

## STELLWAGEN BANK E-NOTES: sanctuary news & events

Jan-Mar 2014



*Salt, the grand dame of Stellwagen Bank sanctuary humpbacks, displays the underside of the two flukes of her tail. The pattern of black and white is used to identify individual humpback whales. She was the first humpback to be officially documented in both the northern feeding ground at Stellwagen Bank and the southern breeding/calving ground off the Dominican Republic. The public is invited to help scientists document other humpbacks in the Caribbean through the CaribTails program. See story below. Photo credit: Center for Coastal Studies. Taken under NOAA Fisheries Permit #633-1778.*

## Sanctuary launches *CARIB Tails*: a citizen science program for yachters



Yachters and long-distance cruisers are invited to help track the movements of humpback whales between NOAA's Stellwagen Bank National Marine Sanctuary and its sister sanctuaries across the wider Caribbean region through a new citizen science project called *CARIB Tails*. By photographing the tails of these whales when they are observed in the Caribbean Sea, boaters will help build the database on this shared population of approximately 1,000 animals.

Researchers identify individual humpback whales by the black and white patterns on the underside of their flukes (a term for the two lobes of the tail). Scars and natural pigmentation, ranging from all white to all black, along with the scalloped shape of the trailing edge of each tail give each whale a distinct look – a virtual

*continued on page 2*

### In This Issue:

DHRA Proposal Moves Ahead	p.3
Fishermen Aid Cod Research	p.4
SAC Recruitment Open	p.5
New SAC Members Profiled	p.6
SEABOSS Seeks Sand Lance	p.7
Info on Art & Essay Contests	p.8
Humpbacks in Worcester	p.8

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[www.youtube.com/user/SBNMS](http://www.youtube.com/user/SBNMS)

<http://stellwagen.noaa.gov/>

## ***CARIB Tails* project underway**

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“fingerprint.” Photographs of humpback flukeprints have allowed researchers to monitor the movements, health and behavior of individual animals since this research began in the 1970s.

“*Salt*, the sanctuary’s grand dame and a mother of 12 was the first East Coast humpback to be named and the first of the sanctuary’s whales to be identified off the Dominican Republic. The match, documented with photographs, confirmed the humpback’s migratory route,” said Craig MacDonald, sanctuary superintendent. “*CARIB Tails* has the potential to exponentially expand our feeding-to-breeding grounds matches and enrich our understanding of the connections between the Stellwagen Bank sanctuary and our Caribbean counterparts via this charismatic species.”

*CARIB Tails* offers yachters and cruisers with an interest in photography a way to actively support on-going research and conservation efforts. Of particular importance at this time is the identification of specific breeding areas for Stellwagen Bank/Gulf of Maine whales in the eastern Caribbean Sea. The project stresses safe boating and viewing practices around these endangered animals. A dedicated website (<http://caribtails.org>) provides tips on how to photograph flukes for research purposes, photo submission forms, and other information about humpback whales.

*CARIB Tails* is a joint effort of Stellwagen Bank National Marine Sanctuary, the Sister Sanctuary Program Partners -- Marine Mammal Sanctuary of the Dominican Republic, Agoa Marine Mammal Sanctuary/French Antilles, Bermuda Marine Mammal Sanctuary, and the marine mammal sanctuaries of the Windward and Leeward Dutch Antilles (expected designations later this year), and the United Nations Caribbean Environment Programme’s Specially Protected Areas and Wildlife Programme (UNEP/SPAW).

“Whales follow long-distance courses that take them to destinations similarly favored by yachters. For the ocean lovers among us, what better way to respect the marine environment and add value to your travels than by becoming a citizen scientist,” said Alessandra Vanzella-Khoury, UNEP SPAW Programme Director.



The *CARIB Tails* project enlists yachters and cruisers as citizen scientists who are asked to photograph humpback whale tails in the animals’ Caribbean breeding/calving grounds. Those photos will be matched by research scientists to a database of known individuals in the northern feeding grounds, including Stellwagen Bank National Marine Sanctuary. Image: Kevin King.

Nathalie Ward, the sanctuary’s Sister Sanctuary and Advisory Council coordinator, created the *CARIB Tails* program. After securing funding from UNEP-SPAW and a commitment for whale tail identification research from the College of the Atlantic (keeper of the North Atlantic Humpback Whale Catalog), she was able to forge ahead with this unique program that may strengthen links between Stellwagen Bank sanctuary and our Caribbean counterparts.



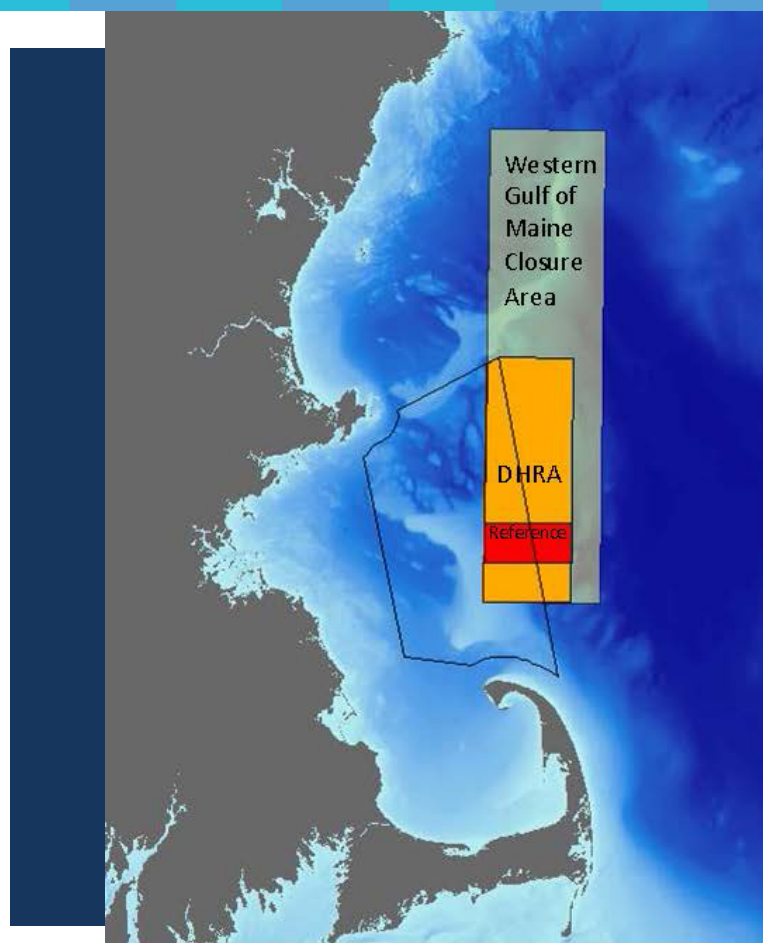
### **First Photo Submitted to *CARIB Tails***

*CARIB Tails* received its first submissions – a video and still image of a humpback whale from the Saba Marine Park in the Dutch Antilles in the eastern Caribbean Sea. The images were taken by Jimmy van Rijn.

A search of the Gulf of Maine catalog did not produce a match; this whale probably feeds in one of the other feeding grounds in the North Atlantic during the summer.

Individuals interested in submitting photographs are reminded to use safe boating practices around whales and follow all local whale watching regulations and/or guidelines.





**Western Gulf of Maine Closure Area (light green)**  
 – remains the same as previously established; excludes all bottom fishing gear capable of catching groundfish (includes DHRA and Reference Area)

**DHRA – Designated Habitat Research Area (yellow)** – a section of WGoMCA; partially located in Stellwagen Bank National Marine Sanctuary; same provisions as WGoMCA but allows permitted fishing for research

**Reference Area (red)** – same provisions as DHRA but excludes party/charter and recreational fishing for groundfish

## Proposed Habitat Research Area gets closer to reality

After several years of discussion, research, negotiations and many meetings with government partners, fishing industry representatives and the public, sanctuary and NOAA Fisheries staff are seeing the fruits of their labors. At the February 26 New England Fishery Management Council meeting, council members voted to include the Stellwagen Designated Habitat Research Area (DHRA) as a preferred alternative in the Omnibus Essential Fish Habitat Amendment (with preferred research reference area Option B -- northern reference area).

The vote was 13 in favor, two opposed and one abstention. This DHRA overlaps a portion of Stellwagen Bank National Marine Sanctuary. The New England Fishery Management Council will hold public hearings on the amendment this summer. If ultimately established by the council, **it will become the first DHRA in the Gulf of Maine** with a reference area to enable a wide range of scientific studies important to both fishery and sanctuary management.

### Why a Stellwagen Designated Habitat Research Area with Reference Area?

*What happens when fishing gear impacts the seafloor? How long does it take different types of seafloor habitats to recover from disturbance? How does fishing activity compare to natural disturbance? How does habitat condition affect marine productivity?*

The questions above are just a few of the ones confronting fisheries and marine sanctuary managers. The creation of a designated habitat research area provides a location where scientists can conduct long-term studies to answer just these sorts of questions. With the resulting sound science, resource protection agencies can develop better management plans. Of special note is the reference area, which serves as the control – a baseline against which variables are tested. For example, the effects of a nor'easter on the no-fishing reference area could be compared to the effects on a fished area (all types of gear) and an area with only recreational gear. Or, the recovery of a formerly fished section of muddy basin in the reference area could be compared to similar areas that are now impacted by all or single types of gear.

By instituting an official research area, scientists can be assured that their work can proceed at the same site over many seasons and years. Since marine studies are often very expensive (requiring special equipment and ship time), it is often difficult to get adequate funding from sponsors who want to be assured that projects can run their full course. The sanctuary region also offers added benefits from detailed seafloor maps and many years of archived fishing data. In the past, the answer to many seafloor-related questions was "We don't know." With a Designated Habitat Research Area we may now be able to get science-based answers to help support healthy fisheries and better conserve marine biodiversity.

## Press conference at sanctuary annex details fishermen-led cod research project

Biologist Jeff Kneebone releases an Atlantic cod into Massachusetts Bay after tagging it while performing research aboard the Yankee Rose. Credit: John Clarke Russ for The Nature Conservancy.



Local fishermen have always known that cod return to the waters off the South Shore to breed this time every year – clustering in large numbers, spawning and providing our best hope of a future for healthy cod populations.

Now, scientists and fishermen are working together to use an “E-Z Pass for fish” to gather data about the fishes’ behavior, to better protect this iconic species and the communities that depend upon it. The project was detailed at a press conference held at Stellwagen Bank National Marine Sanctuary’s Scituate headquarters on January 8, 2014.

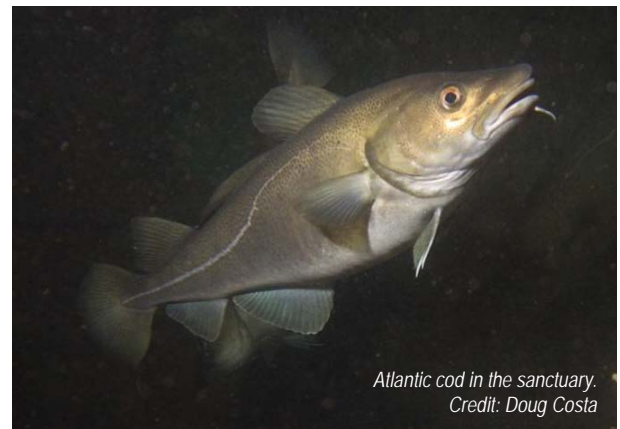
Concerned commercial fishermen from the South Shore sought out scientists from The Nature Conservancy, the Massachusetts Department of Fish and Game’s Division of Marine Fisheries (MADMF), the University of Massachusetts Dartmouth School of Marine Science (SMASST) and NOAA’s Northeast Fisheries Science Center, to help them map out exactly when and where spawning occurs, with the goal of protecting local cod during their spawning season.

“South Shore fishermen approached us to help protect these spawning cod with the future of the fishery in mind, and the collaborating researchers jumped at the chance to work closely with them,” said Chris McGuire of The Nature Conservancy in Massachusetts.

During January and into early February, local fishermen, working with scientists from MADMF and SMASST, are hooking spawning cod, implanting electronic tags and then releasing the fish back into the sea. The project’s goal is to protect these local fish during spawning, as they are particularly vulnerable during this period.

Local fishermen are now seeing cod only during their spawning season in the late fall and early winter, whereas they used to be abundant for much of the year, explained Frank Mirarchi, who has fished from Scituate Harbor since 1962 and has personally witnessed a decline in cod abundance. Warmer seawater and increased predation are also making the fishing business on the South Shore ever more uncertain, he said.

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*Atlantic cod in the sanctuary.  
Credit: Doug Costa*



## Fishermen-led cod research project *continued*

“We hope to provide these fish with protection while they’re vulnerable,” Mirarchi said at the press conference. Also attending were representatives from all the partner organizations as well as Mass. State Senator Robert Hedlund, who helped secure funds to aid the project. “The expectation is that we can provide discrete, small protected areas which will not be disruptive to fishing, while helping the cod stock to recover,” said Mirarchi.

Each electronic tag, once deployed, emits a coded sound roughly once a minute for up to six years, a signal that’s recorded whenever the fish passes within range of a network of receivers deployed on the sea floor by MADMF. Each tag has a unique acoustic signature, allowing scientists to track individual fish using the more than 3 million pings each tag will emit over its lifetime.

“It is sort of like an E-ZPass for fish,” McGuire said.

Researchers are also recording the grunting sounds that male cod make to defend their territories and to attract females. Underwater microphones, deployed by NOAA scientists from the Northeast Fisheries Science Center, will record fish vocalizations, which can be used to characterize the timing of the winter spawning period, as well as the relative abundance when compared to past data. Federal researchers from NOAA’s Northeast Fisheries Science Center (NEFSC) and Stellwagen Bank National Marine Sanctuary use this same equipment to monitor whales.

“Passive acoustics – or listening for cod sounds – is an ideal way to monitor the seasonal presence and persistence of cod spawning aggregations over long time periods,” explained Sophie Van Parjis, of the Passive Acoustic Research Group at NEFSC in Woods Hole, MA.

“Passive acoustic recorders can listen continuously for up to six months, regardless of weather conditions. We are currently looking at historical data for this area (2004-2014), to look at how the presence of cod has changed over time. In addition, our passive acoustic recordings will help define the start and end of the spawning season, so we can more accurately define the time period needed to protect these aggregations,” Van Parjis said.

Atlantic cod is an important species in Massachusetts history. Fishing helped build the state’s economy and remains an important industry. However, the cod population has seen steep declines in the last 20 years and despite drastic measures to reduce fishing pressure, remains at historic lows. This year, local fishermen faced a devastating 78 percent cut in the Gulf of Maine cod annual catch limit.

Ultimately, the fishermen and scientists will bring the spawning data to the New England Fisheries Management Council to inform future management decisions designed to care for this valuable cod population.

### SAVE THIS DATE – 3/12/14!

The next Sanctuary Advisory Council meeting is scheduled for Wed., March 12, 2014. For more information about the meeting, check our website at <http://stellwagen.noaa.gov>

## Stellwagen Bank National Marine Sanctuary seeks advisory council applicants

NOAA’s Stellwagen Bank National Marine Sanctuary is seeking applicants for two primary seats and five alternate seats on its advisory council. The council ensures public participation in sanctuary management and provides advice to the sanctuary superintendent.

The sanctuary is accepting applications for the following seats: at large (primary and alternate); conservation (primary); education (alternate); mobile gear commercial fishing (alternate); recreational fishing (alternate); and whale watch (alternate).

Candidates are selected based on their expertise and experience in relation to the seat for which they are applying, community and professional affiliations, and views regarding the protection and management of marine resources. Applicants who are chosen as members should expect to serve a three-year term.

The advisory council consists of 36 primary and alternate members representing a variety of public interest groups. It also includes six governmental seats representing Massachusetts Environmental Police; Coastal Zone Management; Division of Marine Fisheries; New England Fisheries Management Council; NOAA Fisheries; and U.S. Coast Guard.

Applications are due by **March 31**. To receive an application kit or for further information please contact Elizabeth Stokes via email at [Elizabeth.Stokes@noaa.gov](mailto:Elizabeth.Stokes@noaa.gov); by phone at 781-545-8026 x201; or by mail at 175 Edward Foster Road, Scituate, MA 02066. Application kits can also be downloaded from the sanctuary’s website at <http://stellwagen.noaa.gov/>.

## Seven New Members Added to Sanctuary Advisory Council

**Tracey Dalton (Research)** -- An Associate Professor of Marine Affairs at the University of Rhode Island's Coastal Institute, Dr. Tracey Dalton brings a unique set of skills and expertise to the council. As a social scientist, she has conducted studies on how people use and think about the marine environment, the social and economic impacts of using space in different ways (e.g., no take areas, wind farms, etc.), and participatory processes for planning and managing human interactions with marine environments. She plans on incorporating Stellwagen Bank in her undergraduate course on human use and management of the marine environment and her graduate course on marine protected areas.

**Michael Pierdinock (Recreational Fishing)** -- Captain Mike Pierdinock has been an avid angler all of his life and has fished the Atlantic and Pacific waters from New England to Central America. This experienced recreational angler and charter boat captain on the vessel *Perseverance* usually fishes Cape Cod Bay, Stellwagen Bank area and waters south of the Cape for bottom fish as well as large pelagics. He has authored articles for *On the Water* magazine and other technical publications and serves on the New England Fishery Management Council, Enforcement Advisory Panel; Stellwagen Bank Charter Boat Association, Board of Directors; and Congressman Keating's South Shore Fishery Task Force, Charter/Recreational Seat.

**Alyssa Catalano (Education Alternate)** -- Alyssa Catalano is a teacher-naturalist at the N.E.E.D. Academy in Truro, MA, which is a residential education program that offers a field studies program to fifth grade students from the Falmouth, Dennis-Yarmouth and Monomoy school districts. Her programs cover Cape Cod ecology, biology, geology and natural history. She was introduced to Stellwagen Bank National Marine Sanctuary via a college internship with a whale watch boat based out of Gloucester. At present, she is helping to develop a curriculum entitled "A Caribbean Child's Sanctuary" for our Sister Sanctuary program.

**Charlie Rasak (Business & Industry Alternate)** -- Charlie Rasak is the President, Co-Owner and Creative Director of Creative Resources Group in Plymouth, Mass. With more than 25 years in the industry, his experience encompasses a wide range of market segments, including broadcast, education, corporate, and government. Charlie works directly with clients, creating and integrating media strategies for customized solutions in all areas of communications. A seasoned veteran of film and commercial video production, he has produced commercials for various firms, including Fortune 500 companies and special projects for major television networks as well as profit and non-profit organizations.

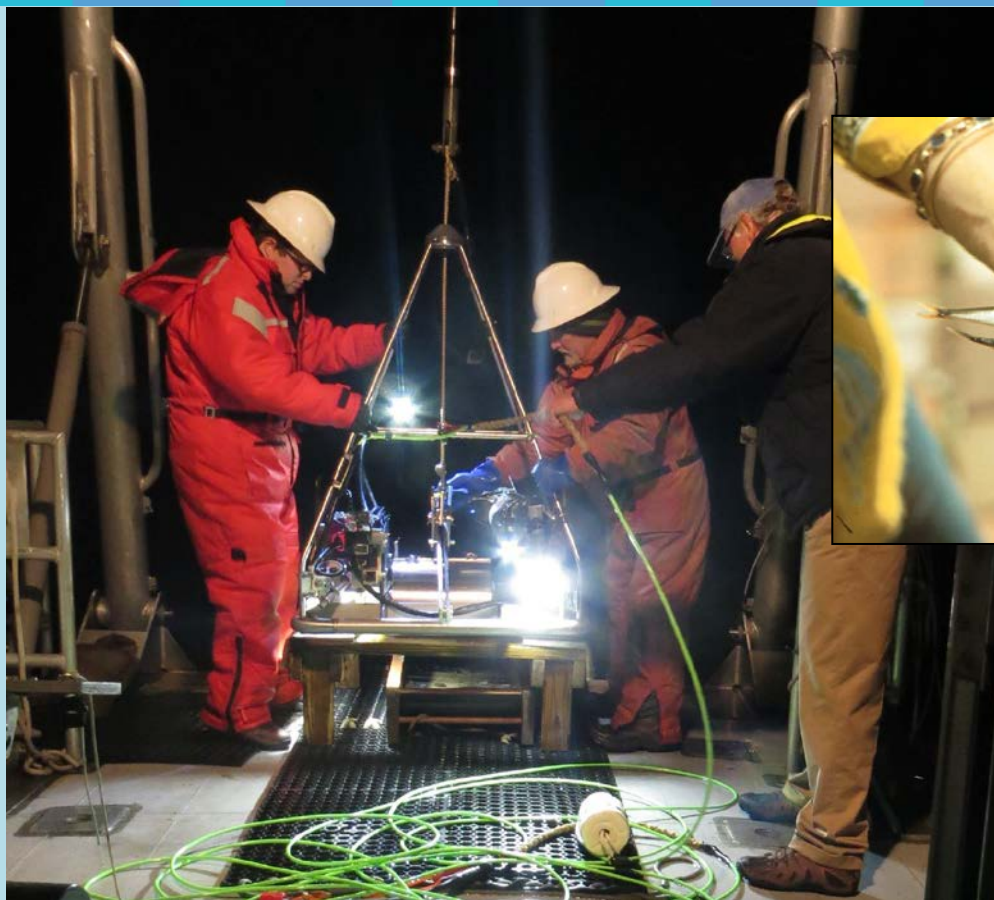
**Kevin Powers (At-Large Alternate)** -- Seabirds have an important role in Kevin Powers' life. Although recently retired after 25 years as an engineer in the disk drive industry, Kevin's initial career began in 1976 as a field biologist with the U.S. Fish & Wildlife Service in Anchorage, Alaska. He soon moved to the Manomet Bird Observatory where he studied the distribution and abundance of marine birds on the continental shelf of the Northwest Atlantic, including studies of the effects of the *Argo Merchant* oil spill. He was recently nominated to serve on the advisory committee for the Massachusetts Fish and Wildlife Natural Heritage Program/Endangered Species Program. He also assists in the sanctuary's shearwater tagging program.

**Christine Guinee (Youth)** -- The Sanctuary Advisory Council Youth Seat will be filled by Christine Guinee, a junior at Cohasset Middle High School. During the summer, Christine volunteers at the Center for Student Coastal Research where she serves as a student leader on the Gulf River Project. At her high school, she participates on the debate, math and robotics teams and holds memberships in the volunteer, great decisions and book clubs. She has participated in the Model United Nations program. A musician, Christine plays the bass clarinet in the concert band and the tenor sax in the jazz band. Her connection to the water includes the school's swim team and rowing with the Cohasset Maritime Institute.

**Kevin Nicolai (Youth Alternate)** -- Kevin Nicolai is a sophomore at the Sturgis Charter Public School in Hyannis and a resident of Chatham. A recreational user of the waters off Cape Cod, he enjoys swimming, fishing, motor boating, sailing and catching lobsters with his dad (with recreational permits). He holds a PADI Rescue Diver certification and has completed more than 45 open water dives. He also holds a Crew certification from International Yacht Training and participates in Sea Scouts. In addition to serving as a member of his school's Model UN team, Kevin plays on the JV soccer team. Kevin sees a role for himself in bringing personal experiences to committee meetings and relaying feedback from the community.



On February 15, sanctuary staff joined headquarters personnel for the annual NOAA Open House in Silver Spring, Maryland, which attracted more than 1,400 visitors. Stellwagen's contribution was "The Child's Sanctuary -- Shipwreck," a project funded by a Preserve America grant.



Sand lance are small, schooling fish that prefer sandy habitats and are a favored prey of humpbacks and other whales. Credit: Center for Coastal Studies.

Sanctuary and USGS researchers prepare the SEABOSS camera/sampling sled for data collection during a November science cruise on the R/V *Auk*. Credit: Anne-Marie Runfola, SBNMS

## Come out! Come out! Wherever You Are? SEABOSS looks for elusive sand lance

Sand lance, small, schooling fish that protect themselves by diving into and burying themselves in sandy habitats, are a key prey species in Stellwagen Bank National Marine Sanctuary. Humpback whales and other fish-eating marine mammals feast on them. Seabirds devour these oil-rich, nutritious morsels, and other fish, such as cod, bluefish and bluefin tuna, also target them. But what happens when there are no sand lance. Researchers from the sanctuary and the U.S. Geological Survey are looking into sand lance abundance and predator-prey relationships. Of particular importance is the apparent cyclical nature of sand lance abundance and the associated presence or absence of whales, seabirds and commercial fish. The first sand lance study cruise occurred in November 2013 on the R/V *Auk* with scientists using the vessel's fishfinder sonar and deploying the USGS's SEABOSS camera/sampling sled from the vessel's stern A-frame. Findings indicated few sand lance detections at 52 locations throughout the voyage, which paralleled the lack seabird and whale sightings in the vicinity. Subsequent cruises and surveys will be reported in future issues of *Stellwagen Bank E-Notes*.

## Do You Know Your Right Whale Speed Zones?

North Atlantic right whales can be found along the East Coast this time of year. To protect this endangered species, a mandatory speed restriction of 10 knots or less is in effect in several Seasonal Management Areas (SMAs).

Cape Cod Bay SMA – in effect through May 15, 2014  
 Off Race Point SMA (including the southern section of Stellwagen Bank National Marine Sanctuary) – in effect through April 30, 2014  
 Mid-Atlantic SMAs – in effect through April 30, 2014  
 Southeast SMAs – in effect through April 15, 2014

For recent right whale sightings, visit: [www.nefsc.noaa.gov/psb/surveys/SASInteractive2.html](http://www.nefsc.noaa.gov/psb/surveys/SASInteractive2.html)  
 For information about WhaleALERT, visit: <http://stellwagen.noaa.gov/protect/whalealert.html>



WhaleALERT is a free iPad/iPhone app designed to augment existing ship navigation tools informing mariners of the safest and most current information to reduce the risk of ship and right whale collisions. Sanctuary scientists lead this multi-organization project.



## Sanctuary Traveling Exhibit Moves to Worcester

Stellwagen Bank National Marine Sanctuary's traveling exhibit *Animals without Passports*, which focuses on humpback whales and the Sister Sanctuary Program, has relocated to the Worcester EcoTarium until late summer 2014. The indoor-outdoor museum, founded in 1825 as the Worcester Lyceum of Natural History, is dedicated to the study of science and nature. In 1884 it was incorporated as the Worcester Natural History Society. In 1998 the organization changed its name from the New England Science Center to EcoTarium. The center welcomes 140,000 visitors a year to three-story museum building with interactive exhibits, outdoor interpretive nature trails, the Alden digital planetarium, and a narrow-gauge railroad. Exhibit funding was provided by the Office of National Marine Sanctuaries and the national Marine Sanctuary Foundation.

The *Animals without Passports* exhibit explores humpback whale biology, behavior and threats to the survival of this endangered species. Stellwagen Bank sanctuary's links to marine mammal sanctuaries protecting this species along its migration route and at its Caribbean breeding/calving grounds are also detailed. The Sister Sanctuary Program created the first international agreements to protect this shared population of endangered humpback whales at both endpoints of its migratory route.

Check the EcoTarium's website for information about hours and entry fees. <http://www.ecotarium.org>. The exhibit continues its regional migration with a stop at the Boston Museum of Science in May.



**News from NOAA:** NOAA Fisheries has changed the name of the Northeast Regional Office. Instead of NERO, the new acronym is GARFO, which stands for Greater Atlantic Regional Fisheries Office. The name change was made to more fully reflect legislative language.

## ONMS announces Voyage to Discovery essay contest

The National Marine Sanctuary Foundation, in collaboration with NOAA's Office of National Marine Sanctuaries, invites 7<sup>th</sup> to 12<sup>th</sup> grade students in the United States to submit an original essay about African-American contributions to the country's maritime heritage.

Entries to the *Voyage to Discovery* Essay Contest will be accepted through April 4. The contest is open to middle and high school students in the United States. Two winners – one high school student and one middle school student – will be selected. The high school student winner will receive a \$1,500 prize for post-secondary education. The middle school student winner will receive a \$500 prize for continuing education.

*Voyage to Discovery* is a multimedia educational initiative highlighting African-American (individual or group) contributions to the country's maritime heritage while fostering increased participation in marine careers and ocean conservation. Entries will be judged on originality, clarity, and content. For specific contest guidelines, visit the *Voyage to Discovery* website at <http://voyagetodiscovery.org>.

## 2014 Marine Art Contest now underway

Students with an interest in art are invited to illustrate one or more of the "Amazing Ocean Creatures of Stellwagen Bank National Marine Sanctuary" in the annual Massachusetts Marine Educators annual marine art contest. Deadline for submissions is May 2. For more information, visit

<http://stellwagen.noaa.gov> or <http://www.massmarineeducators.org>.

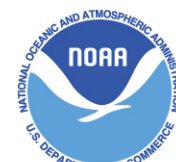
## NATIONAL MARINE SANCTUARY SYSTEM



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

● National Marine Sanctuary  
▲ Marine National Monument

National Oceanic and Atmospheric  
Administration  
National Ocean Service  
Office of National Marine Sanctuaries  
Gerry E. Studds Stellwagen Bank  
National Marine Sanctuary



<http://stellwagen.noaa.gov/>