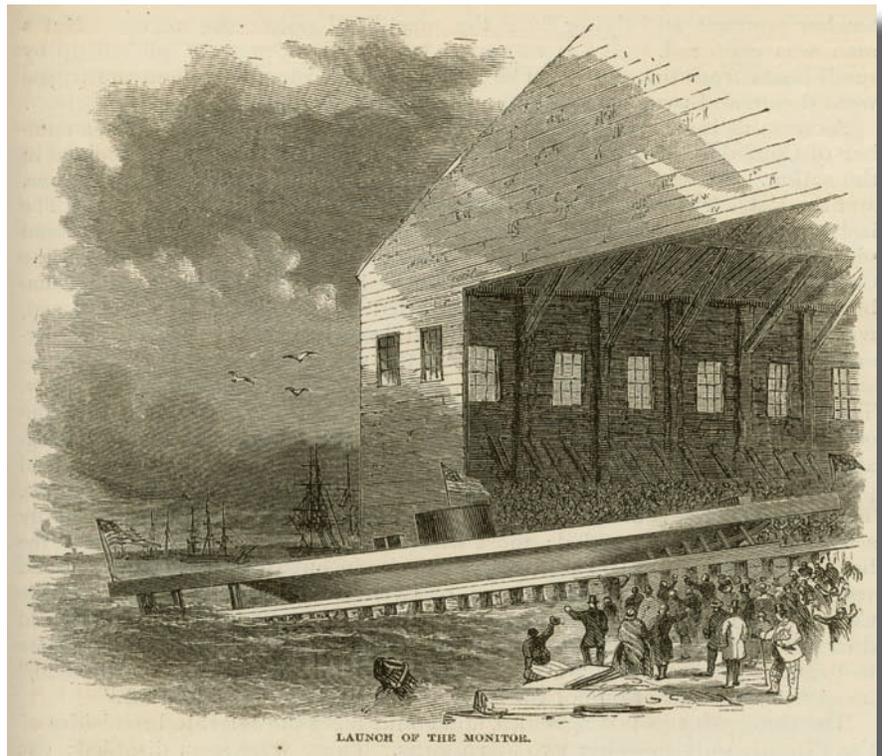


ABOVE: John L. Worden was the first commander of the USS *Monitor* and took her into the historic Battle of Hampton Roads (Naval Historical Center).

Background and History

The USS *Monitor* was designed by John Ericsson, a Swedish-American engineer and was built at Greenpoint, N.Y., at a total cost of \$275,000. The *Monitor* was the prototype for a new class of American ironclads. Among her many unique features were a revolving gun turret, an anchor that could be raised and lowered from below deck, forced-air ventilation and a flushing shipboard toilet. Her first battle on March 9, 1862, at Hampton Roads, Va., was with the Confederate ironclad ram CSS *Virginia* (formerly known as the *Merrimack*). The battle between the *Monitor* and *Virginia*, the first confrontation between ironclad warships, was one of the most celebrated naval battles in American history, changing forever the course of naval warfare and setting a totally new direction in naval architecture and ship design.

RIGHT: Harpers Weekly illustration of the launching of the USS *Monitor* on Jan. 30, 1862 (Harpers' Weekly, September 1862, *Monitor* Collection, NOAA).





ABOVE: J.O. Davidson painting depicting the Battle of Hampton Roads on March 9, 1862 (Library of Congress).

Eleven months after being launched, the *Monitor's* promising career was cut short. The *Monitor* and 16 of her crew were lost while under tow by the vessel *USS Rhode Island* off Cape Hatteras, N.C., an area long known as the “Graveyard of the Atlantic.” The ironclad, unable to weather the heavy gale-driven seas, foundered and sank on December 31, 1862.



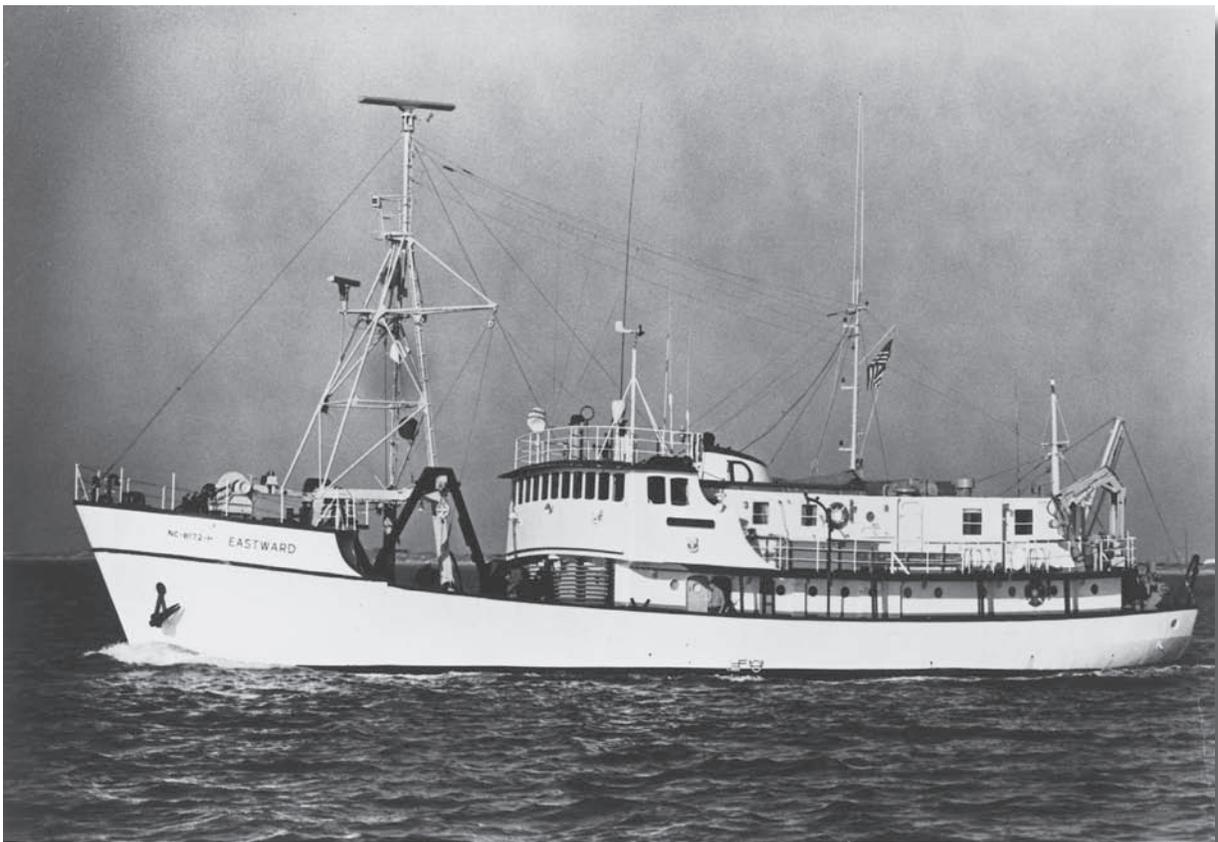
ABOVE: Engraving from *Leslie's Illustrated* depicting *Monitor's* last minutes, with *USS Rhode Island* in the background sending up distress signals (TMM).

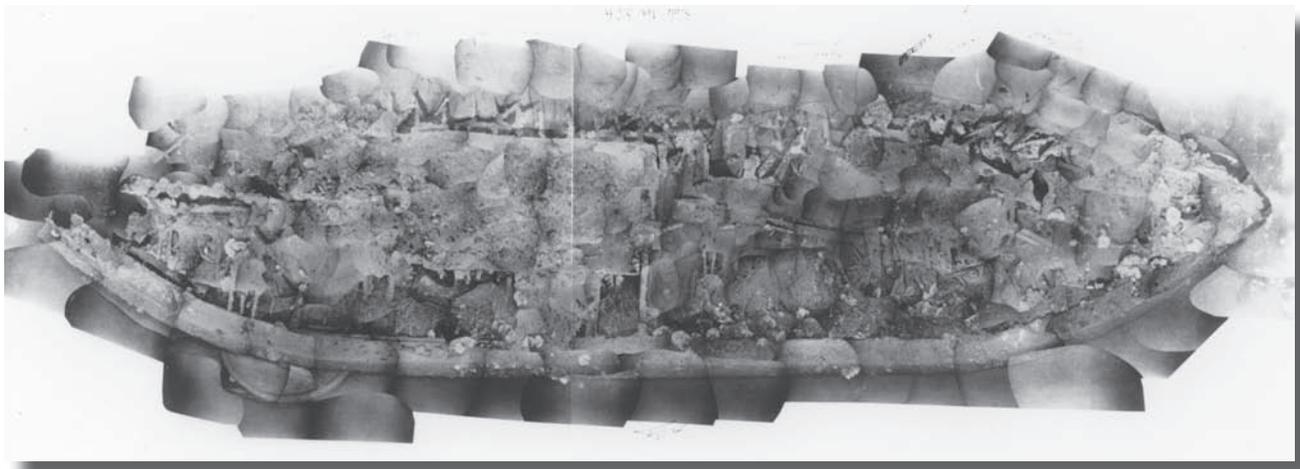
The *Monitor's* final resting place in the Atlantic Ocean remained unknown for more than a century. A number of unsuccessful searches for the wreck took place after World War II.

In August 1973, scientists conducting a research project using side-scan sonar onboard the R/V *Eastward*, located the *Monitor's* remains approximately 18 miles southeast of Cape Hatteras, N.C. Using remotely operated still and video cameras, these scientists obtained the first images of the wreckage. In April, 1974, a second expedition to the site, aboard the R/V *Alcoa Seaprobe*, verified the ship's identity and produced the first photomosaic of the wreck.

The discovery of the *Monitor* made headlines around the world and was announced jointly by Duke University and the North Carolina Department of Archives and History on March 7, 1974. With the verification that the wreck discovered by Duke was indeed the USS *Monitor*, there was significant concern over how the United States could protect an archaeological site that was, at that time, lying in international waters.

BELOW: Research vessel *Eastward*, from Duke University Marine Laboratory, which successfully supported the search for the *Monitor* in Aug. 1973 (*Monitor* Collection, NOAA).





ABOVE: 1974 Photo mosaic of the USS *Monitor* wreck compiled from hundreds of individual 35mm photographs. (*Monitor* Collection, NOAA).

Sanctuary Designation

Title III of the The Marine Protection Research and Sanctuaries Act (MPRSA) of 1972, later renamed the National Marine Sanctuaries Act, established the National Marine Sanctuary Program. Under the Act, the US Secretary of Commerce was granted the authority to designate national marine sanctuaries. The act further stated the need for protecting “special areas” of the ocean and noted that, “*certain areas of the marine environment possess conservation, recreational, ecological, historical, scientific, educational, cultural, archaeological or esthetic qualities which give them special national, and in some cases international, significance.*”

The *Monitor* clearly fit into the criteria for designation as a marine sanctuary and the act was first used to provide protection to the wreck site. The first step towards designating the *Monitor* as a national marine sanctuary came on September 26, 1974, when North Carolina Governor, James E. Holshouser, Jr., nominated the wreck site for National Marine Sanctuary status under the MPRSA. The nomination received a tremendous amount of support and furthered the significance of the *Monitor* to the American people. The *Monitor* site was added to the National Register of Historic Places by Secretary of Interior Rogers C. Morton on October 11, 1974.

Designation

Whereas Title III of the Marine Protection, Research, and Sanctuaries Act of 1972, Public Law 92-532, authorizes the Secretary of Commerce, with the approval of the President of the United States, to designate Marine Sanctuaries; and, Whereas the wreckage of the U.S.S. Monitor has recently been identified; and,

Whereas it is the consensus of concerned organizations and individuals that the wreckage should be protected for its historic, cultural, and technological values; and,

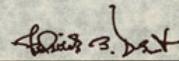
Whereas the vessel has been placed on the National Register of Historic Places;

I therefore designate the site of the U.S.S. Monitor to be

The Monitor Marine Sanctuary

the area of which is to encompass a vertical section of the water column from the surface to the seabed and extending horizontally one mile in diameter from a center point located at 35°00'23" North Latitude and 75°24'32" West Longitude; and hereby affirm that the regulations promulgated according to the aforementioned authority will provide the necessary protection of law to preserve the esthetic values of this Historic Place.

January 30, 1975
Date



Frederick B. Dent
Secretary of Commerce



ABOVE: Designation document creating the nation's first national marine sanctuary on Jan. 30, 1975 (Monitor Collection, NOAA).

On January 30, 1975, the Secretary of Commerce Frederick Baily Dent formally designated the remains of the USS *Monitor* and a one-mile column of water surrounding the vessel as the nation's first national marine sanctuary. Twelve years later, on March 9, 1987, the 125th anniversary of the Battle of Hampton Roads, the Secretary of the Interior, Donald Hodel, designated the *Monitor* shipwreck as a National Historic Landmark.

Whereas title III of the Marine Protection, research and Sanctuaries Act of 1972, Public Law 92-532 authorizes the Secretary of Commerce, with the approval of the President of the United States, to designate Marine Sanctuaries; and

Whereas the wreckage of the U.S.S. Monitor has recently been identified; and

Whereas it is the consensus of concerned organizations and individuals that the wreckage should be protected for its historic, cultural, and technological values; and

Whereas the vessel had been placed on the National Register Of Historic Places;

I therefore designate the site of the U.S.S. Monitor to be

The Monitor National Marine Sanctuary

The area of which is to encompass a vertical section of the water column from the surface to the seabed and extending horizontally one mile in diameter from a center point located at 35° 00' 23" North Latitude and 75° 24' 32" West Longitude; and hereby affirm that the regulations promulgated according to the aforementioned authority will provide the necessary protection of law to preserve the esthetic values of this Historic Place.

January 30, 1975

Frederick B. Dent

Building a New Management Plan

New challenges and opportunities emerge with time. For this reason, the National Marine Sanctuaries Act requires periodic updating of sanctuary management plans to reevaluate site-specific goals and objectives and to develop management strategies and activities to ensure the sanctuary best protects its resources. Management plans are sanctuary-specific planning and management documents used by all national marine sanctuaries. They identify immediate, mid-range and long-term challenges and opportunities, and develop a course for the future. A management plan describes resource protection, research and education programs that guide sanctuary operations, specify how a sanctuary should best protect its resources, and describes sanctuary regulations if appropriate.

A management plan guides sanctuary programs and operations by setting budget and project priorities. Plans also assist advisory councils in providing advice on management decisions by providing a better understanding of strategies to protect sanctuary resources. In addition, management plans also include specific performance measures designed to assess the progress of the sanctuary in implementing a new management plan.

This document is the 2012 Monitor National Marine Sanctuary Draft Management Plan and its contents are the result of the sanctuary's first management plan review since 1992. In 1996, NOAA developed a comprehensive archaeological recovery plan for the USS *Monitor*, which served as the management plan during major recovery at the site until 2003. NOAA has prepared this current draft management plan in cooperation with the advisory council and with input from the public, state and federal agencies, and other stakeholders.

The Monitor National Marine Sanctuary management plan review began in December 2008 with a series of public scoping meetings held in Manteo, N.C. (12/01/2008), Raleigh, N.C. (12/02/2008), Pine Knoll Shores, N.C. (12/03/2008), Hatteras Village, N.C. (12/04/2008) and Newport News, Va. (12/06/2008). The scoping meetings were used to gather input on resource management issues from resource users, interest groups, government agencies and other members of the public. NOAA also received written comments via mail, fax, and email from December 01, 2008 to January 31, 2009. Approximately 100 comments were received from the public. These public comments were used to identify issues to be addressed in the updated management plan.

Comments received during scoping fell into 11 major categories including; resource protection, education and outreach, archaeology, *Monitor* human remains, permitting, access, enforcement, research, conservation, facilities and operations, and expansion. Following the initial public scoping meetings, the Monitor National Marine Sanctuary Advisory Council established eight working groups consisting of sanctuary staff, members of the advisory council and members of the public to address these 11 categories.

The eight working groups included: Education and Outreach, Research, Archaeology, *Monitor* Human Remains, Permitting/Access/Enforcement, Conservation, Resource Protection and Expansion. These working groups met numerous times in 2009 and developed suggestions and recommendations for action plans, strategies and activities, which were presented to the advisory council for consideration on October 27, 2009. The advisory council voted unanimously to accept these recommendations, which are reflected in the draft management plan. Notably, the Expansion Working Group evaluated whether the sanctuary should consider a future expansion effort. At that same October 27, 2009 advisory council meeting, the full advisory council voted unanimously to accept a resolution recommending NOAA explore expansion of the existing sanctuary boundaries.

The core of the Draft Management Plan consists of eight action plans: Resource Protection, Education and Outreach, Archaeological Research, Resource Monitoring, *Monitor* Sailors (Human Remains), Conservation of *Monitor*

RIGHT:
Management plan
scoping meeting
in North Carolina,
Dec. 2008 (NOAA).



Artifacts, Sanctuary Expansion, and Operations and Administration. Each action plan begins with background information on current sanctuary programs and an overview of the direction the sanctuary will take to address current management needs. The goals and objectives are also stated for each action plan.

Strategies describe how the goals will be accomplished for a particular issue or program area. Each strategy is divided into specific activities for sanctuary staff to complete. Action plan resource requirements are estimated based on the overall needs for conducting the strategies, including staff salaries. These estimates have been developed to represent the full requirements to conduct programs and projects, including outside funding, as described over a five-year period. Full implementation of these action plans is dependent on continued support from state and federal funding, grants, donations and contributions from partners.

Performance measures for each action plan are identified to assist in evaluating NOAA's progress over time. As these measures are monitored, data is collected on progress toward the achievement of outcomes. In areas where NOAA is falling short of targets, staff will work to identify the obstacles to reaching the targets. Results will be compiled, synthesized and then reported by the site superintendent annually at an advisory council meeting.

The draft management plan will be circulated to the public for written comment. Additionally, hearings will be held to gather further public comments and suggestions.

The final management plan will be comprised of this draft management plan and an environmental assessment with modifications made after analyzing the public comments. All comments will be considered and NOAA will provide a response to comments with the release of the final management plan. The final management plan will be the primary guide for sanctuary actions to ensure that the sanctuary maintains long-term preservation measures and uses its maritime heritage resources for the benefit of current and future generations.

The strategies and activities contained in the Monitor Draft Management Plan support the sanctuary's mission to preserve the nationally significant shipwreck site of the USS Monitor and promote the maritime heritage resources of the nation through resource protection, education, responsible use and greater stewardship of the oceans.

Monitor National Marine Sanctuary Goals and Objectives

Sanctuary goals and objectives provide the framework for developing management strategies. Management strategies for MNMS focus on the goals and objectives outlined herein. While these goals and objectives are listed separately, their effects overlap. Resource protection efforts, for instance, include expanding the sanctuary's education program.

Resource Protection

Title III of the NMSA authorizes NOAA to manage sanctuaries' historical resources, among others. In doing so, the agency must comply with the Federal Archaeological Program (FAP) as outlined in Executive Order 11593, the National Historic Preservation Act of 1966 (NHPA) and the Archaeological Resources Protection Act of 1979 (ARPA), as well as those acts' implementing regulations.

NOAA had no existing historical/cultural resources management policy when the USS *Monitor* was designated in 1975. Because the *Monitor* was one of the most significant historic shipwrecks in U.S. waters, a special policy was adopted for that site (Title III, sec. 314 added by PL 100-627, MPRSA). ONMS has since published a comprehensive historical context study and resources policy, entitled "Fathoming our Past" that addresses the historic and cultural resources of all of the National Marine Sanctuaries.



LEFT: U.S. Coast Guard patrol boat (USCG).

The highest priority management goal for MNMS is resource protection through comprehensive and coordinated conservation and management of the wreck and its surroundings. An important part of our nation's history, the *Monitor*, its artifacts, the archaeological information at the site, the archaeological collection and the *Monitor's* records are all part of sanctuary resources. The objectives of the resource protection program are to:

- Encourage public access to the wreck site, while promoting safe, responsible and well-informed enjoyment of sanctuary resources;
- Enhance public awareness of sanctuary regulations and the permitting process;
- Ensure compliance with sanctuary regulations; and
- Ensure continued refinement of access and permitting policies of the MNMS management plan based upon changing site conditions.

Education and Outreach



ABOVE: Students work on a “mock shipwreck” activity (NOAA).

Education and outreach is an effective tool to protect and promote MNMS. Jointly, education and outreach directly support resource protection by creating a better-informed public not only on issues affecting the sanctuary, but larger ocean conservation issues as well. MNMS will use education to promote awareness and protection of the sanctuary's natural and cultural resources and to enhance local, regional and national knowledge of the surrounding ocean's climatological and ecological significance. The objectives of education and outreach are:

- Build an education and outreach program that complements and promotes sanctuary resource protection and historical, climatological and ecological research programs;
- Increase ocean and climate literacy among local, regional and national audiences;
- Target user groups and underrepresented audiences' participation in sanctuary programs; and
- Enhance communication and coordination among sanctuary partners.

Archaeological Research

Future archaeological work at MNMS will serve to better protect the sanctuary's resources and maritime landscape by inventorying, locating, documenting, assessing, managing and interpreting the sanctuary's archaeological, historical and environmental resources. This work will remain a major goal of the sanctuary. The objectives of future archaeological research are to:

- Characterize the sanctuary's maritime heritage resources;
- Scientifically monitor the sanctuary's maritime heritage resources to better understand existing and potential threats; and
- Develop and encourage collaborative research programs to meet Monitor National Marine Sanctuary's on-going management needs.



ABOVE: Maritime archaeologist works on a site plan (NOAA).

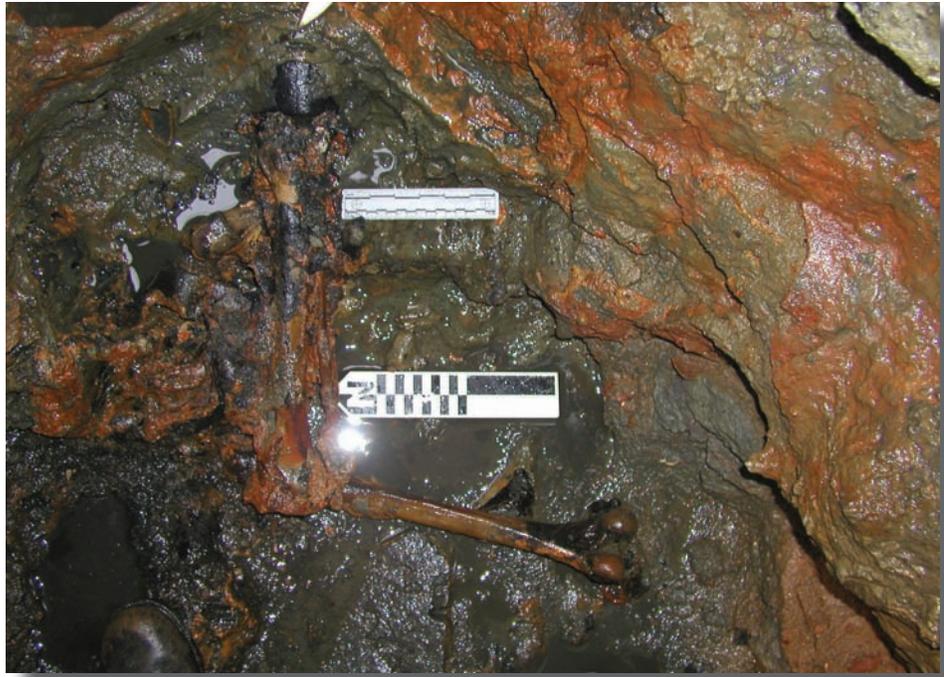
Resource Monitoring

Monitor National Marine Sanctuary requires a research program that addresses resource protection, as well as other management issues. Initial research supported by NOAA was primarily directed toward protection through a comprehensive site characterization process that increased our understanding of the *Monitor's* remains and how they have been affected by natural deterioration and human activities. This research was critical to developing effective approaches to long-range management issues.

NOAA's initial site characterization research and recent monitoring and research activities by NOAA and private researchers, resulted in the detection of a significant increase in the rate of deterioration of the *Monitor*. The rapid degradation of the hull, as described later in this document, may have been precipitated by an incident in 1991, when a private fishing boat was cited by the U.S. Coast Guard for anchoring illegally on the wreck. It is also possible, however, that the structural integrity of the *Monitor* has also decreased through natural deterioration to the point that the rate of collapse has begun to accelerate.

As a result of this new information, current research goals for the sanctuary are to ensure the scientific recovery and dissemination of historical and cultural information from the site and to preserve and manage the

RIGHT: Archaeologists from NOAA and JPAC worked carefully to recover the remains of two U.S. sailors (NOAA).



remains of the *Monitor* in a manner that appropriately enhances the significance and interpretive potential of the warship.

Additionally, resource-monitoring programs will help NOAA better understand the living and natural resources within the sanctuary and in the surrounding waters. The objectives of the revised research program include:

- Recognize, document, and track changes in the structural integrity of USS *Monitor* and associated artifacts;
- Monitoring of MNMS's living resources and their habitats; and
- Promoting the sanctuary as an ocean observing station due to its unique location within an important area for biological productivity and climate change.

Monitor Sailors

NOAA and the U.S. Navy recovered the remains of two U.S. servicemen who lost their lives on the night that the *Monitor* sank. NOAA is working to identify these two men and to establish a protocol for dealing with human remains if additional remains are found at the *Monitor* site. NOAA will follow a standard protocol, based on dignity, respect and honor for the deceased and their families; for dealing with known human remains; as of yet undiscovered human remains;

and associated personal effects encountered within MNMS. The objectives of the *Monitor* Sailors identification research program include:

- Positive identification of known human remains and any additional human remains encountered within the sanctuary;
- Make recommendations to the U.S. Navy concerning the final disposition of human remains and personal effect;
- Care for, conserve, portray and display human remains and personal effects prior to final disposition; and
- Enhance public education and awareness of personal stories and social history associated with human remains encountered within the sanctuary.

Monitor Artifact Conservation

One of Monitor National Marine Sanctuary's primary and ongoing functions is to oversee and facilitate the conservation of the artifacts and materials recovered from the shipwreck since its discovery in 1973. The sanctuary works in close partnership with The Mariners' Museum to achieve this goal. This effort will take more than 30 years for some of the larger artifacts. Due to the lifespan of this effort, NOAA must continually find ways to increase the current levels of funding and other means to better conserve *Monitor* artifacts. The objectives of the *Monitor* Artifact Conservation program include:



ABOVE: Conservator, Colleen Brady, conserved this lantern from *Monitor's* gun turret and painstakingly reassembled its shattered glass globe (TMM).

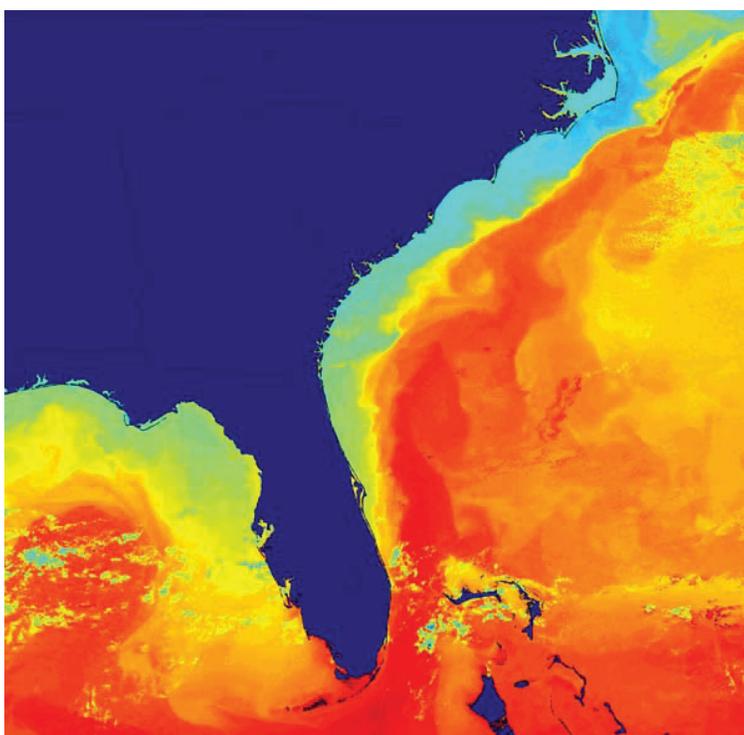


LEFT: Two hard rubber U.S. Navy buttons and a bone knife handle recovered from the *Monitor's* gun turret (Monitor Collection, NOAA).

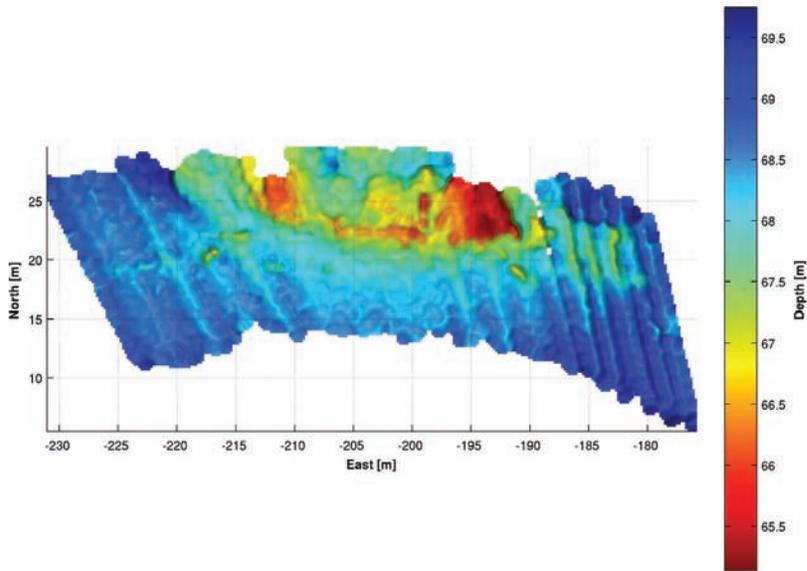
- Identify additional funds to support existing federal dollars allocated towards the conservation of USS *Monitor* archaeological materials;
- Support The Mariners' Museum efforts to increase their levels of funding for the conservation of USS *Monitor* archaeological artifacts;
- Establish additional outside partnerships for USS *Monitor* artifact conservation. This should include the scientific, engineering and mechanical communities;
- Identify other conservation facilities and conservators to explore new techniques that might be applicable to the treatment of USS *Monitor* artifacts; and
- Increase the public visibility, knowledge and support for the conservation efforts on USS *Monitor* artifacts.

Environmental Setting

The *Monitor's* remains lie on the continental shelf 16.1 nautical miles south-southeast of the Cape Hatteras Lighthouse. Monitor National Marine Sanctuary consists of a vertical column of water in the Atlantic Ocean one mile in diameter extending from the surface to the seabed. The center of the water column is 35°00'23" north latitude and 75°24'32" west longitude.



LEFT: Satellite image of the southeastern U.S. coast showing surface water temperatures. The confrontation off Cape Hatteras between the northerly-flowing Gulf Stream (red) and southerly-flowing Labrador Current (blue) is clearly visible (NOAA).



LEFT: Multi-beam sonar survey of the USS *Monitor* (NOAA).

In the vicinity of the *Monitor*, the ocean bottom is composed of sand, shell hash, and clay below the surface. Bathymetric profiles (topography of the sea floor) of the area indicate that the bottom surface slopes gently away to the southeast at less than seven feet per 1000 feet.

The NOAA National Data Buoy Center (NDBC) repositioned the Diamond Shoal Data Buoy (NDBC-41025) within the boundaries of the Monitor National Marine Sanctuary. This data buoy collects oceanographic and meteorological information including temperature, wind conditions, sea states, and current information. This real-time data aides sea farers in determining sea conditions off the coast of Cape Hatteras and assists staff in monitoring conditions at the sanctuary. The public can access data online from the buoy 24-hours a day.

Visibility. Visibility in the 230-foot-deep water varies according to turbidity, the presence of microorganisms and the intensity and angle of sunlight. Records to date indicate that visibility varies from approximately 10 feet to more than 150 feet.

Currents. The site lies at the western margin of the Gulf Stream, and the area is influenced both by the current itself and by eddies it creates. Changes in current direction and velocity occur frequently. Within a 24-hour period, direction has been observed to change 360°. Current velocities are known to vary from zero to more than 1.5 knots at the bottom, and surface currents can be considerably stronger. Water temperature in the area seems to be related to these current patterns. While few specific data are available, temperature projections indicate an



ABOVE: Shark on the *Monitor* wreck (NOAA).



RIGHT: Stormy skies at sunrise, Cape Hatteras, N.C. (NOAA).

annual variation between 52 degrees and 78 degrees Fahrenheit.

Wind patterns. In the area of the sanctuary, wind patterns can be generalized as prevailing from the north to west between November and February; north-northwest and south southwest between March and June; south-southeast during July and August; and north-northeast during September and October. However, unpredictable variations are common and spontaneous storms frequently occur.

Biological organisms. A biological study carried out by NOAA in June 1990, identified encrusting organisms and motile invertebrates on the wreck (Table 1). The wide variety of encrusting organisms included coral, sponges, sea squirts, sea anemones, hydroids, barnacles, tubeworms, mussels and oysters. *Oculina arbuscula* was the most abundant coral, but at least 40 species of sponges were observed. Although many invertebrates are cryptic and hard to detect, those identified were crabs, brittlestars, sea urchins, snapping shrimp and spiny lobsters.

The *Monitor's* remains are located near the northern boundary of tropical reef fish habitat and therefore, support a mixture of temperate and tropical species. Fish abundance has been estimated by visual counts and verified from videotape from five transect lines over the length of the *Monitor*. Twenty-five species were observed (Table 2). The most abundant species was the red barbier. Thousands of fish, approximately 1.5 to 5 inches total length, formed schools at the stern and throughout the center of the vessel. The predominant predator species was the greater amberjack. Fifty-four fish were counted when approaching the *Monitor*.

Approximately half of the wreck was visible so the number of jacks was estimated to be 108. Estimates of other common species included scad (several hundred); black sea bass (35); scup (14); bank sea bass (10); slippery dick (10); and vermilion snapper (6).

Cold-water intrusions by the Labrador Current may limit biological productivity at the wreck site. Several fish kills have been observed in the Cape Hatteras area since 1957. Reports indicate cold-water intrusion on the outer continental shelf may have contributed to the killing of red snapper and vermilion snapper. Most of the tropical species observed on the *Monitor* on past expeditions were juveniles or young adults. Significant changes in the numbers and types of fish, corals and sponges have been noted over the years. Variations in the environment and even changes in the condition of the *Monitor's* hull have been suggested as possible explanations.



ABOVE: Amberjack swarm around diver on *Monitor* (NOAA).

The Monitor National Marine Sanctuary Condition Report

The National Marine Sanctuary System manages marine areas in both near shore and open ocean waters that range in size from less than one to almost 140,000 square miles. Each area has its own concerns and requirements for environmental monitoring, but ecosystem structure and function in all these areas have similarities and are influenced by common factors that interact in comparable ways. Furthermore, the human influences that affect the structure and function of these sites are similar in a number of ways. For these reasons, in 2001 the program began to implement System-Wide Monitoring (SWiM). The monitoring framework facilitates the development of effective, ecosystem-based monitoring programs that address management information needs by using a design process that can be applied in a consistent way at multiple spatial scales and to multiple resource types.

The framework identifies four primary components common among marine ecosystems: water, habitats, living resources and maritime archaeological resources. By assuming that a common marine ecosystem framework can be applied to all places, the National Marine Sanctuary System developed a series of questions that are posed to every sanctuary and used as evaluation criteria to assess resource condition and trends. The questions, which are shown on page iii and explained in Appendix G, are derived from both a generalized ecosystem framework and from the National Marine Sanctuary System's mission. They are widely applicable across the system of areas managed by the sanctuary program and provide a tool with which the program can measure its progress toward maintaining and improving natural and archaeological resource quality throughout the system. Similar reports summarizing resource status and trends will be prepared for each marine sanctuary approximately every five years and updated as new information allows. The information in the condition report is intended to help set the stage for the management plan review process. The report also helps sanctuary staff identify monitoring, characterization and research priorities to address gaps, day-to-day information needs and new threats.

In April 2008, Monitor National Marine Sanctuary released a System-Wide Monitoring or Condition Report, on the health of the sanctuary. This report provided a summary of resources in MNMS, pressures on those resources, the current condition and trends and management responses to the pressures that threaten the integrity of the marine environment. Specifically, this document includes information on the status and trends of water quality, habitat, living resources and maritime archaeological resources and the human activities that affect them. It presents responses to a set of questions posed to all sanctuaries (Appendix G).

Resource status was rated on a scale from good to poor, and the timelines used for comparison vary from topic to topic. Trends in the status of resources were also reported, and were generally based on observed changes in status over the past five years, unless otherwise specified. Evaluations of status and trends were made by sanctuary staff, based on interpretation of quantitative and, when necessary, qualitative assessments and observations of scientists, managers and users. In many cases, sanctuary staff consulted outside experts familiar with the resources as well as previous and current scientific investigations. While ratings thus reflect the collective interpretation of program staff and outside experts based on their knowledge and perceptions of local problems, sanctuary staff determined the final ratings. Similar reports summarizing resource status and trends will be prepared for every marine sanctuary approximately every five years and updated as new information allows. This information is intended to help set the stage for management plan reviews at each site and to help sanctuary staff identify monitoring, characterization and research priorities to address gaps, day-to-day information needs and new threats. The current report has been peer-reviewed and complies with the White House Office of Management and Budget's peer review standards as outlined in the Final Information Quality Bulletin for Peer Review.

While most of the research conducted in Monitor National Marine Sanctuary to date has focused on the archaeological documentation of the shipwreck, NOAA scientists are devoting increased attention to the water quality and marine environment of the wreck site. A NOAA data buoy installed in the sanctuary in 2006, provides scientists and the public the opportunity to monitor weather and sea conditions 24 hours a day. The sanctuary's remote distance from shore poses special challenges for enforcement, but it is also an important factor in the *Monitor's* continued preservation. The site depends heavily on education, word-of-mouth within the dive community and voluntary compliance with regulations. When those measures are ineffective, partnerships with other government agencies such as the U.S. Coast Guard is vital to enforcing sanctuary regulations. MNMS regulations prohibit anchoring, stopping and drifting within the sanctuary; conducting salvage or recovery operations; using diving, dredging or wrecking devices; conducting underwater detonation; drilling in the seabed; laying cable; and trawling. Access is generally limited to scientific research conducted under a permit issued by NOAA; however, special-use permits may be issued for non-research visits to this historic site.

Proceeding, this section provides background and summaries of the condition and trends within four resource areas: water, habitat, living resources, and

maritime archaeological resources. For each resource area, sanctuary staff and selected outside experts considered a series of questions. The set of questions derive from the National Marine Sanctuary System’s mission, and a system-wide monitoring framework developed to ensure the timely flow of data and information to those responsible for managing and protecting resources in the ocean and coastal zone, and to those that use, depend on and study the ecosystems encompassed by sanctuaries. The questions were designed to set the limits of judgments, so that responses can be confined to certain reporting categories; eventually this method will allow for a comparison among all sanctuary sites.

Appendix G (Rating Scheme for System-Wide Monitoring Questions) clarifies the set of questions and presents the statements that were used to judge the status of resources, and along with their corresponding color codes, which were designated on a scale from “good” to “poor.” These statements are customized for each question. This section of the report provides answers to the set of questions. In addition, the following options are available for all questions: “N/A” – the question does not apply; and “undetermined” – resource status is not defined. In addition, symbols are used to indicate trends: “▲” – conditions appear to be improving; “–” – conditions do not appear to be changing; “▼” – conditions appear to be declining; and “?” – the trend is undetermined. Answers to the questions are supported by specific examples of data, investigations, monitoring and observations; the basis for judgment is provided in the text and summarized in the table for each resource area.

Vessel Condition

Since the *Monitor* sank on December 31, 1862, its hull and contents have been



LEFT: Technicians ready an Autonomous Underwater Vehicle (AUV) to map the ocean floor in Ocracoke, N.C. aboard the SRVX (NOAA).

Monitor National Marine Sanctuary Condition Summary Table

Status: Good Good/Fair Fair Fair/Poor Poor Undet.

Trends: Conditions appear to be improving ▲
 Conditions do not appear to be changing –
 Conditions appear to be declining ▼
 Undetermined trend ?
 Question not applicable NA

Condition Summary: The results in the following table are a compilation of findings from the “State of Sanctuary Resources” section of this report. (For further clarification of the questions posed in the table, see the Appendix.)

#	Questions/Resources	Rating	Basis for Judgment	Description of Findings	Sanctuary Response
WATER					
1	Are specific or multiple stressors, including changing oceanographic and atmospheric conditions, affecting water quality and how are they changing?	–	Water current modeling and its effects on dissolved oxygen. No human impacts.	Conditions do not appear to have the potential to negatively affect living resources or habitat quality.	Monitor National Marine Sanctuary regulations state that discharge of waste material within sanctuary boundaries is prohibited. There is a need to develop a water quality monitoring program in order to track conditions that could affect the integrity of the site.
2	What is the eutrophic condition of sanctuary waters and how is it changing?	–	The Monitor is located in water that is deep and well-mixed, therefore eutrophication is not a management concern.	Conditions do not appear to have the potential to negatively affect living resources or habitat quality.	
3	Do sanctuary waters pose risks to human health and how are they changing?	–	No evidence that there is any risk posed.	Conditions do not appear to have the potential to negatively affect human health.	
4	What are the levels of human activities that may influence water quality and how are they changing?	–	Relatively few hazardous discharges, debris or other impacts.	Few or no activities occur that are likely to negatively affect water quality.	
HABITAT					
5	What is the abundance and distribution of major habitat types and how is it changing?	▲	Monitor attracts biological assemblages as an artificial reef.	Habitats are in pristine or near-pristine condition and are unlikely to preclude full community development.	Monitor National Marine Sanctuary regulations prohibit activities that could in any way alter the sanctuary's existing habitats or disturb or damage its natural resources. Activities such as anchoring, discharging waste material into the water, seabed drilling, seabed cable-laying, detonation of explosive material, dredging and trawling are highly restricted within the sanctuary's boundaries.
6	What is the condition of biologically structured habitats and how is it changing?	?	No specific studies conducted; encrusting faunal organisms reduce the rate of corrosion.	Undetermined status and trend.	
7	What are the contaminant concentrations in sanctuary habitats and how are they changing?	–	Lack of sources and constant resuspension of sediments flushing any contaminants that may accumulate.	Contaminants do not appear to have the potential to negatively affect living resources or water quality.	
8	What are the levels of human activities that may influence habitat quality and how are they changing?	–	Limited human activity due to remote location and restrictions.	Some potentially harmful activities exist, but they do not appear to have had a negative effect on habitat quality.	
LIVING RESOURCES					
9	What is the status of biodiversity and how is it changing?	?	Lack of biological monitoring program.	Undetermined status and trend.	Prohibition of commercial fishing and trawling in the sanctuary helps to eliminate the pressure of fishing gear on the living resources. The Monitor sanctuary's long-term goal is to coordinate scientific research and monitoring of the ecological conditions of the sanctuary.
10	What is the status of environmentally sustainable fishing and how is it changing?	NA	NA	NA	
11	What is the status of non-indigenous species and how is it changing?	▼	One Red Lionfish identified in sanctuary in summer 2007.	Non-indigenous species exist, precluding full community development and function, but are unlikely to cause substantial or persistent degradation of ecosystem integrity.	
12	What is the status of key species and how is it changing?	?	No key species have been identified; no specific studies conducted.	Undetermined status and trend.	
13	What is the condition or health of key species and how is it changing?	?	No key species have been identified; no specific studies conducted.	Undetermined status and trend.	
14	What are the levels of human activities that may influence living resource quality and how are they changing?	–	Evidence that fishing activities affect habitat quality and thus living resources.	Some potentially harmful activities exist, but they do not appear to have had a negative effect on living resource quality.	

Monitor National Marine Sanctuary Condition Summary Table (Continued)

#	Questions/Resources	Rating	Basis for Judgment	Description of Findings	Sanctuary Response
MARITIME ARCHAEOLOGICAL RESOURCES					
15	What is the integrity of known maritime archaeological resources and how is it changing?	—	Combination of natural deterioration and site alteration due to archaeology activities from 1998-2002.	Selected archaeological resources exhibit indications of disturbance, but there appears to have been little or no reduction in historical, scientific or educational value.	The Monitor sanctuary was specifically designated to protect and preserve the remains of the Monitor. Therefore, regulations prohibit removal of or damage to any historical or cultural resource in the sanctuary. Activities such as subsurface salvage or recovery operation, diving, and lowering below the water any grappling, suction, conveyor, dredging or wrecking device are also prohibited.
16	Do known maritime archaeological resources pose an environmental hazard and how is this threat changing?	—	Lack of hazardous cargo.	Known maritime archaeological resources pose few or no environmental threats.	
17	What are the levels of human activities that may influence maritime archaeological resource quality and how are they changing?	—	Prior evidence of marine debris and anchoring. Site is susceptible to future incidents of fishing strikes and debris accumulation.	Selected activities have resulted in measurable impacts to maritime archaeological resources, but evidence suggests effects are localized, not widespread.	

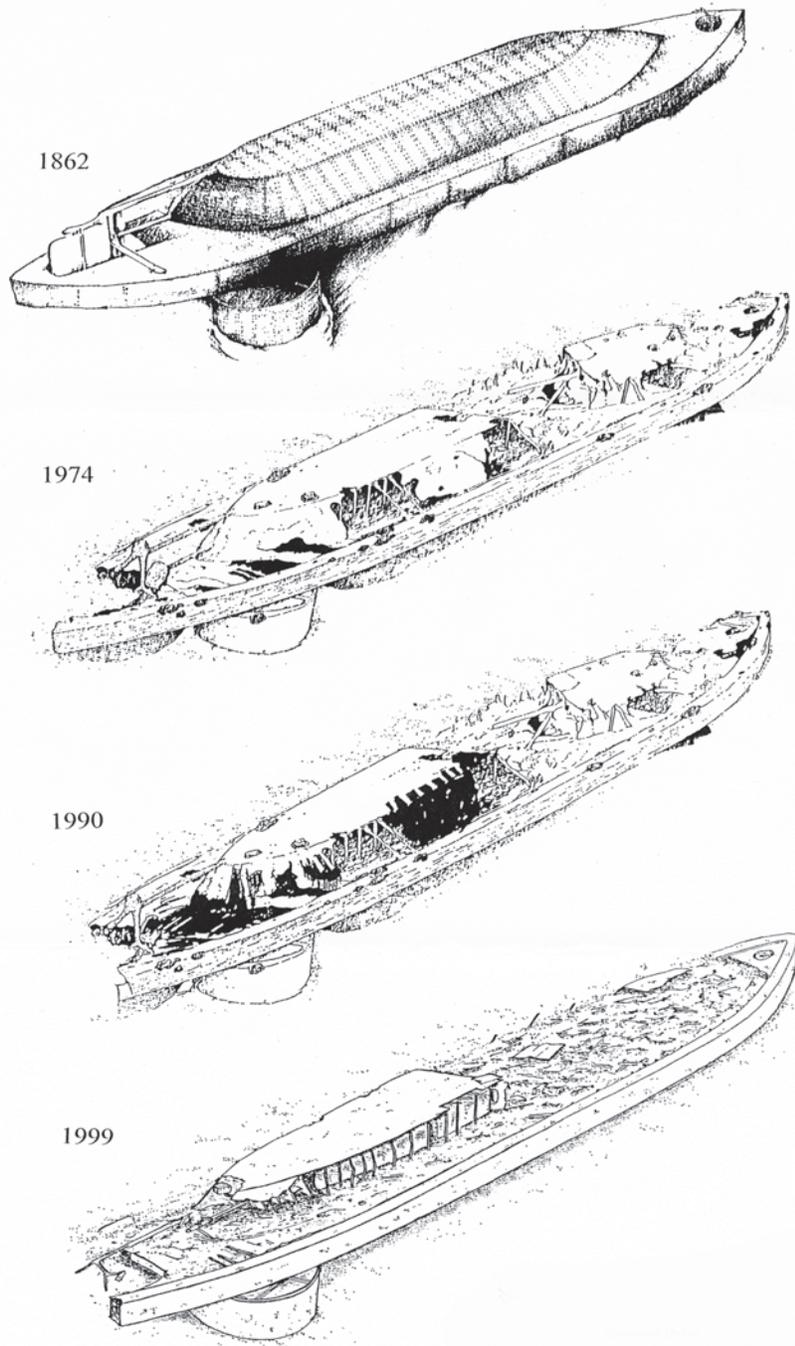
Figure 3: Summary Table from *Monitor* SWiM Report

slowly transforming from a ship of war to an archaeological site. The *Monitor* sank at an offshore location where a hard seabed and strong currents have prevented the hull from becoming imbedded in a protective layer of sand and sediment. The inverted hull of the *Monitor* rests in a nearly east-west orientation, partially submerged in bottom sediment with the port armor belt supported by a series of concrete grout bags placed under the wreck in 2000 to provide stability.

The *Monitor's* present condition is the result of a number of factors including: damage that may have occurred at the time of sinking, natural degradation of ferrous material that has resulted from more than a century and a half of immersion in a seawater environment and damage from human activities. There is some evidence to suggest that the *Monitor* was depth-charged during World War II causing possible damage to the stern and lower hull. There is also evidence that the stern may have suffered damage in 1991, from one or more vessels anchoring on the *Monitor*.

Over the years, the wreck has become covered in fishing line, monofilament, cables and other types of fishing gear and marine debris. Much of this debris was the direct result of fishing activities on the wreck, while other material had drifted onto the wreck in the form of derelict fishing gear. Fishing hooks and lines observed on the site during several NOAA and private expeditions suggest that fishing boats could be a source of this material and thus, pose an ongoing management concern. However, the primary source of most of the observable change to the *Monitor's* hull may, in fact, be the direct result of natural site formation processes.

During the 1980s, NOAA continued to document the deterioration at the stern of the ship, which led to the development of a management plan, *Charting a New Course for the Monitor*, issued in 1998. This plan outlined an ambitious stabilization and recovery proposal that focused on recovering some of the key components from the vessel in order to prevent their loss in the event of a catastrophic collapse. This included placing mechanical shoring (grout bags) under the raised areas of the port armor belt, recovering the *Monitor's* unique steam engine and the world's first rotating gun turret.



LEFT *Monitor's* hull began to deteriorate at an accelerating rate during the 1980s and 1990s. Line drawing depicting the rate of deterioration (*Monitor* Collection, NOAA).



ABOVE: Midships section of the *Monitor* (NOAA).

This recovery work began with the propeller and segment of the propeller shaft, which were recovered with assistance for the U.S. Navy in 1998. In 2000, NOAA and the Navy installed mechanical shoring under the raised portions of the port side of the wreck. In 2001, the steam machinery and associated components were removed from the wreck and in 2002, the vessel's rotating gun turret and its contents were successfully brought to the surface.

In 2004, a cleanup expedition with the Navy revealed significant damage to the site. All of the remaining bottom plate and framing over the boilers and galley area was found lying to the south of the wreck. The midships bulkhead had completely collapsed into a pile of plating around the turret truss. An investigation of the area found a segment of trawl net tangled in the wreckage. Further investigation was conducted by a private research expedition later that year, but could not prove conclusively that the damage had been the result of illegal fishing activities or derelict fishing gear brought onto the wreck as a result of Hurricane Isabel.

Since the turret recovery in 2002, NOAA has continued to study the site. Areas of wood that were exposed during the large item recovery expeditions (1998-2002) have led to degradation of the wood components that were exposed during those expeditions. In more recent years, surveys on the site have revealed the additional loss of deck plating at the stern.

During a 2011 NOAA expedition to the site, researchers observed a build-up of modern marine debris. However, earlier, accelerated deterioration of the site from recovery activities appears to have slowed and has begun to approach equilibrium with natural site formation processes.

The site also displayed observable natural collapse of bottom hull plating. It is clear that while natural and man-made processes will continue to affect the site, the site remains a valuable repository of significant archaeological information and historical material for the foreseeable future. Furthermore, the site is considered a gravesite and is listed as a National Historic Landmark.

Monitor Artifact Conservation

Conservators at The Mariners' Museum (TMM) in Newport News, Va., have been documenting, stabilizing, treating and exhibiting artifacts recovered from the USS *Monitor* since the first large-scale excavations in the 1990s. Over 200 tons of artifacts have been recovered from the wreck. Archaeologists and U.S. Navy divers recovered the revolving gun turret, vibrating side-level steam engine, steam condenser, auxiliary steam equipment, propeller and shaft assembly, Dahlgren guns and gun carriages and other structural and personal items. These artifacts are composed primarily of wrought iron, cast iron and copper alloys. Additional materials included lead, tin, steel, rubber, canvas, wood, wool, glass and ceramic.

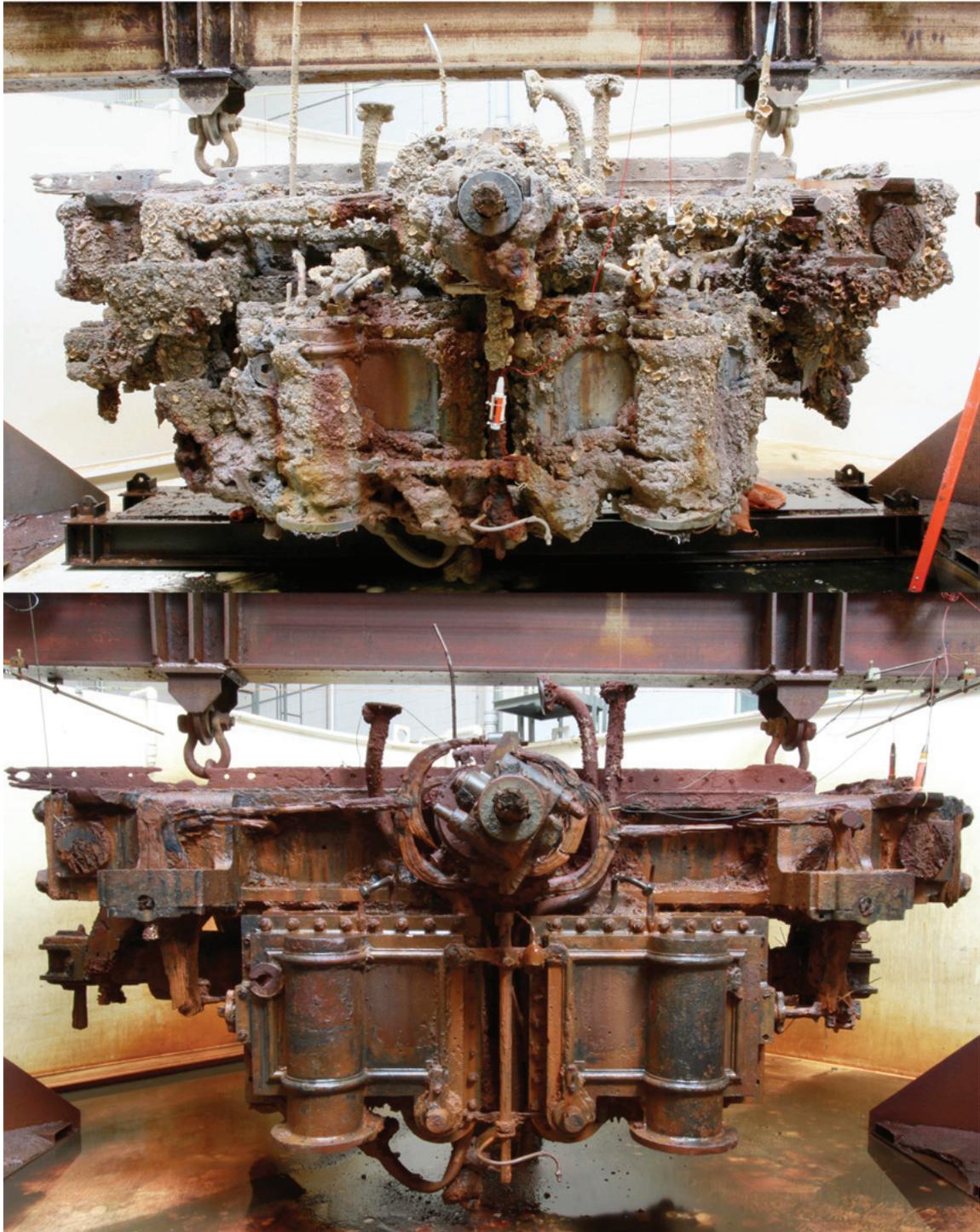
To date, fully one-quarter of the approximately 2,000 artifacts and components have been stabilized, treated, and displayed or stored. Fifty-percent of all organic materials were documented, stabilized and treated during the past five years. Additionally, conservation staff discovered and accessioned over 200 new artifacts during initial conservation of the gun turret between 2005 and 2010.

All *Monitor* artifacts received initial stabilization when they arrived at TMM. Following stabilization, artifacts were prioritized for treatment based upon condition, material type and other considerations. As indicated by the previous statistics, organic artifacts, such as the wood chest, leather shoes and boots, received high priority. Owing to significant facility upgrades between 2006 and 2008, including the construction of the USS *Monitor* Center and Batten Conservation Complex and acquisition of specific capital equipment, conservators are now making significant progress with *Monitor's* auxiliary steam equipment, steam condenser, Dahlgren guns, composite gun carriages and other structural components.

In late 2010 and early 2011, conservators focused on the deconcretion and disassembly of *Monitor*'s 30-ton main steam engine in support of complete treatment. Composite artifacts composed of differing material types and tightly sealed components require disassembly to promote thorough desalination and cleaning. This fact considerably increases the amount of hands-on work and overall treatment time for all composite artifacts recovered from the *Monitor*. Conservation of the revolving gun turret is ongoing and conservators have reduced the corrosion rate by an order of magnitude. The turret is currently stable and is undergoing a lengthy desalination process.

It is anticipated that the entire conservation project will take at least another fifteen to twenty years to complete. This timeframe is based upon the volume of material recovered by NOAA archaeologists, the stability and fragility of these materials, as well as specific conservation treatment parameters. In order to facilitate public access to this historic and iconic material during this time period (aside from an award-winning exhibit), TMM provides large viewing platforms and windows into the conservation lab. The lab is also outfitted with three live web cameras that can be directed at every portion of the lab to show activities as they occur. Additionally, The Mariners' Museum conservators maintain a blog in which they post new and interesting information, images and discoveries on a weekly basis. The web cameras and conservation blog can be found at www.marinersmuseum.org.

BELOW: USS *Monitor* steam engine before and after deconcretion (TMM).





“The *Monitor* became and remains a part of the American mind, its bare mention conjuring up images of what we are as a people, of our experiences as a people, and some of the major events and motifs in our history.”

LARRY E. TISE, 1978 - AUTHOR AND PROFESSOR

Administration and Sanctuary Management

Organizational and Leadership Responsibilities

Office of National Marine Sanctuaries

ONMS develops a general budget, setting out expenditures for program development, operating costs and staffing. Funding priorities are reviewed and adjusted annually to reflect evolving conditions at Monitor Sanctuary, as well as ONMS priorities and requirements. ONMS also establishes priorities and procedures in response to specific issues in each sanctuary. Detailed ONMS responsibilities are listed below in the resource protection, research and education sections.

Sanctuary Management

NOAA's management of Monitor National Marine Sanctuary is designed to protect the site and its resources. NOAA conducts and permits scientific research on the *Monitor*. NOAA is also involved in a number of off-site management activities, including research and public education.

The Mariners' Museum in Newport News, Va., was selected in 1987, as the principal museum for curation of *Monitor*-related artifacts and papers and to cooperate with NOAA on a variety of educational projects, as described in the Administrative and Education sections of this plan.

Since designation of the site as a national marine sanctuary, access to the *Monitor* has been limited primarily to permitted scientific research related to the vessel. However, there is a mechanism for a concessionaires permit making it possible to allow appropriate non-research activities. Prior to conducting on-site activities, a permit must be issued to NOAA pursuant to 15 CFR 924.5.

Staffing

Minimum staffing for Monitor National Marine Sanctuary is considered to be a Sanctuary Superintendent, an Education Coordinator, two Maritime Archaeologists, a Research Coordinator, a Conservator, an IT Coordinator and an Administrative Assistant. The current management structure for MNMS includes a superintendent, an education coordinator, two maritime archaeologists and an IT coordinator all located at NOAA's Maritime Archaeology Center in Newport News, Va. Additionally, MNMS has a research coordinator located in Manteo, N.C., on the campus of the University of North Carolina's Coastal Studies Institute. MNMS staff reports to the Northeast and Great Lakes Region (NEGLR) of the Office of National Marine Sanctuaries, NOAA, in Silver Spring, Maryland.

Sanctuary Superintendent

The sanctuary superintendent for Monitor National Marine Sanctuary reports directly to the Northeast and Great Lakes (NEGLR) Regional Director. ONMS is responsible for the overall management of the sanctuary; however, the Sanctuary Superintendent is responsible for the day-to-day management of the site and sets the direction for future activities impacting the sanctuary. The Superintendent represents ONMS as a spokesperson for Monitor National Marine Sanctuary.

Target staffing levels would include additional positions for Deputy Superintendent, Vessel Operations Coordinator (VOC), Outreach Coordinator, GIS Specialist, Graphics Designer and a number of intern positions.

The sanctuary staff works closely with the U.S. Coast Guard, other federal and state agencies and private organizations in order to provide adequate site surveillance and enforcement and to maintain active cooperative programs in research and education.

Monitor National Marine Sanctuary Headquarters & The Mariner's Museum

The sanctuary's headquarters is located at The Mariners' Museum in Newport News, Va. On September 4, 1986, NOAA published guidelines in the *Federal Register* for submitting proposals for consideration as principal museum for the *Monitor* Collection of Artifacts and Papers (now known as the *Monitor* Collection). After a thorough evaluation of all proposals, NOAA designated The Mariners' Museum, Newport News, Va., as the Principal Museum for the *Monitor* Collection. A Memorandum of Agreement between NOAA and the museum was signed on July 13, 1987.

Today, the relationship between NOAA and The Mariners' Museum is governed by two separate agreements: a four-part Programmatic Agreement between NOAA, The Mariners Museum, The Virginia State Historic Preservation Officer and The Advisory Council on Historic Preservation, as well as a Curatorial Services Agreement with TMM. These agreements set out the responsibilities of NOAA and The Mariners' Museum related to MNMS. A programmatic cooperative agreement was signed between NOAA and The Mariners' Museum in October 1989. This agreement remains in effect until December 31, 2013 and contains an option for renewal.

In the agreements, NOAA committed to:

- Provide financial support for the services of The Mariners' Museum subject to annual appropriations, Federal law and NOAA's approval;
- Deliver to TMM artifacts, papers, and records related to Monitor National Marine Sanctuary; and
- Initiate special projects agreed to by the Museum and NOAA subject to annual appropriations.

In the agreements, The Mariners' Museum committed to:

- Maintain archives, a research library, and a conservation facility for the *Monitor*;
- Develop permanent and traveling exhibits for the sanctuary, and assist other participating museums in developing exhibits and interpretive displays;



ABOVE: Replica of the USS *Monitor* at The Mariners' Museum (TMM).

BELOW: Offices of the Monitor National Marine Sanctuary in Newport News, Va. (NOAA).





ABOVE: Conservator at TMM works on a shoe recovered from the turret (*Monitor* Collection NOAA).

- Manage the lending of portions of the *Monitor* Collection to other qualified repositories for research, interpretation or educational purposes;
- Maintain the *Monitor* Collection under environmentally and physically secure conditions within storage, exhibition, laboratory and study areas;
- Inspect the *Monitor* Collection on a regular basis and make recommendations as to necessary maintenance conservation measures;
- Adequately insure the *Monitor* Collection from theft and other loss;
- Catalog all known *Monitor*-related materials in both private and public collections;
- Assist and advise NOAA regarding the future planning of MNMS and development of the *Monitor* Collection;
- Comply with relevant Federal regulations regarding the curatorship of Federally owned archaeological collections;
- Provide other services relating to the Monitor NMS as agreed to by NOAA and the Museum; and
- Serve on the MNMS Advisory Council.

United States Coast Guard

NOAA maintains a cooperative agreement with the United States Coast Guard (USCG) for enforcement of sanctuary regulations. The *Monitor* site is within the USCG Fifth District, and Group Cape Hatteras directly assists NOAA with surveillance efforts and actions related to enforcing regulations at Monitor National Marine Sanctuary.

Coast Guard units conduct surveillance during routine operations in the vicinity of the sanctuary and also schedule periodic site inspections. Both air and surface craft are involved in surveillance activities. Group Cape Hatteras has provided excellent site coverage, as well as support for research operations. Additionally, the USCG has a permanent seat on the Monitor National Marine Sanctuary Advisory Council.

BELOW: U.S. Coast Guard ship (USCG).



United States Navy

Although the U.S. Navy legally abandoned the USS *Monitor* in 1953, the Naval History and Heritage Command has maintained an active interest in the wreck, providing NOAA with comments and suggestions for historical and archaeological research. In addition, the U.S. Navy has actively participated in *Monitor* research beginning in 1974, with the R/V *Alcoa Seaprobe* expedition that mapped and confirmed the identity of the *Monitor*. Since that mission, the Navy has provided support for several research projects, including NOAA's *Monitor* Archaeological Research and Structural Survey (MARSS) in 1993 and in 1995, a major cooperative project, the *Monitor* Archaeological Research, Recovery and Stabilization Mission (MARRS'95).

The Navy was also instrumental in the recovery of *Monitor* artifacts during the large artifact recovery period between 1998-2002. The Navy provided significant resources including personnel, equipment and technical expertise.

The U.S. Navy has agreed to participate with NOAA in future *Monitor* research to the extent that equipment and personnel are available. The U.S. Navy is also represented with a permanent seat on the MNMS Advisory Council.

Other Public and Private Partners

Governmental Agencies

NOAA also obtains frequent assistance from the staffs of the North Carolina Department of Cultural Resources and the (Federal) Advisory Council on Historic Preservation. The U.S. Navy and the National Park Service Submerged Resources Center have permanent representative seats of the MNMS Advisory Council. The State of North Carolina is represented on the sanctuary advisory council, with seats for North Carolina Maritime Heritage/Tourism Promotion, North Carolina Department of Environment and Natural Resources, and the North Carolina Department of Cultural Resources, which is currently represented by the North Carolina Underwater Archaeology Branch. Additionally, a representative of the Cape Hatteras National Seashore occupies the alternate seat for the National Park Service on the advisory council. Other NOAA agencies are also impor-



ABOVE: The *Monitor* 2002 expedition team gathered in front of the turret for a group photo soon after the turret was safely on deck. (Divers rotated on and off the barge throughout the expedition. This photo represents only the ones on board at recovery time.) (*Monitor* Collection, NOAA).

BELOW: National Park Service Divers assist with MNMS expeditions (NOAA).



tant partners including NOAA's Office of Ocean Exploration and Research and NOAA's Center for Coastal and Ocean Science.

Academic Partners

NOAA has a long-standing relationship with multiple academic institutions. East Carolina University and the University of North Carolina Coastal Studies Institute have formal agreements to facilitate partnerships and collaborative research and outreach initiatives. NOAA also collaborates with other university partners throughout the world on an opportunistic basis to further the mission of the site.

Private Dive Support

Over the years, a number of private organizations and individuals have provided valuable assistance to Monitor National Marine Sanctuary. In 1990, for the first time, NOAA issued research permits to private dive groups who dove to the *Monitor* using conventional scuba equipment. Since then, the number of private research expeditions to MNMS has increased dramatically, contributing photographs, video, computer-aided mapping and artifact recovery. NOAA is actively seeking to encourage and participate with private researchers in attaining common research goals. Additionally, it is the goal of the sanctuary to facilitate, through the existing permit system, greater access to the site as long as that access does not negatively impact sanctuary resources.

RIGHT: USS *Monitor* image captured by private dive support (NOAA).





ABOVE: Cape Hatteras Light House, N.C. (NOAA).



“...at its best, preservation engages the past in a conversation with the present over a mutual concern for the future.”

WILLIAM J. MURTAGH, AUTHOR, *KEEPING TIME: THE HISTORY AND THEORY OF PRESERVATION IN AMERICA*

Action Plans

Action plans identify a series of steps that would be carried out to address priority issues in Monitor National Marine Sanctuary (MNMS) over the next five years. Action plans are a collection of strategies sharing common management objectives. The plans provide an organized structure and process for implementing these strategies, including a description of the required activities and a schedule for implementation. This management plan, and the action plans contained within it, is not intended to be comprehensive in scope. Rather it is designed as a strategic document that would address those priority issues that can be realistically accomplished in a five-year time frame.

How were action plans developed?

Action plans arose from issues and concerns that were identified in the *Monitor* State of the Sanctuary Report, during the public scoping process in December 2008, and through many discussions with partners, constituents and other interested parties. After compiling and categorizing the areas of concern, MNMS staff worked with the sanctuary advisory council to evaluate and prioritize the issues.

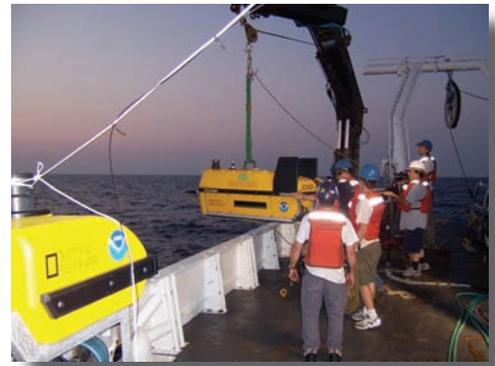
The council currently consists of 18 seats and five alternates. The council seats represent a variety of regional interests and stakeholders, including: recreational diving, recreational and commercial fishing, conservation, education and archaeology. The governmental representatives include: National Park Service, U.S. Navy, U.S. Coast Guard and the states of North Carolina and Virginia. The council serves as a forum for consultation and deliberation among its members

OPPOSITE PAGE: Sunset over the USS *Monitor* (NOAA).

and as a source of advice to the sanctuary superintendent regarding the management of MNMS. The combined expertise and experience of these individuals are a valuable and effective resource for the sanctuary superintendent.

Eleven main issues were identified during the 2008 scoping meetings and were selected as the top priority subjects for the sanctuary to address. These issues include: resource protection, education and outreach, archaeology, *Monitor* human remains, permitting, access, enforcement, research, conservation, facilities and operations and expansion. These eleven issues were organized into eight working groups, including members from the sanctuary advisory council, members of the community, and MNMS staff. The working groups recommendations formed the basis for the final set of action plans contained in this revised draft management plan:

- Resource Protection Action Plan
- Education and Outreach Action Plan
- Archaeological Research Action Plan
- Resource Monitoring Action Plan
- *Monitor* Sailors Action Plan
- Conservation Action Plan
- Expansion Action Plan
- Operations/Administration Action Plan



ABOVE: An ROV is deployed off the *Endeavor*, a research vessel based out of the University of Rhode Island (URI), during its expedition to the USS *Monitor* in 2006 (URI).

How will they be evaluated?

Implementation of each action plan will be evaluated through one or more performance measure(s). A table at the end of each action plan contains measures specific to the action plan strategies, though not all strategies will have an associated performance measure.

Ongoing and routine performance evaluation is a priority for ONMS as part of an effort to improve overall management of sanctuaries. Both site-specific and national efforts are underway to better understand NOAA's ability to meet stated objectives and to address the issues identified in this management plan.

Performance evaluation has many benefits, including:

- Identifying successful or less successful efforts of MNMS management;
- Keeping the public, Congress and other interested parties apprised of MNMS effectiveness;
- Helping MNMS management identify resource gaps;
- Improving accountability;
- Improving communication among sanctuaries, stakeholders, the general public and partners in plan implementation;
- Fostering the development of clear, concise and measurable outcomes;
- Providing a means to comprehensively evaluate MNMS management in both the short and long term;
- Fostering an internal focus on problem solving and improved performance;
- Providing additional support for the resource allocation process; and
- Motivating staff with clear policies and a focused direction.

Performance measures are the means by which the sanctuary staff will evaluate its progress towards achieving the desired outcomes of each action plan. Measures provide information on results over time, from the near term (within one year) to the long term (over the span of ten years or more). NOAA staff will conduct routine performance evaluations over time using the performance measures. NOAA staff will then determine effectiveness by evaluating progress towards achievement of each action plan's desired outcomes and assessing the role or added value of those outcomes in the overall accomplishment of site goals and objectives.

Results from the performance evaluation will also be analyzed and used to meet ONMS, National Ocean Service (NOS), or NOAA-wide performance requirements. Performance data may also be presented annually by: identifying each measure, detailing how it was evaluated and describing the next steps. Based on this analysis, NOAA, in cooperation with the advisory council, will identify accomplishments and determine those management actions that may need to be changed to better meet their stated targets or outcomes.

The targets themselves also may be analyzed to determine their validity (if, for instance, they are too ambitious or unrealistic). The public may have the opportunity to comment on NOAA's perception of its performance, ways in which NOAA could be more effective and methods for improving performance measurement.

How are they organized?

Action plans consist of a description of the issue, the goal and objectives of the action plan and the particular strategies and activities that will be used to implement the action plan. A table that estimates the 5-year costs of implementing the strategies is included and connections to other action plans are identified. Finally, relevant performance measures related to the action plan are posted at the end.

What are the requirements for implementation?

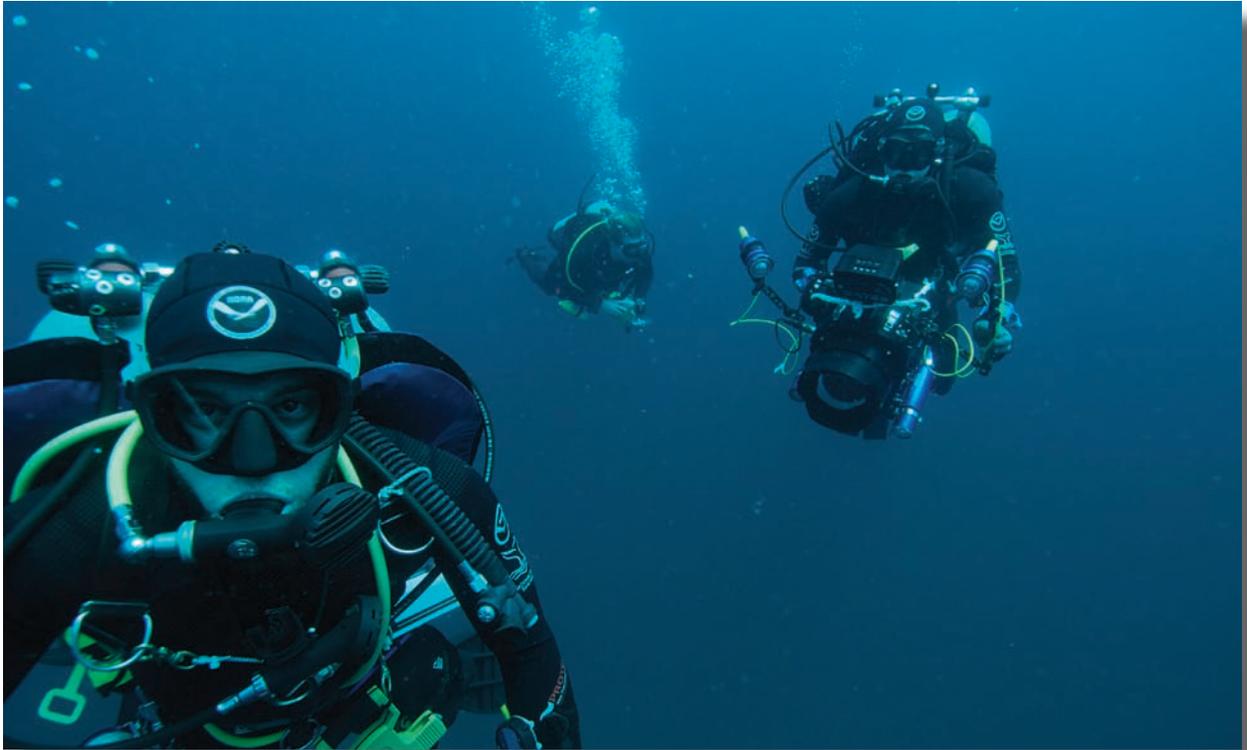
Sanctuary staff developed budgets for each action plan by evaluating the resources necessary for implementation. The cost estimates serve as a general guide and are based on many factors that are difficult to predict for a five-year time frame. Staff estimated the programmatic costs, materials, supplies and travel-time required to address each activity. Labor estimates are incorporated in the Sanctuary Operations and Administration Action Plan and not included in the estimated costs for the other action plans. Some activities will require outside funding in addition to current estimated costs. A summary of the cost for each action plan is included on page 51.

RIGHT: Conservators clean a wool coat found in the USS *Monitor's* turret during excavations (TMM).



Table 1: Estimated Total Costs for the Monitor National Marine Sanctuary Management Plan

Action Plan	Estimated Cost (\$000)					Total Estimate 5-Year Cost
	YR 1	YR 2	YR 3	YR 4	YR 5	
Resource Protection Action Plan	210	170	120	120	140	760
Education and Outreach Action Plan	85	110	115	140	165	615
Archaeological Research Action Plan	180	190	220	220	225	1035
Resource Monitoring Action Plan	225	300	240	240	240	1245
Monitor Sailors Action Plan	195	95	10	10	10	320
Conservation Action Plan	200	250	300	350	400	1600
Expansion Action Plan	25	50	30	50	30	185
Operations/Administration Action Plan		900	1100	1250	1400	5460



ABOVE: NOAA divers stop for decompression, as they ascend to the surface (NOAA).

Resource Protection Action Plan

Description

The purpose of this action plan is to strengthen resource protection by: emphasizing and promoting responsible use of the resources, increasing and focusing education initiatives and enhancing enforcement efforts.

Background

The primary purpose of the management plan is to provide a framework for the responsible protection and management of the *Monitor*, all associated artifacts, and the site itself. The management plan must also provide for resource protection in accordance with all applicable Federal laws. NOAA must ensure that all proposed site activities comply with the regulations of the National Marine Sanctuary Act (NMSA); the Uniform Regulations for the Protection of Archaeological Resources; the National Historic Preservation Act (NHPA); and the National Environmental Policy Act (NEPA).

Natural deterioration and human activities are the most significant threat to the long-term sustainability of the USS *Monitor* as an historical and archaeological resource. While effects of a deteriorating historical resource immersed in a deep saltwater environment will be addressed in the Research Action Plan, the Resource Protection Action Plan is designed to assess and reduce the human impacts on sanctuary resources.

Human activities have significant potential for damaging or destroying shipwrecks and other submerged cultural resources. These activities include, but are not limited to, anchoring, snags from trawling and fishing nets, inadvertent or intentional diving practices (i.e. improper anchoring, artifact manipulation or removal and deliberate looting) that damage resources.

Monitor National Marine Sanctuary regulations prohibit anchoring, stopping, and drifting within the sanctuary; conducting salvage or recovery operations; using diving, dredging or wrecking devices; conducting underwater detonation; drilling in the seabed; laying cable; and trawling and discharging waste material into the water. Access is generally limited to scientific research conducted under a permit issued by NOAA. However, special-use permits are issued for non-research visits to this historic vessel.

Regulations

Regulations are an essential part of managing and protecting our national treasures for current and future generations. People are interested in using the sanctuary for a variety of activities, such as wildlife viewing, photography and research. Some uses have a greater potential for impacting the natural and cultural resources than others. Some activities may not have a measurable effect in small amounts, yet have an undesirable cumulative effect if the amount of the activity is too great. The challenge is to strike a balance in what types and intensities of use are allowed so that those uses are sustainable and the resources are available to be enjoyed for generations to come.

The complete MNMS regulations can be found in Appendix B.

Access

Access to the *Monitor* is generally limited to scientific research conducted under a permit issued by the MNMS superintendent. Work conducted by NOAA is carried out through a Superintendent's Permit; private research by an individual or organization is conducted under a Research Permit; and a Concessionaire Permit gives access for non-research related activities.

Permit Procedures and Criteria

(a) Any person or entity may conduct in the sanctuary any activity listed in § 922.61 if such activity is either: (1) For the purpose of research related to the *Monitor*, or (2) pertains to salvage or recovery operations in connection with an air or marine casualty; and such person or entity is in possession of a valid permit issued by the Director authorizing the conduct of such activity; except that, no permit is required for the conduct of any activity immediately and urgently necessary for the protection of life, property or the environment.

(b) Any person or entity who wishes to conduct in the sanctuary an activity for which a permit is authorized by this section (hereafter a permitted activity) may apply in writing to the Director for a permit to conduct such activity citing this section as the basis for the application. Such application should be made to: Manager, Monitor National Marine Sanctuary, 100 Museum Drive, Newport News, Virginia, 23606, (757)599-3122.

(c) In considering whether to grant a permit for the conduct of a permitted activity for the purpose of research related to the *Monitor*, the Secretary shall evaluate such matters as: (1) the general professional and financial responsibility of the applicant; (2) the appropriateness of the research method(s) envisioned to the purpose(s) of the research; (3) the extent to which the conduct of any permitted activity may diminish the value of the *Monitor* as a source of historic, cultural, aesthetic and/or maritime information; (4) the end value of the research envisioned; and (5) such other matters as the Director deems appropriate.

(d) In considering whether to grant a permit for the conduct of a permitted activity in the sanctuary in relation to an air or marine casualty, the Director shall consider such matters as: (1) the fitness of the applicant to do the work envisioned; (2) the necessity of conducting such activity; (3) the appropriateness of any activity envisioned to the purpose of the entry into the sanctuary; (4) the extent to which the conduct of any such activity may diminish the value of the

Monitor as a source of historic, cultural, aesthetic and/or maritime information; and (5) such other matters as the Director deems appropriate.

(e) In considering any application submitted pursuant to this section, the Director shall seek and consider the views of the Advisory Council on Historic Preservation (ACHP).

f) The Director may observe any activity permitted by this section; and/or may require the submission of one or more reports of the status or progress of such activity.

Enforcement

The sanctuary's distance from shore makes enforcing regulations a significant challenge. NOAA depends heavily on education and public awareness and voluntary compliance with the regulations. In the event of an incident, NOAA's Office of Law Enforcement (OLE) and the U.S. Coast Guard (USCG) enforce sanctuary regulations. For additional information regarding ONMS enforcement strategies, see the three year planning document *Strategy for Clarifying Enforcement Needs and Testing Enforcement Measures*, which can be found at:

http://sanctuaries.noaa.gov/protect/pdfs/enforcement_strategy.pdf

One enforcement tool NOAA uses is "interpretive enforcement," also known as Community Oriented Policy Programs (COPP), which seeks to enhance compliance primarily through public awareness and education. The goal of interpretive enforcement is to gain the greatest level of compliance through public understanding and support of sanctuary goals. Interpretive enforcement emphasizes informing the public through education and outreach about responsible behavior before resources are adversely impacted. NOAA also works to create public awareness about state and federal laws that protect shipwrecks and archaeological sites. Additionally, the MNMS Advisory Council has a USCG representative to advise the council on enforcement related issues.

Should a violation of the MNMS regulations be documented, NOAA can pursue two types of action: either a civil penalty or a natural or cultural resource damage assessment.

Goal

Encourage site access, within the current regulatory framework, to the *Monitor* wreck site, while ensuring that activities within the sanctuary are conducted safely and responsibly so as to assure the integrity and protection of the wreck site.

Objectives

- Encourage access to the wreck site, while promoting safe, responsible, and well-informed enjoyment of sanctuary resources.
- Enhance public awareness of sanctuary regulations and the permitting process.
- Ensure compliance with sanctuary regulations through education, monitoring and enforcement, including the continued partnership with the USCG for surveillance of the site and enforcement of sanctuary regulations and work to increase ONMS presence on the water.

Strategies

Strategy RP-1: Refine the existing permitting system to enable increased recreational access to the *Monitor*, while maintaining an assurance of resource protection in compliance with the MNMS Management Plan.

Activity 1.1: Consider a special use permit to accommodate non-research dives to the wreck of the USS *Monitor* by a vendor (dive charter operation) or by private individuals.

Strategy RP-2: Refine sanctuary visitor use monitoring and regulations where appropriate to reflect changing site conditions and use.

Activity 2.1: Develop a public information outreach program clarifying and interpreting existing sanctuary regulations, such as the “drifting without power” prohibition.

Activity 2.2: Establish a monitoring system to track visitor use and the impact of such use.

- A. Maintain up-to-date data on the current conditions of sanctuary resources.
- B. Conduct site assessment surveys at the beginning and the end of the active field season (or as necessary) to monitor the current conditions of sanctuary resources.
- C. Develop a method to track visitor use within the sanctuary.
- D. Reevaluate and more clearly define the observer program requirements as they apply to the permitting system in the sanctuary regulations and permit guidelines.

Activity 2.3: Implement permit issuance guidelines that adapts to changing conditions at the site, especially those changes that are determined to be the result of human activities.

Activity 2.4: Evaluate and consider the advancements in underwater technologies (remotely operated vehicles (ROVs) and autonomous underwater vehicles (AUVs) to determine if there is a need to amend the current prohibitions section of the sanctuary regulations to ensure such activities require a permit.

Activity 2.5: Develop education and outreach efforts that clarify what the current sanctuary regulations allow and what they prohibit regarding fishing activities within the sanctuary.

Strategy RP-3: Work with NOAA Office of Law Enforcement (OLE) and U.S. Coast Guard (USCG) and other agencies and organizations to develop an effective approach to surveillance and enforcement of regulations and permits.

Activity 3.1: Adjust language to provide NOAA's OLE with the authority to carry out investigations of sanctuary regulation violations beyond the borders of the sanctuary (similar to Thunder Bay language in 15 CFR 922.193 (a) (1)).

Activity 3.2: Work with enforcement partners to develop new enforcement methods:

- A. Investigate and test passive devices and technology for remotely distinguishing permitted from unpermitted activities, for example by distinct radar signatures or emitters.
- B. Investigate and test active remote surveillance technology for the sanctuary; for example, surveillance buoys or airborne monitoring.
- C. Work with NOAA headquarters on Section 307 of the NMSA to expand authority of the Lacey Act to provide OLE clear authority to address cultural resource issues in absence of fish, wildlife or plants otherwise managed by NOAA.

Strategy RP-4: Promote safe and responsible visitor access by providing appropriate materials and facilities.

Activity 4.1: Provide and distribute printed material(s) that cite sanctuary regulations and charts to divers, dive shops, fishermen, charter boat operators and marinas. Provide outreach to fishing and diving communities to clarify permissible and prohibited activities.

Activity 4.2: Re-establish a subsurface mooring system off the bow and stern of the wreck. Additionally, explore the viability of establishing and maintaining a surface mooring system for public access via dive boats.

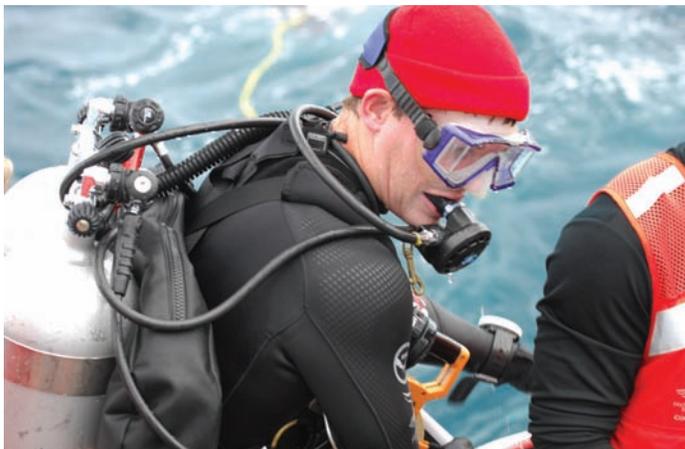
Strategy RP-5: Use outreach and education to enhance diver understanding of the site's significance.

Activity 5.1: Require permittees to provide divers with printed and video materials prior to making a site visit.

- A. Develop and distribute printed materials describing the significance of the *Monitor* to divers.
- B. Develop and distribute a video that presents the site's historic significance, diving operations and restrictions for the general public.

Table 2: Estimated Costs for the Resource Protection Action Plan

Action Plan	Estimated Cost (\$ in thousands)					Total Estimate 5-Year Cost
	YR 1	YR 2	YR 3	YR 4	YR 5	
Refine the existing permitting system to enable increased recreational access to the <i>Monitor</i> , while maintaining an assurance of resource protection in compliance with the MNMS Management Plan.	-	-	-	-	-	-
Refine sanctuary visitor use monitoring and regulations where appropriate to reflect changing site conditions and use.	50	10	10	10	30	110
Work with NOAA Office of Law Enforcement and U.S. Coast Guard and other agencies and organizations to develop an effective approach to surveillance and enforcement of regulations and permits.	50	50	50	50	50	250
Promote safe and responsible visitor access by providing appropriate materials and facilities.	100	100	50	50	50	350
Use outreach and education to enhance diver understanding of the site's significance.	10	10	10	10	10	50
Total Estimated Annual Cost	210	170	120	120	140	760



LEFT: NOAA diver prepares to dive wearing a red hat in honor of Jacques Cousteau's 100th birthday celebration (NOAA).

Table 3: Performance Measures for the Research and Monitoring Action Plan

Outcome	Performance Measure	Baseline
Regular site surveys, monitoring and characterization conducted by qualified archaeologists on an annual basis.	By 2017, increase in-house ability to acquire annual data on site integrity and monitor formation processes.	Since 2003, ONMS has had NOAA archaeologists visit the site only once (in 2011) to assess the condition. Site status between those dates was based on intermittent private-permitted surveys.
Clarify permitting system to facilitate increase site access to members of the public and scientific communities.	By 2014, new education outreach materials will be developed to clarify and promote the MNMS permit system to encourage more applications.	Under the current permitting system, the MNMS receives only 1-2 permit application per annum.
Increase enforcement patrols on site to ensure more regular monitoring use and potential violations	By 2016, develop and implement a plan with OLE and USCG that will increase on-the-water enforcement.	Currently, USCG patrols in the MNMS are irregular and opportunistic. There is no formal enforcement actions taking place on a regular basis.
Increase public awareness via outreach and education of resource protection issues at the site of the MNMS.	By 2013, develop information brochure, which clarifies regulations and provides information on degrading impacts to the resources.	Currently, limited public information is available regarding resource protection issues within the MNMS.



LEFT: NOAA diver surveys the *City of Atlanta* shipwreck (NOAA).

Education and Outreach Action Plan

Description

The purpose of this action plan is to educate and enhance public awareness, understanding and stewardship of the sanctuary, the mid-Atlantic region, and the ocean.

Background

Sanctuary education and outreach programs are designed to raise public awareness about the sanctuary and its resources, encourage public involvement in resource protection, increase knowledge about maritime history, and expand ocean and climate literacy. Education and outreach at the Monitor National Marine Sanctuary includes both formal and informal programs for learners of all ages of sanctuary visitors and constituents, including user groups impacting sanctuary resources. Education and outreach at the sanctuary also includes promotion of the sanctuary, The Mariners' Museum and the Graveyard of the Atlantic Museum. While education and outreach efforts are concentrated in and around Virginia and North Carolina, they extend out to the Northeast and Great Lakes Region and nation with initiatives in maritime heritage, archaeology and ocean/climate literacy. Various strategies, introduced below, allow the sanctuary to efficiently and effectively carry out its education objectives.

The Mariners' Museum

To foster appreciation and preservation of the USS *Monitor* and its maritime heritage, the sanctuary helped to develop exhibits at The Mariners' Museum. In March of 2007, the USS *Monitor* Center and the Batten Conservation Laboratory were opened to the public. The \$30 million, 63,500 square foot facility serves as the primary visitor center for the MNMS. In partnership, the museum and NOAA brought the story of this unique ironclad to the public through this dramatic center, where visitors come face-to-face with history. Through a rich array of original artifacts, archival materials, immersive multimedia experiences and recreated ship interiors, visitors learn the story of the USS *Monitor* and her pivotal role in the Civil War's Battle of Hampton Roads where she fought the



TOP: Students test their ROVs, as they prepare for competition.

BELOW: MNMS Youth Working Group member volunteers to sack oyster shells at Jockey's Ridge, N.C. (NOAA).



CSS *Virginia*. The center is also home to thousands of artifacts, a major interactive exhibition on the two ironclad vessels, and ongoing efforts to conserve more than 2,000 artifacts from the sanctuary. Visitors can walk on a full-scale replica of the *Monitor*, experience the drama of the Battle of Hampton Roads, watch the recovery of the turret and observe the conservation efforts taking place in the state-of-the-art conservation facility.

The Graveyard of the Atlantic Museum

The sanctuary continues to support the development and installation of *Monitor* exhibits at various partnering museums and aquariums across the mid-Atlantic region. MNMS staff is working with the state of North Carolina through the Graveyard of the Atlantic Museum in Cape Hatteras, N.C., to create a unique *Monitor* exhibit to house various artifacts from the collection. Exhibit planning is ongoing and the displays created will make it possible for the public to visit the sanctuary without getting their feet wet.

Other USS *Monitor* Exhibits

Secrets of the Deep, located at Nauticus in Norfolk, Va., is an interactive exhibit of a replica of a deep diving submersible that visited the wreck site of the *Monitor* on numerous occasions. Teachers can also receive free educational materials on the *Monitor* and other NOAA programs at the NOAA Education Resource Center, located on the third floor of the museum.



ABOVE: *Secrets of the Deep* exhibit at Nauticus (NOAA).

The North Carolina Aquarium on Roanoke Island features the largest aquarium in the state, a 285,000-gallon ocean tank complete with sharks, sea turtles, hundreds of fish and a replica of the USS *Monitor*. The one-third-scale model anchors the exhibit and scuba divers give daily educational programs.

The Richmond National Battlefield Park protects over 30 American Civil War Battlefield sites and historic structures around the Virginia capitol. One of those structures is the Confederate fortification on Drewry's Bluff that was attacked by the USS *Monitor* and other ships on May 15, 1862. The park's main visitor center is located in downtown Richmond at the historic Tredegar Iron Works, which rolled the armor plates for the Confederate ironclad CSS *Virginia*, as well as casting four rifled guns for the ironclad. Currently on display are a fragment of a *Monitor* deck plate and three glass bottles that were provided by Monitor National Marine Sanctuary for an exhibit about the Confederate and Union ironclads and their roles in Richmond history.

The Civil War Naval Museum in Columbus, Ga. is undoubtedly the premier museum in the country for American Civil War naval history. The story of the USS *Monitor* is told in an exhibit that includes a partial full size reconstruction of the famous ironclad. Also, on display are several artifacts that were loaned by the Monitor National Marine Sanctuary, including a section of hull plating and condiment and medical bottles that were recovered from the wreck site.

Monitor National Marine Sanctuary has also begun development of a multi-state outdoor heritage trail concept called the USS *Monitor* trail. This program will connect the public to the numerous localities that are connected to the *Monitor*'s history. The trail would start in Greenpoint, N.Y., where the *Monitor* was constructed and would end in Beaufort, N.C., where John Newton and the 1973 expedition to find the *Monitor* sailed. Using interactive media, signage and brochures, this project would connect hundreds of thousands of people to the *Monitor*'s story.



TOP: Visiting classrooms is an integral part of the MNMS education program (NOAA).

Classroom Initiatives

Providing educational opportunities for students and educators is a high priority for the sanctuary. To reach as many students as possible, the sanctuary provides curriculum and training opportunities to regional educators and students. Workshops and professional development opportunities for educators, supplementary classroom materials, and web sites further enhance students' opportunities to not only discover the rich history of the USS *Monitor* and other shipwrecks off the North Carolina coast, but to also learn about ocean and climate literacy principles.

Distance Learning

In partnership with The Mariners' Museum and NASA's Digital Learning Network, the sanctuary is able to offer a variety of distance learning initiatives allowing the sanctuary's education programs to extend across the nation. Education staff carries out a variety of programs as part of the sanctuary's approach to distance learning and/or interactive videoconferences.



BELOW: MNMS On the set at NASA's Distance Learning Network (NOAA).

Through these connections, sanctuary staff can go directly into classrooms around the country and showcase center exhibits and programs to a nationwide audience. Through distance learning, a wide variety of professional development



NOAA DAY AT BUSCH GARDENS AND WATER COUNTRY USA

LEFT: MNMS help Girl Scouts learn about the NMS system (NOAA).

opportunities for educators are also available. Future live expeditionary broadcasts from the Outer Banks of North Carolina will feature archaeologists and scientists exploring the various shipwrecks associated with World War II's Battle of the Atlantic.

Part of a Larger Organization

As part of NOAA, the National Ocean Service and the Office of National Marine Sanctuaries, MNMS has access to an extended network of scientific expertise and resources. This content is the foundation for sanctuary education and outreach initiatives. The implementation of NOAA's ocean literacy mandate – an increased awareness of oceans and one's connectedness to oceans – is also one of the core components of MNMS's education action plan. As scientists learn more about global weather and climate change, NOAA has also mandated that climate literacy principles be incorporated into educational opportunities to better inform all ages of the issues our Earth and its ocean are facing. In addition to grounding our programs, NOAA products, services and information are distributed via MNMS as an on-the-ground storefront and hub for access to NOAA in the mid-Atlantic region.

BELOW: NOAA CO-OPS office staff explain marine debris to Girl Scouts (NOAA).



Events and Festivals

The sanctuary participates in a variety of community festivals and events in North Carolina, Virginia and across the mid-Atlantic region. These events help to enhance public awareness of the importance of the *Monitor* and the efforts of the National Marine Sanctuary System, as well as educate people about climate and ocean issues. Each year, the staff attends events across the region, including the Battle of the Hampton Road Weekend at The Mariners' Museum; Earthfest in Hampton, Va., in collaboration with NASA Langley Research Center; NOAA Day at Busch Gardens Williamsburg and Water Country USA; and many more. Through these events, thousands of people are reached each year.



ABOVE: MNMS volunteers interact with students at Earthfest, an event in partnership with NASA (NOAA).

ROV Building Competition

Designed to inspire the next generation of underwater scientists and explorers to pursue careers in marine technology, archaeology and science, the sanctuary offers workshops and professional development opportunities for both students and educators to learn how to build a Remotely Operated Vehicle (ROV). The ROV program is very successful, with the ability to annually expose hundreds of people to sanctuary resources and messages through technology and engineering.



ABOVE: Group of 5th grade students design and build an ROV (NOAA).

An Integrated Approach

The sanctuary will use education and outreach as a tool to address specific priority issues identified in the management plan. Education is essential to achieving many of the sanctuary's management objectives and will be used to both complement and promote resource protection and research programs.

Goal

Use education to promote awareness and protection of the sanctuary's natural and cultural resources, and to enhance local, regional and national knowledge of the surrounding ocean's climatological and ecological significance.

Objectives

- Build an education and outreach program that complements and promotes sanctuary resource protection and historical, climatological and ecological research programs.
- Increase ocean and climate literacy among local, regional, and national audiences.
- Target user groups and underrepresented audiences for participation in sanctuary programs.
- Enhance communication and coordination among sanctuary partners.
- Collaborate with other sanctuary sites and partner organizations in support of education and outreach programs.

Strategies

Strategy ED-1: Increase awareness and knowledge of the sanctuary by developing education and outreach materials for a broader audience.

Activity 1.1: Develop educational curriculum and materials for students and educators.

Activity 1.2: Develop outreach materials for a wide variety of users.

Strategy ED-2: Increase awareness and knowledge of the sanctuary through education and outreach programs.

Activity 2.1: Expand educational offerings for elementary, secondary and higher education teachers and students.

Activity 2.2: Bring Monitor National Marine Sanctuary content to a national audience through distance learning.

Activity 2.3: Utilize remotely operated vehicles (ROV) and research technology in sanctuary education.

Strategy ED-3: Enhance sanctuary communications and community presence to create greater awareness

Activity 3.1: Work with partners to support a marketing plan to promote the sanctuary.

Activity 3.2: Enhance the MNMS web site to provide quality, up-to-date information about the sanctuary, including implementing Web 2.0 components (social networking, wikis, blogs, etc.) to encourage collaboration and interaction with the public.

Activity 3.3: Sponsor, organize and participate in outreach opportunities that promote the sanctuary's mission and that allow for dissemination of sanctuary information.

Activity 3.4: Begin development of the *Monitor* Trail using appropriate technology.

Activity 3.5: Explore feasibility of conducting an assessment of the socio-economic impact of the sanctuary.

Strategy ED-4: Maximize the impact and effectiveness of education and outreach efforts.

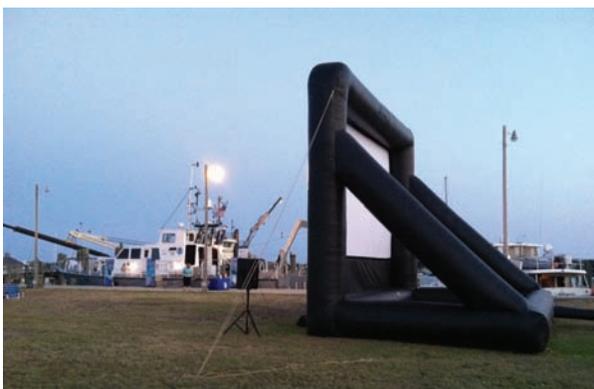
Activity 4.1: Create a standing working group of education experts from the sanctuary advisory council, schools and other constituents to advise on sanctuary education and outreach programs.

Activity 4.2: Continue to seek ongoing input, foster youth leadership and encourage youth participation in sanctuary education and outreach programs through a youth seat on the advisory council and a "youth working group," a volunteer group comprised of middle and high school students.

Activity 4.3: Develop and implement an ongoing system to evaluate and improve education and outreach programs.

Table 4: Estimated Costs for the Education and Outreach Action Plan

Action Plan	Estimated Cost (\$ in thousands)					Total Estimate 5-Year Cost
	YR 1	YR 2	YR 3	YR 4	YR 5	
Increase awareness and knowledge of the sanctuary by developing education and outreach materials for a broader audience	15	15	20	20	25	95
Increase awareness and knowledge of the sanctuary through education and outreach programs	10	10	10	10	10	50
Enhance sanctuary communications and community presence to create greater awareness	60	75	75	100	120	430
Maximize the impact and effectiveness of education and outreach efforts	-	10	10	10	10	40
Total Estimated Annual Cost	85	110	115	140	165	615



ABOVE: MNMS offered free tours of the R-8501 and rented a giant outdoor movie screen to host a free movie night on Ocracoke Island in North Carolina (NOAA).



ABOVE: Students visit the MNMS exhibit to learn about ocean acidification (NOAA).



LEFT: Students learning how to survey a shipwreck with the “Mock Shipwreck” activity (NOAA).

Table 5: Performance Measures for the Education and Outreach Action Plan

Outcome	Performance Measure	Baseline
MNMS will increase Maritime Heritage themed public education and outreach programs locally and regionally.	By 2015, the MNMS will regularly maintain a network of 5 volunteers or interns trained to deliver maritime heritage programs within the community.	Currently, the MNMS has no volunteers or interns that conduct education and outreach programs on behalf of the MNMS independent of full-time staff.
Increased opportunities for public participation in sanctuary education and outreach programming.	By 2014, the total number of education and outreach programs offered to the public will increase by an average of 10% annually.	A baseline number of education and outreach programs will be determined in 2013.
Develop effective tele-presence programming at the sanctuary.	By 2017, the MNMS will develop the ability to conduct tele-presence programming from both offshore and land-based facilities.	MNMS currently has no in-house tele-presence capability or programming content.
Increased effectiveness of sanctuary education and outreach programs.	By 2013, a performance evaluation tool will be developed and implemented to track the effectiveness of the MNMS education and outreach programs.	There is currently no metric for performance evaluation in place at the sanctuary.

Archaeological Research Action Plan

Description

The purpose of the action plan is to outline the sanctuary's archaeological research and monitoring objectives and priorities. The action plan not only guides Monitor National Marine Sanctuary's effort, but also integrates and encourages a broad range of archaeological and interdisciplinary research by sanctuary partners.

Background

Developing knowledge of the sanctuary's maritime heritage resources through research is a primary function of the Monitor National Marine Sanctuary, as is the need to better understand the environment in which they are located and the natural processes that may affect those cultural resources. Knowledge acquired through research is used to evaluate existing management strategies, enhance future management decisions and educate the public about the importance of the site and its environments.

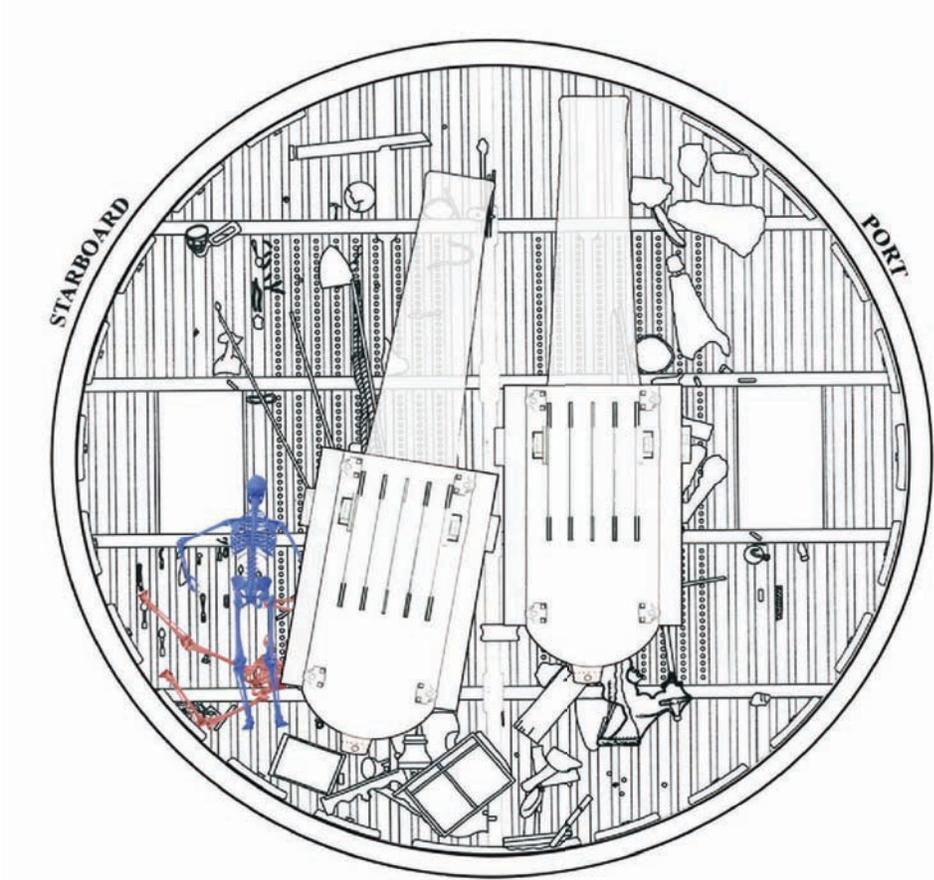
Characterization of the sanctuary includes an inventory of environmental data and the historical resources located, or potentially located, in and around the sanctuary. The inventory is an ongoing process where new data are continually added to the files and databases.

Physically studying and monitoring the remains of the *Monitor* and its environs also plays a role in characterization. Remote sensing surveys have been and continue to be undertaken within the sanctuary and surrounding waters with assistance internally from NOAA and other partners.

Documentation is a critical aspect of the sanctuary's characterization efforts. While there is a substantial amount of historical and archaeological documentation on hand, natural resources and processes merit comparable study and documentation. These provide baseline data to evaluate the current and ongoing state of preservation and can identify threats to the site, such as unintentional damage from fishing gear, anchors or drifting debris, intentionally harmful activities like looting, or potential threats from other natural processes active in the area.

Through documentation of recovered artifacts and on-site research, archaeologists are able to tell the story of this nationally significant Civil War shipwreck and help create products that allow the public to connect with the history that envelops it. This is done in a variety of ways, including but not limited to, exhibits, educational materials and outreach programs.

Due to the depth of sanctuary waters, as well as its distance from shore, casual diving is not possible. Research and documentation relies on combinations of techniques that include specialized diving, photo-mosaics, video and still imagery and information collected by remotely operated vehicles. Data produced from this suite of techniques is essential for documenting change, evaluating the sanctuary's condition and managing its resources.



LEFT: Turret diagram showing the placement of two sets of human remains discovered during excavation of the turret. (NOAA).

Research is greatly enhanced through access to historical records and previous studies. These materials are held at the Christopher Newport University Tribble Library and managed cooperatively with the sanctuary staff. As documents are processed at the sanctuary, they are forwarded to the library to be archived and made accessible to researchers and the public. Digitization is a goal for the collection, as this accelerates the pace of historic research, facilitates greater public access and aids in the preservation of fragile documents and photographs by reducing direct physical contact.

Data produced from all phases of characterization and related research is being incorporated into the sanctuary's resource database and Geographic Information System (GIS). This permits researchers to relate historical information with the empirical elements of the sanctuary. Other scientific information is also incorporated into the GIS program to enable better management, interpretation and public understanding of the sanctuary's historic and natural landscape.

The sanctuary also works to enhance NOAA's and other partners' abilities to study, observe, protect and manage historic and natural coastal resources. By working with various partners on interdisciplinary regional research, the sanctuary works toward a better understanding of the physical, chemical and biological processes affecting sanctuary resources.



LEFT: Jeff Johnston, Tane Casserly, and John Broadwater during the Monitor recovery expedition (NOAA).

Goal

Protect the sanctuary's resources and maritime landscape by inventorying, locating, documenting, assessing, managing and interpreting the sanctuary's archaeological, historical, and environmental resources.

The sanctuary also works to enhance NOAA's and other partners' abilities to study, observe, protect and manage historic and natural coastal resources. By working with various partners on interdisciplinary regional research, the sanctuary works toward a better understanding of the physical, chemical, and biological processes affecting sanctuary resources.

Objectives

- Characterize the sanctuary's maritime heritage resources.
- Explore, map and characterize new wreck sites surrounding sanctuary waters, as per MNMS science needs assessment.
- Scientifically monitor the sanctuary's maritime heritage resources to better understand existing and potential threats.
- Develop and encourage collaborative research programs to meet the Monitor National Marine Sanctuary's on-going management needs.

Strategies

Strategy AR-1: Characterize the sanctuary's maritime heritage resources and landscape features.

Activity 1.1: Assemble and collate extant data regarding the *Monitor* and landscape features in and around the sanctuary and make these available through such media as technical and formal reports, the web, via CD and/or DVD.

- A. Research, compile and collate data and documentation relevant to sanctuary resources.
- B. Maintain files and databases on the *Monitor* and other maritime resources within the sanctuary.

- C. Complete a working draft of the report on the *Monitor*, including all research and archaeology, up to and including the raising of the turret, by December 31, 2012, for use by NOAA staff and the SAC's Archaeology Working Group members for planning purposes.
- D. Complete the final draft of the report on the *Monitor* for review and preparation for publication by March 09, 2014.

Activity 1.2: Conduct systematic remote sensing and visual surveys to monitor maritime heritage resources and landscape features in the sanctuary.

- A. Define survey requirements for characterization.
- B. Encourage and conduct systematic surveys with sanctuary partners based on the requirements above (1.2 A.).
- C. Disseminate research results to professional and public audiences as above (1.1).

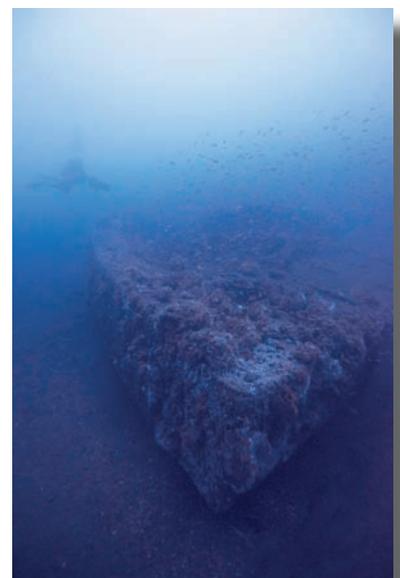
Activity 1.3: Prioritize archaeological data and documentation to establish a baseline for long-term monitoring.

- A. Determine priorities for the *Monitor* site based on gaps identified in the extant data and/or as identified in the Report (1.1 C).
 - 1. Define the gaps that are present.
 - 2. Identify research questions that might be posed.
- B. Determine priorities for the *Monitor* site based on the consideration that it may be deteriorating or becoming less accessible, as a result of natural and human processes.
- C. Complete baseline documentation based on extant data and identified gaps including site plans, underwater video, still imagery and photo-mosaics, particularly as these provide a chronology of imagery of the site through time.
- D. Prepare and complete research reports in a timely manner.
- E. Disseminate research results to professional and public audiences as above (1.1).



ABOVE: Archaeologist excavate the turret (NOAA).

BELOW: USS *Monitor*, 2011 (NOAA).



Activity 1.4: Continue to develop the sanctuary’s Geographical Information System (GIS) for archaeological, historical and geographical data management and dissemination.

- A. Develop a comprehensive database using extant and new data sets.
- B. Maintain and utilize GIS data and create products from the data.
- C. Provide public access to the data via the sanctuary’s web site.

Strategy AR-2: Develop a monitoring program for the sanctuary’s maritime heritage site.

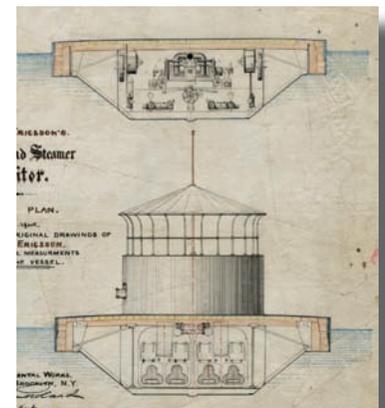
Activity 2.1: Develop and implement a long-term monitoring plan to determine the natural and human impacts on the site.

- A. Collect and evaluate existing data to establish baselines.
- B. Establish site-specific requirements for monitoring.
- C. Collect monitoring data and continually evaluate monitoring requirements.

Strategy AR-3: Develop and continue partnerships with the Christopher Newport University Tribble Library, the Center for Coastal Fisheries and Habitat Research, the National Centers for Coastal Ocean Service and other regional research and academic facilities.

Activity 3.1: Preserve Monitor National Marine Sanctuary collection at the Christopher Newport University Tribble Library and continue to partner with the library to make it accessible to the public.

- A. Ensure the collection infrastructure and policies meet archival standards.
- B. Determine and implement digitization priorities.
- C. Ensure the collection is publicly accessible, physically and online.



ABOVE: Plan drawing of the *Monitor* (TMM).

Activity 3.2: Evaluate opportunities to increase Monitor National Marine Sanctuary research collection holdings.

- A. Develop an acquisitions policy for the collection.
- B. Define the scope for the collection.
- C. Actively pursue donation of archival materials.



ABOVE: Archaeologists with NOAA and ECU work on a site plan (NOAA).

Strategy AR-4: Develop partnerships with local, state, national and international researchers and organizations to enhance sanctuary research programs.

Activity 4.1: Develop partnerships to characterize the sanctuary’s maritime cultural and natural resources.

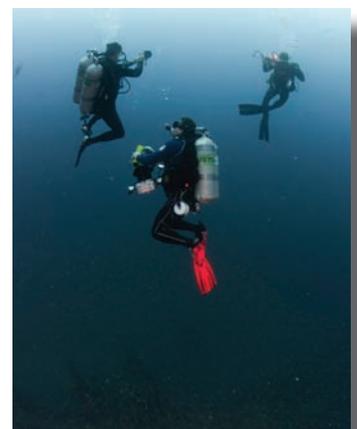
Activity 4.2: Develop partnerships with multi-disciplinary researchers and organizations to study the natural processes within the sanctuary and their impact on associated cultural resources within and adjacent to the site.

Activity 4.3: Create a standing research working group of multidisciplinary researchers from the sanctuary advisory council, government agencies, academic institutions and non-governmental organizations to provide input to further develop and implement a comprehensive sanctuary advisory research program.

Strategy AR-5: Utilize volunteers, students, fellows and interns for sanctuary characterization, research and monitoring, in so far as is practical and with due consideration of safety.

Activity 5.1: Recruit, train, and retain volunteers to assist sanctuary staff on various research projects and with the Monitor National Marine Sanctuary research collection.

- A. Offer a variety of training modules for sanctuary volunteers.
- B. Work with the NOAA Dive Center to establish protocols for certifying and utilizing NOAA-certified and volunteer divers, within established sanctuary dive safety standards.
- C. Develop a list of research opportunities for volunteers.



BELOW: Divers from UNC CSI, ECU, and NOAA ascend to the surface during a dive on the U-701 (NOAA).

- D. Develop a list of opportunities for volunteers in the sanctuary research collection.

Activity 5.2: Establish partnerships with universities, colleges and other institutions to create a robust program for student research internships and fellowships.

- A. Work with ONMS headquarters and NOAA’s Maritime Heritage Program to establish memoranda of agreement with appropriate institutions.
- B. Develop a list of prospective student research projects.



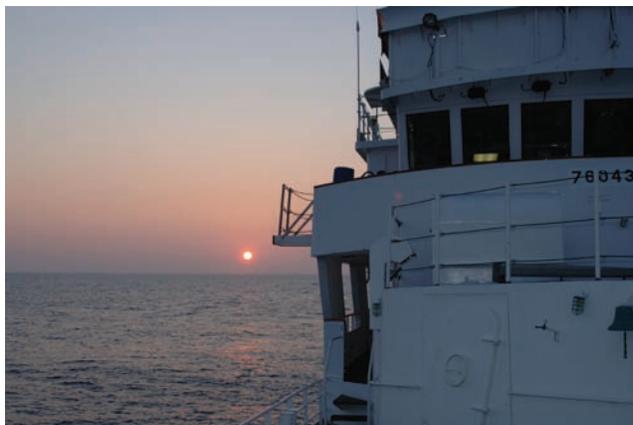
ABOVE: With support from the MNMS, ECU students surveyed and documented several beach and near-shore shipwrecks as part of a summer field school (ECU).

Table 6: Estimated Costs for the Archaeological Research Action Plan

Action Plan	Estimated Cost (\$ in thousands)					Total Estimate 5-Year Cost
	YR 1	YR 2	YR 3	YR 4	YR 5	
Characterize the sanctuary’s maritime heritage resources and landscape features.	100	100	100	100	100	500
Develop a monitoring program for the sanctuary’s maritime heritage site.	10	10	30	20	20	90
Develop and continue partnerships with the Christopher Newport University Triple Library, the Center for Coastal Fisheries and Habitat Research, the National Centers for Coastal Ocean Service and other regional research and academic facilities.	30	40	40	40	45	195
Develop partnerships with local, state, national and international researchers and organizations to enhance sanctuary research programs.	30	30	40	50	50	200
Utilize volunteers, students, fellows and interns for sanctuary characterization, research and monitoring, in so far as is practical and with due consideration of safety.	10	10	10	10	10	50
Total Estimated Annual Cost	180	190	220	220	225	1035

Table 7: Performance Measures for the Archaeological Research Action Plan

Outcome	Performance Measure	Baseline
Annual site monitoring will be conducted by the MNMS utilizing divers or remote sensing technologies.	By 2016, MNMS will have the in-house capability to conduct annual site surveys of the <i>Monitor</i> wreck site.	Currently there is no policy for long-term monitoring and sanctuary staff only intermittently get data or access the site.
Develop a long-term monitoring and archaeological research program for the <i>Monitor</i> wreck site.	By 2015, draft a document that outlines a long-term approach to dealing with archaeological issues at the wreck site.	Since recovery, there has been no formal long-term archaeological plan for the materials, which remain on the seabed.
MNMS will develop a volunteer and internship/fellowship program for archaeological research.	By 2017, the MNMS will begin conducting annual avocational archaeology programs (such as NAS) and maintain an average of 2 regular volunteers or interns to assist staff with AR goals.	Currently, the MNMS has no volunteers or interns that assist with archaeological research goals.
Complete a final archaeological report for NOAA's work on the <i>Monitor</i> site up to 2012.	By 2014, complete and publish (in conjunction with partners) a comprehensive technical archaeological report on all activity conducted on the <i>Monitor</i> since its discovery.	Currently, there are only interim technical reports and annual survey summaries written. A comprehensive report on major initiatives has not yet been completed.



LEFT: Sunset over the *Monitor* (NOAA).

Resource Monitoring Action Plan

Description

The purpose of this action plan is to outline the sanctuary's natural and cultural resource research and monitoring objectives and priorities. The action plan will guide the Monitor National Marine Sanctuary's efforts, while promoting and integrating interdisciplinary research by sanctuary partners.

Background

Continual research and monitoring of the sanctuary's biological and cultural resources and a greater understanding of the physical and chemical characteristics that define the environment in which these resources are located are primary goals of the Monitor National Marine Sanctuary. Sanctuary staff conducts, supports, promotes, and coordinates all research with an aim toward characterization of the unique cultural and natural resources located within and adjacent to the sanctuary. Characterization is the process through which sanctuary resources are inventoried, located, documented and ultimately analyzed within a broader context. Knowledge acquired through research is used to evaluate existing management practices, enhance future management decisions and educate the public about the importance of the USS *Monitor* and the environment in which she is located.

Since its discovery in 1973, the wreck of the USS *Monitor* has suffered significant deterioration in almost every portion of its hull, with the most extensive damage occurring in the stern. As a result of this deterioration, the wreck site has become increasingly fragile and is even more vulnerable to impact. Therefore, it is particularly important that the remainder of the wreck is monitored using multiple techniques so that structural changes can be assessed. Using specialized diving equipment, sanctuary researchers have documented several deepwater shipwreck sites, using a combination of techniques including photo-mosaics, archaeological site plans, artistic renderings and video and still imagery. The sanctuary also uses remotely operated vehicles (ROV) and autonomous underwater vehicles (AUV) to access deeper archaeological sites. Performing corrosion analysis, which measures the electron transfer between metals and the surrounding seawater, is another method through which valuable information is collected on wreck sites. These multiple techniques provide data that are essential for evaluating the *Monitor* and informing future management decisions within the sanctuary.

In proximity to the Monitor National Marine Sanctuary are wreck sites of vessels that were part of the Battle of the Atlantic during World War II. MNMS, in conjunction with the National Marine Sanctuary's Maritime Heritage Program, has incorporated the investigation of these wreck sites into a multi-year study of the Battle of the Atlantic. The goal of this study is to analyze the material remains from WWII vessels, determine their historical significance and identify degradation from environmental and human impact. In addition to studying each site individually, identifying how these sites are connected in a cohesive 'battlefield' is also being examined. Therefore, Allied, Axis, and merchant vessels have been and will continue to be vessels of interest that will aid in this broader understanding. Through this research project, the MNMS also aims to draw attention to the critical role this event played in history as it was the closest theater of war during World War II to the continental United States. As this project progresses, this chapter of American history becomes more comprehensive and better understood.

The Monitor National Marine Sanctuary is uniquely situated at the confluence of the subtropical and temperate zones of the western Atlantic where the cold southerly-flowing Labrador Current meets the warm Gulf Stream waters, making it one of the most biologically productive coastal areas in the Atlantic Ocean.

RIGHT: NOAA data buoy installed in 2006, in the MNMS, offers real-time information to seafarers in determining sea conditions off the coast of Cape Hatteras, N.C. Data from the buoy can be accessed online 24-hours a day.



The sanctuary consists of natural rocky outcrops, sand flats, muddy patches, and artificial hard surfaces created by the *Monitor* itself, providing habitat for diverse tropical, sub-tropical and temperate marine communities. These communities include marine algae, sessile and mobile invertebrates (sponges, lobsters and corals), and economically valuable fishes, including large grouper and snapper. It is the goal of sanctuary staff to characterize these biological communities and the chemical, geological and physical characteristics. A comprehensive look at these living and non-living parameters will provide baseline data and a better understanding of the ecological importance and function of the sanctuary within a unique, dynamic and understudied environment.

A NOAA data buoy, which was installed in the sanctuary in 2006, allows real-time data to be viewed and collected. Water and air temperature, wind direction, wave height and other environmental conditions at the Monitor National Marine Sanctuary aides seafarers in determining sea conditions off the coast of Cape Hatteras and assists staff in monitoring conditions at the sanctuary. Data from the buoy can be accessed online 24 hours a day.

Finally, the sanctuary recognizes that global climate change has far-reaching effects on the oceans. Understanding and confronting climate change are increasingly important aspects of marine conservation. The *Monitor's* unique location within a transition zone where both tropical and colder water species often co-exist, creates an optimal setting to assess potential climate change effects. To that end, the Monitor National Marine Sanctuary is in the process of becoming one of the Office of National Marine Sanctuaries' sentinel sites. Sentinel sites are locations in the marine environment that support sustained observations of changes in the status of the marine environment. They allow investigators to track the status of key indicators of ecosystem integrity, serve as a means to provide early warning to resource managers and offer opportunities for technology and protocol testing. Sentinel sites address NOAA activities in areas of mandated responsibility and help address questions about regional issues, such as habitat degradation and invasive species impacts.

The sanctuary also works to enhance NOAA's and other partners' abilities to observe, protect and manage. The Office of National Marine Sanctuaries has created a Science Needs Assessment website (<http://sanctuaries.noaa.gov/science/assessment/mnms.html>), which provides information about priority management issues facing each sanctuary and science needs necessary to address these issues. This resource allows potential partners and research institutions to view needs of the Monitor National Marine Sanctuary in order to collaboratively meet

research requirements of the site. By collaborating with various partners on interdisciplinary research, the sanctuary is working toward a better understanding and long-term monitoring of the cultural and natural resources, while systematically managing and distributing the data collected.

Finally, public participation is critical to all aspects of resource conservation. Research towards understanding and quantifying the socioeconomic impacts of the Monitor National Marine Sanctuary, as well as perceptions by the public towards marine protected areas off the coast of North Carolina, is an important part of resource monitoring.

Goal

Gain increased knowledge of the Monitor National Marine Sanctuary's natural and cultural resources in order to monitor and protect them, and to better understand the sanctuary environment holistically within a local, regional and global context.

Objectives

- Establish and maintain a monitoring and research program to recognize, document and track changes in the structural integrity of USS *Monitor* and associated artifacts.
- Establish and maintain a monitoring and research program of the MNMS's living resources and their habitats.
- Establish and promote the sanctuary as an ocean observing station or ONMS sentinel site due to its unique location within an important area for biological productivity and climate change.

Strategies

Strategy RM-1: Establish and maintain a monitoring and research program to recognize, document, and track changes in the structural integrity of USS *Monitor* including the remaining hull structure and associated artifacts.

Activity 1.1: Review and catalogue data from past studies to identify gaps and track changes over time.

Activity 1.2: Identify and target research and monitoring on especially vulnerable areas.

Activity 1.3: Collect baseline data against which structural changes to the USS *Monitor* and associated artifacts can be assessed (e.g. concretion characterization and corrosion studies).

- A. Data from laboratory conservation should comprise part of the data set.
- B. Periodic photo- and video-mosaics should be conducted.
- C. Visual examination of the site should be conducted at regular intervals, either through submersibles, AUVs, ROVs or diving.
- D. Archaeological approaches should be further tested and used to assess biological communities.

Activity 1.4: Work with research partners to systematically manage and disseminate data from monitoring and research done within the MNMS.

- A. Create Federal Geographic Data Committee (FGDC) compliant metadata records with all datasets.
- B. Develop products derived from data.
- C. Archive data and metadata on public website.
- D. Access data through web portal.
- E. Promote research projects to potential partners via the ONMS Needs Assessment website.

Strategy RM-2: Establish and maintain a monitoring and research program of the USS *Monitor*'s living resources and their habitats to better understand ecosystem changes within and adjacent to the sanctuary.

Activity 2.1: Assess and monitor the sanctuary's associated biological, geological, chemical and physical characteristics to better understand the factors that control and influence biological productivity and change at the site, including:

- A. Biological communities and succession (e.g. fishes, algae, sponges, lobsters and hard corals).
- B. Atmospheric parameters (e.g. maintain and enhance NOAA data buoy).
- C. Physical and chemical water column parameters to better understand Gulf Stream dynamics, upwelling and ocean acidification including: temperature, currents, internal waves, optical properties, chlorophyll, oxygen, ph, salinity and nutrients.
- D. Geological characteristics (e.g. sedimentological analysis, characterization and movement).

Activity 2.2: Work with research partners to systematically manage and disseminate data from monitoring and research done within the MNMS.

Strategy RM-3: Establish and promote the sanctuary as an ocean observing station or ONMS sentinel site due to its unique location within an important area for biological productivity and climate change.

Activity 3.1: Develop Ocean Observing System (OOS) implication plan.

Activity 3.2: Integrate existing data within the National Integrated Ocean Observing System (IOOS).

- A. Establish real time capabilities, including telepresence above and below the water.

Activity 3.3: Enhance remote observing system with *in situ* sensors to monitor physical, chemical and optical water quality parameters.

Activity 3.4: Conduct historic comparison of satellite data to detect changes in ocean color, sea surface temperature (SST), and Gulf Stream dynamics and related events.

Activity 3.5: Work with research partners to systematically manage and disseminate data from monitoring and research done within the MNMS.

Strategy RM-4: Develop and maintain operational capabilities to sustain research and monitoring (instrumentation, diving, telepresence, personnel).

Activity 4.1: Establish collaborations and regional partners.

- A. Southeast Coastal Ocean Observing Regional Association (SECOORA) and the Mid-Atlantic Coastal Ocean Observing Regional Association (MACOORA)
- B. Regional dive operators
- C. Commercial, academic and government research vessels

Activity 4.2: Utilize volunteers, students, fellows and interns.

Table 8: Estimated Costs for the Resource Monitoring Action Plan

Action Plan	Estimated Cost (\$ in thousands)					Total Estimate 5-Year Cost
	YR 1	YR 2	YR 3	YR 4	YR 5	
Establish and maintain a monitoring and research program to recognize, document and track changes in the structural integrity of USS <i>Monitor</i> including the remaining hull structure and associated artifacts.	50	50	50	50	50	250
Establish and maintain a monitoring and research program of the USS <i>Monitor</i> 's living resources and their habitats to better understand ecosystem changes within and adjacent to the sanctuary.	50	50	50	50	50	250
Establish and promote the sanctuary as an ocean observing station due to its unique location within an important area for biological productivity and climate change.	25	100	40	40	40	245
Develop and maintain operational capabilities to sustain research and monitoring (instrumentation, diving, tele-presence, personnel).	100	100	100	100	100	500
Total Estimated Annual Cost	225	300	240	240	240	1245

Table 9: Performance Measures for the Resource and Monitoring Action Plan

Outcome	Performance Measure	Baseline
Increased environmental and ecological monitoring in the sanctuary accompanied by appropriate dissemination to both public and scientific communities.	By 2017, the data buoy will contain increased capabilities (including a functional ADCP), and the MNMS will work with partners to conduct a comprehensive baseline ecological analysis on site.	Currently, the MNMS resource monitoring has focused predominantly on maritime heritage related issues, with the exception of a 2008 condition report, which includes a cursory assessment of the biological community.
Establish and enact formal plan for on-site corrosion monitoring at the <i>Monitor</i> site.	By 2015, work with partners such as NPS and The Mariners' Museum to develop and draft a long-term plan for assessing corrosion potential at the remains of the wreck site on the seabed.	Currently, the best corrosion information comes from the recovered materials and does not address the materials at the wreck site with up-to-date technology.
In-house ability to conduct field operations on the wreck of the <i>Monitor</i> .	By 2016, the MNMS will have sufficient qualified staff and operational resources to gain access to the <i>Monitor</i> wreck site.	Currently, the MNMS does not have sufficient operational capabilities or staff to access the sanctuary and relies on partner agencies to conduct monitoring activities.

The Monitor Sailors Action Plan

Description

During the major artifact recovery period of 1998-2002, NOAA considered the very real possibility that human remains might be found in the wreck site. NOAA knew that any archaeological investigation into the wreck of the USS *Monitor* carried with it a social responsibility to handle any discovered human remains with the utmost dignity and to do so in accordance with established U.S. Navy and federal archaeological guidelines.

Background

The likeliness of encountering human remains was elevated during the planning phases for the turret recovery that took place in 2002. The Monitor National Marine Sanctuary worked with staff from the U.S. Navy History and Heritage Command and the Central Identification Laboratory, Hawaii (CILH), currently known as Joint POW/MIA Accounting Command (JPAC), to develop a plan in the event of an encounter.

Early on the morning of July 26, 2002, a U.S. Navy diver working underwater inside the *Monitor's* turret (beside the starboard cannon) uncovered a fragment of human bone. MNMS staff on watch instructed the diver to gently fan the area around the bone clearing off additional sediment, which revealed what appeared to be an intact human humerus bone. NOAA immediately alerted the JPAC archaeologist, who verified that the bone encountered was in fact a human humerus. As the work of clearing and fanning continued, it was quickly determined that the bone was part of a full human skeleton lying face down and heavily concreted to the iron roof components of the turret.

Once the turret was on deck, the examination of the skeleton revealed that there was a second set of skeletal remains lying under portions of the first. The excavation of the two sets of remains was completed once the turret was safely on land and in a conservation tank at The Mariners' Museum. Both sets of remains were transferred to the JPAC laboratories for cleaning, forensic examination and possible identification.



ABOVE: Casts of the skulls of *Monitor's* two crewmen (*Monitor* Collection, NOAA).



ABOVE: Crewmen on deck of the USS *Monitor*. Photo taken by James Gibson on July 9, 1862 (Library of Congress).

BELOW: JPAC's Central Identification Laboratory conducted detailed forensic analyses of *Monitor's* two crewmen from the turret (*Monitor* Collection, NOAA).



Associated Artifacts

Several artifacts were recovered from the immediate area around and under the two sets of skeletal remains. These included; “pocket contents” consisting of a hard rubber USN comb, badly corroded coins and a pocketknife. Additional artifacts associated with the two individuals included small glass buttons and large, hard rubber USN buttons. The lack of any brass buttons and brass or gold bullion threads (deteriorated shoulder boards, hat bands, etc.) indicate that the two individuals were likely enlisted personnel.

Forensic Investigation

A forensic study of the two individuals revealed some significant information as to race, age and health issues, as well as the presence of DNA, but could not provide conclusive identification, as there were no known living descendants with whom to compare the DNA.

Goal

Follow all protocols established by the U.S. Navy and other federal agencies, based on dignity, respect and honor for the deceased and their families, for dealing with known human remains, as of yet undiscovered human remains, and associated personal effects encountered within the Monitor National Marine Sanctuary (MNMS).



ABOVE: The first set of remains recovered, *Monitor 1*, was wearing a gold ring on his right hand (*Monitor* Collection, NOAA).

RIGHT: U.S. Navy sailor at Arlington National Cemetery (USN).



Objectives

- Pursue positive identification of known human remains and any additional human remains encountered within the sanctuary.
- Make recommendations to the U.S. Navy concerning the final disposition of human remains and personal effects.
- Follow established parameters for the care, conservation, portrayal and display of human remains and personal effects prior to final disposition.
- Enhance public education and awareness of personal stories and social history associated with human remains encountered within the sanctuary.

Strategies

Strategy MS-1: Continue collaborating with JPAC and the U.S. Navy to pursue positive identification of the human remains recovered in 2002, from the *Monitor*'s turret, as well as any additional human remains encountered in the future.

Activity 1.1: Devote staff time and resources towards the pursuit of identification of human remains that were recovered in 2002, and if possible, locate living descendants. This activity includes working with genealogical services, archival research and increasing public awareness of the two recovered sailors.

Activity 1.2: Work with the Forensic Anthropology and Computer Enhancement Services (FACES) laboratory at Louisiana State University and staff at Texas A&M University, Smithsonian Institution and personnel from JPAC on the facial reconstructions of the two sets of human remains recovered from inside the gun turret.

- A. Work with scientists and technicians to determine best method for facial reconstructions (clay vs. digital) are for accurate reconstructions.
- B. Work with JPAC to ensure that a comprehensive isotopic analysis has been completed for both sets of skeletal remains.
- C. Evaluate the value of obtaining and using nuclear DNA in addition to mitochondrial testing already conducted on the two sets of skeletal remains.



Clay reconstruction of *Monitor* #2 (LSU).



Digitized reconstruction of *Monitor* #2 (LSU).



Clay reconstruction of *Monitor* #1 (LSU).



Digitized reconstruction of *Monitor* #1 (LSU).

Strategy MS-2: Work with the U.S. Naval History and Heritage Command towards a goal of having the two sets of human remains interred in a secure and respectful manner that honors the two sailors within Arlington National Cemetery at Arlington, Va. and that would serve as a tribute to the other 14 individuals who were lost and to the *Monitor*'s impact and significance on U.S. and world history.

Activity 2.1: If no living descendants of the two *Monitor* sailors recovered in 2002 can be located, submit a recommendation on interment to the U.S. Navy by June 1, 2012.

- A. Make recommendations that the remains be interred at Arlington National Cemetery on or by December 31, 2012.
- B. Recommend that the monument not only be a memorial to the two recovered sailors, but to all of the 16 who were lost the night the *Monitor* sank. This type of memorial would serve as a tribute to the USS *Monitor*'s role in history and serve as fitting location in the event additional associated remains are encountered and recovered from within the Monitor National Marine Sanctuary.
- C. Recommend that burial be conducted in such a manner that assures the security of the interred remains.

Activity 2.2: Work with the U.S. Congress and the U.S. Navy to fund, develop, and erect a monument to the *Monitor* and her crew in Arlington National Cemetery.

- A. The MNMS should take the lead in finding funds for the design and construction of a monument and should work with Congress, the U.S. Navy, private citizens and NGO's.
- B. Work directly with Arlington National Cemetery to determine what (if any) design restrictions or constraints will be encountered.
- C. Work with partners to identify an appropriate artist for the monuments design.

Activity 2.3: In the event that living descendants are located for one or both of the *Monitor* sailors, the MNMS should work with the Navy History and Heritage



ABOVE: A wreath was laid at the statue of the Lone Sailor, Navy Memorial Museum in Washington, DC (NOAA).

Command and JPAC to encourage the descendants to inter the remains in a manner that honors the individual(s), the other men lost the night the *Monitor* sank and the importance of the *Monitor* and her crew to this nation's maritime history.

Strategy MS-3: Define a protocol for the disposition and display of the personal effects associated with the human remains recovered from the *Monitor* in 2002, that emphasizes their historical significance and assures that any exhibition provides a strong measure of dignity, respect and honor towards the deceased and their descendants.

Activity 3.1: Clearly define the differences between “associated” artifacts and “directly associated” artifacts relating to the two individuals recovered from inside of the *Monitor's* gun turret.

Activity 3.2: Identify existing policies relating to the display of personal effects recovered from an archaeological site, which are directly associated with human remains. This should specifically include a study on the treatment of personal effects belonging to naval personnel, but not limited to naval personnel.

Activity 3.3: In the event that legitimate descendants are located, work with descendants and the U.S. Navy to impart an understanding of the importance of the associated artifacts and their significance to the national story of the USS *Monitor*, with a recommendation that all or some of the associated artifacts of the individual(s) remain part of the Monitor National Marine Sanctuary's archaeological collection.

Strategy MS-4: Develop outreach and educational materials and programs based on the personal stories and social history associated with the *Monitor's* crew.

Activity 4.1: Engage a production company to develop a documentary or docu-drama surrounding the two individuals recovered in 2002. This should include historical background of the events, the forensic data records derived from the individuals, documentation of the facial reconstruction procedures and imagery of the final results. This production should be geared towards reaching a prime time market.



ABOVE: Researchers are puzzled why so many items of silverware, some with engraved names or initials, were found deep inside the turret (TMM).

Table 10: Estimated Costs for the *Monitor* Sailors Action Plan

Action Plan	Estimated Cost (\$ in thousands)					Total Estimate 5-Year Cost
	YR 1	YR 2	YR 3	YR 4	YR 5	
Continue collaborating with JPAC and the U.S. Navy to pursue positive identification of the human remains recovered in 2002, from the <i>Monitor</i> 's turret, as well as any additional human remains encountered in the future.	50	10	10	10	10	90
Work with the U.S. Naval History and Heritage Command towards a goal of having the two sets of human remains interred in a secure and respectful manner that honors the two sailors within Arlington National Cemetery at Arlington, Va., serves as a tribute to the other 14 individuals who were lost and highlights the <i>Monitor</i> 's impact and significance on U.S. and world history.	100	50	-	-	-	150
Define a protocol for the disposition and display of the personal effects associated with the human remains recovered from the <i>Monitor</i> in 2002, that emphasizes their historical significance and assures that any exhibition provides a strong measure of dignity, respect and honor towards the deceased and their descendants.	30	20	-	-	-	50
Develop outreach and educational materials and programs based on the personal stories and social history associated with the <i>Monitor</i> 's crew.	15	15	-	-	-	30
Total Estimated Annual Cost	195	95	10	10	10	320

Table 11: Performance Measures for the *Monitor* Sailors Action Plan

Outcome	Performance Measure	Baseline
Establish an appropriate ceremony and inter the remains of the individuals recovered from inside the <i>Monitor's</i> turret	By 2013, erect an appropriate monument and conduct an appropriate ceremony, preferably at Arlington National Cemetery to serve as the final resting place for the crew.	Currently the remains are undergoing forensic and genealogical analysis at JPAC. There are currently no formal plans for the remains.
Identify the two sets of human remains	By 2013, Determine, via genealogical research and public outreach, the identify of the individuals and consequently identify descendants. If no results are gained by 2013, interment will proceed.	This is an ongoing effort for the sanctuary.



LEFT: Conserved shoes found in turret (TMM).

Monitor *Artifact Conservation Action Plan*

Background

In the mid-1990's, NOAA began reporting to Congress that based on corrosion studies and expert observations, the USS *Monitor's* degraded hull was at risk of a catastrophic collapse. This collapse could happen at anytime and would likely result in a significant loss of the ship's structure and many of its historic contents.

In response to these reports, Congress issued a mandate to the Secretary of Commerce in October 1996, to produce "a long-range, comprehensive plan for the management, stabilization, preservation, and recovery of artifacts and materials of the USS *Monitor*." The mandate further stated that "to the extent feasible," NOAA should, "utilize the resources of other Federal and private entities with expertise and capabilities that are helpful" and to submit the plan within 12 months of the date of enactment of the act.

The final plan titled *Charting a New Course for the Monitor* was submitted to Congress in November 1997. The plan outlined an ambitious stabilization and recovery proposal for some of the key components of this historic vessel and after a review, was approved by Congress and formally issued in April 1998.

A critical element to the plan was the need to adequately conserve what NOAA was proposing to recover. Monitor National Marine Sanctuary's main partner in the preservation of the USS *Monitor* is The Mariners' Museum, which was selected as the principal repository for archival materials and artifacts in 1987. The museum's role in the project was substantially increased with the issuance of the recovery plan. Conservators contracted by the museum worked with sanctuary and museum staff to develop a preliminary plan for a facility that outlined the variety of materials likely to be recovered and the space and equipment that would be necessary to hold and treat these artifacts. [See *Charting a New Course for the Monitor*, Appendix B, pg. 31 - 43 for complete details.]

In June 1998, NOAA and the U.S. Navy recovered the *Monitor's* unique cast iron propeller and the majority of the wrought iron propeller shaft. The remaining segment of propeller shaft (with the stuffing box attached) and the rudder skeg, were recovered in 2000. The *Monitor's* vibrating lever steam engine was recovered in July 2001, and the rotating gun turret was raised from the sea floor in August 2002. The combined weight estimates of the large components recovered from 1998 – 2002 is in excess of 190 tons with an additional estimate of five tons

of associated artifacts comprised of brass, bronze, copper, glass, ceramics, wood and other organic materials and approximately two tons of anthracite coal. In all, NOAA has delivered almost 200 tons of waterlogged archaeological materials to The Mariners' Museum since recovery operations began in 1998.

In March 2007, The Mariners' Museum and NOAA officially opened the USS *Monitor* Center. *Monitor* Center is a 64,000 square foot addition to the museum's existing building that is dedicated to telling all facets of the USS *Monitor* story including John Ericsson, the CSS *Virginia*, and the Monitor National Marine Sanctuary. A major component to the USS *Monitor* Center is the 15,000 square foot Batten Conservation Laboratory Complex, which was built specifically as a facility for treatment of the archaeological materials recovered from the Monitor National Marine Sanctuary.

The Batten Conservation Laboratory Complex far exceeds the original proposal that was incorporated into the 1998 recovery plan. The facility's main areas are the wet lab, dry lab and the artifact treatment area, which includes the offices for conservation staff. The facility houses 95 percent of the waterlogged artifacts in a variety of storage and treatment tanks. The other five percent of the recovered components are maintained in controlled wet storage under a covered shed behind the main facility.

Artifact conditions are initially assessed through a triage approach and artifacts deemed to be at the most risk receive priority attention. Artifacts not requiring immediate treatment are placed in wet storage and the corrosion processes are chemically controlled. Conservation staff continually monitor the water quality and water level on these passive treatment tanks, as well as those artifacts undergoing active treatments.

Artifacts undergoing conservation are kept in a variety of treatment tanks ranging in size from the 90,000-gallon turret tank down to small sealed storage bins on shelves. Many of the singular components (pumps, blower engines, valves, etc.) expand their footprints in the facility, as they are disassembled for treatment. Some containers can hold multiple components of a disassembled artifact, but some components require individual tanks or bins depending on the material or specific needs of the artifact. Composite artifacts like the *Monitor*'s condenser, steam engine, and rotating gun turret will require a variety of treatments and a significant number of treatment tanks throughout the conservation processes.

The overall scope of the conservation of *Monitor* archaeological materials is vast and some of the components are very complex. Estimates for completed treatment of artifacts are dependent on many factors, including staff, funding and the artifact itself. Preliminary estimates for complete conservation of some of the larger components are estimated at 10 – 15 years, and long-term conservation requires long-term funding.

Goal

Assure successful conservation treatment of artifacts recovered from the *Monitor* and find ways to assure adequate funding to increase the current levels of funding.

Objectives

- Assure all artifacts recovered from the *Monitor* are properly and adequately conserved.
- Identify additional funds to support existing federal dollars allocated towards the conservation of USS *Monitor* archaeological materials.
- Support The Mariners' Museum's efforts to increase their levels of funding for the conservation of USS *Monitor* archaeological artifacts.
- Work with The Mariners' Museum to establish additional outside partnerships for USS *Monitor* artifact conservation. These partnerships should include the scientific, engineering and mechanical communities.
- Identify other conservation facilities and conservators to explore new techniques that might be applicable to the treatment of USS *Monitor* artifacts.
- Collaborate closely with museum conservation staff to increase the public visibility, knowledge and support for the conservation efforts on USS *Monitor* artifacts.



RIGHT : Dahlgren gun in conservation tank at TMM (TMM).

Strategies

Strategy CN-1: Assure adequate long-term base funding for conservation needs for *Monitor* artifacts, and pursue increased federal funding for the conservation of *Monitor* archaeological artifacts.

Activity 1.1: Develop briefing for ONMS HQ staff materials that detail the scope of the USS *Monitor* conservation project and stress the need for increased funding for the MNMS contribution to the artifact conservation efforts.

Activity 1.2: Work with ONMS HQ on securing Congressional support for increasing the MNMS budget, specifically to support the ongoing conservation of USS *Monitor* archaeological materials.

Strategy CN-2: Work with The Mariners' Museum on ways to increase their level of funding for the conservation of USS *Monitor* archaeological materials.

Activity 2.1: Assist The Mariners' Museum to identify outside funding sources, particularly grant opportunities, outside federal systems.

Activity 2.2: Assist The Mariners' Museum with locating and jointly applying for federal grants that apply to the conservation of USS *Monitor* archaeological materials.

Strategy CN-3: Continue to establish relationships within the scientific, engineering and mechanical communities to further the study of USS *Monitor* archaeological materials.

Activity 3.1: Develop a list of companies and agencies that utilize specialized equipment (laser scanners, demonized water generation, plumbing, chemical companies, etc.) and that might be attracted to in-kind partnerships with NOAA and The Mariners' Museum on conserving USS *Monitor* archaeological materials for publications and advertising incentives. Agencies and companies can likely be approached jointly by the MNMS and The Mariners' Museum.



ABOVE: Engine register, after conservation, from the *Monitor*'s steam engine (TMM).



BELOW: Conserved shoe (TMM).

Strategy CN-4: Foster relationships with conservation facilities and conservators that are involved in waterlogged archaeological projects.

Activity 4.1: Actively research what other conservation facilities are engaged in and what alternative techniques are available in the field, particularly in areas that accelerate the entire conservation processes (form fitting anodes, modified electrolyte solutions, current densities, etc.).

Activity 4.2: Support alternative conservation techniques where possible. Treatments that are considered experimental can be investigated by applying techniques to sample pieces recovered from the USS *Monitor* wreck site.

Strategy CN-5: The MNMS and The Mariners' Museum should work jointly on presentations and through publications to maintain an awareness of the needs of conserving archaeological materials from the USS *Monitor*.

Activity 5.1: The MNMS staff and The Mariners' Museum should collaborate on presentations directed at the historical and historical preservation communities to promote awareness of the value of the USS *Monitor* archaeological collection and the preservation efforts involved.

Activity 5.2: The MNMS staff and The Mariners' Museum should work together and individually to have articles published in a variety of historical and trade publications that would help make people aware of the value of the USS *Monitor* archaeological collection and efforts to preserve the collection.

RIGHT: Batten Conservation Laboratory Complex (TMM).



Table 12: Estimated Costs for the Artifact Conservation Action Plan

Action Plan	Estimated Cost (\$ in thousands)					Total Estimate 5-Year Cost
	YR 1	YR 2	YR 3	YR 4	YR 5	
Assure adequate long-term base funding for conservation needs for <i>Monitor</i> artifacts and pursue increased federal funding for the conservation of <i>Monitor</i> archaeological artifacts.	200	250	300	400	450	1600
Work with The Mariners' Museum on ways to increase their level of funding for the conservation USS <i>Monitor</i> archaeological materials.	-	-	-	-	-	0
Continue to establish relationships within the scientific, engineering and mechanical communities to further the study of USS <i>Monitor</i> archaeological materials.	-	-	-	-	-	0
Foster relationships with conservation facilities and conservators that are involved in waterlogged archaeological projects.	-	-	-	-	-	0
The MNMS and The Mariners' Museum should work jointly on presentations and publications to maintain an awareness of the needs of conserving archaeological materials from the USS <i>Monitor</i> .	-	-	-	-	-	0
Total Estimated Annual Cost	200	250	300	350	400	1600

Table 13: Performance Measures for the Artifact Conservation Action Plan

Outcome	Performance Measure	Baseline
Increased funding via a combination of federal, state and private sources to meet the needs of <i>Monitor</i> conservation.	Maintain a minimum level of base conservation funding of \$350k per year, with an increase to \$500k by 2015.	Minimum level of funding required to maintain conservation efforts is \$300k per year.



LEFT TO RIGHT: Dry lab at TMM, gun carriage, steam engine, and entrance to the USS *Monitor* Center (TMM).

Expansion Action Plan

Description

Maritime heritage is a broad legacy that includes not only physical resources, such as historic shipwrecks and prehistoric archaeological sites, but also terrestrial structures which link human activity to the sea (lighthouses, life-saving stations, wharves, docks, shipyards, etc.), archival documents, oral histories and traditional seafaring and ecological knowledge of indigenous cultures. When properly studied and interpreted, these maritime heritage resources add an important dimension to our understanding and appreciation of our nation's rich maritime legacy and make us more aware of the critical need for wise stewardship of our ocean's biological and cultural resources. Responsible, informed decisions must be made on how to manage these resources for the enjoyment and appreciation of current and future generations.

Along the Outer Banks of North Carolina, maritime history and heritage has been central to the identity of the region. Shipwrecks, lifesaving stations and iconic lighthouses are important drivers for heritage tourism and regional identity. Known archaeological sites in this area represent many facets of maritime commerce and conflict, including sites associated with colonial commerce, piracy, shipbuilding, the American Civil War, World War I and World War II, as well as a wide range of materials associated with regional coastal heritage and possible material remains of early indigenous habitation sites on the continental shelf. The broad range and high quality of maritime heritage resources that exist in this region are unique to the country in abundance, integrity and accessibility, and in some cases, represent the only examples of a particular event in history or maritime technological development. The variety and richness of the resources in this region is of particular significance and may merit elevated recognition, resources and management that incorporates federal, state and local interests.

In recent years, there has been growing public interest in our nation's collective maritime heritage. The body of heritage resources off North Carolina may represent an ideal location to celebrate, study and preserve an area of nationally significant historic sites. Many of these sites, which in some cases are military gravesites, merit further characterization and preservation. As such, constituents such as veterans groups, historians, archaeologists, divers, the preservation community, the general public and the MNMS Advisory Council have approached NOAA to formally assess their national significance and consider expansion of the Monitor National Marine Sanctuary as a means to protect and preserve these historic sites.

Many of the WWII shipwrecks are protected under the 2005 Sunken Military Craft Act (10 U.S.C. 113 note; Pub. L. 108-375, Sections 1401-1408), which permits divers to visit these sites, but restricts their activities to a “look but do not touch” policy to stop illegal salvage and looting. The Sunken Military Craft Act does not address fishing activities or other commercial ventures that may inadvertently damage these resources. Additionally, enforcement of the Sunken Military Craft Act is difficult, partially because the U.S. Navy has not yet promulgated implementing regulations. As a consequence, NOAA is working with local divers, the State of North Carolina, and other stakeholders to determine whether NOAA can be of assistance in providing further protection for the submerged cultural resources in this area, so they may continue to be enjoyed by the public, historical interests, divers and others for years to come and remain a valuable national heritage resource.

During the 2008 scoping meetings, held as part of the management plan review process, and in the subsequent comments received, the issue of possible expansion of the MNMS boundary was raised repeatedly. Most comments and questions revolved around issues of access and increased protection. As a result, the sanctuary advisory council voted unanimously in January 2009 to establish a working group to examine the benefits and implications of possible future expansion of the MNMS. That working group studied the issues and concerns regarding possible expansion and submitted to the full advisory council a recommendation that NOAA should explore expansion formally. The following is a statement of the official language approved by the full MNMS Advisory Council regarding its recommendations:



LEFT: Sand tiger sharks on the *Dixie Arrow* wreck site (NOAA).

MNMS SAC Recommendation

The Advisory Council of the Monitor National Marine Sanctuary recognizes that the waters off of coastal North Carolina contain a unique collection of shipwrecks, which document over 500 years of our nation's maritime past, and further acknowledges that these shipwrecks are of great significance to the people of the United States.

The Monitor National Marine Sanctuary Advisory Council therefore recommends that the Office of National Marine Sanctuaries evaluate and assess an expansion of the Monitor National Marine Sanctuary or the designation of an entirely new National Marine Sanctuary to protect, manage and interpret additional shipwrecks and other potential maritime heritage resources that exist in the adjacent waters of North Carolina in an area known as the Graveyard of the Atlantic.

Such an evaluation should be accomplished in a way that assures continued public access and takes into consideration the potential effects of an expanded area on all users including divers, fisherman (charter, recreational, and commercial), boaters, and the local communities near the sanctuary. If an expansion is pursued, it should be based on the management model adopted by the Trust under Bay National Marine Sanctuary in terms of open access for all and focus on the maritime heritage resources within any proposed sanctuary boundary. The advisory council strongly encourages the Sanctuary Program to work with all stakeholders as they evaluate this proposal.

Any decision to move forward with a possible expansion of the MNMS will involve a multi-year process and include numerous public meetings and workshops, advisory council and public input and a public review of all proposals.

Background

Protecting additional submerged cultural resources in the waters off of Cape Hatteras, N.C., in the area popularly known as *The Graveyard of The Atlantic*, emerged as the number one issue voiced during scoping. Specifically, comments expressed concern that many of the shipwrecks located in these waters (many of which are war graves) were not being adequately protected. Other comments focused on the concern for continued public access to these shipwrecks, which serve as important economic resources for tourism and SCUBA diving within the state. Many of these comments were received from dive shop owners, divers, dive charter operators and members of the general public.

The National Marine Sanctuaries Act (NMSA) has specific requirements for sanctuary expansion or designation that include inter-agency consultations and environmental analyses, among other activities. NOAA will formally consider expansion through a public process guided by requirements of the NMSA, National Environmental Policy Act (NEPA) and other applicable laws and regulations. This process requires the development of an Environmental Impact Statement (EIS), which describes the affected environment, the development of alternatives and the environmental consequences to the human and natural environments of each of the alternatives.

Objective

The Sanctuary Expansion Action Plan (SEAP) outlines the process of looking at the submerged cultural resources in the Graveyard of the Atlantic. Under this action plan, a working group of state, federal and county officials, as well as non-governmental organizations and community stakeholders (fishing, diving, recreational users) will be established to assess all aspects of the expansion. This group will make recommendations to the MNMS Advisory Council on the expansion concept and rely extensively on input from the public.

Strategy

The SEAP contains one strategy to initiate a process that will begin exploring the implications and justifications for any future expansion of the MNMS. This process will include: a socio-economic study; a maritime cultural heritage resource assessment; public scoping meetings; meetings with relevant state and local agencies; opportunities for input from potentially affected stakeholder groups, such as the dive industry and recreational fishers; a DEIS; a study of boundary and regulatory options; a management plan assessment; and most importantly, numerous and frequent opportunities for public input.

Strategy SE-1: Evaluate and consider the benefits, need and impact of a future boundary expansion of MNMS to include additional submerged cultural resources.

Activity 1.1: Catalog the known historic resources located in the waters adjacent to the MNMS through a cultural resource assessment in partnership with



LEFT: NOAA crew members recover an ROV from the back of the R-8501 (NOAA).

the State of North Carolina, other federal agencies, universities, local communities, the MNMS Advisory Council and members of the public.

Activity 1.2: Hold public scoping meetings on boundary expansion based on information developed through Activity 1.1. Meet with relevant state and local agencies and provide opportunities for input from potentially affected stakeholder groups.

Activity 1.3: Initiate the preparation of a Draft Environmental Impact Statement (DEIS) and Draft Management Plan (DMP), for proposed expanded area, to analyze the impacts of alternatives for sanctuary expansion, with one alternative being take no further action on expansion.

Activity 1.4: Hold a series of public information sessions to gather input on DEIS and DMP.

Activity 1.5: Complete Final Environmental Impact Statement (FEIS) and final management plan (FMP).

Activity 1.6: Make final decision and issue regulations.

Table 14: Estimated Costs for the Sanctuary Expansion Action Plan

Action Plan	Estimated Cost (\$ in thousands)					Total Estimate 5-Year Cost
	YR 1	YR 2	YR 3	YR 4	YR 5	
Evaluate and consider the benefits, need and impact of a future boundary expansion of the MNMS to include additional submerged cultural resources.	25	50	30	50	30	185
Total Estimated Annual Cost	25	50	30	50	30	185

Table 15: Performance Measures for the Sanctuary Expansion Action Plan

Outcome	Performance Measure	Baseline
Completed Draft Environmental Impact Statement and Draft Management Plan.	Completed DEIS & DMP by 2014.	Currently, no baseline for this performance measure.



LEFT: *Dixie Arrow* as it burns after torpedo hits (Library of Congress).

ABOVE: Photomosaic of the *U-85* located off the North Carolina coast (NOAA).

Operations and Administration Action Plan

Background

The Operations and Administration Action Plan (OAAP) provides recommendations to strengthen the sanctuary's base-level staffing, facilities, infrastructure and program support to effectively meet the basic needs of sanctuary management. Emphasis is placed on the physical infrastructure and financial resource requirements of the site.

Objective

The purpose of the OAAP is to ensure the administrative, operational and financial capacities of the sanctuary are adequate to effectively implement the goals and objectives of the sanctuary.

Strategies

The OAAP has two strategies and associated activities to build the additional capacity needed for the sanctuary to meet basic requirements for staffing, infrastructure support and program implementation. In brief:

Strategy OA-1: Strengthen sanctuary human resources and program support capabilities.

Activity 1.1: Maintain, and increase when necessary, human resources required to support existing, new or expanded sanctuary programs.

Activity 1.2: Enhance the use of volunteers, partnerships, internships and cooperative programs to fulfill human resource needs, when possible.

Strategy OA-2: Maintain and enhance sanctuary facilities, vessels and other infrastructure.

Activity 2.1: Effectively operate and maintain the regional sanctuary vessel R-8501.

Activity 2.2: Maintain existing facility infrastructure, and develop and implement a long-range facilities plan.

Activity 2.3: Establish a permanent sanctuary office presence in North Carolina.

Strategy OA-1: Strengthen sanctuary human resource and program support capabilities.

As sites update and revise management plans, they identify and evaluate needs for more effective management. Additional staffing and infrastructure resources are required to meet the expanded public demands and expectations raised by the process and to respond to legal mandates and policies. Strengthening the sanctuary's base level staffing, facilities infrastructure and program support to effectively meet the basic needs of sanctuary management is one of the priorities of this management plan.

Activity 1.1: Maintain, and increase when necessary, human resources required to support existing, new or expanded sanctuary programs.

The MNMS will maintain basic staffing requirements to support existing programs in the areas of conservation science, education and outreach, resource management and administration.

Current (2012) staff positions and responsibilities include:

Management

- Sanctuary Superintendent

Administration

- IT Specialist

Education & Outreach

- Education Coordinator/SAC Coordinator

Research and Monitoring

- Maritime Archaeologist and Permit Coordinator
- Maritime Archaeologist/Cultural Landscapes Specialist
- Research Coordinator
- Program Specialist

Over the next five years, it is anticipated that additional staff positions will be necessary to carry out the activities and programs identified in this management plan. Subject to funding allocations, the following positions may be needed:

Management

- Deputy Superintendent
- Resource Protection Specialist

Administrative

- Secretary/Receptionist – NC/SAC Coordinator
- Administrative Assistant

Education and Outreach

- Volunteer Coordinator
- Outreach/Media Specialist
- Graphic Designer/Program Specialist

Operations

- Marine Engineer
- Captain, R-8501
- Vessel Operations Coordinator

Research and Monitoring

- Archaeologist/Historian
- Geographic Information System (GIS) Specialist

Additional positions will be considered as warranted.

Activity 1.2: Enhance the use of volunteers, partnerships, internships and cooperative programs to fulfill human resource needs, when possible.

Given the limited funding generally available to address personnel requirements, the MNMS will utilize to the fullest extent alternative mechanisms to meet human resource needs. This will include support of an active volunteer base to capitalize on the interest of constituents to assist with sanctuary programs. The MNMS will also promote the use of student internships and cooperative

programs with universities and other institutions to address specific sanctuary issues. Existing programs, such as the Hollings Scholarship, the Nancy Foster Scholarship and Student Conservation Association (SCA), will be utilized, as appropriate, to fill future needs. Programs associated with the University of North Carolina's Coastal Studies Institute (UNCCSI), East Carolina University's Program in Underwater Archaeology and others will be investigated to provide support to the site, as well as to promote a greater sense of community and individual ownership of the sanctuary.



LEFT: Jeff Johnston, showcases artifacts at a public scoping meeting in North Carolina (NOAA).

Strategy OA-2: Maintain and enhance sanctuary facilities, vessels and other infrastructure.

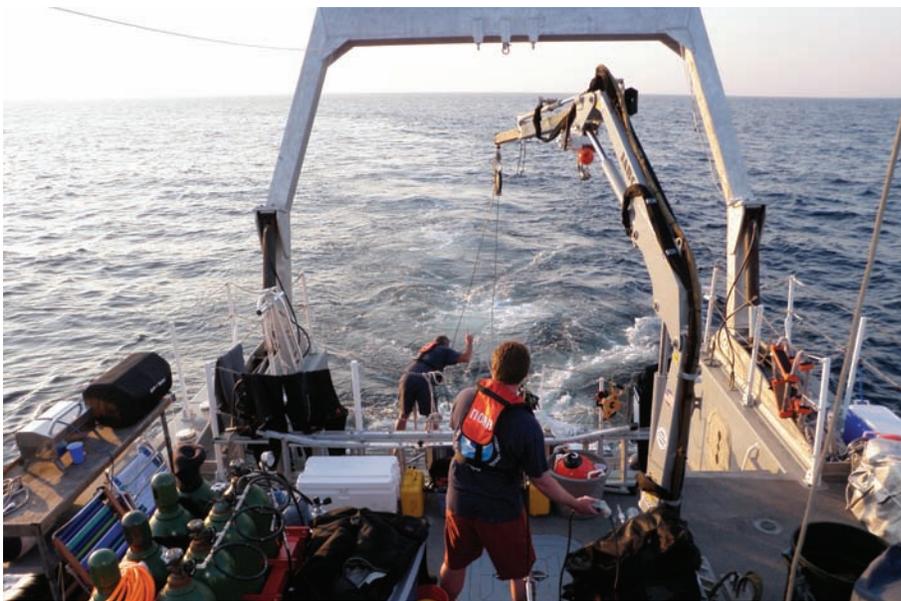
In 2005, the sanctuary office moved into a brand new facility on the grounds of The Mariners' Museum in Newport News, Va. At the time the facility was opened, the Maritime Archaeology Center (MAC), as it is known, housed the offices of both the MNMS and the Maritime Heritage Program (MHP) for ONMS. In 2008, the MHP was relocated to ONMS headquarters in Silver Spring, Md.

The sanctuary facility in Newport News was built partially to support the conservation and interpretive efforts of The Mariners Museum. It is located within a few hours drive of Washington, D.C. and serves a large metropolitan area. It also supports the larger NOAA presence in the Hampton Roads area including the Center for Operational Oceanographic Products and Services (CO-OPS), the Atlantic Marine Center, NOAA Fisheries, National Weather Service and others. Staff has easy and convenient access to our partners at The Mariners' Museum and can oversee activities related to the *Monitor* Collection.

Since the site has been established, the MNMS has made a commitment to building relationships and maintaining partnerships with the State of North Carolina and Virginia. The current location of the MNMS offices is critical with regards to overseeing sanctuary resources housed in The Mariners Museum. Additionally, the MNMS currently has a small vacant office within the Graveyard of the Atlantic Maritime Museum in Cape Hatteras, N.C. This office primarily serves as a temporary field office and provides a workplace for staff during joint operations with the museum. The MNMS also has an office and one full-time staff member at UNC Coastal Studies Institute in Manteo, N.C. This office and its staffing allocation were created to meet the need of developing an increased presence in North Carolina. As a result of these two offices, the MNMS has some, albeit limited, means of supporting staff in North Carolina. However, in the long term, the MNMS will require more permanent and substantial support facilities, in addition to office space, to conduct field operations, education and outreach efforts, public engagement and other critical sanctuary functions requisite for developing enhanced services to the state of North Carolina. To that end, the MNMS will identify a suitable facility and relocate its primary office facilities to North Carolina. The office facility in Newport News will be maintained as a satellite office for staff and researchers working on the *Monitor* artifact conservation effort.



LEFT The R-8501, an important tool for research, monitoring, enforcement and emergency response (NOAA).



LEFT: Archaeologists deploy a side-scan sonar off the back of the R-8501, during the Battle of the Atlantic expedition (NOAA).

In 2011, the MNMS became property custodian and primary user of the regional NOAA Vessel R-8501. The R-8501 is a highly capable 85' research platform intended for regional use among east coast ONMS facilities, as well as partner agencies, universities and NGO's that have a need for a research vessel. The vessel is not intended for exclusive use of the MNMS, but will be managed through the MNMS. The site will establish a long-range maintenance, manning and operations protocol for the vessel to maximize the use of this asset.

Activity 2.1: Effectively operate and maintain the sanctuary vessel R-8501.

The R-8501 will be operated and maintained in a safe and efficient manner and will meet or exceed the standards established by the NOAA Small Boat Program and the NOAA Office of Marine and Aviation Operations (OMAO). A rigorous maintenance program will be established and implemented. The MNMS staff will ensure that vessel operations are conducted in as environmentally sensitive a manner as possible, including the incorporation of the use of biodegradable marine products, when possible.

The MNMS will establish a review process for the use of the R-8501 by sanctuary partners and research institutions. The process will include mechanisms for partners to request use of the vessel, submit cruise instructions and submit required documentation (e.g., permits, authorizations).

The MNMS, as acting Vessel Operations Coordinator (VOC) will coordinate with the ONMS Chief Mariner, and duly appointed contractors to ensure the vessel is properly staffed and maintained to support cruise plans. The MNMS, in cooperation with the ONMS Chief Mariner, will develop a long-term plan for sustainable operations and vessel operations coordination to ensure the vessel is adequately utilized.

Activity 2.2: Maintain existing facility infrastructure and develop and implement a long-range facilities plan.

The MNMS staff will develop a long-range (5 to 10 years) facilities plan to consider the need for office space, vessel support facilities, visitor centers, signage and other infrastructure located throughout the sanctuary's operational area, as necessary to support implementation of the management plan. A national facilities plan is under development for all sites within the National Marine Sanctuary System. Facility planning for the MNMS will be consistent with and incorporated into that plan.

The administrative headquarters for the MNMS is located on The Mariners' Museum grounds in Newport News, Va. This building is large enough to meet the current administrative needs of the MNMS, but will become inadequate as increased operations and programming in North Carolina develops. Additional facilities and office space will be necessary to accommodate existing needs and potential growth within the next five years. There are potential partners in the state of North Carolina (UNC CSI, NOAA/NCCOS, etc.) that may be willing

to partner with the MNMS for facilities space in the future, or it may be necessary for the MNMS to have a stand-alone facility in North Carolina. Assessing the merit, requirements and feasibility of the MNMS needs in the state of North Carolina is a fundamental action item under this management plan.

The sanctuary vessel, R-8501, is currently housed at the U.S. Navy Little Creek amphibious base in Virginia Beach, Va., approximately 20 miles from the current MNMS administrative offices. In the long-term, a permanent dock for this vessel needs to be established. While secure at the Navy base, access to the vessel is limited, particularly for contractors or operators who need temporary access to the vessel for service. Additionally, a vessel support facility is needed near the dock location to provide storage, a dive locker, a workshop and an office for vessel crew. As plans for the MNMS facilities and offices develop as a result of this management plan, permanent berthing and associated vessel specific facilities will be incorporated, which may also include the possibility of R-8501 being relocated to North Carolina.

The MNMS also has a need for increased marine operations capability. R-8501 has the capability to support many of the ongoing missions at the site. However, there are several types of operations for which the vessel is inappropriate. Chiefly, small operations, which require few staff and limited time on the water, need a much smaller and operationally efficient platform. The vessel, while excellent for extended and complex missions, is overly costly and complex for day-to-day operations. A platform with the ability to facilitate on-water access for the MNMS staff with minimal planning and support is needed. Developing a requirements/needs assessment for a smaller, day-use platform will be an action item under this facilities portion of the management plan.

Significant public input was received during the scoping process regarding the perception of the sanctuary moving *Monitor* artifacts, from federal waters off North Carolina and relocating them along with personnel and resources to Virginia. Additionally, the fact that the sanctuary is located in federal waters off North Carolina has led to a much stronger effort on behalf of the sanctuary to engage both Virginia and North Carolina communities equally. During an ONMS facility long-range planning program, the MNMS identified the need to establish a permanent office presence and visitor center on the Outer Banks in North Carolina, where people could go to learn more about the MNMS and the coastal resources of North Carolina. Over the next three years, the MNMS staff will investigate options and develop a plan for the establishment of a visitor center or visitor contact point. A MNMS visitor center would likely be modest in

size, but incorporate new technologies to allow visitors to experience the sanctuary without actually going there. The plan will encourage working with partners, such as other federal, state and local agencies, in visitor center development and operation. The plan will also include an analysis of possible locations, size, type of messages and information to be provided and operational costs. Options suggested during discussions on this topic include a visitor center in the old Oregon Inlet Life Saving Station, currently vacant and owned by the State of North Carolina Department of Natural Resources and managed by North Carolina Aquariums. This is a highly visible and accessible location on HWY 12 on the northern end of Pea Island National Wildlife Refuge.

MNMS staff will develop and implement an educational exhibits plan to utilize existing outreach venues to assist in the dissemination of information about the sanctuary. MNMS staff have identified a number of outreach venue locations that could provide for the sanctuary's interpretive needs from both geographical and thematic points of view. These facilities cover a geographic area from Hampton Roads, Va. to Wilmington, N.C. The sanctuary will seek funding and work with the identified facility to develop appropriate exhibits, informational signage and other outreach materials. Outreach and interpretive exhibit venues being established or considered include:

- The Mariners Museum, Newport News, Va.
- Nauticus, Norfolk, Va.
- North Carolina Aquariums, Manteo, Pine Knoll Shores and Wilmington (Fort Fisher) N.C.
- Graveyard of the Atlantic Maritime Museum, Hatteras, N.C.
- Beaufort Maritime Museum, Beaufort, N.C.
- Southport Maritime Museum, Wilmington, N.C.
- Cape Hatteras National Seashore, Coastal N.C.
- Jeanette's Pier, Nags Head, N.C.



Table 16: Estimated Costs for the Operations and Administration Action Plan

Action Plan	Estimated Cost (\$ in thousands)					Total Estimate 5-Year Cost
	YR 1	YR 2	YR 3	YR 4	YR 5	
Strengthen sanctuary human resource and program support capabilities.	610	700	800	900	1000	4010
Maintain and enhance sanctuary facilities, vessels and other infrastructure.	200	200	300	350	400	1450
Total Estimated Annual Cost	810	900	1100	1250	1400	5460

Table 17: Performance Measures for the Operations and Administration Action Plan

Outcome	Performance Measure	Baseline
Identify long-term facility needs and staffing requirements.	By 2014, complete facility needs assessment document.	Current facilities are based on previous management plans.
Increased presence in visitor centers and partner institutions.	By 2017, increase the presence of ONMS/MNMS visibility at visitor centers by 50 percent.	MNMS will generate a baseline metric for this measure by 2013.
Complete a marine operations plan and vessels needs plan.	By 2013, complete a marine operations plan for increased on-water needs and draft a plan for the long-term management of R-8501 and identify needs for additional vessels.	Currently, the sanctuary has no marine operations plan or statement of vessel needs.

OPPOSITE PAGE

TOP: Graveyard of the Atlantic Museum, Hatteras, N.C. (NOAA).

MIDDLE: The Mariners' Museum, Newport News, Va. (TMM).

BOTTOM: Cape Hatteras Light House, N.C. (NOAA).

Appendices

- Appendix A: National Marine Sanctuaries Act**
- Appendix B: Final Regulations for Monitor NMS**
- Appendix C: The Mariners' Museum: Programmatic Agreement**
- Appendix D: Amendment to The Mariners' Museum: Programmatic Agreement**
- Appendix E: The Mariners' Museum: Curatorial Services Agreement**
- Appendix F: Permit Guidelines: Archaeological Research**
- Appendix G: Rating Scheme for System-Wide Monitoring Questions**

Appendix A: National Marine Sanctuaries Act

16 U.S.C. 1431 et seq., as amended by Public Law 106-513

Sec. 301. FINDINGS, PURPOSES, AND POLICIES; ESTABLISHMENT OF SYSTEM

(a) FINDINGS. --The Congress finds that--

(1) this Nation historically has recognized the importance of protecting special areas of its public domain, but these efforts have been directed almost exclusively to land areas above the high-water mark;

(2) certain areas of the marine environment possess conservation, recreational, ecological, historical, scientific, educational, cultural, archaeological, or esthetic qualities which give them special national, and in some instances, international, significance;

(3) while the need to control the effects of particular activities has led to enactment of resource-specific legislation, these laws cannot in all cases provide a coordinated and comprehensive approach to the conservation and management of special areas of the marine environment; and

(4) a Federal program which establishes areas of the marine environment which have special conservation, recreational, ecological, historical, cultural, archaeological, scientific, educational, or esthetic qualities as national marine sanctuaries managed as the National Marine Sanctuary System will-

(A) improve the conservation, understanding, management, and wise and sustainable use of marine resources;

(B) enhance public awareness, understanding, and appreciation of the marine environment; and

(C) maintain for future generations the habitat, and ecological services, of the natural assemblage of living resources that inhabit these areas.

(b) PURPOSES AND POLICIES.--The purposes and policies of this title are--

(1) to identify and designate as national marine sanctuaries areas of the marine environment which are of special national significance and to manage these areas as the National Marine Sanctuary System;

(2) to provide authority for comprehensive and coordinated conservation and management of these marine areas, and activities affecting them, in a manner which complements existing regulatory authorities;

(3) to maintain the natural biological communities in the national marine sanctuaries, and to protect, and, where appropriate, restore and enhance natural habitats, populations, and ecological processes;

(4) to enhance public awareness, understanding, appreciation, and wise and sustainable use of the marine environment, and the natural, historical, cultural, and archaeological resources of the National Marine Sanctuary System;

(5) to support, promote, and coordinate scientific research on, and long-term monitoring of, the resources of these marine areas;

(6) to facilitate to the extent compatible with the primary objective of resource protection, all public and private uses of the resources of these marine areas not prohibited pursuant to other authorities;

(7) to develop and implement coordinated plans for the protection and management of these areas with appropriate Federal agencies, State and local governments, Native American tribes and organizations, international organizations, and other public and private interests concerned with the continuing health and resilience of these marine areas;

(8) to create models of, and incentives for, ways to conserve and manage these areas, including the application of innovative management techniques; and

(9) to cooperate with global programs encouraging conservation of marine resources.

(c) ESTABLISHMENT OF SYSTEM.-There is established the National Marine Sanctuary System, which shall consist of national marine sanctuaries designated by the Secretary in accordance with this title.

Sec. 302. DEFINITIONS

As used in this title, the term--

(1) "Draft management plan" means the plan described in section 304(a)(1)(C)(v);

(2) "Magnuson-Stevens Act" means the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.);

(3) "marine environment" means those areas of coastal and ocean waters, the Great Lakes and their connecting waters, and submerged lands over which the United States exercises jurisdiction, including the exclusive economic zone, consistent with international law;

- (4) “Secretary” means the Secretary of Commerce;
- (5) “State” means each of the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, American Samoa, the Virgin Islands, Guam, and any other commonwealth, territory, or possession of the United States;
- (6) “damages” includes--
- (A) compensation for--
- (i)(I) the cost of replacing, restoring, or acquiring the equivalent of a sanctuary resource; and (II) the value of the lost use of a sanctuary resource pending its restoration or replacement or the acquisition of an equivalent sanctuary resource; or
- (ii) the value of a sanctuary resource if the sanctuary resource cannot be restored or replaced or if the equivalent of such resource cannot be acquired;
- (B) the cost of damage assessments under section 312(b)(2);
- (C) the reasonable cost of monitoring appropriate to the injured, restored, or replaced resources;
- (D) the cost of curation and conservation of archaeological, historical, and cultural sanctuary resources; and
- (E) the cost of enforcement actions undertaken by the Secretary in response to the destruction or loss of, or injury to, a sanctuary resource;
- (7) “response costs” means the costs of actions taken or authorized by the Secretary to minimize destruction or loss of, or injury to, sanctuary resources, or to minimize the imminent risks of such destruction, loss, or injury, including costs related to seizure forfeiture, storage, or disposal arising from liability under section 312;
- (8) “sanctuary resource” means any living or nonliving resource of a national marine sanctuary that contributes to the conservation, recreational, ecological, historical, educational, cultural, archaeological, scientific, or aesthetic value of the sanctuary;
- (9) “exclusive economic zone” means the exclusive economic zone as defined in the Magnuson-Stevens Act; and
- (10) ‘System’ means the National Marine Sanctuary System established by section 301.

Sec. 303. SANCTUARY DESIGNATION STANDARDS

(a) STANDARDS.--The Secretary may designate any discrete area of the marine environment as a national marine sanctuary and promulgate regulations implementing the designation if the Secretary determines that--

(1) the designation will fulfill the purposes and policies of this title;

(2) the area is of special national significance due to--

(A) its conservation, recreational, ecological, historical, scientific, cultural, archaeological, educational, or esthetic qualities;

(B) the communities of living marine resources it harbors; or

(C) its resource or human-use values;

(3) existing State and Federal authorities are inadequate or should be supplemented to ensure coordinated and comprehensive conservation and management of the area, including resource protection, scientific research, and public education;

(4) designation of the area as a national marine sanctuary will facilitate the objectives in subparagraph (3); and

(5) the area is of a size and nature that will permit comprehensive and coordinated conservation and management.

(b) FACTORS AND CONSULTATIONS REQUIRED IN MAKING DETERMINATIONS AND FINDINGS.--

(1) Factors.--For purposes of determining if an area of the marine environment meets the standards set forth in subsection (a), the Secretary shall consider--

(A) the area's natural resource and ecological qualities, including its contribution to biological productivity, maintenance of ecosystem structure, maintenance of ecologically or commercially important or threatened species or species assemblages, maintenance of critical habitat of endangered species, and the biogeographic representation of the site;

(B) the area's historical, cultural, archaeological, or paleontological significance;

(C) the present and potential uses of the area that depend on maintenance of the area's resources, including

commercial and recreational fishing, subsistence uses other commercial and recreational activities, and research and education;

(D) the present and potential activities that may adversely affect the factors identified in subparagraphs (A), (B), (C);

(E) the existing State and Federal regulatory and management authorities applicable to the area and the adequacy of those authorities to fulfill the purposes and policies of this title;

(F) the manageability of the area, including such factors as its size, its ability to be identified as a discrete ecological unit with definable boundaries, its accessibility, and its suitability for monitoring and enforcement activities;

(G) the public benefits to be derived from sanctuary status, with emphasis on the benefits of long-term protection of nationally significant resources, vital habitats, and resources which generate tourism;

(H) the negative impacts produced by management restrictions on income-generating activities such as living and nonliving resources development;

(I) the socioeconomic effects of sanctuary designation;

(J) the area's scientific value and value for monitoring the resources and natural processes that occur there;

(K) the feasibility, where appropriate, of employing innovative management approaches to protect sanctuary resources or to manage compatible uses; and

(L) the value of the area as an addition to the System.

(2) Consultation.--In making determinations and findings, the Secretary shall consult with--

(A) the Committee on Resources of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate;

(B) the Secretaries of State, Defense, Transportation, and the Interior, the Administrator, and the heads of other interested Federal agencies;

(C) the responsible officials or relevant agency heads of the appropriate State and local government entities, including coastal zone management agencies, that will or are likely to be affected by the establishment of the area as a national marine sanctuary;

(D) the appropriate officials of any Regional Fishery Management Council established by section 302 of the Magnuson-Stevens Act (16 U.S.C. 1852) that may be affected by the proposed designation; and

(E) other interested persons.

Sec. 304. PROCEDURES FOR DESIGNATION AND IMPLEMENTATION

(a) SANCTUARY PROPOSAL.--

(1) Notice.--In proposing to designate a national marine sanctuary, the Secretary shall--

(A) issue, in the Federal Register, a notice of the proposal, proposed regulations that may be necessary and reasonable to implement the proposal, and a summary of the draft management plan;

(B) provide notice of the proposal in newspapers of general circulation or electronic media in the communities that may be affected by the proposal; and

(C) no later than the day on which the notice required under subparagraph (A) is submitted to Office of the Federal Register, submit a copy of that notice and the draft sanctuary designation documents prepared pursuant to section 304(a)(2), including an executive summary, to the Committee on Resources of the House of Representatives, the Committee on Commerce, Science, and Transportation of the Senate, and the Governor of each State in which any part of the proposed sanctuary would be located.

(2) Sanctuary Designation Documents.- The Secretary shall prepare and make available to the public sanctuary designation documents on the proposal that include the following:

(A) A draft environmental impact statement pursuant to the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

(B) A resource assessment that documents-

(i) present and potential uses of the area, including commercial and recreational fishing, research and education, minerals and energy development, subsistence uses, and other commercial, governmental, or recreational uses;

(ii) after consultation with the Secretary of the Interior, any commercial, governmental, or recreational resource uses in the areas that are subject to the primary jurisdiction of the Department of the Interior; and

(iii) information prepared in consultation with the Secretary of Defense, the Secretary of Energy, and the Administrator of the Environmental Protection Agency, on any past, present, or proposed future disposal or

discharge of materials in the vicinity of the proposed sanctuary. Public disclosure by the Secretary of such information shall be consistent with national security regulations.

(C) A draft management plan for the proposed national marine sanctuary that includes the following:

(i) The terms of the proposed designation.

(ii) Proposed mechanisms to coordinate existing regulatory and management authorities within the area.

(iii) The proposed goals and objectives, management responsibilities, resource studies, and appropriate strategies for managing sanctuary resources of the proposed sanctuary, including interpretation and education, innovative management strategies, research, monitoring and assessment, resource protection, restoration, enforcement, and surveillance activities.

(iv) An evaluation of the advantages of cooperative State and Federal management if all or part of the proposed sanctuary is within the territorial limits of any State or is superjacent to the subsoil and seabed within the seaward boundary of a State, as that boundary is established under the Submerged Lands Act (43 U.S.C. 1301 et seq.).

(v) An estimate of the annual cost to the Federal Government of the proposed designation, including costs of personnel, equipment and facilities, enforcement, research, and public education.

(vi) The proposed regulations referred to in paragraph (1)(A).

(D) Maps depicting the boundaries of the proposed sanctuary.

(E) The basis for the determinations made under section 303(a) with respect to the area.

(F) An assessment of the considerations under section 303(b)(1).

(3) Public Hearing.--No sooner than thirty days after issuing a notice under this subsection, the Secretary shall hold at least one public hearing in the coastal area or areas that will be most affected by the proposed designation of the area as a national marine sanctuary for the purpose of receiving the views of interested parties.

(4) Terms of Designation.--The terms of designation of a sanctuary shall include the geographic area proposed to be included within the sanctuary, the characteristics of the area that give it conservation, recreational, ecological, historical, research, educational, or esthetic value, and the types of activities that will be subject to regulation by the Secretary to protect those characteristics. The terms of designation may be modified only by the same procedures by which the original designation is made.

(5) Fishing Regulations.--The Secretary shall provide the appropriate Regional Fishery Management Council with the opportunity to prepare draft regulations for fishing within the Exclusive Economic Zone as the Council may deem necessary to implement the proposed designation. Draft regulations prepared by the Council, or a Council determination that regulations are not necessary pursuant to this paragraph, shall be accepted and issued as proposed regulations by the Secretary unless the Secretary finds that the Council's action fails to fulfill the purposes and policies of this title and the goals and objectives of the proposed designation. In preparing the draft regulations, a Regional Fishery Management Council shall use as guidance the national standards of section 301(a) of the Magnuson-Stevens Act (16 U.S.C. 1851) to the extent that the standards are consistent and compatible with the goals and objectives of the proposed designation. The Secretary shall prepare the fishing regulations, if the Council declines to make a determination with respect to the need for regulations, makes a determination which is rejected by the Secretary, or fails to prepare the draft regulations in a timely manner. Any amendments to the fishing regulations shall be drafted, approved, and issued in the same manner as the original regulations. The Secretary shall also cooperate with other appropriate fishery management authorities with rights or responsibilities within a proposed sanctuary at the earliest practicable stage in drafting any sanctuary fishing regulations.

(6) Committee Action.--After receiving the documents under subsection (a)(1)(C), the Committee on Resources of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate may each hold hearings on the proposed designation and on the matters set forth in the documents. If within the forty-five day period of continuous session of Congress beginning on the date of submission of the documents, either Committee issues a report concerning matters addressed in the documents, the Secretary shall consider this report before publishing a notice to designate the national marine sanctuary.

(b) TAKING EFFECT OF DESIGNATIONS.--

(1) Notice.--In designating a national marine sanctuary, the Secretary shall publish in the Federal Register notice of the designation together with final regulations to implement the designation and any other matters required by law, and submit such notice to the Congress. The Secretary shall advise the public of the availability of the final management plan and the final environmental impact statement with respect to such sanctuary. The Secretary shall issue a notice of designation with respect to a proposed national marine sanctuary site not later than 30 months after the date a notice declaring the site to be an active candidate for sanctuary designation is published in the Federal Register under regulations issued under this Act, or shall publish not later than such date in the Federal Register findings regarding why such notice has not been published. No notice of designation may occur until the expiration of the period for Committee action under subsection (a) (6). The designation (and any of its terms not disapproved under this subsection) and regulations shall take effect and become final after the close of a review

period of forty-five days of continuous session of Congress beginning on the day on which such notice is published unless in the case of a natural [sic] marine sanctuary that is located partially or entirely within the seaward boundary of any State, the Governor affected certifies to the Secretary that the designation or any of

its terms is unacceptable, in which case the designation or the unacceptable term shall not take effect in the area of the sanctuary lying within the seaward boundary of the State.

(2) Withdrawal of Designation.-- If the Secretary considers that actions taken under paragraph (1) will affect the designation of a national marine sanctuary in a manner that the goals and objectives of the sanctuary or System cannot be fulfilled, the Secretary may withdraw the entire designation. If the Secretary does not withdraw the designation, only those terms of the designation or not certified under paragraph (1) shall take effect.

(3) Procedures.-- In computing the forty-five-day periods of continuous session of Congress pursuant to subsection (a)(6) and paragraph (1) of this subsection--

(A) continuity of session is broken only by an adjournment of Congress sine die; and

(B) the days on which either House of Congress is not in session because of an adjournment of more than three days to a day certain are excluded.

(c) ACCESS AND VALID RIGHTS.—

(1) Nothing in this title shall be construed as terminating or granting to the Secretary the right to terminate any valid lease, permit, license, or right of subsistence use or of access that is in existence on the date of designation of any national marine sanctuary.

(2) The exercise of a lease, permit, license, or right is subject to regulation by the Secretary consistent with the purposes for which the sanctuary is designated.

(d) INTERAGENCY COOPERATION.--

(1) Review of Agency Actions.--

(A) In General.--Federal agency actions internal or external to a national marine sanctuary, including private activities authorized by licenses, leases, or permits, that are likely to destroy, cause the loss of, or injure any sanctuary resource are subject to consultation with the Secretary.

(B) Agency Statements Required.-- Subject to any regulations the Secretary may establish each Federal agency proposing an action described in subparagraph (A) shall provide the Secretary with a written statement describing the action and its potential effects on sanctuary resources at the earliest practicable time, but in no case later than 45 days before the final approval of the action unless such Federal agency and the Secretary agree to a different schedule.

(2) Secretary's Recommended Alternatives.--If the Secretary finds that a Federal agency action is likely to destroy, cause the loss of, or injure a sanctuary resource, the Secretary shall (within 45 days of receipt of complete information on the proposed agency action) recommend reasonable and prudent alternatives, which may include conduct of the action elsewhere, which can be taken by the Federal agency in implementing the agency action that will protect sanctuary resources.

(3) Response to Recommendations.--The agency head who receives the Secretary's recommended alternatives under paragraph (2) shall promptly consult with the Secretary on the alternatives. If the agency head decides not to follow the alternatives, the agency head shall provide the Secretary with a written statement explaining the reasons for that decision.

(4) FAILURE TO FOLLOW ALTERNATIVE.- If the head of a Federal agency takes an action other than an alternative recommended by the Secretary and such action results in the destruction of, loss of, or injury to a sanctuary resource, the head of the agency shall promptly prevent and mitigate further damage and restore or replace the sanctuary resource in a manner approved by the Secretary.

(e) REVIEW OF MANAGEMENT PLANS.--Not more than 5 years after the date of designation of any national marine sanctuary, and thereafter at intervals not exceeding 5 years, the Secretary shall evaluate the substantive progress toward implementing the management plan and goals for the sanctuary, especially the effectiveness of site-specific management techniques and strategies, and shall revise the management plan and regulations as necessary to fulfill the purposes and policies of this title. This review shall include a prioritization of management objectives.

(f) LIMITATION ON DESIGNATION OF NEW SANCTUARIES.-

(1) FINDING REQUIRED.- The Secretary may not publish in the Federal Register any sanctuary designation notice or regulations proposing to designate a new sanctuary, unless the Secretary has published a finding that--

(A) the addition of a new sanctuary will not have a negative impact on the System; and

(B) sufficient resources were available in the fiscal year in which the finding is made to--

(i) effectively implement sanctuary management plans for each sanctuary in the System; and

(ii) complete site characterization studies and inventory known sanctuary resources, including cultural resources, for each sanctuary in the System within 10 years after the date that the finding is made if the resources available for those activities are maintained at the same level for each fiscal year in that 10 year period.

(2) DEADLINE- If the Secretary does not submit the findings required by paragraph (1) before February 1,

2004, the Secretary shall submit to the Congress before October 1, 2004, a finding with respect to whether the requirements of subparagraphs (A) and (B) of paragraph 1 have been met by all existing sanctuaries.

(3) LIMITATION ON APPLICATION- Paragraph (1) does not apply to any sanctuary designation documents for--

(A) a Thunder Bay National Marine Sanctuary; or

(B) a Northwestern Hawaiian Islands National Marine Sanctuary.

[[(g) NORTHWESTERN HAWAIIAN ISLANDS CORAL REEF RESERVE*.-

(1) PRESIDENTIAL DESIGNATION.- The President, after consultation with the Governor of the State of Hawaii, may designate any Northwestern Hawaiian Islands coral reef or coral reef ecosystem as a coral reef reserve to be managed by the Secretary of Commerce.

(2) SECRETARIAL ACTION.- Upon the designation of a reserve under paragraph (1) by the President, the Secretary shall--

(A) take action to initiate the designation of the reserve as a National Marine Sanctuary under sections 303 and 304 of the National Marine Sanctuaries Act (16 U.S.C. 1433);

(B) establish a Northwestern Hawaiian Islands Reserve Advisory Council under section 315 of that Act (16 U.S.C. 1445a), the membership of which shall include at least 1 representative from Native Hawaiian groups; and

(C) until the reserve is designated as a National Marine Sanctuary, manage the reserve in a manner consistent with the purposes and policies of that Act.

(3) PUBLIC COMMENT- Notwithstanding any other provision of law, no closure areas around the Northwestern Hawaiian Islands shall become permanent without adequate review and comment.

(4) COORDINATION- The Secretary shall work with other Federal agencies and the Director of the National Science Foundation, to develop a coordinated plan to make vessels and other resources available for conservation or research activities for the reserve.

(5) REVIEW- If the Secretary has not designated a national marine sanctuary in the Northwestern Hawaiian Islands under sections 303 and 304 of the National Marine Sanctuaries Act (16 U.S.C. 1433,

1434) before October 1, 2005, the Secretary shall conduct a review of the management of the reserve under section 304(e) of that Act (16 U.S.C. 1434(e)).

(6) REPORT- No later than 6 months after the date of enactment of this Act, the Secretary shall submit a report to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Resources, describing actions taken to implement this subsection, including costs of monitoring, enforcing, and addressing marine debris, and the extent to which the fiscal or other resources necessary to carry out this subsection are reflected in the Budget of the United States Government submitted by the President under section 1104 of title 31, United States Code.

(7) AUTHORIZATION OF APPROPRIATIONS- There are authorized to be appropriated to the Secretary of Commerce to carry out the provisions of this subsection such sums, not exceeding \$4,000,000 for each of fiscal years 2001, 2002, 2003, 2004, and 2005, as are reported under paragraph (6) to be reflected in the Budget of the United States Government.]]

Sec. 305. APPLICATION OF REGULATIONS AND INTERNATIONAL NEGOTIATIONS

(a) REGULATIONS.--This title and the regulations issued under section 304 shall be applied in accordance with generally recognized principles of international law, and in accordance with the treaties, conventions, and other agreements to which the United States is a party. No regulation shall apply to or be enforced against a person who is not a citizen, national, or resident alien of the United States, unless in accordance with--

- (1) generally recognized principles of international law;
- (2) an agreement between the United States and the foreign state of which the person is a citizen; or
- (3) an agreement between the United States and the flag state of a foreign vessel, if the person is a crewmember of the vessel.

(b) NEGOTIATIONS.--The Secretary of State, in consultation with the Secretary, shall take appropriate action to enter into negotiations with other governments to make necessary arrangements for the protection of any national marine sanctuary and to promote the purposes for which the sanctuary is established.

(c) INTERNATIONAL COOPERATION.--The Secretary, in consultation with the Secretary of State and other appropriate Federal agencies, shall cooperate with other governments and international organizations in the furtherance of the purposes and policies of this title and consistent with applicable regional and multi-lateral arrangements for the protection and management of special marine areas.

Sec. 306. PROHIBITED ACTIVITIES

It is unlawful for any person to--

- (1) destroy, cause the loss of, or injure any sanctuary resource managed under law or regulations for that sanctuary;
- (2) possess, sell, offer for sale, purchase, import, export, deliver, carry, transport, or ship by any means any sanctuary resource taken in violation of this section;
- (3) interfere with the enforcement of this title by--
 - (A) refusing to permit any officer authorized to enforce this title to board a vessel, other than a vessel operated by the Department of Defense or United States Coast Guard, subject to such person's control for the purposes of conducting any search or inspection in connection with the enforcement of this title;
 - (B) resisting, opposing, impeding, intimidating, harassing, bribing, interfering with, or forcibly assaulting any person authorized by the Secretary to implement this title or any such authorized officer in the conduct of any search or inspection performed under this title; or
 - (C) knowingly and willfully submitting false information to the Secretary or any officer authorized to enforce this title in connection with any search or inspection conducted under this title; or
- (4) violate any provision of this title or any regulation or permit issued pursuant to this title.

Sec. 307. ENFORCEMENT

- (a) IN GENERAL.--The Secretary shall conduct such enforcement activities as are necessary and reasonable to carry out this title.
- (b) POWERS OF AUTHORIZED OFFICERS.--Any person who is authorized to enforce this title may--
 - (1) board, search, inspect, and seize any vessel suspected of being used to violate this title or any regulation or permit issued under this title and any equipment, stores, and cargo of such vessel;
 - (2) seize wherever found any sanctuary resource taken or retained in violation of this title or any regulation or permit issued under this title;
 - (3) seize any evidence of a violation of this title or of any regulation or permit issued under this title;
 - (4) execute any warrant or other process issued by any court of competent jurisdiction;

(5) exercise any other lawful authority; and

(6) arrest any person, if there is reasonable cause to believe that such a person has committed an act prohibited by section 306(3).

(c) CRIMINAL OFFENSES-

(1) OFFENSES.- A person is guilty of an offense under this subsection if the person commits any act prohibited by section 306(3).

(2) PUNISHMENT.- Any person that is guilty of an offense under this subsection--

(A) except as provided in subparagraph (B), shall be fined under title 18, United States Code, imprisoned for not more than 6 months, or both; or

(B) in the case of a person who in the commission of such an offense uses a dangerous weapon, engages in conduct that causes bodily injury to any person authorized to enforce this title or any person authorized to implement the provisions of this title, or places any such person in fear of imminent bodily injury, shall be fined under title 18, United States Code, imprisoned for not more than 10 years, or both.

(d) CIVIL PENALTIES.--

(1) Civil penalty.--Any person subject to the jurisdiction of the United States who violates this title or any regulation or permit issued under this title shall be liable to the United States for a civil penalty of not more than \$100,000 for each such violation, to be assessed by the Secretary. Each day of a continuing violation shall constitute a separate violation.

(2) Notice.--No penalty shall be assessed under this subsection until after the person charged has been given notice and an opportunity for a hearing.

(3) In Rem Jurisdiction.--A vessel used in violating this title or any regulation or permit issued under this title shall be liable in rem for any civil penalty assessed for such violation. Such penalty shall constitute a maritime lien on the vessel and may be recovered in an action in rem in the district court of the United States having jurisdiction over the vessel.

(4) Review of Civil Penalty.--Any person against whom a civil penalty is assessed under this subsection may obtain review in the United States district court for the appropriate district by filing a complaint in such court not later than 30 days after the date of such order.

(5) Collection of Penalties.--If any person fails to pay an assessment of a civil penalty under this section after

it has become a final and unappealable order, or after the appropriate court has entered final judgment in favor of the Secretary, the Secretary shall refer the matter to the Attorney General, who shall recover the amount assessed in any appropriate district court of the United States. In such action, the validity and appropriateness of the final order imposing the civil penalty shall not be subject to review.

(6) **Compromise or Other Action by Secretary.**--The Secretary may compromise, modify, or remit, with or without conditions, any civil penalty which is or may be imposed under this section.

(e) **FORFEITURE.**--

(1) **In General.**--Any vessel (including the vessel's equipment, stores, and cargo) and other item used, and any sanctuary resource taken or retained, in any manner, in connection with or as a result of any violation of this title or of any regulation or permit issued under this title shall be subject to forfeiture to the United States pursuant to a civil proceeding under this subsection. The proceeds from forfeiture actions under this subsection shall constitute a separate recovery in addition to any amounts recovered as civil penalties under this section or as civil damages under section 312. None of those proceeds shall be subject to set-off.

(2) **Application of the Customs Laws.**--The Secretary may exercise the authority of any United States official granted by any relevant customs law relating to the seizure, forfeiture, condemnation, disposition, remission, and mitigation of property in enforcing this title.

(3) **Disposal of Sanctuary Resources.**--Any sanctuary resource seized pursuant to this title may be disposed of pursuant to an order of the appropriate court or, if perishable, in a manner prescribed by regulations promulgated by the Secretary. Any proceeds from the sale of such sanctuary resource shall for all purposes represent the sanctuary resource so disposed of in any subsequent legal proceedings.

(4) **Presumption.**--For the purposes of this section there is a rebuttable presumption that all sanctuary resources found on board a vessel that is used or seized in connection with a violation of this title or of any regulation or permit issued under this title were taken or retained in violation of this title or of a regulation or permit issued under this title.

(f) **PAYMENT OF STORAGE, CARE, AND OTHER COSTS.**--

(1) **Expenditures.**--

(A) Notwithstanding any other law, amounts received by the United States as civil penalties, forfeitures of property, and costs imposed under paragraph (2) shall be retained by the Secretary in the manner provided for in section 107(f)(1) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980.

(B) Amounts received under this section for forfeitures and costs imposed under paragraph (2) shall be used to pay the reasonable and necessary costs incurred by the Secretary to provide temporary storage, care, maintenance, and disposal of any sanctuary resource or other property seized in connection with a violation of this title or any regulation or permit issued under this title.

(C) Amounts received under this section as civil penalties and any amounts remaining after the operation of subparagraph (B) shall be used, in order of priority, to--

(i) manage and improve the national marine sanctuary with respect to which the violation occurred that resulted in the penalty or forfeiture;

(ii) pay a reward to any person who furnishes information leading to an assessment of a civil penalty, or to a forfeiture of property, for a violation of this title or any regulation or permit issued under this title; and

(iii) manage and improve any other national marine sanctuary.

(2) Liability for Costs.--Any person assessed a civil penalty for a violation of this title or of any regulation or permit issued under this title, and any claimant in a forfeiture action brought for such a violation, shall be liable for the reasonable costs incurred by the Secretary in storage, care, and maintenance of any sanctuary resource or other property seized in connection with the violation.

(g) SUBPOENAS.--In the case of any hearing under this section which is determined on the record in accordance with the procedures provided for under section 554 of title 5, United States Code, the Secretary may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, electronic files, and documents, and may administer oaths.

(h) USE OF RESOURCES OF STATE AND OTHER FEDERAL AGENCIES.—The Secretary shall, whenever appropriate, use by agreement the personnel, services, and facilities of State and other Federal departments, agencies, and instrumentalities, on a reimbursable or nonreimbursable basis, to carry out the Secretary's responsibilities under this section.

(i) COAST GUARD AUTHORITY NOT LIMITED.--Nothing in this section shall be considered to limit the authority of the Coast Guard to enforce this or any other Federal law under section 89 of title 14, United States Code.

(j) INJUNCTIVE RELIEF.--If the Secretary determines that there is an imminent risk of destruction or loss of or injury to a sanctuary resource, or that there has been actual destruction or loss of, or injury to, a sanctuary resource which may give rise to liability under section 312, the Attorney General, upon request of the Secretary, shall seek to obtain such relief as may be necessary to abate such risk or actual destruction, loss, or injury, or to restore or replace the sanctuary resource, or both. The district courts of the United States shall

have jurisdiction in such a case to order such relief as the public interest and the equities of the case may require.

(k) AREA OF APPLICATION AND ENFORCEABILITY.--The area of application and enforceability of this title includes the territorial sea of the United States, as described in Presidential Proclamation 5928 of December 27, 1988, which is subject to the sovereignty of the United States, and the United States exclusive economic zone, consistent with international law.

(l) NATIONWIDE SERVICE OF PROCESS.- In any action by the United States under this title, process may be served in any district where the defendant is found, resides, transacts business, or has appointed an agent for the service of process.

Sec. 308. REGULATIONS.

The Secretary may issue such regulations as may be necessary to carry out this title.

Sec. 309. RESEARCH, MONITORING, AND EDUCATION.

(a) IN GENERAL- The Secretary shall conduct, support, or coordinate research, monitoring, evaluation, and education programs consistent with subsections (b) and (c) and the purposes and policies of this title.

(b) RESEARCH AND MONITORING.-

(1) IN GENERAL.- The Secretary may--

(A) support, promote, and coordinate research on, and long-term monitoring of, sanctuary resources and natural processes that occur in national marine sanctuaries, including exploration, mapping, and environmental and socioeconomic assessment;

(B) develop and test methods to enhance degraded habitats or restore damaged, injured, or lost sanctuary resources; and

(C) support, promote, and coordinate research on, and the conservation, curation, and public display of, the cultural, archaeological, and historical resources of national marine sanctuaries.

(2) AVAILABILITY OF RESULTS.- The results of research and monitoring conducted, supported, or permitted by the Secretary under this subsection shall be made available to the public.

(c) EDUCATION-

(1) IN GENERAL.- The Secretary may support, promote, and coordinate efforts to enhance public awareness, understanding, and appreciation of national marine sanctuaries and the System. Efforts supported, promoted, or coordinated under this subsection must emphasize the conservation goals and sustainable public uses of national marine sanctuaries and the System.

(2) EDUCATIONAL ACTIVITIES.- Activities under this subsection may include education of the general public, teachers, students, national marine sanctuary users, and ocean and coastal resource managers.

(d) INTERPRETIVE FACILITIES.-

(1) IN GENERAL.- The Secretary may develop interpretive facilities near any national marine sanctuary.

(2) FACILITY REQUIREMENT.- Any facility developed under this subsection must emphasize the conservation goals and sustainable public uses of national marine sanctuaries by providing the public with information about the conservation, recreational, ecological, historical, cultural, archaeological, scientific, educational, or esthetic qualities of the national marine sanctuary.

(e) CONSULTATION AND COORDINATION.- In conducting, supporting, and coordinating research, monitoring, evaluation, and education programs under subsection (a) and developing interpretive facilities under subsection (d), the Secretary may consult or coordinate with Federal, interstate, or regional agencies, States or local governments.

Sec. 310. SPECIAL USE PERMITS

(a) ISSUANCE OF PERMITS.--The Secretary may issue special use permits which authorize the conduct of specific activities in a national marine 201 (1) to establish conditions of access to and use of any sanctuary resource; or

(2) to promote public use and understanding of a sanctuary resource.

(b) PUBLIC NOTICE REQUIRED.- The Secretary shall provide appropriate public notice before identifying any category of activity subject to a special use permit under subsection (a).

(c) PERMIT TERMS.--A permit issued under this section--

(1) shall authorize the conduct of an activity only if that activity is compatible with the purposes for which the sanctuary is designated and with protection of sanctuary resources;

(2) shall not authorize the conduct of any activity for a period of more than 5 years unless renewed by the Secretary;

(3) shall require that activities carried out under the permit be conducted in a manner that does not destroy, cause the loss of, or injure sanctuary resources; and

(4) shall require the permittee to purchase and maintain comprehensive general liability insurance, or post an equivalent bond, against claims arising out of activities conducted under the permit and to agree to hold the United States harmless against such claims.

(d) FEES.--

(1) Assessment and Collection.--The Secretary may assess and collect fees for the conduct of any activity under a permit issued under this section.

(2) Amount.--The amount of a fee under this subsection shall be equal to the sum of--

(A) costs incurred, or expected to be incurred, by the Secretary in issuing the permit;

(B) costs incurred, or expected to be incurred, by the Secretary as a direct result of the conduct of the activity for which the permit is issued, including costs of monitoring the conduct of the activity; and

(C) an amount which represents the fair market value of the use of the sanctuary resource.

(3) Use of Fees.--Amounts collected by the Secretary in the form of fees under this section may be used by the Secretary--

(A) for issuing and administering permits under this section; and

(B) for expenses of managing national marine sanctuaries.

(4) WAIVER OR REDUCTION OF FEES.- The Secretary may accept in-kind contributions in lieu of a fee under paragraph (2)(C), or waive or reduce any fee assessed under this subsection for any activity that does not derive a profit from the access to or use of sanctuary resources.

(e) VIOLATIONS.--Upon violation of a term or condition of a permit issued under this section, the Secretary may--

(1) suspend or revoke the permit without compensation to the permittee and without liability to the United States;

(2) assess a civil penalty in accordance with section 307; or

(3) both.

(f) REPORTS.--Each person issued a permit under this section shall submit an annual report to the Secretary not later than December 31 of each year which describes activities conducted under that permit and revenues derived from such activities during the year.

(g) FISHING.--Nothing in this section shall be considered to require a person to obtain a permit under this section for the conduct of any fishing activities in a national marine sanctuary.

Sec. 311. COOPERATIVE AGREEMENTS, DONATIONS, AND ACQUISITIONS

(a) AGREEMENTS AND GRANTS- The Secretary may enter into cooperative agreements, contracts, or other agreements with, or make grants to, States, local governments, regional agencies, interstate agencies, or other persons to carry out the purposes and policies of this title.

(b) AUTHORIZATION TO SOLICIT DONATIONS.--The Secretary may enter into such agreements with any nonprofit organization authorizing the organization to solicit private donations to carry out the purposes and policies of this title.

(c) DONATIONS.--The Secretary may accept donations of funds, property, and services for use in designating and administering national marine sanctuaries under this title. Donations accepted under this section shall be considered as a gift or bequest 203

(d) ACQUISITIONS.--The Secretary may acquire by purchase, lease, or exchange, any land, facilities, or other property necessary and appropriate to carry out the purposes and policies of this title

(e) USE OF RESOURCES OF OTHER GOVERNMENT AGENCIES.- The Secretary may, 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 nonreimbursable basis, to assist in carrying out the purposes and policies of this title.

(f) AUTHORITY TO OBTAIN GRANTS.- Notwithstanding any other provision of law that prohibits a Federal agency from receiving assistance, the Secretary may apply for, accept, and use grants from other Federal agencies, States, local governments, regional agencies, interstate agencies, foundations, or other persons, to carry out the purposes and policies of this title.

Sec. 312. DESTRUCTION OR LOSS OF, OR INJURY TO, SANCTUARY RESOURCES

(a) LIABILITY FOR INTEREST.--

(1) Liability to UNITED STATES.--Any person who destroys, causes the loss of, or injures any sanctuary resource is liable to the United States for an amount equal to the sum of--

(A) the amount of response costs and damages resulting from the destruction, loss, or injury; and

(B) interests on that amount calculated in the manner described under section 1005 of the Oil Pollution Act of 1990.

(2) Liability In Rem.--Any vessel used to destroy, cause the loss of, or injure any sanctuary resource shall be liable in rem to the United States for response costs and damages resulting from such destruction, loss, or injury. The amount of that liability shall constitute a maritime lien on the vessel and may be recovered in an action in rem in the district court of the United States having jurisdiction over the vessel.

(3) Defenses.--A person is not liable under this subsection if that person establishes that--

(A) the destruction or loss of, or injury to, the sanctuary resource was caused solely by an act of God, an act of war, or an act or omission of a third party, and the person acted with due care;

(B) the destruction, loss, or injury was caused by an activity authorized by Federal or State law; or

(C) the destruction, loss, or injury was negligible.

(4) Limits to Liability.-- Nothing in sections 4281-4289 of the Revised Statutes of the United States or section 3 of the Act of February 13, 1893, shall limit the liability of any person under this title.

(b) RESPONSE ACTIONS AND DAMAGE ASSESSMENT.-

(1) Response Actions.--The Secretary may undertake or authorize all necessary actions to prevent or minimize the destruction or loss of, or injury to, sanctuary resources, or to minimize the imminent risk of such destruction, loss, or injury.

(2) Damage Assessment.--The Secretary shall assess damages to sanctuary resources in accordance with section 302(6).

(c) CIVIL ACTIONS FOR RESPONSE COSTS AND DAMAGES.—

(1) The Attorney General, upon request of the Secretary, may commence a civil action against any person or vessel who may be liable under subsection (a) for response costs and damages. The Secretary, acting as

trustee for sanctuary resources for the United States, shall submit a request for such an action to the Attorney General whenever a person may be liable for such costs or damages.

(2) An action under this subsection may be brought in the United States district court for any district in which-

(A) the defendant is located, resides, or is doing business, in the case of an action against a person;

(B) the vessel is located, in the case of an action against a vessel; or

(C) the destruction of, loss of, or injury to a sanctuary resource occurred.

(d) USE OF RECOVERED AMOUNTS.--Response costs and damages recovered by the Secretary under this section shall be retained by the Secretary in the manner provided for in section 107(f)(1) of the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. 9607(f)(1)), and used as follows:

(1) RESPONSE COSTS.- Amounts recovered by the United States for costs of response actions and damage assessments under this section shall be used, as the Secretary considers appropriate--

(A) to reimburse the Secretary or any other Federal or State agency that conducted those activities; and

(B) after reimbursement of such costs, to restore, replace, or acquire the equivalent of any sanctuary resource.

(2) OTHER AMOUNTS.-All other amounts recovered shall be used, in order of priority--

(A) to restore, replace, or acquire the equivalent of the sanctuary resources that were the subject of the action, including for costs of monitoring and the costs of curation and conservation of archaeological, historical, and cultural sanctuary resources;

(B) to restore degraded sanctuary resources of the national marine sanctuary that was the subject of the action, giving priority to sanctuary resources and habitats that are comparable to the sanctuary resources that were the subject of the action; and

(C) to restore degraded sanctuary resources of other national marine sanctuaries.

(3) Federal-State Coordination.--Amounts recovered under this section with respect to sanctuary resources lying within the jurisdiction of a State shall be used under paragraphs (2)(A) and (B) in accordance with the court decree or settlement agreement and an agreement entered into by the Secretary and the Governor of that State.

(e) STATUTE OF LIMITATIONS- An action for response costs or damages under subsection (c) shall be barred unless the complaint is filed within 3 years after the date on which the Secretary completes a damage assessment and restoration plan for the sanctuary resources to which the action relates.

SEC. 313. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Secretary--

(1) to carry out this title--

(A) \$32,000,000 for fiscal year 2001;

(B) \$34,000,000 for fiscal year 2002;

(C) \$36,000,000 for fiscal year 2003;

(D) \$38,000,000 for fiscal year 2004;

(E) \$40,000,000 for fiscal year 2005; and

(2) for construction projects at national marine sanctuaries, \$6,000,000 for each of fiscal years 2001, 2002, 2003, 2004, and 2005.

Sec. 314. U.S.S. MONITOR ARTIFACTS AND MATERIALS

(a) CONGRESSIONAL POLICY. -- In recognition of the historical significance of the wreck of the United States ship Monitor to coastal North Carolina and to the area off the coast of North Carolina known as the Graveyard of the Atlantic, the Congress directs that a suitable display of artifacts and materials from the United States ship Monitor be maintained permanently at an appropriate site in coastal North Carolina. [P.L. 102-587 authorized a grant for the acquisition of space in Hatteras Village, NC, for display of artifacts and administration and operations of the Monitor National Marine Sanctuary.

(b) DISCLAIMER. --This section shall not affect the following:

(1) Responsibilities Of Secretary.--The responsibilities of the Secretary to provide for the protection, conservation, and display of artifacts and materials from the United States ship Monitor.

(2) Authority Of Secretary.--The authority of the Secretary to designate the Mariner's Museum, located at Newport News, Virginia, as the principal museum for coordination of activities referred to in paragraph

(1).

Sec. 315. ADVISORY COUNCILS

(a) ESTABLISHMENT.--The Secretary may establish one or more Advisory Councils (in this section referred to as an 'Advisory Council') to advise and make recommendations to the Secretary regarding the designation and management of national marine sanctuaries. The Advisory Councils shall be exempt from the Federal Advisory Committee Act.

(b) MEMBERSHIP.--Members of the Advisory Councils may be appointed from among--

(1) persons employed by Federal or State agencies with expertise in management of natural resources;

(2) members of relevant Regional Fishery Management Councils established under section 302 of the Magnuson-Stevens Act; and

(3) representatives of local user groups, conservation and other public interest organizations, scientific organizations, educational organizations, or others interested in the protection and multiple use management of sanctuary resources.

(c) LIMITS ON MEMBERSHIP.--For sanctuaries designated after the date of enactment of the National Marine Sanctuaries Program Amendments Act of 1992, the membership of Advisory Councils shall be limited to no more than 15 members.

(d) STAFFING AND ASSISTANCE.--The Secretary may make available to an Advisory Council any staff, information, administrative services, or assistance the Secretary determines are reasonably required to enable the Advisory Council to carry out its functions.

(e) PUBLIC PARTICIPATION AND PROCEDURAL MATTERS.--The following guidelines apply with respect to the conduct of business meetings of an Advisory Council:

(1) Each meeting shall be open to the public, and interested persons shall be permitted to present oral or written statements on items on the agenda.

(2) Emergency meetings may be held at the call of the chairman or presiding officer.

(3) Timely notice of each meeting, including the time, place, and agenda of the meeting, shall be published locally and in the Federal Register, except that in the case of a meeting of an Advisory Council established to provide assistance regarding any individual national marine sanctuary the notice is not required to be published in the Federal Register.

(4) Minutes of each meeting shall be kept and contain a summary of the attendees and matters discussed.

Sec. 316. ENHANCING SUPPORT FOR NATIONAL MARINE SANCTUARIES

(a) AUTHORITY.- The Secretary may establish a program consisting of--

(1) the creation, adoption, and publication in the Federal Register by the Secretary of a symbol for the national marine sanctuary program, or for individual national marine sanctuaries or the System;

(2) the solicitation of persons to be designated as official sponsors of the national marine sanctuary program or of individual national marine sanctuaries;

(3) the designation of persons by the Secretary as official sponsors of the national marine sanctuary program or of individual sanctuaries;

(4) the authorization by the Secretary of the manufacture, reproduction, or other use of any symbol published under paragraph (1), including the sale of items bearing such a symbol, by official sponsors of the national marine sanctuary program or of individual national marine sanctuaries;

(5) the creation, marketing, and selling of products to promote the national marine sanctuary program, and entering into exclusive or nonexclusive agreements authorizing entities to create, market or sell on the Secretary's behalf;

(6) the solicitation and collection by the Secretary of monetary or in-kind contributions from official sponsors for the manufacture, reproduction or use of the symbols published under paragraph (1);

(7) the retention of any monetary or in-kind contributions collected under paragraphs (5) and (6) by the Secretary; and

(8) the expenditure and use of any monetary and in-kind contributions, without appropriation, by the Secretary to designate and manage national marine sanctuaries.

Monetary and in-kind contributions raised through the sale, marketing, or use of symbols and products related to an individual national marine sanctuary shall be used to support that sanctuary.

(b) CONTRACT AUTHORITY.-- The Secretary may contract with any person for the creation of symbols or the solicitation of official sponsors under subsection (a).

(c) RESTRICTIONS.-- The Secretary may restrict the use of the symbols published under subsection (a), and the designation of official sponsors of the national marine sanctuary program or of individual national

marine sanctuaries to ensure compatibility with the goals of the national marine sanctuary program.

(d) PROPERTY OF UNITED STATES.-- Any symbol which is adopted by the Secretary and published in the Federal Register under subsection (a) is deemed to be the property of the United States.

(e) PROHIBITED ACTIVITIES.-- It is unlawful for any person--

(1) designated as an official sponsor to influence or seek to influence any decision by the Secretary or any other Federal official related to the designation or management of a national marine sanctuary, except to the extent that a person who is not so designated may do so;

(2) to represent himself or herself to be an official sponsor absent a designation by the Secretary;

(3) to manufacture, reproduce, or otherwise use any symbol adopted by the Secretary under subsection (a) (1), including to sell any item bearing such a symbol, unless authorized by the Secretary under subsection (a) (4) or subsection (f); or

(4) to violate any regulation promulgated by the Secretary under this section.

(f) COLLABORATIONS- The Secretary may authorize the use of a symbol adopted by the Secretary under subsection (a)(1) by any person engaged in a collaborative effort with the Secretary to carry out the purposes and policies of this title and to benefit a national marine sanctuary or the System.

(g) AUTHORIZATION FOR NON-PROFIT PARTNER ORGANIZATION TO SOLICIT SPONSORS.-

(1) IN GENERAL.- The Secretary may enter into an agreement with a non- profit partner organization authorizing it to assist in the administration of the sponsorship program established under this section. Under an agreement entered into under this paragraph, the Secretary may authorize the non-profit partner organization to solicit persons to be official sponsors of the national marine sanctuary system or of individual national marine sanctuaries, upon such terms as the Secretary deems reasonable and will contribute to the successful administration of the sanctuary system. The Secretary may also authorize the non-profit partner organization to collect the statutory contribution from the sponsor, and, subject to paragraph (2), transfer the contribution to the Secretary.

(2) REIMBURSEMENT FOR ADMINISTRATIVE COSTS.- Under the agreement entered into under paragraph (1), the Secretary may authorize the non-profit partner organization to retain not more than 5 percent of the amount of monetary contributions it receives from official sponsors under the agreement to offset the administrative costs of the organization in soliciting sponsors.

(3) PARTNER ORGANIZATION DEFINED.- In this subsection, the term 'partner organization' means an

organization that--

(A) draws its membership from individuals, private organizations, corporation, academic institutions, or State and local governments; and

(B) is established to promote the understanding of, education relating to, and the conservation of the resources of a particular sanctuary or 2 or more related sanctuaries.

SEC. 318. DR. NANCY FOSTER SCHOLARSHIP PROGRAM.

(a) ESTABLISHMENT.- The Secretary shall establish and administer through the National Ocean Service the Dr. Nancy Foster Scholarship Program. Under the program, the Secretary shall award graduate education scholarships in oceanography, marine biology or maritime archaeology, to be known as Dr. Nancy Foster Scholarships.

(b) PURPOSES- The purposes of the Dr. Nancy Foster Scholarship Program are--

(1) to recognize outstanding scholarship in oceanography, marine biology, or maritime archaeology, particularly by women and members of minority groups; and

(2) to encourage independent graduate level research in oceanography, marine biology, or maritime archaeology.

(c) AWARD.- Each Dr. Nancy Foster Scholarship--

(1) shall be used to support graduate studies in oceanography, marine biology, or maritime archaeology at a graduate level institution of higher education; and

(2) shall be awarded in accordance with guidelines issued by the Secretary.

(d) DISTRIBUTION OF FUNDS.- The amount of each Dr. Nancy Foster Scholarship shall be provided directly to a recipient selected by the Secretary upon receipt of certification that the recipient will adhere to a specific and detailed plan of study and research approved by a graduate level institution of higher education.

(e) FUNDING- Of the amount available each fiscal year to carry out this title, the Secretary shall award 1 percent as Dr. Nancy Foster Scholarships.

(f) SCHOLARSHIP REPAYMENT REQUIREMENT- The Secretary shall require an individual receiving a scholarship under this section to repay the full amount of the scholarship to the Secretary if the Secretary

determines that the individual, in obtaining or using the scholarship, engaged in fraudulent conduct or failed to comply with any term or condition of the scholarship.

(g) MARITIME ARCHAEOLOGY DEFINED- In this section the term `maritime archaeology' includes the curation, preservation, and display of maritime artifacts

Appendix B: Monitor National Marine Sanctuary Final Regulations

The following excerpt is taken from the final regulations for the Monitor National Marine Sanctuary, Department of Commerce, National Oceanic and Atmospheric Administration, as published Monday May 19, 1975 in the Federal Register, Volume 40, Number 97. These excerpts include activities specifically prohibited in the Sanctuary:

Final Regulations

On January 30, 1975, the Secretary of Commerce designated as a marine sanctuary an area of the Atlantic Ocean around and above the submerged wreckage of the Civil War ironclad Monitor pursuant to the authority of Section 302(a) of the Marine Protection, Research and Sanctuaries Act of 1972 (86 Stat 1052, hereafter the Act). The sanctuary area (hereafter the Sanctuary) is about 16.10 miles south-southeast of Cape Hatteras (North Carolina) Light.

Section 302(f) of the Act directs the secretary to issue necessary and reasonable regulations to control any activity permitted within a designated marine sanctuary. This section also provides that no permit, license, or other authorization issued pursuant to any other authority shall be valid unless the Secretary shall certify that the permitted activity is consistent with the purposes of Title III of the Act ("Marine Sanctuaries"); and that it can be carried out within the regulations promulgated under section 302(f).

The authority of the Secretary to administer the provision of the Act has been delegated to the Administrator, National Oceanic and Atmospheric Administration, U.S. Department of Commerce (hereafter the Administrator, 39 FR 10255, March 19, 1974)...

AUTHORITY Secs. 302(f), 302(g), 303 Marine Protection Research, and Sanctuaries Act of 1972.

924.1 Authority

The Sanctuary has been designated by the Secretary of Commerce pursuant to the authority of Section 3021(a) of the Act. The following regulations are issued pursuant to the authorities of Sections 302(f), 302(g) and 303 of the Act.

924.2 Description of the Sanctuary

The Sanctuary consists of a vertical water column in the Atlantic Ocean one mile in diameter extending from the surface to the seabed, the center of which is at 35° 00' 23" north latitude and 75° 24' 32"

west longitude.

924.3 Activities prohibited within the Sanctuary

Except as may be permitted by the Administrator, no person subject to the jurisdiction of the United States shall conduct, nor cause to be conducted, any of the following activities in the Sanctuary:

- (a) anchoring in any manner, stopping, remaining, or drifting without power at any time;
- (b) any type of subsurface salvage or recover operations;
- (c) any type of diving whether by an individual or by a submersible;
- (d) lowering below the surface of the water any grappling, suction, conveyor, dredging or wrecking device;
- (e) detonation below the surface of the water of any explosive or explosive mechanism;
- (f) seabed drilling or coring;
- (g) lowering, laying, positioning or raising any type of seabed cable or cable-laying device;
- (h) trawling; or
- (i) discharging waste material into the water in violation of any Federal statute or regulation.

924.4 Penalties for commission of prohibited acts

Section 303 of the Act authorizes the assessment of a civil penalty of not more than \$50,000 for each violation of any regulation issued pursuant to Title III of the Act, and further authorizes a proceeding in rem against any vessel used in violation of any such regulation. Details are set out in Subpart (D) of Part 922 of this Chapter (39 FR 23254, June 17, 1974). Subpart (D) is applicable to any instance of a violation of these regulations.

924.5 Permitted Activities

Any person or entity may conduct in the Sanctuary any activity listed in 924.3 of this Part if: (a) such activity is either (1) for the purpose of research related to the Monitor, or (2) pertains to salvage or recovery operations in connection with an air or marine casualty; and (b) such person or entity is in possession of a valid permit issued by the Administrator authorizing the conduct of such activity; except that no permit is required for the conduct of any activity immediately and urgently necessary for the protection of life, property or the environment...

VIOLATION PROCEDURE

Violators are subject to civil penalties of up to \$50,000 under Public Law 92-532. They will be notified of the alleged violation at the scene by the issuance of a Coast Guard Enforcement Action Report (EA), CG-520, Offense Investigation Report (OIR) CG-5202; and Offense Investigation Report Supplement (OIR-SUP); CG-5202-A. Evidentiary materials found in the possession of the violator (i.e. artifacts, concretions, etc.) will be seized by Coast Guard personnel and statements taken. No further action against the violator will normally be taken at this time. Copies of the Enforcement Action or the Offense Investigation Report are distributed as the format indicates. Statements of evidentiary materials are transferred with the copy of the Report of Boarding to the NOAA Office of General Counsel which evaluates all relevant information for sufficiency of evidence and severity of the offense. If appropriate, the NOAA Office of General Counsel draws a notice of violation involved and the proposed penalty and sends it to the violator for appropriate action.

If the need arises, U.S. vessels and their operators are subject to seizure by the Coast Guard under the combining authority of 14 USC 89 and 16 USC 1433(c). If a contempt of court is involved (Sec 16 USC 1433(d)), the operator would be subject to arrest by the Coast Guard for disobedience of the restraining order. Violations of foreign vessels will be reported to the U.S. Department of State.

Appendix C: The Mariners' Museum: Programmatic Agreement

PROGRAMMATIC AGREEMENT

AMONG

THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

AND

THE MARINERS' MUSEUM

AND

THE VIRGINIA STATE HISTORIC PRESERVATION OFFICER

AND

THE ADVISORY COUNCIL ON HISTORIC PRESERVATION

FOR

PROTECTION AND MANAGEMENT

OF THE MONITOR COLLECTION

NOS Agreement Code: MOA-2004-023/114

WHEREAS, the National Oceanic and Atmospheric Administration (NOAA) of the Department of Commerce is charged with the protection and management of the Civil War ironclad vessel U.S.S. Monitor, which sank in waters of the United States off the coast of North Carolina on December 31, 1862, nine months after its epic battle with the CSS Virginia, and

WHEREAS, the Monitor has been designated a National Historic Landmark by the Secretary of the Interior in 1974, and under the authority of the Marine Protection, Research and Sanctuaries Act of 1972 (16 U.S.C. 1431 et seq.) the remains of the Monitor were designated the first National Marine Sanctuary by the Secretary of Commerce in 1975, and

WHEREAS, NOAA has determined that it is in the public interest to remove selected artifacts from the Monitor from the sea floor and conserve, study, preserve, and interpret them, and this collection of artifacts meets the definition of “historic property” in Section 301(5) of the National Historic Preservation Act of 1966, as amended (NHPA, 16 U.S.C. 470w), and

WHEREAS, NOAA has determined that some of these management and preservation activities (the “Federal undertaking”) will have an effect upon the Monitor, and has consulted with The Mariners’ Museum (hereafter “TMM”), the Virginia State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation (ACHP) pursuant to the regulations (36 CFR Part 800) implementing Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f), and

WHEREAS, NOAA has consulted with The Mariners’ Museum, the Virginia State Historic Preservation Officer, the City of Newport News, and the Advisory Council on Historic Preservation in accordance with the ACHP’s regulations (36 CFR Part 800), implementing Section 106 of the NHPA to develop this Programmatic Agreement (“Agreement”), and

WHEREAS, this Agreement sets forth the steps NOAA will take to meet its responsibilities for historic properties in the Monitor Collection (hereinafter Monitor Collection) and the Monitor National Marine Sanctuary (MNMS) which are set forth in: a) the National Marine Sanctuaries Act (NMSA) (16 U.S.C. 1431 et seq.) b) Sections 106 and 110 of the NHPA (16 U.S.C. 470f & 470h-2), on historic properties, and manage them in the public interest; and c) 36 CFR Part 79 (“Curation of Federally-Owned and Administered Archaeological Collections”), and

WHEREAS, in 1987, NOAA selected The Mariners’ Museum in Newport News, Virginia as the official principal museum for the conservation, interpretation, management, and exhibition of this Monitor Collection, and this selection was based upon criteria developed and recommended by the Council of American Maritime Museums, published in the request for proposals to protect and manage the Monitor Collection at 51 Federal Register 31,708 (September 4, 1986);

NOW, THEREFORE, NOAA, TMM, the Virginia SHPO, and the ACHP agree that research, manage-

ment, and preservation activities for the Monitor Collection shall be implemented in accordance with the following stipulations to satisfy NOAA's responsibilities under the NHPA and the NMSA.

STIPULATIONS

NOAA shall ensure that the following measures are carried out.

I. PURPOSE AND SCOPE

A. This Agreement incorporates by reference the Curatorial Services Agreement between NOAA and TMM for management of the Monitor Collection (attached to this Agreement as Appendix A) and the underlying regulations implementing the Archaeological Resources Protection Act (ARPA) (16 U.S.C. 450rr et seq.) (36 CFR Part 79).

B. This Programmatic Agreement sets forth how NOAA will comply with sections 106 and 110 of the NHPA. For purposes of compliance with the NHPA, ARPA, and the NMSA, it supersedes all previous Agreements, including the Memorandum of Agreement signed July 17, 1987, the Cooperative Agreement signed October 4, 1989, and the Memorandum of Agreement signed January 11, 2000, which were not Programmatic Agreements under the NHPA.

II. PARTIES

A. The authority to protect and manage sanctuary resources under the NMSA has been delegated by the Secretary of the Department of Commerce to the Administrator of NOAA. Within NOAA, this authority has been delegated through the National Ocean Service (NOS) to the Director of the National Marine Sanctuary Program (NMSP). Thus, the Director is authorized to protect and manage the Nation's system of National Marine Sanctuaries, including the Monitor NMS and its resources.

B. The Mariners' Museum, an internationally-recognized private, nonprofit institution, has been the principal museum for the protection and management of the Monitor Collection since 1987. The authority for the Secretary to designate TMM as the principal museum for the Monitor Collection has been codified at 16 U.S.C. 1445 (c)(2).

III. REFERENCES AND AUTHORITY

A. The Monitor NMS was designated by the Secretary of Commerce on January 30, 1975, pursuant to Title III of the Marine Protection, Research and Sanctuary Act of 1972 (16 U.S.C. 1431, et seq.) as amended, now also known as the National Marine Sanctuaries Act. The NMSA (16 U.S.C. 1442 (a)) authorizes the Secretary of Commerce to enter into cooperative agreements, contracts, or other

agreements with, or make grants to, States, local governments, regional agencies, interstate agencies, or other persons to carry out the purposes and policies of this title.

B. Regulations implementing the NMSA for the National Marine Sanctuary Program at 15 C.F.R. §922 apply at all sanctuaries and incorporate the laws and policies of the Federal Archaeological Program §922.2(e). As artifacts and other information recovered from the Monitor NMS are a federally-owned Monitor Collection, they are subject to the standards, requirements and guidelines of the Federal Archaeological Program, including, but not limited to the: (1) National Historic Preservation Act (NHPA), (16 U.S.C. 470 et seq.) and (2) Archaeological Resources Protection Act (ARPA) (16 U.S.C. 470aa et seq.), and implementing regulations and guidelines, including requirements for the Curation of Federally-Owned and Administered Archaeological Collections (36 C.F.R. Part 79) as referenced in TMM's conservation plan.

C. The site-specific regulations for the Monitor NMS are at 15 C.F.R. §924. The NMSA has been amended to specifically address artifacts recovered from the Monitor NMS. Under 16 U.S.C. 1445, the Secretary's authority to designate TMM as the principal museum for the Monitor Collection is recognized; however, it also provides that a suitable display of artifacts and materials from the Monitor be maintained permanently at an appropriate site in coastal North Carolina.

D. The federal agency's trustee status means that, under 36 C.F.R. Part 79, it is responsible for the long-term management and preservation of the federally-owned artifacts within the Monitor Collection. The final determination as to whether TMM is in compliance with the requirements of Part 79 shall be made by NOAA. Any disputes that arise regarding TMM's compliance with Part 79 or any other federal requirements shall be resolved through this Agreement's dispute resolution process, outlined at Section XI below.

E. Other laws and policies may also apply, including those that apply to United States Government property, sunken warships and other "state craft" (as defined by the President's Statement, U.S. Policy for the Protection of Sunken Warships, January 19, 2001), and the treatment of the human remains and artifacts associated with the U.S. military personnel. However, the provisions of the Agreement remain controlling for purposes of compliance with the NHPA, the NMSA and implementing regulations.

IV. RESOURCE PROTECTION

A. In Situ Preservation in Monitor National Marine Sanctuary

1. NOAA will continue to protect and manage the Monitor National Marine Sanctuary subject to the current management plans set forth in Monitor National Marine Sanctuary Management Plan (1992) and Charting a New Course for the Monitor (1998), regulations, and the terms of this

Agreement.

2. NOAA will cooperate with TMM on the education, research, and possible recovery of additional historic sanctuary resources that are still at the sanctuary site.

B. The Treatment of Human Remains and Associated Artifacts

1. Any human remains discovered within the Sanctuary or its recourses will be treated with the utmost respect and in accordance with the President's Statement, U.S. Policy for the Protection of Sunken Warships, January 19, 2001.

2. NOAA's recovery of the human biological remains shall be conducted in accordance with the Operating Procedures developed by the U.S. Army Central Identification laboratory, Hawaii (USACILHI) (April 15, 2002).

3. Human biological remains shall not be on public display or exhibition. NOAA, in consultation with the Director of the Naval Historical Center, will determine the appropriate treatment for any human biological remains, associated artifacts, and other associated information. The final disposition of human biological remains and associated artifacts must be consistent with applicable U.S. Department of Defense laws and policies.

4. There shall be no public display or exhibition of artifacts associated with human biological remains without the prior written approval of NOAA. NOAA may consult with the Director of the Naval Historical Center, as necessary or appropriate.

C. Transportation and Stabilization

1. NOAA is responsible for the transportation and delivery to TMM all Monitor NMS resources, including material remains and associated records, as they are generated or acquired, to be added to the Monitor Collection, as agreed upon in advance between NOAA and TMM.

2. Subject to NOAA oversight as provided in the Curatorial Services Agreement (CSA), TMM is responsible for stabilizing the turret, engine, and other sanctuary resources provided by NOAA.

3. TMM is responsible for handling and care upon delivery. All physical care of the Monitor Collection must be conducted by qualified museum professionals, as set forth in 36 C.F.R. 79.9(4).

4. TMM will handle, store, clean, conserve, and exhibit in a manner that:

(i) is appropriate to the nature of the material remains and associated records; (ii) protects the

Monitor Collection from breakage and possible deterioration from adverse temperature and relative humidity, visible light, ultraviolet radiation, dust, soot, gases, mold, fungus, insects, rodents and general neglect; and (iii) preserves data that may be studied in future laboratory analysis. 36 C.F.R. 79.9(5). In accordance with 36 C.F.R. 79.8(i), the NPS Museum Handbook, Part I, provides specific procedures and restrictions for physical care that meet or exceed the required standards. See

<http://www.cr.nps.gov/museum/publications/MHI/mushbkI.html>

D. Long-term Conservation and Curation of Monitor Collection at The Mariners' Museum

1. NOAA is responsible for the protection and management of the federally-owned Monitor collection. In 1987, NOAA selected TMM as the most appropriate repository to provide long-term curatorial services, including the stabilization, conservation, storage, and exhibition of the Monitor Collection. As such, TMM will continue to be the principal museum responsible for providing for the long-term protection and management of the Monitor Collection with NOAA as long as the services and facility continue to meet the standards and requirements of 36 C.F.R. Section 79.9

2. The protection and management of the Monitor Collection shall be conducted in a manner that is consistent with the Curatorial Services Agreement with TMM. The CSA implements the requirements of 36 C.F.R. Part 79. If TMM fails to protect and manage the Monitor Collection in accordance with the CSA, NOAA may select another facility within the mid-Atlantic region to fulfill NOAA's responsibilities for the long-term protection and management of the Monitor Collection.

V. RESEARCH & MONITORING

A. NOAA will continue to conduct long-range research and monitoring projects at the Monitor NMS, in accordance with the current Monitor NMS Management Plan and under this Agreement. Except in accordance with 16 U.S.C. 1445, NOAA will provide TMM with material remains and associated records. NOAA will consult with TMM regarding these programs, as mutually agreed upon or as specified in the annual task and budget summaries of the financial assistance awards (hereinafter annual task and budget summaries).

B. Consistent with the CSA, TMM agrees to provide access to the Monitor Collection to NOAA and others whose research has been determined by NOAA to be in the public interest. 36 C.F.R. Part 79, 79.10, 79.8(j), (k). NOAA shall consult with TMM in the development and approval of research proposals. See <http://www.cr.nps.gov/museum/publications/MHIII/mushbkIII.html>

C. NOAA shall provide final reports resulting from its research under this Agreement to TMM, the Virginia and North Carolina SHPOs, the Naval Historical Center, the ACHP, the National Park Service - National Technical Information Service, and other parties, as appropriate.

D. Pursuant to 36 C.F.R. 79.8(1) TMM shall provide NOAA with copies of publications resulting from its research of the Monitor Collection.

VI. EDUCATION/OUTREACH

A. NOAA also conducts long-range research and educational programs related to the Monitor NMS, in accordance with the Monitor NMS Management Plan. TMM agrees to assist NOAA with these programs, as mutually agreed upon or as specified in the annual task and budget summaries of the financial assistance awards (annual task and budget summaries).

B. NOAA and TMM will credit each other in cooperative projects, publications, media releases, announcements, and other activities as appropriate.

VII. FUNDING

A. To date, the U.S. Government, through NOAA and the Navy, has provided approximately \$30 million in human and financial resources toward research and recovery efforts for the Monitor.

B. NOAA's responsibilities and support for the Monitor Collection and TMM under this Agreement are subject to annual appropriations, Federal law, and NOAA's approval. NOAA shall provide annual task and budget summaries to support services and special projects as mutually agreed upon.

C. Per the May 20, 2002 cooperative agreement between NOAA and TMM, NOAA anticipates that the Monitor Center will be developed at TMM. In the May 2002 cooperative agreement, NOAA provided that a \$5.039 million Federal appropriation would be provided toward the cost of the Monitor Center. A second appropriation of \$5 million was awarded in the FY03. TMM is responsible for raising the rest of the funds needed for the Center through individual, corporate, government, and foundation sources.

D. TMM will maintain the NOAA fund, accept donations to the fund, provide audits as appropriate, and make the funds available to the Monitor NMS, as requested by NOAA or as specified by the donor.

E. TMM may use the Monitor Collection to raise funds only for the implementation of this

Agreement and the CSA. TMM shall use proceeds of such fund-raising only for purposes of preservation, conservation, and maintenance of the Monitor Collection, for educational and interpretational activities regarding the Monitor Collection, and for construction of Monitor-related facilities in support of the Curatorial Services Agreement between the parties and this Programmatic Agreement.

VIII. USE OF MONITOR COLLECTION FOR FUND RAISING

A. Artifacts recovered from the Monitor NMS remain the property of the U.S. Government (with NOAA as trustee). They shall not be traded, sold, bought, or bartered as commercial goods by TMM or others.

B. TMM may use the Monitor Collection to raise funds through regular museum admission fees at TMM, and through reasonable loan/exhibition fees arising from the loan of artifacts in the Collection to other qualified museums. However, researchers, educators and the general public should not be subject to extraordinary or special fees for access or admission. No loan agreements shall be entered into without the prior written approval of NOAA.

C. TMM may also use the Monitor Collection to raise money from photographs, drawings, and other depictions of the Monitor Collection that it has developed or to which it has intellectual property rights. However, any such records associated with the Monitor Collection that are developed using federal funds must be available to the public, whether at a reasonable cost or free of charge. Nothing in this Agreement restricts NOAA from making its records associated with the Monitor Collection available to the public at a reasonable cost or free of charge.

D. NOAA maintains the right to have access to create and provide photos, drawings, and other depictions of the Monitor Collection for public use. NOAA will cooperate with TMM to ensure that the use of such public domain materials does not infringe on TMM's intellectual property rights or unduly interfere with its fund-raising activities.

E. TMM shall submit to NOAA an annual report on the result of fund-raising efforts involving the Monitor Collection or its artifacts or Associated Records over the course of the previous year. This annual report shall contain a disclosure of all restricted funds raised for or used in association with the Monitor Collection, and how such funds were allocated generally.

IX. MONITOR SANCTUARY ADVISORY COUNCIL

A. A Monitor Sanctuary Advisory Council (SAC) will be established to provide advice to NOAA regarding the protection and management of the Monitor NMS and the Monitor Collection, includ-

ing implementation of the sanctuary management plan, the Curatorial Services Agreement, and this programmatic Agreement.

B. Membership on the SAC shall be established consistent with 16 U.S.C. 1445(a) and shall include a representative of TMM.

X. SUNSET CLAUSE, AMENDMENT, OR TERMINATION

A. This Agreement shall become effective upon execution by all the Parties and shall remain in effect for a period of five (5) years, whereupon it will be reviewed and reaffirmed, revised, as necessary, or terminated.

B. At any time prior to the end of the 2007 calendar year, any of the signatories may request the other signatories to consider the continuation, amendment, or termination of this Agreement. Such continuation, amendment, or termination will take effect upon unanimous written agreement of all signatories to this Agreement. If the Agreement is terminated, NOAA shall either consult in accordance with 36 CFR Part 800.6 to develop and execute a new Agreement or request the comments of the ACHP pursuant to 36 CFR Part 800.7.

C. The sunset or termination of this Agreement means that NHPA 106 compliance may no longer be addressed programmatically by its provisions. NHPA 106 requirements for federal undertakings would then need to be addressed on a case-by-case basis.

D. The sunset or termination of this Programmatic Agreement under NHPA 106 does not terminate the CSA. The CSA has its own provisions controlling its duration.

XI. DISPUTE RESOLUTION

A. If any signatory to this Agreement objects to any procedural action proposed, attempted, or carried out under this Agreement, including research, recovery, stabilization, conservation, curation, fund raising, or education/outreach, NOAA and the objecting signatory shall together attempt to resolve any disagreement. If NOAA determines that the disagreement cannot be resolved, NOAA shall request the further comments of the ACHP in accordance with 36 CFR Part 800.7(b). Any Council comment provided in response will be taken into account by NOAA in reaching a final decision regarding this issue. NOAA's responsibility to carry out all other actions under this Agreement that are not the subjects of the dispute will remain unchanged.

B. If any signatory to this Agreement objects to any substantive action proposed, attempted, or car-

ried out under this Agreement, including research, recovery, stabilization, conservation, curation, fund raising, or education/outreach, NOAA and the objecting signatory shall together attempt to resolve any disagreement. If NOAA determines that the disagreement cannot be resolved, NOAA shall request the comments of the Monitor SAC. If within 30 days of receiving the Monitor SAC's comments the Parties do not resolve the dispute, NOAA will take all received comments into account in making a final decision regarding the dispute. NOAA's responsibility to carry out all other actions under this Agreement that are not the subjects of the dispute will remain unchanged.

Execution and implementation of this Agreement evidences that the National Oceanic and Atmospheric Administration has satisfied its Sections 106 and 110 responsibilities for research, management, and preservation activities carried out on the Monitor National Historic Landmark and the Monitor Collection.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

By: _____ Date: 12/22/03 _____, 2003

Daniel J. Basta

Director, National Marine Sanctuary Program

THE MARINERS' MUSEUM

By: _____ Date: 12/23/03 _____, 2003

John B. Hightower

President & Chief Executive Officer

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: _____ Date: 1/29/04 _____, 2003

John M. Fowler

Executive Director

VIRGINIA STATE HISTORIC PRESERVATION OFFICER

By: _____ Date: 12/30/03 _____, 2003

Kathleen S. Kilpatrick

State Historic Preservation Officer

APPENDIX A (OF PROGRAMMATIC AGREEMENT):

CURATORIAL SERVICES AGREEMENT FOR THE FEDERALLY OWNED MONITOR COLLECTION
PURSUANT TO NATIONAL MARINE SANCTUARIES ACT (NMSA), 16 U.S.C. § 1440 RESEARCH,
MONITORING, AND EDUCATION

*Appendix D: Amendment to The Mariners' Museum: Programmatic
Agreement*

AMENDMENT TO
PROGRAMMATIC AGREEMENT
AMONG
THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION,
THE MARINER'S MUSEUM,
THE VIRGINIA STATE HISTORIC PRESERVATION OFFICER,
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
FOR THE PROTECTION AND MANAGEMENT
OF THE *MONITOR* COLLECTION

WHEREAS, on January 29, 2004, a Programmatic Agreement (Agreement) was executed among the above-named parties for the protection and management of artifacts recovered from the U.S.S. Monitor, a National Historic Landmark, and

WHEREAS, Stipulations X.A. and X.B. of Sunset Clause section of this Agreement called for the Agreement to remain in effect until January 2009, and that it could be amended prior the end of the 2007 calendar year, and

WHEREAS, the signatories are unanimous that this Agreement should be continued, and these two Stipulations be amended to reflect this;

NOW, THEREFORE, the signatories agree to the following language to substitute for the Stipulations cited above.

1) Current language of Stipulation X.A.:

“This Agreement shall become effective upon execution by all parties and shall remain in effect for a period of 5 years, whereupon it will be reviewed and reaffirmed, revised, as necessary, or terminated.”

2) Amended language of Stipulation X.A.

“This Agreement shall become effective upon execution by all parties and shall remain in effect for a period of 10 years, whereupon it will be reviewed and reaffirmed, revised, as necessary, or terminated.”

3) Current language of Stipulation X.B.:

“At any time prior to the end of the 2007 calendar year, any of the signatories may request the other signatories to consider the continuation, amendment or termination of this Agreement. Such continuation, amendment or termination will take effect upon unanimous written agreement of all the signatories to this Agreement. If the Agreement is terminated, NOAA shall either consult in accordance with 36 CFR Part 800.6 to develop and execute a new Agreement or request the comments of the ACHP pursuant to 36 CFR Part 800.7”

4) Amended language of Stipulation X.B.:

“At any time prior to the end of the 2013 calendar year, any of the signatories may request the other signatories to consider the continuation, amendment or termination of this Agreement. Such continuation, amendment or termination will take effect upon unanimous written agreement of all the signatories to this Agreement. If the Agreement is terminated, NOAA shall either consult in accordance with 36 CFR Part 800.6 to develop and execute a new Agreement or request the comments of the ACHP pursuant to 36 CFR Part 800.7”

Execution of the Programmatic Agreement and this Amendment to it by NOAA, the Mariner’s Museum, the Virginia State Historic Preservation Officer, and the Advisory Council on Historic Preservation (ACHP), and subsequent implementation of their terms by NOAA, evidences that NOAA has afforded the ACHP an opportunity to comment on the undertaking and its effects on historic properties and that NOAA has taken into account its effects on historic properties.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

By: _____ Date: _____

Director, National Marine Sanctuary Program

MARINER'S MUSEUM

By: _____ Date: _____

Executive Vice President and Chief Operating Officer

VIRGINIA STATE HISTORIC PRESERVATION OFFICER

By: _____ Date: _____

State Historic Preservation Officer

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: _____ Date: _____

John M. Fowler, Executive Director

Appendix E: The Mariners' Museum: Curatorial Services Agreement

NOAA 12/07 Revisions to
Revised Draft Curatorial Services Agreement
NOAA-MNMS/The Mariners' Museum
WORKING DRAFT

CURATORIAL SERVICES AGREEMENT FOR THE
FEDERALLY OWNED U.S. *MONITOR* COLLECTION
PURSUANT TO NATIONAL MARINE SANCTUARIES ACT (NMSA),
16 U.S.C. § 1444 RESEARCH, MONITORING, AND EDUCATION
BETWEEN THE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION,
MONITOR NATIONAL MARINE SANCTUARY
AND
THE MARINERS' MUSEUM

CURATORIAL SERVICES AGREEMENT

BETWEEN THE
National Oceanic and Atmospheric Administration,
Department of Commerce
AND
The Mariners' Museum

THIS CURATORIAL SERVICES AGREEMENT (the "Agreement") is entered into effective _____, 2003 by and between the Secretary of Commerce, acting by and through the National Oceanic and Atmospheric Administration's National Marine Sanctuary Program, (hereinafter called the "Depositor"), and The Mariners' Museum, located in the State of Virginia (hereinafter called the "Repository"). This Curatorial Services Agreement supersedes all previous agreements between the Parties, including the Memorandum of Agreement signed July 17, 1987, the Cooperative Agreement signed October 4, 1989, and the Memorandum of Agreement signed January 11, 2000. This Curatorial Services Agreement shall be implemented in coordination with the Memorandum of Programmatic Agreement between the parties, dated the date hereof. To the extent that provisions of this Curatorial Services Agreement contradict or are otherwise in conflict with the provisions of any other agreement between the parties hereto or of any attachment to this Agreement, the provisions of this Curatorial Services Agreement shall govern.

The Parties do witnesseth that,

Whereas, the Depositor has the responsibility under Federal law to preserve for future use certain collections of archaeological artifacts, specimens and other material remains (as defined in 36 CFR §79.4(a)(1)) and Associated Records (as defined in 36 CFR §79.4(a)(2)) relating to the ironclad USS Monitor. The Depositor is desirous of obtaining from the Repository conservation and curatorial services (as defined in 36 CFR §79.4(b)) for the collection of Monitor archaeological artifacts, including specimens and material remains and the Associated Records (herein, collectively, the "Monitor Collection") listed in Attachment A, which is attached hereto and made a part hereof. Attachment A constitutes the full and complete inventory of the Monitor Collection, except insofar as the Associated Records listed in Attachment A are not all named and described with specificity as of the date of execution of this Agreement. The parties agree that Attachment A shall be updated to more precisely specify the Associated Records upon the completion of the process contemplated by the parties under this Agreement at Section II, Paragraph c, to be specified at Attachment E, which will outline a plan for coming to meet the Federal requirements for processing and archiving of the Associated Records. The Depositor also has the responsibility under Federal law to preserve any future archaeological artifacts, specimens, material remains and Associated Records that may result from future Monitor expeditions or other means, and the parties intend that these will become additions to the Monitor Collection, subject to future agreement between the

Parties. Any such additions, if any, to the Monitor Collection would be noted in addenda to Attachment A, and the Depositor will be desirous of obtaining conservation and curatorial services for such additions; and

Whereas, the Repository understands the historical significance of the Monitor artifacts and the need to preserve them for the public good, and being desirous of supporting the needs of the Depositor, the Repository has assumed the responsibility to receive, house, conserve and maintain the Monitor Collection, including (to the extent mutually agreed by both Parties) future artifacts from the Monitor site, and recognizes the benefits that will accrue to the public and scientific interests by housing, conserving and maintaining the Monitor Collection for study, exhibition and other educational purposes; and

Whereas, the Depositor recognizes that in order for the Repository to establish and maintain the facilities necessary for the Repository to perform the conservation and curatorial services contemplated in this Agreement, the Repository has to date raised, and will of necessity be required in the future to raise, significant funds from numerous individual, corporate, government and foundation sources; and

Whereas, the Parties hereto recognize the Federal Government's continued ownership and control over the Monitor Collection and any other U.S. Government-owned personal property (i.e., computers, furniture, etc.), if any, listed in Attachment B attached hereto and made a part hereof, provided to the Repository, and the Federal Government's responsibility to ensure that the Monitor Collection is suitably managed and preserved for the public good; and

Whereas, the Parties hereto recognize the mutual benefits to be derived by having the Monitor Collection suitably housed and maintained by the Repository;

NOW THEREFORE, the Parties do mutually agree as follows:

I. Authorities and References

Authorities and References for this Agreement are as follows: Title III of the Marine Protection, Research and Sanctuary Act of 1972, as amended at 16 U.S.C. 1431 et. seq., as amended, now also known as the National Marine Sanctuaries Act (NMSA), which authorizes the Secretary of Commerce to designate National Marine Sanctuaries, recognizing that certain areas in the marine environment possess, among other things, conservation, historical, educational, cultural, archaeological or esthetic qualities that give them special significance. The Monitor National Marine Sanctuary (MNMS) was so designated by the Secretary of Commerce on January 30, 1975. The NMSA (16 U.S.C. §1442(a)) authorizes the Secretary of Commerce to enter into cooperative agreements, financial agreements, grants, contracts, or other agreements with States, local governments, regional agencies, or other persons to carry out the purposes and policies of the NMSA. Regulations further describe and govern activities taking place in National Marine Sanctuaries Program at 15 C.F.R. § 922. Regulations implementing the NMSA for the National Marine Sanctuary Program (NMSP) at 15 C.F.R. § 922 apply at all sanctuaries and incorporate the laws and policies of the Federal Archaeological

Program. There are also site-specific regulations for the MNMS at 15 C.F.R. §924. The special policies for the treatment of historical resources within the NMSA are found at 15 C.F.R. § 922.2 (e), and authorize the NMSP to obtain guidance from the Department of the Interior's Standards and Guidelines for Archaeology. 36 C.F.R. Part 79 establishes the Department of the Interior's guidelines for the curation of federally owned and administered archaeological collections.

As artifacts and other information recovered from the MNMS are a federally-owned collection, they are also subject to the requirements and guidelines of the Federal Archaeological Program, including, but not limited to: (1) National Historic Preservation Act (NHPA), (16 U.S.C. § 470 et seq.); (2) Archaeological Resources Protection Act (ARPA), (16 U.S.C. § 470aa et seq.); and, (3) implementing regulations and guidelines, including requirements for the Curation of Federally Owned and Administered Archaeological Collections, (36 C.F.R. Part 79). NOAA published a request for proposals (RFP) from museums interested in acting as the principal museum for the management of the Monitor Collection at 51 Federal Register 31,708 (September 4, 1986), based upon criteria developed and recommended by the Council of American Maritime Museums. In response to that RFP, NOAA selected The Mariners' Museum to serve as principal museum for the Monitor Collection.

II. Repository's Duties

Subject to and in accordance with the terms and conditions of this Agreement, the Repository shall:

a. Provide for the professional care and management, in accordance with the regulation 36 C.F.R. Part 79, of the Monitor Collection from the U.S.S. Monitor site. The archaeological artifacts, specimens and material remains in the Monitor Collection were recovered in connection with periodic Monitor expeditions in the Monitor National Marine Sanctuary, located in waters approximately 16 miles off Cape Hatteras, North Carolina. The Associated Records have been assembled in connection with such Monitor expeditions, and through associated historical research, through donated records associated with the U.S.S. Monitor's history, and through private expeditions to the Monitor. Subject to the mutual written consent of both Parties to this Agreement, the Monitor Collection may grow following any future Monitor expeditions, or may otherwise change due to the requirements of applicable law, including 16 U.S.C. § 1445 (pursuant to which Congress directed that a suitable display of Monitor artifacts be maintained at a site in coastal North Carolina, subject to the responsibilities of the Depositor to provide for the conservation of such artifacts). With the mutual written consent of the Depositor and the Repository, Attachment A to this Agreement (inventory list) shall be updated as needed to accurately reflect the Monitor Collection's contents.

b. Perform all work necessary to protect the archaeological artifacts, specimens and material remains in the Monitor Collection in accordance with the regulation 36 C.F.R. Part 79 for the cura-

tion of federally-owned and administered archaeological collections and the terms and conditions stipulated in Attachment C to this Agreement. Evidence of adherence to 36 C.F.R. Part 79 with respect to the Monitor Collection's archaeological artifacts, specimens and material remains shall be submitted in the form of the Conservation Plan to the Depositor within 3 months of the effective date of this Agreement for approval by the Depositor in accordance with the procedures listed under Section IV of this Agreement. Approval by the Depositor of the Conservation Plan shall constitute the Depositor's acknowledgement that the Repository is currently conserving and curating the Monitor Collection's archaeological artifacts, specimens and material remains in a manner that meets the Federal standards established under 36 C.F.R. Part 79 with regards to conservation and curatorial services for the Monitor Collection. Unless Federal standards change, the Repository shall be deemed to be meeting the requirements listed at 36 C.F.R. Part 79 as long as conservation and curation of the Monitor Collection is undertaken in accordance with such approved Conservation Plan. Should Federal standards change, or the Depositor request a higher standard of care, the Depositor agrees to work with the Repository to develop a schedule and to help the Repository find means for meeting the new standards. No amendment or revision of the Conservation Plan shall be valid except if adopted with the written consent of the Depositor and the Repository. Upon approval of the Conservation Plan, said plan shall be incorporated into this Agreement at Attachment D, and shall become a part hereof.

c. Following a joint assessment of the Repository's current archival capabilities, establish, together with the Depositor, within ninety (90) days of signing this Agreement, a schedule for improving those capabilities as may be required to allow the Depositor to meet Federal archival requirements, with respect to the Associated Records in the Monitor Collection. This schedule for improving the Repository's archival capabilities for the purposes of allowing the Depositor to come to meet the applicable Federal requirements shall, upon the agreement of the parties, be incorporated into this Agreement at Attachment E, and shall become a part hereof. Upon adoption of and in accordance with the Archival Plan to be developed and adopted by the parties pursuant to Section IV, Paragraph b below, the Repository shall provide and maintain a repository facility having requisite equipment, space, and adequate safeguards for the physical security and controlled environment for the Associated Records of the Monitor Collection, and shall provide for the proper storage, handling, and public accessibility of the Associated Records, all in accordance with and subject to 36 C.F.R. Part 79, and all applicable and controlling regulations and standards of the National Archives and Records Administration ("NARA") all of which shall be reflected in the Archival Plan. Unless those standards change, the Repository shall thereafter meet the requirements through continuing implementation of the Archival Plan. Should Federal standards change, or the Depositor request a higher standard of care, the Depositor agrees to work with the Repository to develop a schedule and to help the Repository find means for coming to meet the new standards. No amendment or revision of the Archival Plan shall be valid except if adopted with the written consent of the Depositor and the Repository.

d. Pursuant to the requirements of 36 C.F.R. Part 79, as evidenced by the approved Conservation Plan and Archival Plan, and in accordance with the terms of this Agreement, do the following:

1. Assign as the Curator, the Collections Manager, and the Conservator having responsibility for the work under this Agreement, a person or persons who are qualified museum professionals and whose expertise is appropriate to the nature and content of the Monitor Collection.
2. Continue all stabilization, conservation and other curatorial services for the duration of the term of this Agreement. (The term of this Agreement and the conditions for early termination are set forth in Section VIII of this Agreement).
3. Provide and maintain, in accordance with the Conservation Plan and the Archival Plan, a repository facility having requisite equipment, space and adequate safeguards for the physical security and controlled environment for the Monitor Collection of artifacts, specimens, material remains, Associated Records, and any other U.S. Government-owned personal property, if any, in the possession of the Repository. This includes maintaining and up-to-date Emergency Management Plan to ensure that mechanisms have been developed with which the Repository can adequately protect the Monitor Collection in the event of any contingencies. The Depositor reserves the right to act following an emergency to protect the Monitor Collection from further risks associated with the emergency.
4. As the parties agree is currently the case, maintain at all times during the term of this Agreement, insurance policies and coverage in adequate and sufficient amounts, in conformity with customary museum practice, to cover the costs of repair or replacement of objects in the Monitor Collection that are lost, deteriorated, damaged, or destroyed during transit or while in the Repository's possession. Depositor acknowledges and agrees that the Repository's insurance program to cover insurable risk, including risks to the Monitor Collection, is adequate and sufficient as of the date hereof. The Repository agrees that it shall make reasonable increases in its insurance coverages over the course of the term of this Agreement. If so requested by Depositor, the Repository shall seek quotations from insurance brokers and agents for, and shall report to Depositor on the availability of, alternative insurance coverages or forms of security instrument to provide coverage against any and all risks of physical loss or damage to objects in the Monitor Collection from any external causes while in transit or on display during the course of this Agreement. The Depositor must be notified in writing at least 30 days prior to any cancellation, decrease or other meaningful change in the Repository's insurance policies and coverages, at which time the Depositor shall be given the opportunity to object to said change. The beneficiary of any settlement award compensating for damage to or loss of any part of the Monitor Collection shall be the Monitor Collection itself. Toward that end, the Repository shall use loss settlement proceeds from insurance on the Monitor Collection only for implementation of this Agreement and the Programmatic Agreement between the parties. Dollar values of objects in the Monitor

Collection, if established, shall be established for insurance purposes only. NOAA reserves the right to request a review of the insurance coverage maintained by the Repository. The Depositor, as owner of the Monitor Collection, agrees that in the event of any loss, deterioration, damage, or destruction of any item in the Monitor Collection, it shall look solely to insurance, and solely for the benefit of the Monitor Collection, and shall have no rights of recovery or indemnification from the Repository, to cover any such loss, unless such loss is caused by the negligence or willful misconduct of an employee or contractor of the Repository.

5. Hold the Depositor harmless for any property damage or personal injury suffered or incurred by a third party and that is caused as a result of the Repository's storage, transport, or display of Monitor archaeological artifacts or Associated Records of the Monitor Collection, or from any other Government owned personal property in the possession of the Repository.

6. Not in any way adversely alter or deface any of the Monitor Collection except as may be absolutely necessary in the course of stabilization, conservation, scientific study, analysis and research. Permission from the Depositor is required in advance and in writing for any alterations or defacements contemplated by the Repository.

7. Provide the MNMS with annual progress reports on conservation, copies of proposed changes and additions to the Conservation Plan or the Archival Plan, and copies of any reports or documents generated by the Repository or any third party concerning the conservation or analysis of the Monitor Collection.

8. Annually inspect the facilities, the Monitor Collection and any other U.S. Government-owned personal property, if any. Every year, inventory the Monitor Collection and any other U.S. Government-owned personal property, if any. The Repository shall undertake these yearly inspections and inventories jointly with the Depositor's representative. Perform only those conservation treatments as are absolutely necessary to ensure the physical stability, integrity and long-term preservation of the Monitor Collection, and report the results of inventories, inspections and treatments to the Depositor.

9. Within one (1) day of discovery, report to the Depositor all instances of and circumstances surrounding loss of, deterioration and damage to, or destruction of the Monitor Collection and any other U.S. Government-owned personal property, and those actions taken to stabilize the Monitor Collection and to correct any deficiencies in the physical plant or operating procedures that may have contributed to the loss, deterioration, damage or destruction. The Depositor must approve in advance and in writing any actions that will involve the alteration, repair and restoration of any item of the Monitor Collection and any other U.S. Government-owned personal property.

10. Review and approve or deny, with the concurrence of the Depositor, requests by outside par-

ties for access to or short-term loan of the Monitor Collection (or any part thereof) for scientific, educational or religious uses in accordance with the regulations set forth in 36 C.F.R. part 79 for the curation of federally-owned and administered archaeological collections and the terms and conditions stipulated in Attachment C of this Agreement. The Repository shall use the facilities report form and model short-term loan agreement provided in Attachment C (or as amended as circumstances require upon mutual agreement of the Parties) for all loans between the Repository and any third party after the Depositor has approved the loans. In addition, the Repository shall refer requests for consumptive uses of the Monitor Collection (or any part thereof) to the Depositor for approval or denial.

11. Not mortgage, pledge, assign, repatriate, transfer, exchange, give, sublet, discard or part with possession of any of this Collection or any other U.S. Government-owned personal property in any manner to any third party either directly or indirectly without the prior written permission of the Depositor. In addition, not take any action whereby any of the Monitor Collection or any other U.S. Government-owned personal property shall or may be encumbered, seized, taken in execution, sold attached, lost, stolen, destroyed or damaged.

III. Depositor's Duties

The Depositor shall:

- a. To the extent agreed upon in advance between the Depositor and the Repository, deliver or cause to be delivered to the Repository additions to the Monitor Collection as additional artifacts are retrieved by future Monitor expeditions. All such agreed additions to the Monitor Collection shall be described in addenda to Attachment A to this Agreement. This shall continue until Monitor expeditions no longer occur, or until this Agreement is sooner terminated or revoked in accordance with the terms set forth herein.
- b. Assign as the Depositor's Representative having full authority with regard to this Agreement, a person who meets pertinent professional archaeological, archival, and/or curatorial qualifications. Depositor shall also ensure that it has representatives meeting professional qualifications in other areas pertinent to this Agreement for purposes of providing input on its ongoing implementation.
- c. Every year, or as determined by the Depositor, have the Depositor's Representative inspect and inventory the Monitor Collection and any other U.S. Government-owned personal property and inspect the Repository facility, jointly with the Repository's designated representative. The Depositor's Representative shall have access to the Monitor Collection upon request and with reasonable notice for other purposes at any time.
- d. Review and approve or deny in writing requests for short-term loans of the Monitor Collection to

third parties and requests for consumptive use of the Monitor Collection, or any part thereof.

IV. Conservation Plan, Archival Plan and Advisory Committee

a. The Repository shall submit to the Depositor its detailed conservation plan setting forth the plans, facilities and capabilities of the Repository for conservation of the archaeological artifacts, specimens and material remains in the Monitor Collection (the "Conservation Plan"). Upon reviewing the proposed Conservation Plan, including any changes or additions to the Conservation Plan, or other documentation establishing that the Repository is meeting the requirements of 36 C.F.R. Part 79, the Depositor or its designee shall, within thirty (30) days after receipt of the Conservation Plan, either (i) certify that the Conservation Plan meets the requirements of that law or (ii) request in writing and with a reasonable level of detail that the plan be revised. Upon its certification by Depositor, the Conservation Plan shall become Attachment D to this Agreement and shall be deemed incorporated as a part hereof.

b. The Depositor and the Repository have together commenced, in consultation with NARA, to analyze and assess the Monitor Collection's Associated Records and the NARA regulations and standards applicable to the Associated Records (and any applicable obligations that may be set forth in a Memorandum of Understanding contemplated to be entered into between the Depositor and NARA). This analysis and assessment shall form the basis of the schedule for improving the Repository's archival capabilities, if necessary, to allow the Repository to meet the Federal archival requirements, as contemplated at Section II Paragraph c. Thereafter, the Depositor and the Repository shall diligently and in good faith cooperate to develop as promptly as reasonably possible, an Archival Plan that shall (i) establish the methods, procedures, and standards (including all applicable regulations and standards of NARA) pursuant to which the Repository shall perform the duties foreseen under Paragraph c of Section II of this Agreement, and (ii) set forth the plans, facilities and capabilities of the Repository for processing and archiving the Associated Records. The Archival Plan shall include a pro forma budget of costs and expenses, including capital costs, and shall identify potential funding sources and other potential resources including in-kind services where applicable, necessary for the performance of the activities foreseen under the Archival Plan and the fulfillment of the obligations of the Repository upon final adoption and approval of the Archival Plan. It is acknowledged and agreed by the Repository that nothing in the foregoing sentence shall be construed as creating any fiscal or funding obligation on the part of the Depositor or any other agency of the U.S. Government. The Repository shall submit its Archival Plan to the Depositor for review and approval. Upon reviewing the proposed Archival Plan, including any documentation establishing that the Repository meets the requirements of 36 C.F.R. Part 79 and the applicable NARA regulations and standards, the Depositor or its designee shall, within thirty (30) days after receipt of the Archival Plan, either (i) certify that the Archival Plan meets such requirements, regulations and standards or (ii) request in writing and with a reasonable level of detail that the plan be revised. Upon its certification by Depositor, the Archival Plan shall become Attachment F to this Agreement and shall be deemed incorporated as a part hereof.

c. To assist the Repository generally in its efforts to preserve and protect the Monitor Collection, including the creation and review of the Archival Plan, the Conservation Plan and the evaluation of the conservation and curatorial services performed by the Repository hereunder, the Parties agree that the Repository shall establish an Advisory Committee of recognized experts in the fields of conservation and curation of maritime archaeological artifacts and archival record keeping (the “Museum Advisory Committee”).

d. The Repository may consult with the Museum Advisory Committee regarding any disputes it has with the Depositor as to whether the Conservation Plan or the Archival Plan submitted by the Repository meets the requirements of 36 C.F.R. Part 79, or other applicable Federal requirements. In the event of a dispute, either party may request that the dispute then be resolved under the dispute resolution mechanisms set forth in the Memorandum of Programmatic Agreement between the parties, dated the date hereof.

V. Removal of Monitor Collection from Premises

Removal of all or any portion of the Monitor Collection from the premises of the Repository for scientific, educational, public awareness, or religious purposes may be allowed by the Repository only in accordance with 36 C.F.R. Part 79 for the curation of federally-owned and administered archaeological collections, and the conditions stipulated in Attachment C for handling packaging and transporting the Monitor Collection. Prior to removing any item from the Monitor Collection, the Repository shall receive approval in writing from the Depositor for such removal. The Repository, in accordance with customary museum practice may specify additional conditions for handling, packaging and transporting the Monitor Collection to prevent breakage, deterioration and contamination. The Repository shall have no liability or responsibility for deterioration or loss of any item of the Monitor Collection that has been removed from the premises of the Repository and is in the possession of another party, provided such removal was undertaken fully in accordance with the requirements of this Section V, including ensuring that the Depositor has agreed to the removal of item(s), and that the Borrowing institution will provide wall-to-wall insurance for those items in the Monitor Collection on loan to it.

VI. Exhibiting the Monitor Collection and Fund Raising

The Monitor Collection or portions thereof may be exhibited, photographed or otherwise reproduced and studied in accordance with the terms and conditions stipulated in Attachment C to this Agreement. The Repository shall determine exhibition design, interpretation, method and technique, as well as the content, layout, display, label copy and other interpretive strategies. In undertaking the foregoing, the Repository shall fully consult with the Depositor throughout the process. Depositor reserves the right of final approval on label copy and other interpretive strategies with respect to the accuracy, crediting, or representation of the Depositor. In the event that the Depositor wishes to exercise its option to refuse final approval of an exhibit, it shall do so in writing and within 30 days of Repository’s submission

of a final exhibit plan. Depositor shall explain the basis for its refusal to approve the plan, and shall give the Repository the opportunity to remedy the inaccuracy. In the event that the Depositor fails to respond to any final exhibit plan within 30 days, Depositor's approval shall be presumed. The Repository may use the Monitor Collection to raise funds through regular museum admission fees at the facilities of the Repository, and through reasonable loan/exhibition fees arising from the loan of artifacts in the Monitor Collection to other qualified museums. However, researchers, educators and the general public should not be subject to extraordinary or special fees for access or admission. All other uses of the Monitor Collection by the Repository shall be in compliance with the terms of the Programmatic Agreement between the parties, dated the date hereof. All exhibitions, reproductions and studies shall credit the Depositor, and read as follows; "Courtesy of the Monitor National Marine Sanctuary, National Oceanic and Atmospheric Administration, U.S. Department of Commerce," Or some shortened version thereof, upon the approval of both parties. The Repository agrees to provide the Depositor with two copies of any resulting publications or video productions.

VII. Record-Keeping

The Repository shall maintain complete and accurate records of the Monitor Collection and any other U.S. Government-owned personal property, if any, including information on the study, use, loan and location of any part of the Monitor Collection that has been removed from the premises of the Repository. The Repository shall determine record keeping methods and procedures, which shall at all times be in accordance with customary museum practice.

VIII. Duration of Agreement

Upon execution by both Parties, this Curatorial Services Agreement shall be in full force and effect, and shall remain in effect for an initial term of thirty (30) years. At the conclusion of the initial term, the parties shall review this Agreement and determine whether it shall be renewed, and for what term. Nothing in this Section VIII shall be deemed to limit the right of the Depositor to terminate this Agreement at any time in accordance with the provision of Section IX of this Agreement, or any other provision of Federal law.

IX. Termination of Agreement

The Depositor reserves the right to terminate this Agreement if (A) the Repository has been shown upon inspection, and after consultation by the Depositor with the Repository, to be in breach of and out of compliance with 36 C.F.R. Part 79, as evidenced by the Repository's material breach and failure to perform conservation and curatorial services in accordance with the Conservation Plan and the Archival Plan, and (B) the Repository remains in such breach and non-compliance after (i) the Depositor has given written notice to the Repository detailing the breach and non-compliance, (ii) the Depositor and the Repository have engaged in cooperative efforts to remedy such breach and non-compliance, and (iii) the Depositor has given the Repository reasonable time and opportunity to come into compliance. Notwithstanding the foregoing,

the Depositor shall have the right to terminate this Agreement with immediate effect if the Depositor deems that as a direct result of the Repository's breach of and non-compliance with its obligations under this Agreement, the Monitor Collection, or a significant part thereof, is in imminent danger of irreparable deterioration or loss. Upon expiration or termination of this Agreement, including any early termination in accordance with this Section IX, the Repository shall, at the Depositor's cost and expense, return the Monitor Collection and any other U.S. Government-owned personal property, if any, to a destination directed by the Depositor and in such manner to preclude breakage, loss, deterioration and contamination during handling, packaging and shipping, and in accordance with other conditions specified in writing by the Depositor.

X. Fiscal Obligations

This Agreement is not a fiscal or funds obligation document. Any activities involving reimbursement or transfer of funds between the parties to this Agreement will be handled in accordance with applicable laws, regulations, and procedures. Such activities will be documented in a separate legal instrument.

XI. Contacts

The Parties to this Agreement shall be contacted as follows:

- a. National Oceanic and Atmospheric Administration
Daniel J. Basta, Director, National Marine Sanctuary Program
1305 East-West Highway, SSMC 4, Room 11523
Silver Spring, MD 20910
Phone: (301) 713-3125 Fax: (301) 713-0404

- b. Monitor National Marine Sanctuary
John D. Broadwater, Ph.D., Manager
NOAA's Monitor National Marine Sanctuary
100 Museum Drive
Newport News, VA 23 606
Phone: 757-599-3122 Fax:

- c. The Mariners' Museum:

John B. Hightower, President and CEO,
The Mariners' Museum
100 Museum Drive
Newport News, VA 23606
Phone: 757-596-2222 Fax 757-591-7311

XII. Dispute Resolution

Any disputes between the Parties shall be resolved under the dispute resolution mechanisms outlined in the Memorandum of Programmatic Agreement between the Parties, dated the date hereof.

XIII. Title to the Monitor Collection

Title to the Monitor Collection being cared for and maintained under this Agreement lies with the Federal Government.

IN WITNESS WHEREOF, the Parties hereto have executed and delivered this Agreement to be effective as of the date first above written.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

By: _____

Date: _____, 2003

Daniel J. Basta

Director, National Marine Sanctuary Program

THE MARINERS' MUSEUM

By: _____

Date: _____, 2003

John B. Hightower

President and CEO, The Mariners' Museum

Attachment A: Inventory of the Monitor Collection, to be updated annually

Attachment B: Inventory of U.S. Government-owned Personal Property

Attachment C: Terms and Conditions Required by the Depositor

Attachment D: Conservation Plan

Attachment E: Schedule for Archival Improvements

Attachment F: Archival Plan

Appendix F: Permit Guidelines: Archaeological Research

For Information regarding applying for a permit within the boundaries of the Monitor National Marine Sanctuary, please contact the sanctuary staff at:

NOAA Monitor National Marine Sanctuaries

100 Museum Dr.

Newport News, VA 23606

(757) 599-3122

Or visit: http://sanctuaries.noaa.gov/management/permits/pdfs/nms_permit_instructions.pdf

Appendix G: Rating Scheme for System-Wide Monitoring Questions

The purpose of this appendix is to clarify the 17 questions and possible responses used to report the condi-

tion of sanctuary resources in “Condition Reports” for all national marine sanctuaries. Individual staff and partners utilized this guidance, as well as their own informed and detailed understanding of the site to make judgments about the status and trends of sanctuary resources.

The questions derive from the National Marine Sanctuary Program mission, and a system-wide monitoring framework (National Marine Sanctuary Program, 2004) developed to ensure the timely flow of data and information to those responsible for managing and protecting resources in the ocean and coastal zone, and to those that use, depend on, and study the ecosystems encompassed by the sanctuaries. They are being used to guide staff and partners at each of the 14 sites in the sanctuary system in the development of this first periodic sanctuary condition report. The questions are meant to set the limits of judgments so that responses can be confined to certain reporting categories that will later be compared among all sites, and combined. Evaluations of status and trends may be based on interpretation of quantitative and, when necessary, non-quantitative assessments and observations of scientists, managers and users.

Following a brief discussion about each question, statements are presented that were used to judge the status and assign a corresponding color code. These statements are customized for each question. In addition, the following options are available for all questions: “ N/A” - the question does not apply; and “Undet.” - resource status is undetermined.

Symbols used to indicate trends are the same for all questions: “ ” - conditions appear to be improving; “ ” - conditions do not appear to be changing; “ ” - conditions appear to be declining; and “?” – trend is undetermined.

Question 1 (Water/Stressors): Are specific or multiple stressors, including changing oceanographic and atmospheric conditions, affecting water quality and how are they changing?

This is meant to capture shifts in condition arising from certain changing physical processes and anthropogenic inputs. Factors resulting in regionally accelerated rates of change in water temperature, salinity, dissolved oxygen, or water clarity, could all be judged to reduce water quality. Localized changes in circulation or sedimentation resulting, for example, from coastal construction or dredge spoil disposal, can affect light penetration, salinity regimes, oxygen levels, productivity, waste transport, and other factors that influence habitat and living resource quality. Human inputs, generally in the form of contaminants from point or non-point sources, including fertilizers, pesticides, hydrocarbons, heavy metals, and sewage, are common causes of environmental degradation, often in combination rather than alone. Certain biotoxins, such as domoic acid, may be of particular interest to specific sanctuaries. When present in the water column, any of these contaminants can affect marine life by direct contact or ingestion, or through bioaccumulation via the food chain.

[Note: Over time, accumulation in sediments can sequester and concentrate contaminants. Their effects may manifest only when the sediments are resuspended during storm or other energetic events. In such cases, reports of status should be made under Question 7 – Habitat contaminants.]

