

SANCTUARY WATCH

NOAA Cleanup Removes Tons of Marine Debris in Hawaiian waters

Something as small as a lightstick or cigarette lighter tossed into the ocean can have a profound impact on marine life. To adult albatrosses, a lightstick, used by longliners to attract fish, is food that will be ingested and fed to their chicks. Once eaten, a lightstick restricts the amount of food chicks can hold in their stomachs. Marine animals also get caught and sometimes die tangled in strapping materials from bait boxes.



Marine mammals often fall prey to the debris that floats in the oceans.

Photo: Chad Yoshinaga

On September 18, the National Oceanic and Atmospheric Administration's (NOAA) National Ocean Service and National Marine Fisheries Service, responding to the threat of derelict marine debris in Hawaiian waters, co-sponsored a marine debris cleanup in the Northwestern Hawaiian Islands (NWHI). The area is currently being considered for designation as a National Marine Sanctuary.

With \$3 million allocated for ocean debris removal, NOAA deployed chartered commercial vessels for the 90-day cleanup. The National Marine Fisheries Service's (NMFS) Honolulu Lab and the U.S. Coast Guard took part in a five-vessel expedition to survey and remove the marine debris. They were joined in their efforts by the National Ocean Service, Sea Grant, The Ocean Conservancy, The City and County of Honolulu, Horizon waste services, and others. In addition, the media participated in a

(Cont'd pg.4)

Tall Ships Came A'Sailing into NOAA's Thunder Bay Sanctuary

With snapping sails and creaking wooden timbers the *Pride of Baltimore II* and the *HMS Tecumseh*, nineteenth century replica sailing ships, glided into the Thunder Bay National Marine Sanctuary and Underwater Preserve on August 18-19. Hosted by the National Marine Sanctuary Foundation and other local partners, the Tall Ships Festival attracted government officials, business, and community leaders along with several thousand citizens and visitors to the small northeastern Michigan port town of Alpena.

The nation's first Great Lakes sanctuary, co-managed by NOAA's National Marine Sanctuary Program and the state of Michigan, was designated on October 6, 2000. The 448-square mile sanctuary today protects an estimated 116 historically significant shipwrecks ranging from nineteenth century wooden side-wheelers to twentieth century steel-hulled steamers. To date only 40 shipwrecks have been located. During an underwater expedition this summer yet another one wreck was discovered by ocean explorer Dr. Robert Ballard and his team from the Institute of Ocean Exploration.

National Marine Sanctuaries Chief of Staff Captain Scott Kuester, Congressman Bart Stupak (D-MI), Michigan State Representative Andy Nesmann and other dignitaries attended the two-day festival.

"We hope to locate more shipwrecks by working with notable scientists such as Dr. Robert Ballard. We plan to bring the stories of these wrecks and what they represent to

(Cont'd pg. 2)

INSIDE.....

- Islands in the Stream Atlantic Bight Mission 2
- From Baja to Bering and Back Again 2
- Sanctuary Foundation Hosts Ocean Day 2
- Coral Reef Data Buoys 2
- Channel Islands Marine Reserves 3
- Advising on Titanic Mission 3
- NewSplash 3
- Calendar 4



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Islands in the Stream Journeys Continue

NOAA's newest Voyage of Discovery, the *Islands in the Stream* Expedition, began in early summer with an international effort to study marine habitats fed by the system of ocean currents that curve around Belize, Mexico, and the United States. In this newest phase, the *Islands in the Stream*—South Atlantic Bight Mission, explorers studied marine areas in Atlantic Ocean: the Oculina Reserve, Savannah Scarp, the Charleston Bump, deep water habitats along the North Carolina shelf, and the *Monitor* National Marine Sanctuary. The mission concluded on Oct. 1.

For this mission, the National Marine Sanctuaries System joined with the Harbor Branch Oceanographic Institution in using their multi-person submersibles *Clelia* and *Johnson-Sea-Link*.

The 2001 Voyages of Discovery provide important educational opportunities. During the voyages, teachers, students and the general public posted questions for the aquanauts, scientists, ocean explorers and educators-at-sea via the Internet to learn about how new ocean frontiers have become available through advanced undersea technologies.

To learn more, visit <http://oceanexplorer.noaa.gov/explorations/islands01/islands01.html>.

Baja to Bering and Back Again

The long stretch of open ocean that stretches between the Baja Peninsula off the coast of Mexico up to the cold reaches of the Bering Sea will be the next focus of a National Marine Sanctuary System mission.

The Baja to Bering expedition, expected to begin in early 2002, will explore and conduct research to help characterize marine habitats and resources in the system of national marine sanctuaries, marine protected areas (MPA), and other areas of critical marine habitat.

During the expedition, piloted and remote submersibles as well as other new marine technologies will be used. In addition to research, the expedition provides mission participants with opportunities to support major ecosystem-based and MPA initiatives active on the West Coast. It also focuses on developing new partnerships and strengthening established ones with government and non-government institutions who share an active interest in conserving marine resources and habitats. Visit <http://oceanexplorer.noaa.gov/> to learn more about NOAA's newest ocean adventures.

Ocean Day on Capitol Hill

The National Marine Sanctuary Foundation, a nonprofit organization promoting outreach and education efforts of NOAA's National Marine Sanctuaries, took its mission of ocean conservation to Capitol Hill on September 25.

During Ocean Day activities, congressional staff and members experienced firsthand some of the technologies used in ocean conservation, science, exploration, and research. Featured exhibits included acoustic profilers, re-breather technologies, image processing, and the Sustainable Seas Expedition's Deep Worker submersible.

House and Senate congressional staff attended a series of topical briefings on marine resource management (MPAs, fisheries, sanctuaries, marine mammals), ocean and climate observation tools, and ocean exploration. For more information, see www.nmsfocean.org.

Data Buoys Aid in Coral Conservation

The first severe global coral bleaching event in 1987 caught coral reef scientists and managers by surprise. Several studies later, scientists noted that increasing seawater temperatures were a primary factor in triggering coral bleaching events. However, few short or long-term records of seawater temperatures were available.

In response, Dr. John Ogden of the Florida Institute of Oceanography (FIO) initiated The SeaKeys Program. Today through Dr. Ogden's efforts seven c-man stations are installed along the Florida Keys coral reef tract. In the early 1990's, FIO attached an underwater array of instruments to NOAA's six c-man stations that stretched from Fowy Rocks off Key Biscayne, all the way to the Dry Tortugas. A seventh station is situated in Florida Bay. These stations record water temperature, wave height, pH, refraction and other such parameters. The data is transmitted to satellite and accessible to a global audience.

The SeaKeys project has been a critical management tool to NOAA and has been a tremendous benefit to the Florida Keys National Marine Sanctuary in assisting managers in predicting the onset of coral bleaching.

Details about the SeaKeys Program is available at <http://coral.aoml.noaa.gov/sferpm/seakeys/>.

From U.S.S. Monitor to RMS Titanic

After a successful NOAA/Navy mission to recover the steam-powered engine of the Civil War ironclad *Monitor*, Sanctuary Manager Dr. John Broadwater was invited to participate in yet another shipwreck mission. This time Dr. Broadwater traveled to the site of RMS *Titanic*, the historian ocean liner, that rests miles below the surface of the North Atlantic.

Captain Craig McLean, Director of NOAA's Office of Ocean Exploration's (OOE), was given the responsibility over the sunken vessel in the *Titanic* Memorial Act of 1986. Captain McLean requested Broadwater's assistance after his office received a request to participate in director and ocean explorer James Cameron's filming expedition to the *Titanic*.

"Ocean Exploration is a new NOAA office that integrates the expertise within the NOAA line organizations. We all benefited from the contributions of Dr. Broadwater, a recognized leader in marine archaeology," said Captain McLean.

In addition to providing marine archeology expertise, Dr. Broadwater will collect additional layouts and descriptions of the wreck to aid future expeditions.

Channel Islands Recommend 25% Marine Reserves in Sanctuary

On August 24th, more than 400 people filled the Veterans Memorial Hall in Santa Barbara, CA, as Channel Islands Marine Sanctuary (CINMS) Manager Matt Pickett and California Department of Fish and Game (DFG) representatives presented a joint agency recommendation for Marine Protected Area designations in the sanctuary to the California Fish and Game Commission. The preferred alternative proposed jointly by CINMS and DFG represents a no-take marine reserve network that would encompass 25% of sanctuary waters.

This historic recommendation comes after 2 1/2 years of community participation in the development of a marine reserves network, particularly by the stakeholder-based Marine Reserves Working Group and the Sanctuary Advisory Council. The process brought together hundreds of participants, all working to build a marine protected area plan that will provide long-term protection to marine biodiversity and fisheries while sustaining and benefiting the maritime economy.

More information about meetings of the California Fish and Game Commission can be found on line at

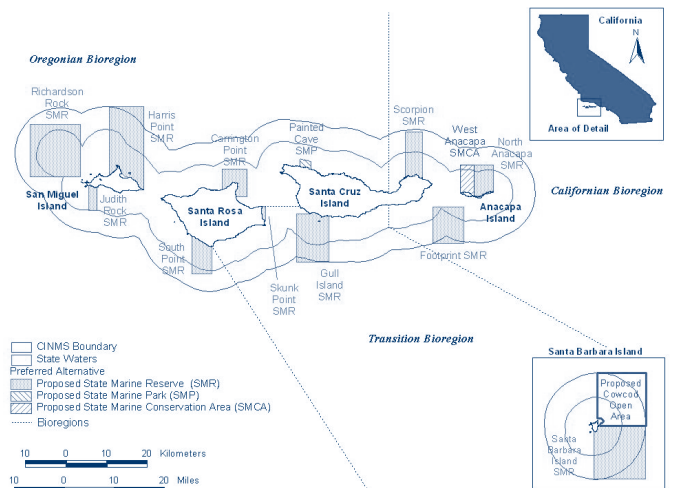
Newsplash

National Marine Sanctuary System Director Dan Basta was chief investigator in a recent underwater mission to Aquarius, an underwater ocean laboratory in the Florida Keys National Marine Sanctuary. The underwater laboratory, owned by NOAA and operated by the University of North Carolina at Wilmington (UNCW), is deployed three and half miles offshore, at a depth of 60 feet.

The mission, held September 4-19, was conducted to introduce sanctuary managers to coral reef monitoring techniques currently being used to monitor marine protected areas in the Florida Keys Sanctuary and to evaluate advanced diving techniques to support National Marine Sanctuary System overall.

Because monitoring techniques adapt to other habitats, the managers were able to evaluate their potential in a nationwide benthic monitoring programs that use common sampling design and techniques.

A surface-based team of sanctuary and NURC/UNCW staff participated concurrently during the mission using advanced scientific diving techniques to evaluate new equipment that divers to work deeper than is currently possible using conventional diving techniques.



The new plan allots 25% of the Channel Islands Sanctuary as marine reserves.

http://www.dfg.ca.gov/fg_comm. For a copy of the CINMS/DFG Marine Protected Area recommendation report, visit <http://www.cinms.nos.noaa.gov/cimpa2.html>.

—Mike Murray



1305 East-West Highway
Silver Spring, MD 20910
301-563-1124
301-713-0404
<http://www.sanctuaries.nos.noaa.gov>



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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.

Oct./Nov. Calendar

Natural events •

Rising of the palolo, a marine worm, approximately one week after the full October moon, Fagatele Bay Sanctuary. Pregnant female and juvenile northern right whales make their way into the coastal waters off Georgia and northern Florida.

October 1-9 • Islands in the Stream Ocean Explorers in the Classroom Program. To learn more, visit <http://oceanexplorer.noaa.gov/>.

October 25-Nov. 27 • A nine-member National Marine Sanctuary delegation travels to South Africa to help with plans for a marine protected area.

November 4 • Hawaiian Islands Humpback Whale and Gerry E. Studds Stellwagen Bank Sanctuaries celebrate their 10th anniversaries.

November 8 • The National Marine Sanctuary Foundation meets in Monterey Bay, CA.

November 16 • Florida Keys Sanctuary celebrates its 12th anniversary.

November 29-30 • Student Ocean Conference for Sustainable Seas-Islands in the Stream.

Tall Ships Festivities in Thunder Bay *(Cont'd from pg. 1)*

our country's history for all to learn from and enjoy," Captain Kuester said.

"Seeing the Tall Ships today emphasizes the importance of preserving the historical remains on the bottom of the Thunder Bay National Marine Sanctuary and Underwater Preserve," said Congressman Stupak, an early and ardent supporter of the new sanctuary. "It is our responsibility, all of us, to make sure that we take care of the Great Lakes because they are preserving our past and we have to preserve them for the future."

Earlier Congressman Stupak urged young visitors "to leave [the festival] with an enhanced understanding of the role sailing ships played in the discovery, settlement, and development of the Great Lakes states, and of the continued importance of the Great Lakes themselves."

The Sanctuary's Acting Manager, Ellen Brody agreed: "Interpretation of maritime history is a priority for the Thunder Bay National Marine Sanctuary and Underwater Preserve. This festival helps make the captivating maritime stories come alive for a whole new generation."

In addition to touring the two vessels, festival celebrants were treated to sail rigging aboard the *Pride of Baltimore II*, music from the *Song of the Lakes*, and swashbuckling demonstrations of sword fighting from an earlier era by *Ring of Steel*.

For more information on the National Marine Sanctuary Foundation and future events, visit www.nmsfocean.org. Learn more about Thunder Bay at <http://www.glerl.noaa.gov/glsr/thunderbay/>.

Marine Debris *(Cont'd from pg. 1)*

portion of the cleanup in order to see firsthand how scientists are saving the most endangered marine mammal in the United States, the Hawaiian monk seal.

In 1996 and 1997, NMFS's Honolulu lab conducted an investigative marine debris cleanup operation in the NWHI in an effort to reduce injury and death to the endangered monk seal. During that effort, 4368 kg of derelict fishing gear were recovered, demonstrating the significance of this threat to the island's coral reefs. In 1998, the Honolulu Lab established a partnership with the University of Hawaii's Sea Grant Program and other key agencies to improve debris removal efforts. In Autumn 1998, a multi-agency coral reef restoration/marine debris cleanup effort at French Frigate Shoals resulted in the collection and analysis of approximately 7,500 kg of derelict fishing gear from 13.8 km² of the shallow reef area. This effort involved two ship platforms, 17 divers, and six scientists from eight unique government and private organizations. These methods were refined during cleanup cruises in 1999 and 2000 which collected over 50 tons of potentially entangling fishing gear from NWHI coral reefs and beaches.

Scientists estimate that over 100 tons of derelict fishing nets and associated items in need of collection remain. Currently, approximately 22,000 pounds of derelict fishing gear are awaiting collection and removal from Midway Atoll.

For more information, contact Wende Goo, (808) 983-5303. Visit www.nmfs.hawaii.edu for more on marine debris retrieval.

—Dr. Mary Donohue
National Marine Fisheries Service

Sanctuary Watch is a publication of the National Oceanic and Atmospheric Administrations' (NOAA) Office of National Marine Sanctuaries, Communications and Development Branch.

Branch Chief: Matt Stout

Graphic Artist: Sandra Nitchie

Writer/Editor:

Copy Editor:

Nancy O'Donnell

Michael T. Murphy