

SANCTUARY WATCH

NOAA and U.S. Navy Succeed in Recovering *Monitor's* Turret

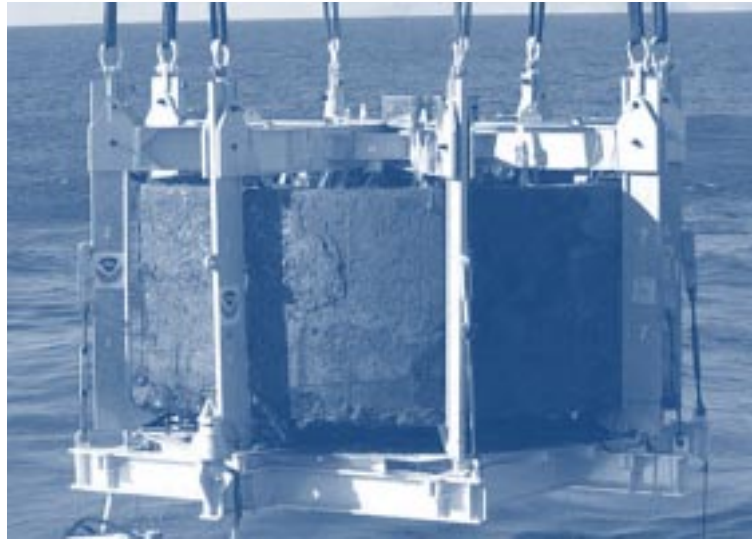


Photo: AP Pool

After nearly 140 years, the turret of the USS Monitor breaks the surface of the Atlantic Ocean. The silt-filled turret was lifted aboard the barge Wotan for its journey to land and restoration at The Mariners' Museum in Newport News, Va.

On August 6, 2002, at 5:55 p.m., National Oceanic and Atmospheric Administration marine archeologists and U.S. Navy divers accomplished what some thought was impossible —the recovery of the Civil War ironclad USS *Monitor's* armored revolving gun turret from 240 feet below the ocean's surface off the coast of Cape Hatteras, N.C. To the whoops and hollers of the men and women aboard the U.S. Navy's derrick barge *Wotan*, the turret was safely lifted from the sea floor by a 500-ton crane and an eight-legged claw nicknamed "the spider." Once safely aboard, the turret made its final voyage to land 139 years after it sank in a wild New Year's Eve storm. Now ensconced in The Mariners' Museum in Newport News, Va., the turret will undergo a decade of public restoration before it will be placed on permanent exhibition.

"This is truly a historic day," said Daniel J. Basta, director of the National Marine Sanctuary Program. "After four summers of sometimes dangerous expeditions, the dedicated men and women of NOAA and the Navy returned this significant Civil War relic to the American people."

The ironclad, designed by Swedish engineer John Ericsson, was enlisted to help the Union win the war against Confederate naval forces in the Civil War. Although disparaged as "the cheesebox on a raft," the *Monitor* took on Confederate forces off Hampton Roads, Va. On March 9, 1862, the *Monitor* battled the Confederate ironclad CSS *Virginia* (the former Union ship, USS *Merrimac*) to a draw after a four-hour engagement.

Despite its advanced steam engines, distinctive rotating turret and 9-inch-thick armor, the *Monitor* was not built for the open ocean. On December 31, 1862, while being towed to Beaufort, N.C., it sank to the bottom of the Atlantic Ocean with 16 of her crew during a

INSIDE...

Sanctuary Confirms Site of New England's "Titanic"	2
Thunder Bay Celebrates Annual Tall Ships Festival	3
Newsplash	3
Sanctuary System Celebrates 30 Years	5
Sanctuary Studies Shipwreck Risks	6
Fagatele Bay's Yummy Worms	6
Thunder Bay Expedition 2002	7
Aquarium Shows off Gulf of Mexico Sanctuary	7
Calendar	8



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Sanctuary Confirms Site of New England's *Titanic*

The loss of the steamship *Portland* with all hands in 1898, long one of New England's greatest sea tragedies and an enduring mystery, is a mystery no more. In July, a team led by the Stellwagen Bank National Marine Sanctuary confirmed the location of the 281-foot side paddlewheel steamship deep in sanctuary waters.

Its final resting place has perplexed researchers for more than 100 years. After departing Boston for Portland, Maine, on November 26, 1898, the *Portland* sailed into a ferocious storm as it passed east of Cape Ann. As the storm intensified,

schooner captains and crews riding out the storm in the middle of the Massachusetts Bay reportedly saw the vessel in various stages of distress before the blowing snow and high waves cut off their view. Other observers claimed they saw the steamer just off Cape Cod. The following day as

the storm continued to rage, pieces of the steamer as well as the bodies of some of its passengers and crew began washing up on the outer Cape Cod beaches. The storm was thereafter known as the "Portland Gale" and has remained one of the most destructive storms to hit New England.

The citizens of Portland, Maine, were particularly hard hit by the tragedy; many of the 192 or so people on board hailed from that community. In most cases, the families of the passengers and crew were unable to hold a funeral for their loved ones as only a small percentage of the people onboard the vessel were found. Many families remained unsure whether their loved ones had even been on the steamer as its passenger list sank with the ship. After the disaster, many captains made it a policy to send a passenger list ashore in the event their vessel sank.

Since the *Portland's* sinking, many people have sought to solve the mystery of its last moments. Speculation as to the *Portland's* final resting place ranged from the deepwater off Stellwagen Bank to the sand bars just off Cape Cod.



"Steamship *Portland*" by Antonio Jacobson. Maine Historical Society

Attempts to find the steamer, beginning shortly after its loss and continuing through the 1950s, turned up no conclusive evidence of the vessel's final resting place. The continued search for the site by New England maritime historian Edward Rowe Snow kept the story in the public's consciousness. In the 1980s, private maritime researchers John Fish and Arnold Carr of American Underwater Search and Survey began searching for the *Portland*. Their efforts culminated in 1989 with the discovery of a wreck they believed to be the *Portland*; however, the men did not possess conclusive evidence of their find. In the spring of

2002, the researchers gave the coordinates of their suspected site to Stellwagen Bank National Marine Sanctuary personnel. Using advanced deep-sea search technology provided by the National Undersea Research Center at the University of

Connecticut, a sanctuary-led team relocated the site using side scan sonar and then finally gathered conclusive evidence to support Fish and Carr's discovery with a remotely operated vehicle.

"The sanctuary is also exploring 50 possible shipwrecks," said Sanctuary Superintendent Dr. Craig MacDonald. "With other finds that are occurring, submerged cultural resources take on even greater importance in the sanctuary's management and in its role of preserving America's cultural heritage."

"The *Portland* is New England's *Titanic*," said MacDonald. "Confirming its location is an important event not only to the sanctuary but to the relatives of those lost on the *Portland*. They can take some comfort that we have found their loved ones' final resting place."

—Matthew Lawrence

Thousands Gather for Tall Ships™ Festival

In a celebration of northern Michigan's rich Great Lakes heritage, the Thunder Bay National Marine Sanctuary and Underwater Preserve played host to the second annual Thunder Bay Tall Ships™ Festival August 16-18. The three-day event attracted several thousand visitors to Alpena, Mich., to see replicas of famous brigs and schooners that once plied Lake Huron's waters.

The event, sponsored primarily by the National Marine Sanctuary Foundation (NMSF), was aimed at raising awareness of the sanctuary program and the many historic shipwrecks the system protects in Thunder Bay.

"The event was designed to connect people with the rich maritime heritage of Thunder Bay. We surveyed the crowd, and we found that people were often surprised and pleased to learn that Thunder Bay is part of the National Marine Sanctuary System," said Lori Arguelles, NMSF Executive Director.

U.S. Senator Carl Levin and U.S. Congressman Bart Stupak (D-MI) served as honorary co-chairs for the event. U.S. Congressman Vernon Ehlers (R-MI) addressed festival attendees and toured the ships.

"You really have something to brag about in this community and make sure you brag about it, not just to each other. Start advertising it so people can come here and see what you see all the time—the beautiful countryside as well as the sanctuary," said Rep. Ehlers.

The festival's centerpiece was the three tall ships which had sailed to Alpena from throughout the region. The largest, the U.S. brig *Niagara*, is a reconstruction of Commodore Oliver Hazard Perry's reserve flagship during the pivotal Battle of Lake Erie in 1813. Two smaller sailing vessels, the schooners *Madeline* and *HMS Bee*, joined the brig at the wharf behind the sanctuary's riverside office. The three ships are representative of the types of vessels that once cruised Lake Huron's waters and all offered public tours throughout the festival. Music, storytelling, swordfight demonstrations, and games provided additional entertainment for all ages.

The annual event is one of the most visible sanctuary efforts to build public appreciation for historic ships like the ones at the festival and maintain awareness of the need to protect submerged cultural resources. Over 100 shipwrecks spanning two centuries are thought to be located within sanctuary boundaries.

"The wrecks here speak to the long and unique maritime tradition of this region," said Sanctuary Manager Jeff Gray. "Part of our role is to help ensure that future generations have the opportunity to experience and learn from this heritage."

—David Bizot

Decorating Your Desktop?—A selection of National Marine Sanctuary System photographs, from jellyfish and sharks to giant kelp forests and the Civil War *Monitor's* turret, are now available for computer desktops. The photos were formatted by National Headquarters' website staff member **Valarie Thorpe**. Choose photographs on <http://sanctuaries.nos.noaa.gov/wallpaper/>.

Fagatele Bay Hosts Marine Science Workshop—More than 30 elementary school teachers attended a marine science workshop hosted by the Fagatele Bay National Marine Sanctuary from August 5 through 9. The five-day course, co-funded by *Le Vaomatua*, an American Samoan environmental organization, was filled with workshops demonstrating marine science activities designed to increase students' interest in the marine environment. **Rosia Tavita**, Fagatele Bay Sanctuary's education coordinator, helped coordinate the workshop.

Stellwagen Bank National Marine Sanctuary Assesses Sanctuary Activity—Sanctuary staff led by **Dr. David Wiley** conducted a habitat use assessment of the sanctuary on August 1. The team sighted several species of whales, basking sharks, blue sharks and bluefin tuna. They also noted human activities including gillnetting, lobstering, and whale watching. These surveys help determine patterns of both wildlife dispersion and human use. They will assist the sanctuary during its five-year management plan review.

Bluefish on the Menu of Annual AFS Meeting—Sea Grant fellow with Sanctuary Headquarters' **Lynn Takata**, presented her scientific paper "Growth, cohort dynamics, and habitat use of juvenile bluefish in three Maryland nursery systems" at the annual meeting of the American Fisheries Society in Baltimore, Md. on August 22.

—David Bizot

The National Marine Sanctuary Act Marks 30th Anniversary in 2002

To most Americans, the ocean's wide expanse and changing tides seemed safe from any lasting human damage until 1969, when a devastating oil spill blackened the coastline of southern California. Newspapers were filled with photographs of countless marine creatures dead and dying.

Three years later, Congress responded to the nation's concern over the Santa Barbara oil spill and other accounts of toxic dumping with a series of new environmental laws to reduce ocean pollution and increase protections for endangered marine animals. In this spirit, the National

Marine Sanctuary Program, administered by the Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), was created in Title III of the Marine Protection, Research and Sanctuaries Act of 1972. To date, 13 sanctuaries have been established in recognition of their unique ecological, cultural and recreational characteristics.

For 30 years, the National Marine Sanctuary Program has been committed to protect and conserve marine environments and their habitats for the American public to enjoy.



Photo: Brad Barr

A kiosk in Provincetown, Mass., gives visitors facts about sanctuary resources.



Channel Islands National Marine Sanctuary

A Channel Islands Sanctuary classroom delights young adventurers.



Jarvis Hall

At-sea researchers in Cordell Bank Sanctuary search for zooplankton as it migrates from deep water into the surface layers after dark.



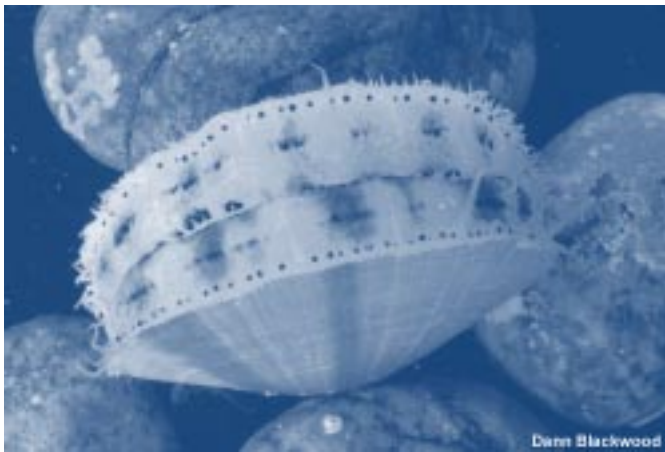
Paige Gill - Florida Keys NMS

Sanctuary officers on staff help to protect the resources through interpretive enforcement.



A single adult male humpback whale often accompanies females and their calves as they visit Hawaiian waters.

Photo: Joseph Mobely - NMFS Permit # 810



*The sea scallop (*Placopecten magellanicus*) has over 100 blue eyes along the edge of its mantle, with which it senses light intensity.*

Darrin Blackwood

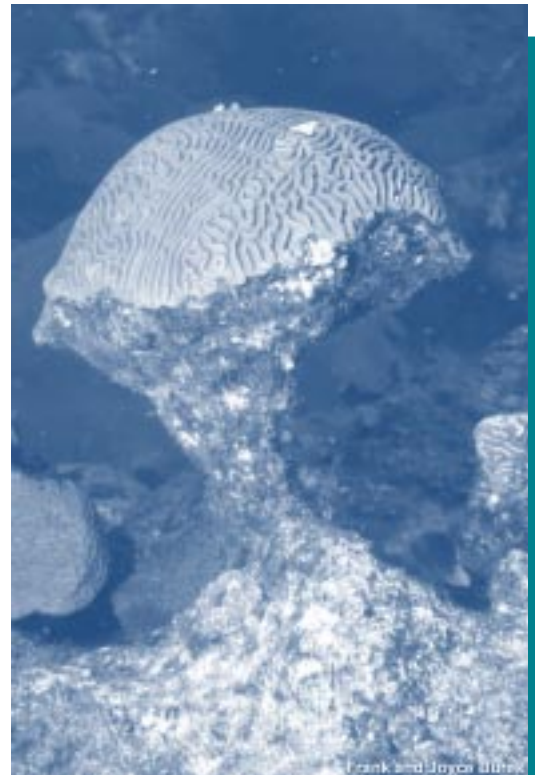


Leopard sharks are an unusual sight in the kelp forests of Monterey Bay. These harmless sharks eat a variety of bottom dwelling invertebrates.

Kip Evans

Celebrating Anniversaries in 2002

Three national marine sanctuaries celebrate their 10th anniversary in 2002. Flower Garden Banks National Marine Sanctuary, a tropical coral garden in the Gulf of Mexico, reached its first decade of marine conservation on January 17th. Once an anchoring spot for large vessels, the protected site today has become a premier diving spot. On September 18th, California's Monterey Bay Sanctuary, the nation's largest marine sanctuary, celebrates its designation. Stellwagen Bank Sanctuary, off Massachusetts, and the Hawaiian Islands Humpback Whale Sanctuary, celebrating its 5th year, share an anniversary on November 4th. Stellwagen Bank Sanctuary enjoys the visits of great whales on its surface while below historic shipwrecks wait for rediscovery. In the Hawaiian Islands, the sanctuary monitors the travels of humpback whales who come to the warm waters close to shore to breed, calve and nurse their young.



Many mushroom shaped coral heads, such as this one, occur naturally at Flower Garden Banks and other coral reefs.



Photo: AP Pool

We did it! Dr. John Broadwater, sanctuary manager, and Commander Bobbie Scholley cheer as the turret breaks the surface.

More on the *Monitor* turret recovery *(cont'd from pg. 1)*

storm. The vessel remained undiscovered, resting upside down on its 120-ton turret, until scientists located it in 1973. The site was designated the nation's first national marine sanctuary in 1975.

Subsequent surveys showed that the *Monitor* was deteriorating at a rapid rate, and a decision was made to recover as much of the vessel as possible while there was still time. For five summers the sanctuary, with assistance from the Navy's Mobile Diving and Salvage Unit Two and a dedicated salvage team of marine archeologists, first worked to shore up the famous vessel, map its structure, and then gradually recover artifacts. Subsequent expeditions recovered the propeller, shaft and steam engine.

During these missions, Navy divers were able to test new diving techniques. Saturation diving enabled workers to

(cont'd on pg. 8)

Sanctuary Studies Shipwreck Risk

Initial findings from a Sanctuary Quest Expedition to the shipwreck site of the freighter *Pac Baroness* indicate that marine life is flourishing around the wreck despite its cargo of hazardous materials. The National Oceanic and Atmospheric Administration (NOAA) and U.S. Navy mission to the site was initiated in response to sanctuary concerns that the wreck's cargo might be adversely impacting marine life in the area.

When the 162-meter commercial bulk carrier collided with an auto carrier off Santa Barbara in 1987, it sank with tanks containing 278,943 gallons of fuel and lubricating oils and 21,000 tons of finely powdered copper concentrate in the cargo holds.

Remotely operated vehicle (ROV) reconnaissance dives on the wreck were conducted in November 1987 and again in January 1988. The Sanctuary Quest Expedition, as coordinated by the Channel Islands National Marine Sanctuary staff, was the first expedition to visit the site in 14 years.

ROV video and still camera images from the mission depict abundant rockfish and other invertebrates swirling around the wreck site. In addition, NOAA researchers collected dozens of sediment samples that will provide a more detailed chemical and biological analysis of the site. Researchers also mapped and characterized the site for future missions that will monitor any new ecological impacts and potential threats to marine life.

Visit <http://www.cinms.nos.noaa.gov/cr/cevent.html> for more information on the *Pac Baroness*.

Yummy Worms in Fagatele Bay National Marine Sanctuary

Seven days after the October full moon, in a good year, islanders on American Samoa flock to the shore to watch the annual spawning of palolo worms. With hand nets at the ready, worm seekers scoop up the blue and green epitokes (eggs and sperm packets) released by the 1 to 5 inch squirming worms for an unusual evening snack.

Considered a special delicacy, the epitokes are eaten raw on the spot, fried in butter or baked in a loaf the following day. Staff at the Fagatele Bay National Marine Sanctuary describe their flavor as similar to caviar.

Few have studied the life cycle of the palolo worms (*Palolo siciliensis*), a saltwater segmented marine worm, who live in limestone burrows in the shallow coral reef. Marine researchers note the importance of clean, silt-free water to the worms' survival and stress the need for water pollution and land erosion controls and good land management skills.

—Nancy O'Donnell



A bright-eyed palolo worm has drawn the attention, if not the appetites, of biologists and anthropologists since the 18th century.

Photo: Smithsonian National Museum of Natural History

Undersea Explorer Returns to Great Lakes Sanctuary

Dr. Robert Ballard, the ocean discoverer of the *Titanic*, the battleship *Bismarck*, the aircraft carrier *Yorktown* and, most recently, *PT-109* turned his sights this summer to Lake Huron's shipwrecks in the Thunder Bay National Marine Sanctuary and Underwater Preserve. This is the second time the famed explorer and his team from the Institute for Exploration (IFE) in Mystic, Conn., have explored and documented the steamers and schooners preserved in the cold waters off Alpena, Mich.

Ballard was joined in the mission by scientists from the National Oceanic and Atmospheric Administration (NOAA) and the Michigan Department of History, Arts and Libraries. Using IFE's *Little Hercules*, a remotely operated vehicle, the Thunder Bay Exploration 2002 expedition team collected video and still images of both known and newly discovered shipwrecks, as well as new archeological sites and unique geological formations called karsts.

In June 2001, NOAA and IFE used sidescan sonar technology to search for the deepwater shipwrecks in the sanctuary. The team worked this season to gather high definition video of identified wrecks and help identify undocumented vessels. Researchers believe that two ships may be new discoveries. Mission explorers also investigated limestone sinkholes for artifacts and evidence of human habitation by Paleo Indians during low lake levels 8,000 to 10,000 years ago.

This expedition is part of a larger joint mission to further explore and research the national marine sanctuaries. NOAA and IFE teams are currently focusing on Thunder Bay because of its high concentration of wrecks that span more than a century of maritime history.

"Preserved by the waters on which they served, these vessels offer a look back in time when steamers and schooners ruled the Great Lakes," said Jeff Gray, Thunder Bay sanctuary manager. "Our work with IFE not only provides information about our maritime past, but also helps us ensure that these sites are preserved for future generations."

To learn more, visit <http://www.glerl.noaa.gov/glsr/thunderbay/>.



Dr. Bob Ballard works with the IFE team to launch the ROV Little Hercules.

Photo: Kate Kauffman

Flower Garden Banks Exhibit Dedicated in Louisiana

The Audubon Aquarium of the Americas and the Flower Garden Banks National Marine Sanctuary partnered to create a new exhibit highlighting an often unseen treasure located in the Gulf of Mexico. The Flower Garden Banks exhibit was formally dedicated and opened to the public on August 8, 2002. The dedication was highlighted by a press conference featuring world renowned ocean explorers Jean-Michel Cousteau and Dr. Sylvia Earle, who joined sanctuary staff for the event.

The new Flower Garden Banks exhibit is designed to give visitors to the New Orleans, La., aquarium a look at this



(l-r) Robert Lyn Nelson, Dr. Sylvia Earle, Gov. Mike Foster, Jean-Michel Cousteau, and G.P. Schmahl, sanctuary manager.

Photo: Stan Combs

incredible national marine sanctuary that is home to a variety of sea creatures and contains the northernmost coral reefs in the continental United States.

Located on New Orleans' Riverwalk, the Audubon Aquarium of the Americas is one of the top five aquariums in the country, featuring more than one million gallons of fresh and salt water exhibits containing 530 species in a variety of wondrous habitats. With over one million visitors each year, the aquarium is a premier Gulf Coast destination.

Before reaching the Flower Garden Banks exhibit, visitors walk through a Caribbean exhibit, where they can learn the basic biology and structure of coral.

General concepts of coral reef ecology and impacts are also displayed. This coral reef lesson is the perfect transition to the Flower Garden Banks National Marine Sanctuary exhibit which is the next area encountered. As they move from the Caribbean to the sanctuary exhibit, visitors see an overview of the National Marine Sanctuary Program and the Flower Garden Banks National Marine Sanctuary, including location maps and large photos of the reef. Also on display are several species of coral skeletons.

For more information about the Flower Garden Sanctuary, visit <http://www.flowergarden.nos.noaa.gov/>. Visit the Audubon Aquarium of the Americas online at <http://www.auduboninstitute.org/aoa/>.

—George Schmahl



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vision People value marine sanctuaries as treasured places protected for future generations.

mission To serve as the trustee for the nation's system of marine protected areas to conserve, protect, and enhance their biodiversity, ecological integrity, and cultural legacy.

October/November Calendar

Natural Events • In October, the palolo, a marine worm, rises to the surface of the water in Fagatele Bay Sanctuary, American Samoa, usually one week after the full October moon. Loggerhead sea turtle hatchlings make their way down Georgia's beaches to swim out to the Gulf Stream where they will spend the next several years traveling in the North Atlantic Gyre. When grown, they head inshore using Gray's Reef National Marine Sanctuary for food and rest. In November, Great White shark sightings have peaked in the Gulf of the Farallones Sanctuary.

October 7 • Thunder Bay National Marine Sanctuary and Underwater Preserve celebrates its 2nd anniversary.

October 12 • Gulf of the Farallones Sanctuary Fair. For more information, call 415-561-6622.

November 4 • Gerry E. Studts Stellwagen Bank National Marine Sanctuary celebrates its 10th anniversary. Hawaiian Islands Humpback Whale National Marine Sanctuary designated on this day in 1992.

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Photo: AP Pool

An eight-legged claw fondly nicknamed the "spider" lifts the turret from 240 feet below the Atlantic Ocean. The Civil War ironclad USS *Monitor* changed the course of naval warfare.

We did it! *Monitor's* turret recovered from ocean's floor (cont'd from pg. 6)

stay underwater up to six hours at a time and live in a pressurized habitat on the barge for more than a week without decompressing. This allowed the divers to work longer and more efficiently in an area famous for capricious weather and treacherous currents.

"This successful recovery is the culmination of a NOAA long-range management plan that was first submitted to Congress in 1998," said Sanctuary Manager Dr. John Broadwater, who served as chief scientist during this year's expedition. "The turret will remind present and future generations of the *Monitor's* story and of the men and women from NOAA and the Navy who rescued the *Monitor* after nearly 140 years."

Not only historians were heartened by the turret's recovery, but relatives of those who perished as well. As divers prepared the turret for lifting, they discovered two skeletons buried in the silt that filled its interior. Sanctuary staff believe more may be recovered as restoration continues. The bones were recently transported to the Army's Central Identification Laboratory in Hawaii for analysis. Once the lab assembles a "profile" of the individual by determining the person's age, stature and history of any disease, the profile will be matched with the crew members' government records that include names, ages and physical characteristics. Reports have indicated that several of the crew were new immigrants to the nation and at least one was a former slave. Descendants of sailors who served and died aboard the *Monitor* may one day attend military burials for their relatives.

"Future generations will not have to only rely on paintings and faded photographs to remember the *Monitor*," said Dr. Broadwater. "Her story will now be told through the very icon that made her famous—the world's first armored revolving gun turret and by the valiant sailors who have finally returned home."

—Nancy O'Donnell

Sanctuary Watch is a publication of the Department of Commerce, National Oceanic and Atmospheric Administration's (NOAA) National Marine Sanctuary Program, Communications and Development Branch.

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