National Marine Sanctuaries
National Oceanic and Atmospheric Administration
STELLWAGEN BANK NATIONAL MARINE SANCTUARY

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

June 2015

Humpback whale feeding near a whale watch vessel in the sanctuary. Photo by Ari Firedlaender. Photo taken under NOAA Fisheries Research Permit # 775-1875.

Get into Your Sanctuary! program promotes recreation in sanctuaries

Stellwagen Bank National Marine Sanctuary joins with the 13 other sites in the national marine sanctuary system (12 other sanctuaries and one marine national monument) to celebrate Get Into Your Sanctuary days on June 27 and 28. The campaign promotes awareness of sustainable tourism and recreation opportunities within the sanctuary and, secondarily, invites visitors to share their experiences through social media.

June 27-28
#VisitSanctuaries

In This Issue:

EDITOR: Anne Smrcina

To receive notices about new issues or to provide feedback on this publication, contact us at stellwagen@noaa.gov or 781-545-8026 and provide your e-mail address. This information will be held securely and not released to any outside organization or individual.

Find us on Facebook www.facebook.com/SBNMS

YouTube www.youtube.com/user/SBNMS

@NOAASBNMS

Boston Harbor Cruises launches new whale watch vessel named *Sanctuary*

In honor of the sanctuary and its rich resources, Boston Harbor Cruises is naming its newest whale watch vessel *SANCTUARY*. A ceremony will be held at Central Wharf on Friday, June 26, kicking off the national "Get Into Your Sanctuary" weekend celebration.

The vessel is the former *Voyager III*, which has undergone extensive refitting and updating, according to Boston Harbor Cruises. It will be dedicated to serving as one of BHC's New England Aquarium whale watch vessels throughout the summer months.

Sanctuary Classic fishing photo contest begins July 3

This summer marks the return of the Sanctuary Classic, a fishing photo contest designed to promote recreational opportunities and reward conservation-minded recreational angling in the national marine sanctuaries. The contest opens on Friday, July 3 and ends on Labor Day, Monday, September 7.

Entrants register online and enter their fishing photos through the http://sanctuaryclassic.org website. Each week one entrant will be awarded a pair of Costa sunglasses. At the end of the contest, the Guy Harvey Oceans Foundation will present up to 13 $1,000 scholarships – one for each sanctuary – for youth photos selected by a panel of judges, including marine artist Guy Harvey. Photos will be judged on how well they display one of more of the following criteria: Biggest (Looking) Fish; Smallest (Looking) Fish; Best Conservation Message; Best Display of Responsible Fishing Values; Guy Harvey Spirit; Most Family Oriented Photo; Most Unique Looking Fish; and Largest Fish Compared to Angler.

Sanctuary Classic sponsors are the Office of National Marine Sanctuaries, the Guy Harvey Oceans Foundation and The Sportfishing Conservancy.

SANCTUARY CLASSIC

10 Ways to Get Into Your Sanctuary!

Stellwagen Bank National Marine Sanctuary is a valuable treasure – a special wild place near an urban world. Located 25 miles east of Boston, three miles north of Provincetown and three miles southeast of Gloucester, the sanctuary is part of a productive ocean ecosystem at the mouth of Massachusetts Bay.

Here are 10 ways you can get into your sanctuary – most of them without getting wet.

1. Go on a whale watch. Daily trips leave from Provincetown, Barnstable Harbor, Plymouth, Boston, Gloucester and Newburyport. Private charters are also available from several ports.

2. Birdwatch from a whale watch vessel. Use this vessel of opportunity for sightings of pelagic and coastal seabirds.

3. SCUBA dive on a sanctuary shipwreck or an interesting seafloor habitat. Encounter crabs, lobsters, shrimp, and a variety of fishes during charter trips offered by several local boats.

4. Try your hand at deep water fishing. Fishing charters and party boats depart from numerous ports and harbors along the Mass. coast.

5. Cruise through sanctuary waters on a private boat on charter vessel (but make sure to check weather and sea conditions and forecasts).

6. Visit the sanctuary's "Animals without Passports" (humpback whale) exhibit at the Boston Museum of Science. See another sanctuary humpback exhibit in Provincetown at the Center for Coastal Studies' S.E.A. Space.

7. View a deep boulder reef and a sandy bank in the New England Aquarium's sanctuary exhibit area in the Gulf of Maine cold water gallery.

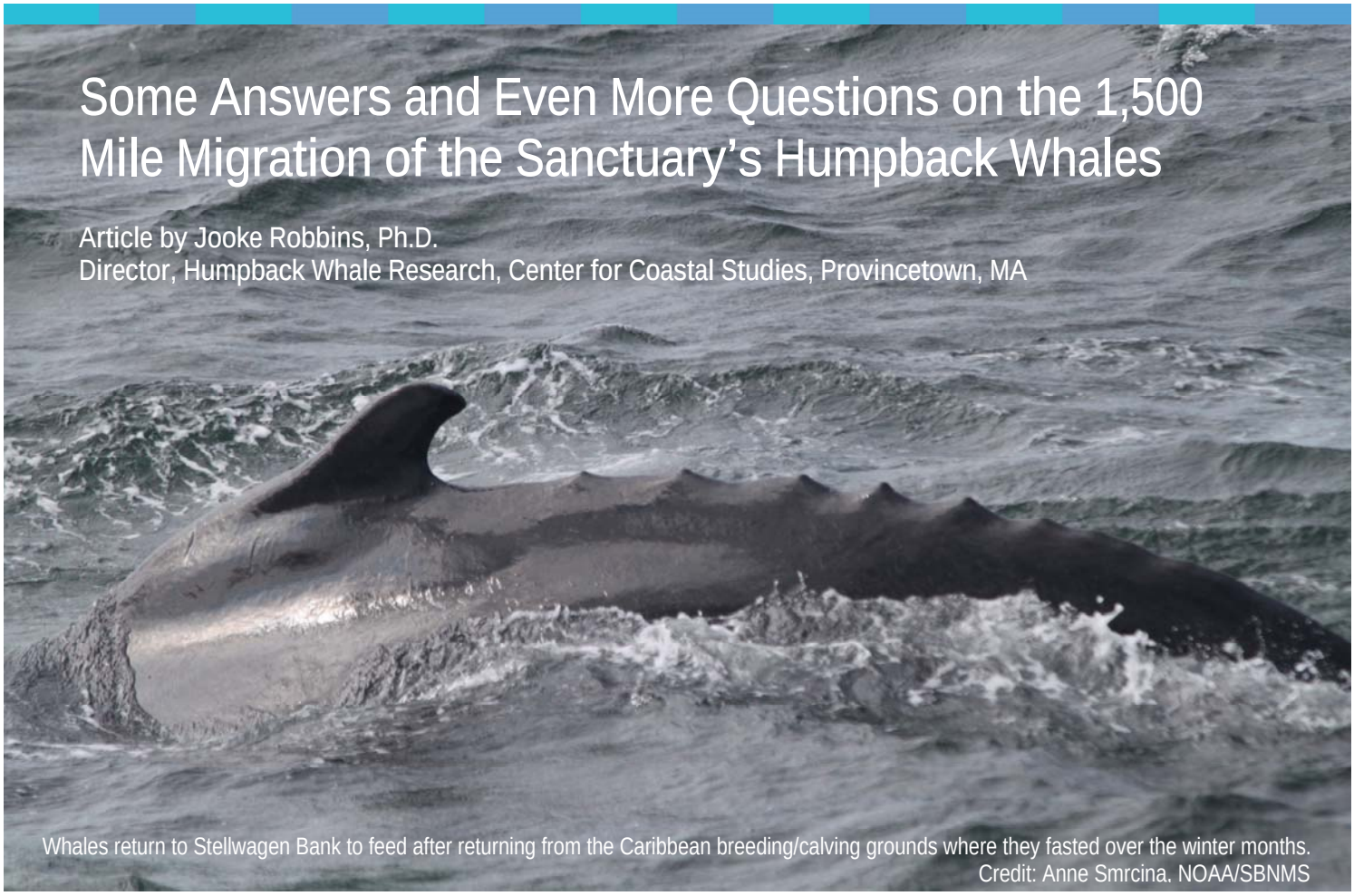
8. Explore the Stellwagen Bank Sanctuary Hall at Maritime Gloucester to learn about seafloor geology, whale research, fish species and shipwrecks. Visit the Cape Cod Museum of Natural History and the Harvard Museum of Natural History to view sanctuary species.

9. Listen to sanctuary stories and view images and video from the sanctuary at the ***Fathom That!*** audio tour (781-304-1013) and mobile website https://bycell.mobi/stellwagen.

10. Visit our website http://stellwagen.noaa.gov .

Some Answers and Even More Questions on the 1,500 Mile Migration of the Sanctuary's Humpback Whales

Article by Jooke Robbins, Ph.D.
Director, Humpback Whale Research, Center for Coastal Studies, Provincetown, MA



Whales return to Stellwagen Bank to feed after returning from the Caribbean breeding/calving grounds where they fasted over the winter months. Credit: Anne Smrcina. NOAA/SBNMS

Humpback whales migrate annually between mid- to high-latitude feeding grounds and low-latitude breeding grounds. Although distances vary, most travel thousands of kilometers each year and some undertake the largest migrations of any mammal. After decades of research, scientists are still struggling to understand this behavior and managers are still developing strategies to protect them effectively across their critical habitats.

Much of what we know about the movements of humpback whales in the North Atlantic comes from recognizing individuals in different parts of their range. Each humpback whale has a unique pattern of pigmentation and markings on the underside of the tail, and this pattern can be photographed each time the whale raises its tail to dive. Scientists maintain catalogs to keep track of the individuals that they study, and they share sightings with each other through an ocean-scale archive known as the North Atlantic Humpback Whale Catalog. This allows us to collaboratively piece together the movements of individuals, even over great distances.

One of the first humpback whales matched in this way between its breeding and feeding grounds was a humpback whale known as "Salt". She was photographed by researchers off the Dominican Republic in the late 1970s and then linked to a very regular sighting history on feeding grounds off New England. In fact, "Salt" has now been documented several times on her breeding grounds, as well as every single year on her feeding grounds since 1976. She has brought 13 offspring back to New England over the years. Whales like "Salt" have taught us that humpback whales imprint on the feeding ground where they were brought as a calf, and they return to it each spring. In addition to the waters off New England (Gulf of Maine), there are other major feeding grounds off Canada, west Greenland, Iceland and Norway.

SANCTUARY TRIVIA
Stellwagen Bank National Marine Sanctuary claims "Salt" as the Grand Dame of its humpback whales

The first insights into the duration of migration in the North Atlantic also came from individually identified animals. In the early 1980s, a female named Vega was seen in the Caribbean and New England (a distance of 2,684-km) only 34 days apart. A male named Trunk did a similar journey in no more than 43 days. Satellite tags now provide us with a more precise view of the routes taken, swimming speeds and trip duration. Tags deployed in the Caribbean just in the past decade have confirmed that the northbound migration can take an individual whale between one to two months, depending

continued on next page

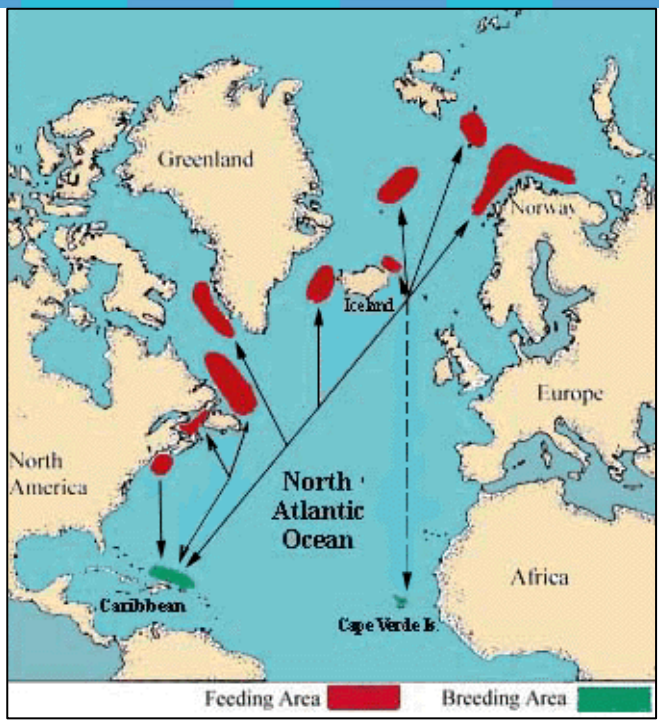
Humpback Migration *(continued from page 4)*

on the feeding ground destination. The migration distance to sites in the eastern North Atlantic can approach 7,000-km each way. As you might expect for such long transits, their courses are amazingly straight and largely set from the moment that the whales leave the Caribbean.

Individuals do not migrate all together, but rather follow timing that depends on their reproductive status each year. Mature females nearing the end of lactation are the first to migrate toward the breeding ground, followed by juveniles, mature males, "resting" females that are neither pregnant nor lactating, and finally females in late pregnancy. This pattern is roughly reversed on the return migration, with pregnant and resting females leaving first for their feeding grounds and females with new calves leaving last. These patterns make sense when you consider that humpback whales do not feed on their breeding grounds. Instead, they live off of the energy that they store in fat over the course of the previous feeding season. Once a female mates and becomes pregnant, she is thought to have little to gain from remaining on the breeding grounds. Instead, she returns to her feeding ground to accumulate the reserves she will need for lactation next year. Mature males may remain on the breeding grounds as long as they can to maximize their mating opportunities. Finally, late pregnant females benefit from storing as much energy at the end of the feeding season as possible. Once born, their calves will likely benefit from an extended period of nursing before undertaking the migration north.

The question remains as to why most humpback whales separate their feeding and breeding grounds at all. Part of the answer likely lies in the genetic diversity that can result when an entire population mates on a shared breeding range. Most scientists also assume that giving birth at low latitudes contributes in some way to healthy offspring. Some have hypothesized that migration is a form of predator avoidance, because killer whales are observed less regularly at low latitudes. However, it is possible that the water temperature may also be important for the humpbacks themselves, as breeding sites world-wide are better defined by a specific water temperature range (21-28 degrees Celsius) than by a specific latitude. Humpback whale calves probably do not actually require warm water to survive, but it is conceivable that they may benefit from extended residency in warm water when they are very young. It may be that the longer that a mother can nurse her newborn in warm water, the faster that calf may grow and the more resilient it may be to future hardships.

Whatever the reasons, the long distance migrations of North Atlantic humpback whales pose challenges for management and protection. Fortunately, the Wider Caribbean Region is part of the first international marine mammal protected area network in the world. Follow this link to read more about the Sister Sanctuary Program at http://stellwagen.noaa.gov/sister/



June is Great Outdoors Month

Every state in the nation has proclaimed the month of June as Great Outdoors Month. The campaign started as a week-long salute to the outdoors under President Clinton and has grown under Presidents Bush and Obama to its present month-long celebration of nature, the environment and recreation.The project is sponsored by the American Recreation Coalition. Look for more information, including a proclamation and public service ad by Mass. Governor Charlie Baker, at http://www.greatoutdoorsmonth.org.

The Commonwealth of Massachusetts

A Proclamation

Whereas Massachusetts has a proud legacy of parks, trails, beaches, campgrounds and forests that play an integral role in contributing to our quality of life; and

Whereas We celebrate Great Outdoors Month to promote biking, swimming, camping, hiking and other outdoor recreation that helps children and youth have fun, exercise, and engage in healthy lifestyles in the great outdoors; and

Whereas Great Outdoors Month includes connecting people with nature through initiatives including Outdoor Kitchen, Healthy Heart Trails, the MassParks Adventure Guide Mobile Application, and the Great Park Pursuit and ongoing interpretive nature programming; and

Whereas We continue our support of National Trails Day, the Great American Campout, Every Kid in a Park and National Get Outdoors Day and other special national programs that feature the natural, cultural, and recreational treasures of our state park system; and

Whereas We invite first time campers to our first Capital Campout during Great Outdoors Month and to our Becoming an Outdoors Family Camping Programs to experience the awe of sleeping under the stars; and

Whereas We collaborate with America's State Parks and the National Park Service to promote the Find Your Park campaign by encouraging people to understand the importance of local, state and national parks to our physical and emotional well-being as well as to our local, state and national economies, and to use social media to share their experiences with others; and

Now, Therefore, I, Charles D. Baker, Governor of the Commonwealth of Massachusetts, do hereby proclaim June, 2015, to be,

GREAT OUTDOORS MONTH

God Save the Commonwealth of Massachusetts

June is National Ocean Month

RV *Auk*'s summer schedule fills up with exciting research projects

The Stellwagen Bank National Marine Sanctuary's research vessel *Auk* has a busy summer ahead of it, as it already began the research season with cruises to study internal waves (generated by tides and their interaction with Stellwagen Bank) and to monitor sand lance (a key prey species in the sanctuary.

The latter part of June was set aside for humpback and fin whale tagging. Researchers apply small recording units on the backs of whales via suction cups to track movements underwater (see photo on back page).

Other planned research includes tagging of Great shearwaters, a common summer seabird that may prove to be an excellent indicator of ecosystem health, seabird monitoring surveys for species diversity and density, and the deployment and, later in the year, recovery of gliders (autonomous underwater vehicles) for the detection of cod vocalizations and potential spawning grounds.

The R/V Auk will also be used to support undergraduate student research in the sanctuary.

R/V *Auk*'s team begins whale tagging operations on a misty morning. Photograph courtesy of Boston Harbor Cruises.

You Said It!

"You Said It!" – an interactive activity in two parts.

1. Readers are invited to submit their captions for the selected photo of the month. The caption can reflect the "real" description of the item, event or place or the caption can be a "humorous" interpretation of the image.
2. Please refrain from crude, sexist or other inappropriate language. Sanctuary staff will vote for their favorite selection; the winning entry will be posted in the following issue of *E-Notes*. Winners in each category get a sanctuary poster; names will be included if desired. If no entries are received, sanctuary staff will provide answers.

June 2015 Photo

Submit your entries to: stellwagen@noaa.gov. In the subject line of your email write: June 2015 (real or humorous) caption. Include your name and mailing address in the body of the email text along with your caption.

May 2015 Answers

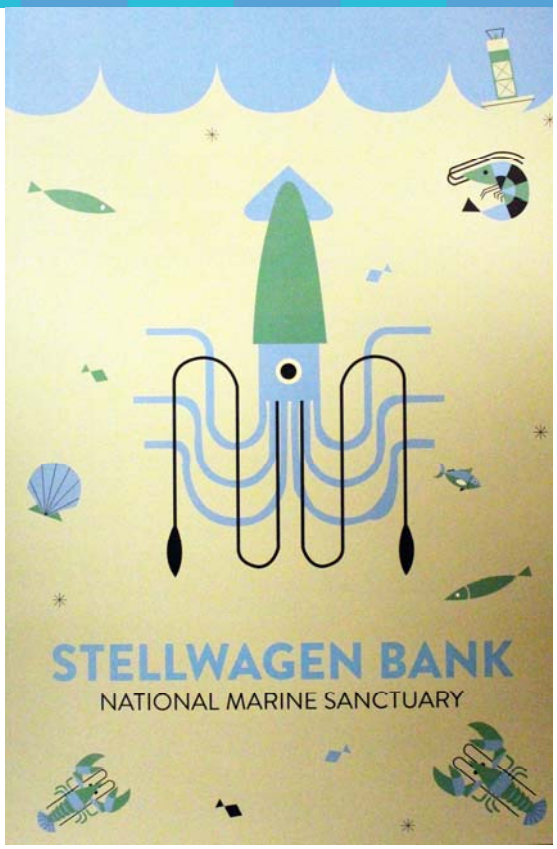
REAL:
Northern gannets typically make near vertical dives in their hunt for food – usually small prey fish, such sand lance and herring. The head and the neck of the bird survive these dramatic dives with internal air bag-like structures and strong skulls to absorb the shock of hitting the ocean after a drop of 50 feet or more. Along with the swift dive, the birds are highly maneuver-able underwater.

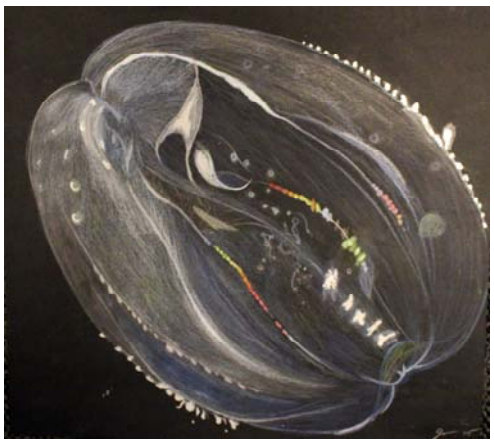
HUMOR: Better hope there's no whale under there!
Oh, man. I'm going to regret this tomorrow.

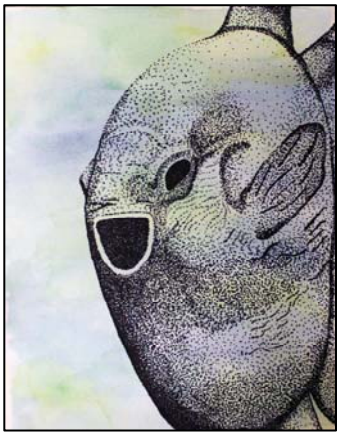
.

2015 K-12 Marine Art Contest Winners Announced

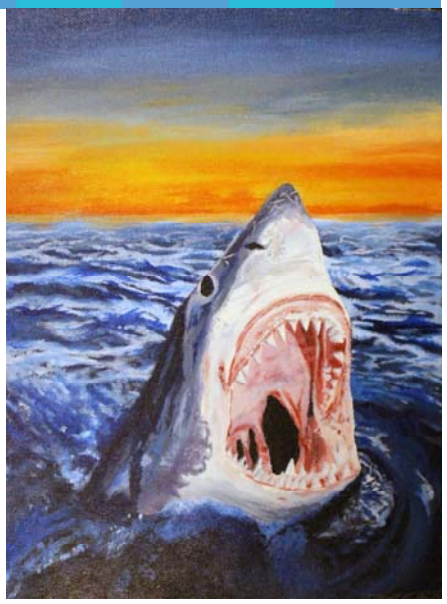
Results of the 2015 Marine Art Contest for students in grades K-12, sponsored by the Massachusetts Marine Educators and co-sponsored by the sanctuary, New England Aquarium, Center for Coastal Studies and Whale and Dolphin Conservation, have been announced. All winning artwork and honorable mention pieces will be posted on the sanctuary website in July. The theme of the contest was "Amazing Creatures of Stellwagen Bank National Marine Sanctuary" and more than 750 entries explored the diversity of species in the sanctuary. The artwork included on these pages includes some of the award-winning work from each of the categories – High School (gr. 9-12), Middle School (gr. 5-8), Elementary School (gr. K-4), Scientific Illustration (all grades) and Computer Graphics (all grades). A collection of this art will begin a year-long tour later in the summer.



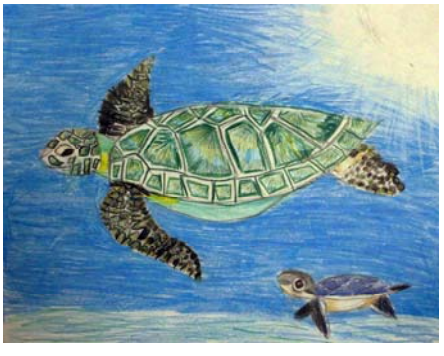


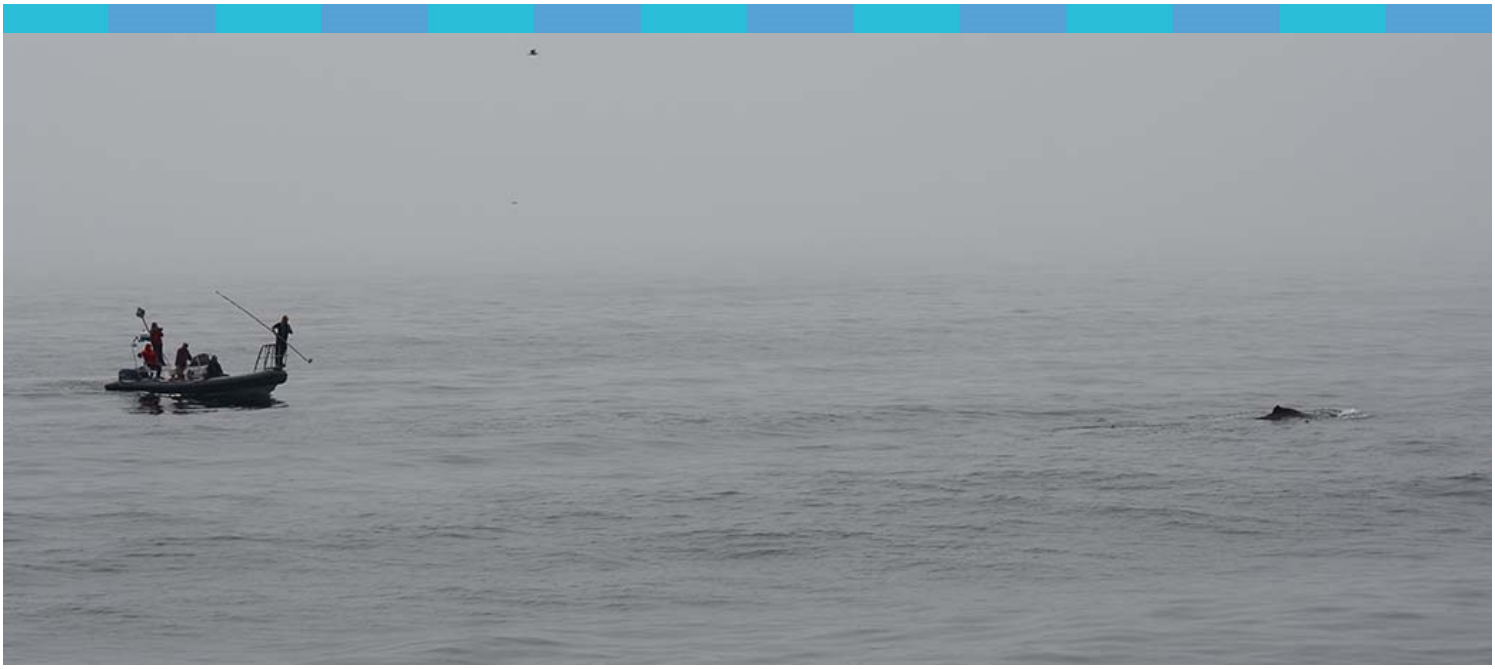


Art (clockwise from top left): *Ctenophore* by Gina Trott, Nausett Reg HS; *Ocean Sunfish* by Shaye Ellard, Nauset Reg HS; *Squid Design* by Jasmyne Dias, Old Colony Reg Voc Tech HS; *Pseudocalanus Copepod* by Kyle Gilmore, Nauset Reg HS; *Red Phalarope* by Kaitlin McManus, Falmouth HS; *Feeding Humpback* by Erik Z., Jonas Clarke MS, Lexington; *Atlantic Puffin* by Rebecca Kielar, Jonas Clarke MS; *Sea Butterfly* by Shyaman Zhang, Washtenaw Int'l HS, Canton, MI; *Octopus* by Morgan B., Marshall Simond MS, Burlington.



Art (left column, top to bottom): *Striped Bass & Bluefish* by Calvin Toran-Sandlin, Falmouth HS; *Hagfish in knot* by Allegra Martin, Nauset Reg HS; *Sea Robin* by Eloise B., Teaticket Elem Sch; *Humpback Graphic* by Kaitlynn Davis, Norfolk County Agr HS; (middle column, top to bottom): *Acadian Hermit Crab* by Andrew T., William Diamond MS; *Humpback Whale* by Bella Branlund, Nauset Reg HS; *Green Sea Turtle* by Junki B., Jonas Clarke MS; (right column, top to bottom): *White Shark* by Raissa Li, Luckie Art Studio, Lexington; *Atlantic White-Sided Dolphin* by Claire M., Jonas Clarke MS; *Red-Gilled Nudibranch* by Jamin S., Jonas Clarke MS; *Sea Turtles* by Candice L., Bridge Elem School.





Sanctuary research team prepares to tag a humpback whale during the 2015 June research cruise under a NOAA Fisheries research permit. A RHIB (rigid-hulled inflatable boat), deployed from the R/V *Auk*, is used for close approaches to the whales. Photo courtesy of Boston Harbor Cruises.

earth is blue

View a new collection of fascinating photographs and an intriguing video every week from your national marine sanctuaries at http://sanctuaries.noaa.gov/earthisblue.html

Visit our exhibit booths at

Barenaked Ladies Concert

June 29

EarthFest, Boston Common

July 18

Stellwagen Bank National Marine Sanctuary will host booths at the Barenaked Ladies concert at the Blue Hills Tent in Boston on June 29 and at EarthFest on the Boston Common on July 18, courtesy of REVERB.

Stop by and post a picture from our tent, enter a raffle for whale watch tickets donated by Boston Harbor Cruises, or talk to one of our staff members about volunteer opportunities.

National Oceanic and Atmospheric Administration

National Ocean Service

Office of National Marine Sanctuaries

Gerry E. Studds Stellwagen Bank National Marine Sanctuary

NOAA

National Marine Sanctuaries

http://stellwagen.noaa.gov/