

Sounding Line

News of the Florida Keys National Marine Sanctuary

Summer 2002

Sanctuary Reaches Higher Level of Protection

Cheva Heck, FKNMS Public Outreach Officer

State waters of the Florida Keys National Marine Sanctuary reached a higher level of protection on June 19, 2002, when a No Discharge Zone (NDZ) designation took effect. Under rules published by the United States Environmental Protection Agency (EPA), boaters must now pump out their sewage or make sure their marine sanitation devices (MSDs) cannot discharge overboard while in state waters.

“Now that we are making progress in dealing with local wastewater and stormwater management and restoring historic water flows from the Everglades, the No Discharge Zone designation provides an opportunity for the boating community to step up to the plate and do their part to help restore the quality of our nearshore waters,” said Sanctuary Superintendent Billy Causey. “At the request of the Sanctuary’s Water Quality Steering Committee, we will soon propose rules to establish a No Discharge Zone protecting federal waters of the Sanctuary as well.”

Prior to June 19, regulations prohibited dumping untreated sewage into state waters, but allowed the discharge of treated sewage from Type I and Type II MSDs. These systems chop up solid waste and use chemicals to eliminate many bacteria and viruses, but they do not eliminate nutrients such as nitrogen and phosphorous and other pollutants that contribute to poor water quality.



In state waters, mariners will now be required to use one of the pump-out stations located at marinas and state parks throughout the Keys.

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The new rule does not require boaters to retrofit their vessel with a holding tank, but boaters who choose not to install holding tanks must ensure that their Type I or II MSD cannot discharge overboard while in state waters of the Sanctuary. Discharge of gray water (such as water from the galley and shower) remains legal in most areas.

While EPA scientists estimate that nutrients from vessel discharges account for only 3% of the total nutrients in Sanctuary waters, nutrients and other pollutants from vessel discharge constitute a significant source of water pollution in harbors, marinas and other areas with poor circulation.

“Coral reef ecosystems depend on clear, nutrient poor water to thrive,” said Causey. “By eliminating another source of nutrients in the waters of the Florida Keys National Marine Sanctuary, we can easily relieve one more problem facing our already stressed marine environment”.

see *No Discharge Zone*, p.5

Message from the Superintendent



Dear Readers,

Almost every day we hear about problems affecting the health of our oceans. We read newspaper articles about new coral diseases or hear on national radio about massive algal blooms or mysterious fish die-offs. Television images of massive dolphin strandings on beaches or grounded ships pulverizing living coral reefs serve as stark reminders that we are impacting our oceans and coastal environments.

The good news is that people like those featured in this edition of *Sounding Line* are making a difference. Whether they are veteran Environmental Heroes like George Hommell, Fran Ford, and Steve Dimse, or young Environmental Heroes like Rheo Bruer and Phillip Bruer, more people are becoming alert to the problems in our oceans and there is still time to take action. However, the key to success lies in creating an ocean literate society through education.

On June 4-6, 2002, I had the privilege of participating in a symposium on Capital Hill in Washington, D.C. organized by Lori Arguelles, Executive Director of the National Marine Sanctuary Foundation. The theme of the symposium was "Connecting the WOW!: Wonders of the Ocean World Creating an Ocean Literate Society." This theme creatively captures what we, as residents of our ocean planet, must accomplish if our ocean and its resources are to survive present day assaults. I recall the first time I heard the challenge for an ocean literate society from my good friend, Jean-Michel Cousteau, during a presentation in the Florida Keys. He declared that the future of our oceans depend on it. Recently, I read his testimony to the President's Commission on Ocean Policy, in which he again emphasized the need to develop a society that understands the ocean and its needs and limitations ...an ocean literate society.

Another good friend, Dr. Jim Bohnsack, uses the term "ocean ethic." He has frequently pointed out the need to develop an "ocean ethic," much like the "land ethic" that so many naturalists have subscribed to over the decades. Just imagine, a world where the literacy of the people about the ocean is such that it affects their ethical understanding and behavior and is passed along from generation to generation. It would be a world where a set of moral principles or values regarding the ocean are instilled in people.

In order to be successful at conserving and protecting our ocean for present and future generations, we have to overcome the many challenges ahead of us. We must first establish the goal of attaining an ocean literate society as advocated by Jean Michele Cousteau. Then and only then will society understand and recognize the need to embrace an ocean ethic. In order to meet these challenges, we need education and outreach programs that target every aspect of society--programs that not only reach coastal communities, but reach far inland where some of the problems that affect the health of the ocean begin.

Discover how you can personally make a difference by visiting the National Marine Sanctuary Foundation website at <http://www.nmsfocean.org/> or by contacting the Sanctuary Friends of the Florida Keys (Sanctuaryfriends@noaa.gov). Each of us can make ocean literacy a reality by teaching our young people to care for and respect our oceans. I plan to teach my two new grandchildren from the very start to be stewards of our ocean planet.

Sincerely,

Florida Keys National Marine Sanctuary

Billy D. Causey
Superintendent

Kacky Andrews
State Co-trustee

Nancy G. Diarsing
Sounding Line Editor

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Anita Schwessinger
Tourism-Lower Keys

Deborah A. Shaw
Research and Monitoring

Vacant
Charter Fishing/Sport Fishing

Vacant
Boating Industry



People Who Make a Difference Everyday



Photo: Joy Tatgenhorst

Superintendent **Billy Causey** presented **Research Interpreter Joanne Delaney** with the **2002 Team Member of the Year Award for the Florida Keys National Marine Sanctuary**. Joanne brought her experience in marine science and education to the Sanctuary in 1997.



Brenda Altmeier was recognized for her nine years of outstanding service to the Sanctuary by Florida Department of Environmental Protection Senior Managers **Eva Armstrong** and **Danny Riley** and by Sanctuary Superintendent **Billy Causey**.



Photo: Brenda Altmeier

Dave Score presented **Submerged Resource Inventory Volunteer Chuck Hayes** with a gift from the staff at his going-away party. Chuck and his wife Maria recently moved to South Carolina. Chuck's contributions to the Sanctuary include a vast amount of underwater and archival research and thousands of hours of support to other Sanctuary operations using his personal vessel and time. He has been of tremendous assistance to the program and will be greatly missed!



Photo: Joy Tatgenhorst

Fran Ford of the **Monroe County Environmental Education Advisory Council (MCEEAC)** and **Florida Keys Audubon** received NOAA's **Environmental Hero** award for her many years of enthusiastically educating the students, teachers and citizens of Monroe County. Fran is active in several organizations and has spearheaded many environmental projects that support the mission of the Sanctuary.



Earth Day 2002 Celebrates Environmental Heroes



Photo: Alan Cradick

Sanctuary Superintendent Billy Causey and National Oceanic and Atmospheric Administration Deputy Undersecretary Scott Gudes presented the NOAA Environmental Hero Awards for 2002 at the Earth Day Celebration sponsored by The Nature Conservancy. Environmental Hero George Hommell, Jr., General Manager of World Wide Sportsman, was recognized for having the first marina in the Florida Keys to be declared a "Clean Marina" by the Florida Department of Environmental Protection (from left to right: *Billy Causey, George Hommell, Scott Gudes*).

Fran Ford received the Hero Award for her work with the Florida Keys Audubon Society and the Monroe County Environmental Education Advisory Council (*pictured on page 3*). Dr. Steve Dimse of Cudjoe Key received the Environmental Hero Award for his valuable real-time citizen weather observations (*lower left*).



Photo: Alan Cradick

Seven-year-old Parker Phillip Bruer and five-year-old Rheo Fulton Bruer are the Florida Keys National Marine Sanctuary's youngest environmental stewards. Parker and Rheo are members of a volunteer group that planted more than 1,500 dune grass seedlings at Coco Plum Beach in Marathon and participated in the removal of exotic plants at the Key West Botanical Garden.

Attendees of the annual Earth Day Celebration, held on the beach at Cheeca Lodge in Islamorada, were treated to a selection of "Earth Songs" performed by Key Largo School students. After constructing a giant red, white, and blue American flag sculpture in the sand on the beach, people boarded their kayaks and headed into the shallow waters to create an arrangement with their kayaks that spelled "Earth Day 2002" when viewed from the air. The crowd waved when news helicopters flew by to capture photos of the kayak creation (*lower right*).





Education Specialists Involved in a Variety of Programs

Spring is a busy time of year for Sanctuary Educators Ivy Kelley and Amy Massey who conduct *Coral Reef Classroom* and *Community Connections*, educational field programs for middle school students. This year the education team also sponsored a one-day workshop for local teachers. Guest speaker Dr. Steven Miller, National Undersea Research Center, University of North Carolina at Wilmington, presented research findings about recent trends in coral reef ecology and discussed living and working in the *Aquarius Habitat*, located at Conch Reef Research-Only Area. Sanctuary Resource Specialist Bill Goodwin presented information about restoring coral reef habitats damaged by vessel groundings. Teachers also enjoyed learning new educational activities for the classroom from Sanctuary educators.



Photo: Joy Tatgenhorst

At the *Monroe County Envirothon* for middle school students, Sanctuary Educator Nancy Diersing explained how to measure the salinity of water collected from different marine habitats using a refractometer (top, right). The Monroe County Environmental Education Advisory Council (MCEEAC) sponsored the event, which was coordinated by Joy Tatgenhorst, Sanctuary Education Specialist and MCEEAC secretary.

In May the National Geographic Alliance sponsored a five-day visit to the Florida Keys National Marine Sanctuary for 28 teachers and their students from three major American cities. During a laboratory program conducted by Sanctuary educators at Keys Marine Lab, National Geographic Alliance Teacher Barbara Prillaman and her student Jennifer DeLeon recorded their observations of a live grassbed urchin (bottom, right).

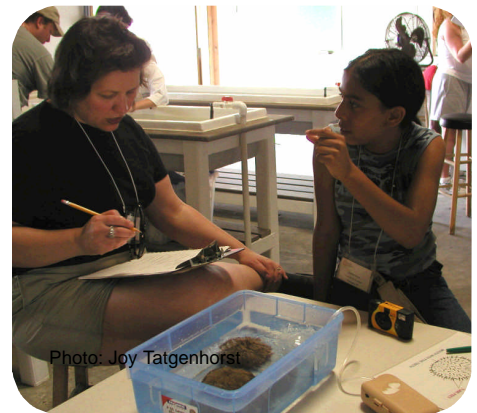


Photo: Joy Tatgenhorst

No Discharge Zone, continued from page 1

Cheva Heck, FKNMS Public Outreach Officer

The Sanctuary's Water Quality Steering Committee and the Monroe County Board of County Commissioners asked Florida Governor Jeb Bush to seek the NDZ designation for all state waters of the Florida Keys National Marine Sanctuary. Governor Bush supported the proposed designation and, on December 7, 2000, he sent a letter to the EPA requesting this action. The EPA published the proposed rule for comment on July 26, 2001. Of 1,050 comments received, nearly 97% supported the designation as a necessary step in improving water quality in the Florida Keys.

Although the designation does not require EPA to ensure adequate availability of pump-out facilities, a survey by the Florida Department of Environmental Protection found adequate coverage in the most heavily populated areas of Monroe County, with 29 operating pump-out stations, two mobile pump-outs and several more pump-outs in the planning stages. Marinas that want to install pump-out stations or mobile pump-out boats can apply for grants of up to 75% of the project cost from the Clean Vessel Act (CVA) Grant Program. Since 1996, CVA grants totaling approximately \$520,000 have funded 18 pump out facilities in the Florida Keys.

A working group led by the Florida Department of Environmental Protection, and composed of representatives of federal, state and local governments, local environmental groups, and local marine professionals, is currently developing an implementation plan for the NDZ. This plan will include a public outreach and education program, a strategy to fund and develop adequate pump-out services in the Keys, and an enforcement strategy for implementation of the NDZ. For more information on the No Discharge Zone designation and how to comply, call 305.743.2437 or visit the Sanctuary's web site at <http://www.fknms.nos.noaa.gov/>.





Cousteau Kicks off Seagrass Celebration

Nancy Diersing, FKNMS Education Specialist

World-renowned ocean explorer and film-maker Jean-Michel Cousteau offered a few poignant words about the importance of protecting seagrass communities during the Seagrass Awareness Month Celebration at World Wide Sportsman in Islamorada. “The health of the beloved coral reefs of the Florida Keys depends upon the health of its seagrass habitat,” said Cousteau. “Without the quiet beauty of the seagrass meadows, the splendors of the coral reef could not thrive. Like everything on our planet, the two are directly connected”.



Mark Klingbeil, representative on the Seagrass Outreach Partnership for World Wide Sportsman, listens to Jean-Michel Cousteau speak about seagrass protection during the Seagrass Festival held at World Wide Sportsman in Islamorada.

Cousteau, President of Ocean Futures Society and National Marine Sanctuary Foundation Board Member, attended the Seagrass Festival in March during a visit to the Florida Keys National Marine Sanctuary.

“We were truly honored to have Mr. Cousteau join us in our effort to increase awareness about boating impacts to seagrass communities,” stated Mary Tagliareni, Education Coordinator for the Florida Keys National Marine Sanctuary and Seagrass Outreach Partnership Chair.

“This is the first time we’ve held an event entirely dedicated to educating people about how to prevent boating injuries to this valuable resource. We are very fortunate to have World Wide Sportsman as a Seagrass Outreach Partner this year,” added Tagliareni. “World Wide Sportsman was a perfect location to reach out to both visitors and Keys residents about this issue.”

Under the direction of General Manager George Hommel, Jr. (one of NOAA’s Environmental Heroes for 2002, see page 6), World Wide Sportsman joined the Seagrass Outreach Partnership last year to help spread the word about preventing damage to seagrass, an important coastal habitat for maintaining healthy fish populations. The Seagrass Outreach Partnership is an interagency and community partnership that is dedicated to preventing damage to seagrass communities.

Visitors attending the event enjoyed a variety of activities conducted by Seagrass Outreach Partners. Captain Mike Ehlers from the Florida Keys Guides Association demonstrated casting techniques for both young and not-so-young anglers. Boaters were able to practice their navigational skills and learn about channel marking at the station developed by Monroe County Biologist Rich Jones and Sanctuary Lower Region Manager Fritz Wettstein. Visitors were also able to closely examine some of the marine creatures that live in the seagrass community in the aquaria set up by the Florida Fish and Wildlife Conservation Commission’s Florida Marine Research Institute.



At the Seagrass Festival, Steve Werndli and Sean Meehan discuss the techniques used by the Sanctuary’s damage assessment team in determining the amount of damage done to seagrass by boats during groundings.



Scientist Shares Research on Restoration

Nancy Diersing, FKNMS Education Specialist

Dr. W. Judson Kenworthy shared his knowledge of techniques designed to restore seagrass habitats damaged by boat propellers and hulls at a recent workshop held in the Florida Keys. Kenworthy, a research scientist from NOAA's Coastal Center for Fisheries and Habitat Research in Beaufort, N.C., has been developing, researching, and assessing seagrass restoration techniques in the Florida Keys for nearly two decades and has published extensively on this topic. The workshop was hosted by the Florida Park Service and sponsored by the Florida Keys National Marine Sanctuary.



On a field trip to view experimental restoration sites, workshop participants examined the new growth of shoal grass around one of the bird stakes.

Resource managers, scientists, educators, and interested citizens listened attentively as Kenworthy described the most common seagrass in the Florida Keys, turtle grass, *Thalassia testudinum*, as the "redwood" of seagrasses. In contrast, Cuban shoal grass, *Halodule wrightii*, and manatee grass, *Syringodium filiforme* are "ground covers and shrubs" because of their relatively fast-growing, colonizing nature. When the slow-growing turtle grass dominates an area, it is considered to be a mature seagrass community that can exist indefinitely under the right conditions.

"When a boat impacts a turtle grass bed, it damages a habitat that does not repair itself readily," commented Kenworthy. Often, propellers cut deeply into the underground stems called rhizomes, cutting off the growing tips, halting growth in the affected rhizomes. In addition, rhizomes are not genetically programmed to grow downward into the prop scar or blow-hole, a crater formed when a boater tries to "power off" the flat. Instead, rhizomes grow outward and upward. Recolonization of the damaged area is hindered further because the loose, coarse sediments that often fill the holes are not suitable for new seagrass colonization. Currents move these sediments around readily, further preventing colonization. Tropical storms and hurricanes have been known to cause significant erosion to already damaged banktops, which took several hundred years to form, building up from the bottom, layer by layer over time.

Understanding the natural succession toward a mature turtle grass community is necessary to fully appreciate the "modified compressed succession" restoration technique described by Kenworthy at the workshop. The goal of restoration of a seagrass site is to return the area to the original community, which in many cases is turtle grass. With this method, resource managers "jump start" the succession process, attempting to bring the site back to the original community sooner than would occur in nature. Kenworthy is careful to point out that a mature turtle grass community takes years to develop and supports a diverse assortment of invertebrate and vertebrate life that can not be easily replaced.

Various tools are used when implementing this technique, depending upon the extent of damage and other factors. In water about 3 feet deep or less, stakes that are attractive roosting posts for cormorants and terns, are driven into the sediment. Using the feces of the birds as fertilizer, shoal grass quickly grows, forming a halo at the base of each post. This process of new growth usually takes 1-2 years, then the stakes are removed. The new growth of shoal grass serves to hold the sediments in place and allows for the colonization of the turtle grass over time. In deeper areas and/or larger damaged areas, fertilizer is added and new shoots of shoal grass are planted to jump start the colonization. When needed, sediment tubes, biodegradable bags of limestone sediments, are placed into the scar or hole to provide stability to the sediments and bring the sediment level up to its original point. The sediment tubes, which can be made in different shapes, may contain plant fertilizers known to promote seagrass growth.

The restoration techniques described by Kenworthy are only one facet of the collaborative restoration program in place at the Florida Keys National Marine Sanctuary. This program uses sophisticated damage assessment methods to measure injuries to the natural resources caused by vessel groundings and





Coral Spawning Season is Upon Us

Ben Richards, FKNMS Program Specialist

Every year, a few days after the late summer full moon, something wonderful and amazing happens in the nighttime waters of the Florida Keys - the corals of the reef spawn. In one extraordinary event, usually around midnight, the entire reef explodes in a ticker tape parade of the marine world. Many stony coral species are broadcast spawners, which means that like many fish and other marine creatures, they release their eggs and sperm into the water column, letting them mix in the surface currents.

While not the most efficient means of fertilization, the sheer numbers of eggs and sperm released ensure that some will meet, giving rise to the next generation of coral animals. After fertilization the resulting larvae drift in the ocean currents generally for 3-4 weeks before settling on an open area of hard bottom or bare substrate. They will never move again. Growing from that point by usually less than a centimeter a year, [staghorn branches are an exception, extending at a rate of about 10 cm/yr.] the young coral will eventually become a large coral head or elkhorn cathedral that makes our Florida reefs spectacular.

With this August's full moon falling on August 22, the elkhorn and staghorn corals should spawn during the period between August 24 and August 26th. The star corals follow a few days later, somewhere around the 28th-30th of August. As usual, the corals will spawn by their own timetable.

To watch the corals spawn, head out to the reef in the evening or at night. The calmer the night, the better. Be sure to bring lights and whether snorkeling or diving, you should be able to see the spectacle. As the spawning begins, you may start to see tiny white, pink, or orange spheres rising out of the center of each coral polyp. Some corals may soon be covered with thousands of these tiny egg packets. In an instant, the eggs will be released en masse and the water will fill with millions of floating BB-sized packets.

Corals in the more southern regions of the Caribbean usually spawn a month after Florida's corals, or spawn in both August and September given the lateness of August's full moon. Sometimes Florida corals will spawn twice in one season, too. Corals as far north as Bermuda may spawn in late July as well as August.



Spiny Lobsters Thrive in the Ecological Reserve

Carrollyn Cox, FWC/FMRI Biologist

Spiny lobsters are wanderers. They start their lives as tiny floating larvae that drift offshore for almost a year. When they are ready to begin life on the sea floor, they settle in nearshore habitats. After a year or two near shore, the lobsters are on the move again, this time to offshore reefs where they reproduce. With all their wandering, it is amazing that a discernable difference in the population could result from protecting a relatively small area from fishing. But that is just what lobster biologists at Florida Fish and Wildlife Conservation Commission's Florida Marine Research Institute (FWC/FMRI) have been finding out in an ongoing research project.

Over the last five years, FWC/FMRI biologists have been counting and measuring lobsters in thirteen of the protected zones in the Sanctuary and unprotected reference areas. As might be expected, at this time there does not appear to be an increase in the number or size of lobsters in some of the smaller Sanctuary Preservation Areas (SPAs). However, in the larger Western Sambo Ecological Reserve, lobster abundance is on the rise. It is not unusual to find dens containing twenty or more lobsters on the fore reef. The lobsters in this reserve are getting bigger too, especially on mid-channel patch reefs. In 1997, large males were very rare; only one lobster larger than 100 mm carapace length (CL) was found in the searches conducted by scientists. But, by 2001, large males were more frequently encountered, and the largest individuals were more than 130 mm CL. Because size of both male and female lobsters influences the number of larvae that are produced, biologists predict an increase in the number of larvae starting their lives in the waters of Western Sambo Ecological Reserve.

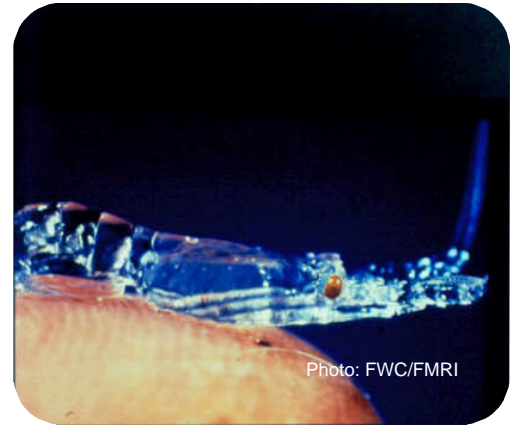


Photo: FWC/FMRI

Spiny lobster larvae float in the ocean currents for up to nine months before changing into the transparent swimming form called a puerulus (above). For several weeks, the non-feeding puerulus swims until it reaches nearshore habitat where it settles to the bottom and develops into a juvenile spiny lobster.



Photo: Grant Stoecklin

During a day of field sampling, Dave Eaken, FWC/FMRI, holds up one of the large males found in the Western Sambo Ecological Reserve. Also pictured: Project Biologist Carrollyn Cox (right) and Kerry Maxwell (center).

Project biologists will continue to follow the trends in size and number of spiny lobsters within the Ecological Reserve and in the SPAs.

For more information about spiny lobster biology, please visit the FWC Florida Marine Research Institute website at: <http://www.floridamarine.org/>.

For more information about this project, please visit: http://www.fknms.nos.noaa.gov/research_monitoring/zpr99.html#Anchor-Project-3800.

Project Investigators: Carrollyn Cox, Meaghan C. Darcy, Nathaniel Jue and John H. Hunt, Florida Fish and Wildlife Conservation Commission/Florida Marine Research Institute, Marathon, Florida.



100-Year-Old Mystery Wreck Identified as Canadian

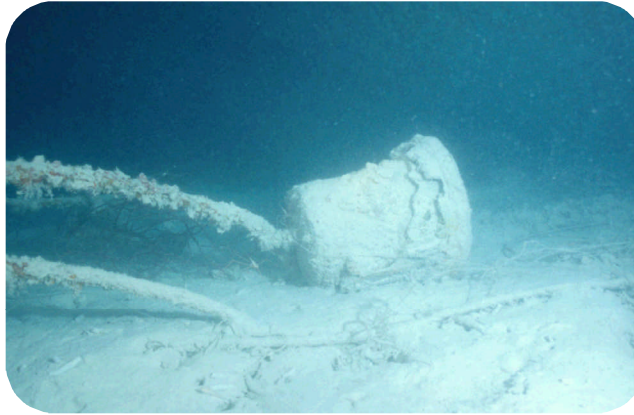
Cheva Heck, FKNMS Public Outreach Officer

The National Oceanic and Atmospheric Administration (NOAA) announced in May that a team of divers led by a NOAA archaeologist has identified a mystery wreck in the Florida Keys National Marine Sanctuary as a former Canadian warship. National Marine Sanctuary Program officials plan to nominate the site to the National Register of Historic Places.

Canada's first naval vessels, as "the flagship of the embryonic Canadian Navy at the time, symbolic of the evolution of Canada from a dominion within the British Empire to a sovereign nation."

"The opportunity for archaeologists and marine historians to glean information from a wreck that is so remarkably intact is very rare," said Moore.

In the summer of 2001, members of the Association of Underwater Explorers (AUE) dove an unnamed wreck, located in 230 feet of water off Islamorada, and reported it to Sanctuary officials as a shipwreck of potential significance.



The Queen of Nassau ship's bell was found in the sand at the wreck site.

Beginning in October 2001, AUE members joined NOAA, the University of North Carolina at Wilmington's National Undersea Research Center (NURC), and East Carolina University (ECU) staff for a series of archaeological surveys, led by NOAA project archaeologist Tane Casserley. NURC provided diving support for the operations, which were partially funded by a grant from the PADI Foundation, and the State of Florida consulted with NOAA in developing the research design.

Vickers Maxim and Sons Ltd. in Barrow in Furness, England built the *Canada* in 1904 as a one-of-a-kind small cruiser for the Canadian Fisheries Protection Service. Known as the fastest ship in the fisheries protection fleet, the vessel became Canada's first naval training ship and later was commissioned in the newly formed Canadian Navy. The *Canada* spent World War I conducting convoys and naval patrols.

Based on ceramics recovered from the site, measurements of the ship's length and beam and the distinctive ram bow, Casserley has been able to identify the ship with a high degree of certainty as the steamer *Queen of Nassau*, formerly the *Canadian Government Ship (CGS) Canada*.

In 1919, the *Canada* was decommissioned, and in 1924, the Canadian government sold the vessel to Barron Collier, a wealthy Florida landowner, who renamed it the *Queen of Nassau*. When the aged ship proved too slow for service as an inter-island cruise ship, Collier made plans to sell it to Mexican interests, but the ship sank in 1926 en route to its final inspection in Tampa, after developing a leak.

"We intend to nominate the *Queen of Nassau* to the National Register because of her significant history, archaeological resources and site integrity," said LCDR Dave Score, Sanctuary Upper Region Manager. "The Florida Keys National Marine Sanctuary is very dedicated to protecting this 100-year-old shipwreck and will continue efforts to document and monitor this site."

Since the survey team's initial dives on the wreck site, key artifacts may have been altered, and artifacts not previously in plain view lay uncovered. In addition, parts of the ship's structure appear to have sustained anchor damage.

Marven Moore, manager of collections for the Maritime Museum of the Atlantic in Nova Scotia, describes the *Queen of Nassau/CGS Canada*, one of

In light of the perceived site disturbance, archaeologists working for the Florida Keys National Marine Sanctuary recovered several artifacts deemed to be threatened, including ceramics, a mast light and a lantern top and base. In accordance with the programmatic agreement between the Sanctuary and the State of Florida, the Florida Division of Historic Resources is conserving the artifacts, which will be put on display in the Florida Keys to educate the community about the region's cultural heritage.

see *Mystery Wreck* p.11



Keys Residents and Team Ocean Volunteers Aid Sea Turtle

One Saturday in June, Keys residents Jamie and Joan Wheeler were out boating when they found a sick sea turtle struggling on the surface unable to dive. Concerned for the turtle, the Wheelers hailed the Florida Keys National Marine Sanctuary on VHF Channel 16. Team OCEAN volunteers Frank and Carolyn Fasano responded to the Wheelers request for assistance in transporting the loggerhead to shore.

The Fasanos reported the turtle to Florida Fish and Wildlife Conservation Commission Officers (formerly the Marine Patrol) and received permission to bring her aboard the vessel. They were further instructed to bring the distressed turtle to the Key West Aquarium where the ambulance from the Turtle Hospital transported her to the hospital in Marathon. The Wheelers and Fasanos are to be commended for responding appropriately in this rescue situation.



At the Turtle Hospital in Marathon, Director Richie Moretti (left) and world-renowned explorer Jean-Michel Cousteau (right) examine a rehabilitated sea turtle prior to releasing her back into the wild.

Unfortunately, in spite of the efforts made by the Wheelers, the Fasanos, and the Turtle Hospital staff, the loggerhead died. Turtle Hospital staff performed a necropsy and determined the cause of death to be a rubber grommet wrapped in a piece of plastic lodged in its digestive system.

During the necropsy, the following items were also found in her gut: two plastic ball point pens, a pink plastic clothes-pin, a piece of square rubber sponge, pieces of torn netting, a small plastic bottle, numerous pieces of plastic shards, blue plastic strapping, numerous pieces of plastic bags and numerous pieces of polypropylene rope (string).

Fortunately, not all rescues end this way. Recently, Jean-Michel Cousteau and Turtle Hospital Director Richie Moretti released a rehabilitated turtle back into the wild. If you find an injured sea turtle, marine mammal, or bird while boating, please contact the Florida Fish and Wildlife Conservation Commission by dialing *FMP on a cell phone or 1-888-404-FWCC (1-888-404-3922). For more information about the turtle hospital, please visit <http://www.turtlehospital.org/>.

Mystery Wreck, continued from page 10

Cheva Heck, FKNMS Public Outreach Officer



One of the artifacts recovered from the Queen of Nassau wreck was a portion of an oblong serving plate made in the USA.

The National Marine Sanctuaries Act charges the Florida Keys National Marine Sanctuary with managing archaeological and historical resources in its waters to protect the public's interest. Disturbing, removing or possessing artifacts without a permit is illegal and punishable by a maximum civil penalty of \$119,000 per violation. For more information on submerged cultural resources in the Florida Keys National Marine Sanctuary, visit <http://www.fknms.nos.noaa.gov>.

NOAA's Ocean Service (NOS) and the State of Florida manage the Florida Keys National Marine Sanctuary. NOS is dedicated to exploring, understanding, conserving, and restoring the nation's coasts and oceans. NOS balances environmental protection with economic prosperity in fulfilling its mission of promoting safe navigation, supporting coastal communities, sustaining coastal habitats, and mitigating coastal hazards. To learn more about NOS, please visit <http://www.nos.noaa.gov/>.

Lost and Found Buoys



Mooring Buoy Hotline

Is your favorite mooring buoy missing or damaged? Have you noticed a missing boundary buoy for a Sanctuary Preservation Area (SPA)? Have you found a buoy floating free or washed up on shore? If so, the Sanctuary mooring buoy team could use your help. The team is made up of seven dedicated people employed by the Florida Keys National Marine Sanctuary to maintain more than 700 buoys found in Sanctuary waters. They not only install and clean the blue and white mooring buoys used by boaters to tie up at their favorite reef, but they take care of the large yellow buoys that act as boundary markers for the different Sanctuary zones and the spar buoys that mark the Wildlife Management Areas.

The Sanctuary has established a **Mooring Buoy Hotline**, (305) 852-7717 x 45 to make it easier for people to report missing buoys and retrieve lost ones. For missing buoys, please provide the name of the reef, nearest point of reference or buoy number, if known, and the date the buoy was missing or damaged. For buoys that have been found, call the hotline for a pick up. Buoys are an important management tool that have been shown to minimize the damage to reefs and other sensitive areas. Please help the Sanctuary mooring buoy team by reporting all damaged, missing, or found buoys to the **Mooring Buoy Hotline**.



Sounding Line is issued on a quarterly basis by the Florida Keys National Marine Sanctuary. For more information or to be placed on the mailing list, email the editor at Nancy.Diersing@noaa.gov.



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