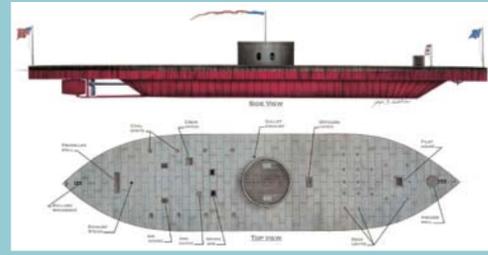


A Revolutionary Vessel

The *Monitor* has been called the most famous ship in American history. The building of iron ships was not in itself revolutionary in the 1800s, but Swedish-American engineer John Ericsson was suggesting the use of iron as a protective plate rather than simply as a building material. He presented a conceptual design of a steam-powered ironclad ship with rotating gun turret to the United States Navy that would soon become the USS *Monitor*.



Monitor Plan Profile View Courtesy of Joe Hines



Transverse section of turret diagram Courtesy Naval Historical Center



4 Officers on deck Courtesy of Library of Congress

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



The National Marine Sanctuary Program serves as the trustee for a system of 14 marine protected areas encompassing more than 150,000 square miles of marine and Great Lakes waters from Washington State to the Florida Keys, and from Lake Huron to American Samoa. The system includes 13 national marine sanctuaries and the Northwestern Hawaiian Islands Marine National Monument. The National Marine Sanctuary Program is part of the National Oceanic and Atmospheric Administration, which manages sanctuaries by working cooperatively with the public to protect sanctuaries while allowing compatible recreation and commercial activities. The sanctuary program works to enhance public awareness of our marine resources and marine heritage through scientific research, monitoring, exploration, educational programs and outreach.

The National Marine Sanctuary System



Divers working to recover turret. Photo Credit: Monitor Collection/NOAA

Efforts to date have successfully recovered the propeller, engine, rotating gun turret, Dahlgren guns and many small artifacts. Through a detailed conservation process, and educational programming the history of the *Monitor* lives on.

In an effort to protect our nation's first ironclad, the *Monitor* was designated our first national marine sanctuary on January 30, 1975. Initial dives in the 1970s indicated the *Monitor* iron hull, having been inundated with saltwater for over 100 years, was deteriorating at an accelerated rate. The decision was made to recover many of the historic and inherently unique components of the ship.

On a stormy New Year's Eve in 1862 the USS *Monitor*, en route to Beaufort, North Carolina, sank off the coast of the Outer Banks of North Carolina. Nearly 11 years later scientists aboard Duke University vessel *Castward* made an amazing discovery—they found the *Monitor*, laying upside down within the waters of what is now known as the Graveyard of the Atlantic. In an effort to protect our nation's first ironclad, the *Monitor* was designated our first national marine sanctuary on January 30, 1975. Initial dives in the 1970s indicated the *Monitor* iron hull, having been inundated with saltwater for over 100 years, was deteriorating at an accelerated rate. The decision was made to recover many of the historic and inherently unique components of the ship.

A National Treasure

Battle of Hampton Roads

The *Monitor* was launched from Greenpoint, Long Island, New York on January 30, 1862. In March, the *Monitor* was ordered to the Hampton Roads area of Virginia to protect the federal fleet stationed there. On March 9, 1862 the *Monitor* participated in a four-hour battle against the Confederate ironclad CSS *Virginia*.

In reality, the battle was a virtual draw with neither vessel inflicting serious damage to the other. Although the *Monitor* remained in Hampton Roads throughout the spring and summer of 1862, the two vessels never again met in battle.



Battle of Hampton Roads by J.O. Davidson Courtesy of The Mariners' Museum

The Loss of the Monitor

With the exception of the engagement with the *Virginia*, the *Monitor's* brief career was uneventful. Shortly after midnight on December 31, 1862, while under tow by the USS *Rhode Island* en route to Beaufort, North Carolina, the *Monitor* sank in a storm off Cape Hatteras, North Carolina. Sixteen crewmen lost their lives, most from being swept overboard while attempting to reach the lifeboats.



Loss of the *Monitor* Photo Credit: Harper's Weekly, January, 1863

Sanctuary Designation

The *Monitor* was our nation's first national marine sanctuary, designated on January 30, 1975. The sanctuary is comprised of a column of water extending from the ocean's surface to the seabed and is one nautical mile in diameter. The Sanctuary boundaries protect the wreck of the USS *Monitor*. Since its sinking in 1862, the *Monitor* has become a productive artificial reef. Numerous fish species including black sea bass, oyster toadfish and great barracuda call the *Monitor* home.

Current Research

NOAA scientists continue to study the wreck site of the *Monitor*. Scientists are learning more each year about the ships construction, design, and performance, as well as information regarding her loss. NOAA is also conducting research into water quality and the marine environment of the wreck site which has become a vibrant artificial reef. NOAA is also surveying the waters surrounding the Monitor National Marine Sanctuary for other historical wrecks lost within the "Graveyard of the Atlantic".



Captain's quarters Photo Credit: Monitor Collection/NOAA

What is a National Marine Sanctuary?

Our national marine sanctuaries embrace part of our collective riches as a nation. Within their protected waters, giant humpback whales breed and calve their young, coral colonies flourish, and shipwrecks tell stories of our maritime history. Sanctuary habitats include beautiful rocky reefs, lush kelp forests, whale migrations corridors, spectacular deep-sea canyons, and underwater archaeological sites. Our nation's sanctuaries can provide a safe habitat for species close to extinction or protect historically significant shipwrecks. Ranging in size from less than one square mile to more than 5,300 square miles, each sanctuary is a unique place needing special protections. Natural classrooms, cherished recreational spots, and valuable commercial industries—marine sanctuaries represent many things to many people.



Turret Recovery Courtesy of US Navy

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E-mail: monitor@noaa.gov
Web: http://monitor.noaa.gov



1974 *Monitor* photomosaic Photo credit: Monitor Collection/NOAA



Navy diver preparing to descend to work on the *Monitor* Photo credit: Monitor Collection/NOAA



NOAA Ship *Thomas Jefferson* Photo credit: NOAA

And so long as we remain a people, so long will the work of the Monitor be remembered, and her story told to our children's children...The "little cheese box on a raft" has made herself a name which will not soon be forgotten by the American people.

—Greenville Weeks Surgeon, USS *Monitor*

Scientists deploying equipment in the *Monitor* National Marine Sanctuary Photo Credit: Monitor Collection/NOAA

Monitor bow shot Photo Credit: Monitor Collection/NOAA



Contact Information
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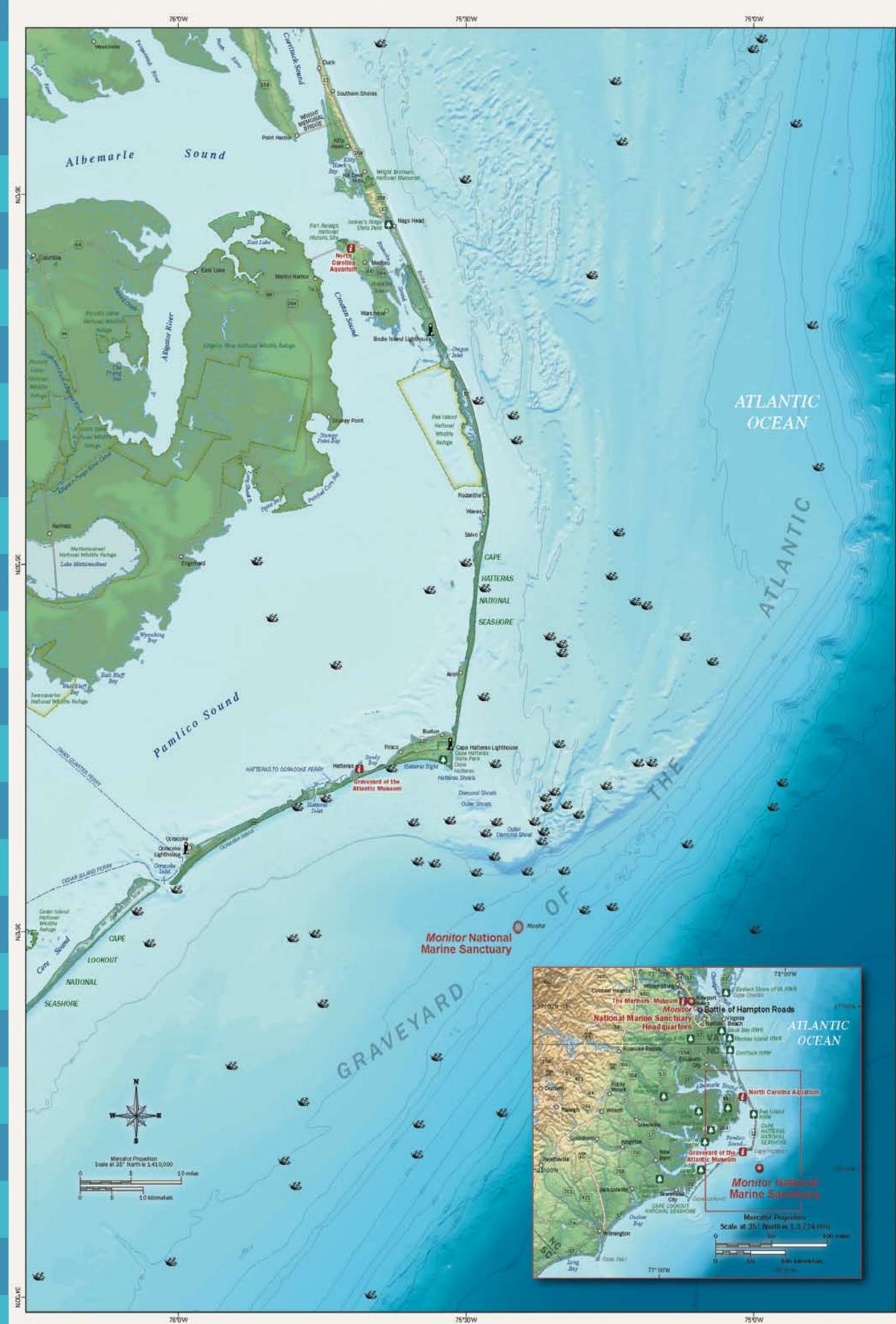
Key Species
- American oystercatcher
- Black sea bass
- Scad
- Striped mullet
- Striped shrimp
- Striped tiger shark
- Sea urchins
- Mummichog
- Blue crabs
- Striped bass
- Ocean quahog
- Ocean murex

Types of Vessels lost in the Graveyard of the Atlantic
- Schooners
- Brigantines
- Brig
- Sloop
- Tugboats
- Tankers
- U-boats
- Steamships

Map Key
- National Marine Sanctuary
- National Park
- Other Park
- Marine Sanctuary
- Office
- Sanctuary Information
- Shipwreck
- Lighthouse

Location
50 miles off Cape Hatteras, North Carolina

Protected Area Designation
January, 1975

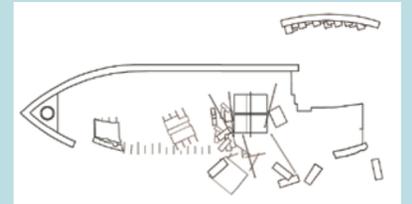


Education & Outreach
The *Monitor* National Marine Sanctuary is committed to providing educational programs and materials that teach about the history, discovery, recovery, conservation and wreck site of the USS *Monitor*. Visit our web site for information on upcoming teacher workshops and other events as well as downloadable lesson plans and activities that help inspire a new audience to protect our rich maritime heritage resources and act as wise ocean stewards.



Students map artifacts into *Monitor* mock shipwreck
Photo Credit: Monitor Collection/NOAA

Archaeology & Conservation
In response to an accelerated pattern of deterioration on the wreck, numerous recovery expeditions to the *Monitor* have recovered a variety of artifacts that include huge iron components, delicate glass bottles, lumps of coal, wood paneling, a leather book cover, and even walnut halves. In 2001 alone, more than 250 artifacts arrived at The Mariners' Museum, in Newport News, Virginia to be conserved and prepared for exhibition at The *Monitor* Center.



Monitor Site Plan Photo Credit: Monitor Collection/NOAA



Red Lantern Photo Credit: Monitor Collection/NOAA
Propeller Photo Credit: Monitor Collection/NOAA

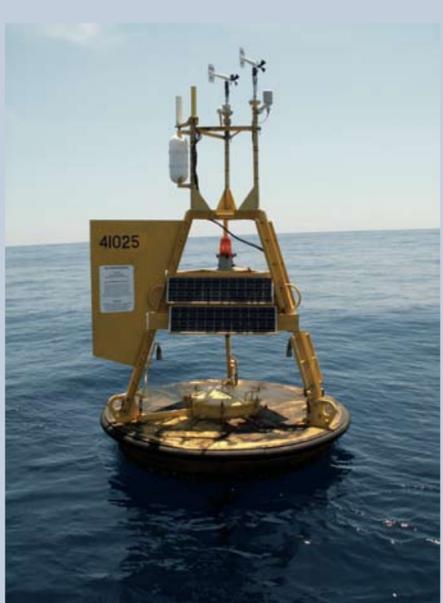
Visit the *Monitor* without Getting Your Feet Wet

Exhibits

One of the best ways to learn about the *Monitor* National Marine Sanctuary without having to dive 240 feet deep is to visit The Mariners' Museum in Newport News, Virginia. The Museum and NOAA have brought the story of this unique ironclad to the public through the dramatic USS *Monitor* Center. The Center serves as the primary visitor center for the *Monitor* National Marine Sanctuary. The Center tells the story of the USS *Monitor* and her worthy opponent the CSS *Virginia* through a rich array of original artifacts, archival materials, immersive multimedia experiences and recreated ship interiors that transport the visitor back in time to 1862. To learn more about this exciting facility visit <http://www.monitorcenter.org>.



USS *Monitor* Center Photo Credit: Monitor Collection/NOAA



Monitor NMS data buoy Photo Credit: Monitor Collection/NOAA

Monitor Data Buoy

It is now possible to view real-time data on water and air temperature, wind direction, wave height and other environmental conditions in the *Monitor* National Marine Sanctuary from a NOAA data buoy installed at the site in 2006. The data collected aides mariners 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. http://www.nbc.noaa.gov/station_page.php?station=41025



Mustard bottle recovered from the *Monitor*
Courtesy of The Mariners' Museum

Conservation Efforts Continue on *Monitor* Artifacts

Salt, mud, and time have taken their toll on the iron artifacts of the USS *Monitor*. In 2006 the Batten Conservation Laboratory Complex at The Mariners' Museum opened. This state of the art facility houses thousands of small and large *Monitor* artifacts where scientists study the corrosion process and preserve components of the shipwreck. Working with companies like CC Technologies, Fuji Film, and Optira, NOAA and The Mariners' Museum are making great strides in preserving the historic shipwreck for future generations.



Conservation of a shoe
Courtesy of The Mariners' Museum



Mosaic of inside the turret Photo Credit: Monitor Collection/NOAA