

STELLWAGEN BANK E-NOTES: *sanctuary news & events* December 2015



Sand lance scatter as a humpback whale lunge feeds in the sanctuary. Credit: NOAA/SBNMS. Photo taken under NOAA permit # 605-1904.

Humpback whale sightings in sanctuary continue into November



Credit: NOAA/SBNMS

2015 was a very good year for whale watching, with many companies continuing to schedule trips well into November. Fair skies and seas, especially on weekends, and consistent appearances of sand lance schools, kept the whales in sanctuary waters throughout the season, which started in early April. Sanctuary researchers also benefited; 17 whales were tagged this year for studies of whale behavior. See page 2 for more information.

Ghost On Board

Although he appeared to be a friendly ghost, this balloon found floating in the sanctuary could have created serious problems for local wildlife. See the story on page 4.

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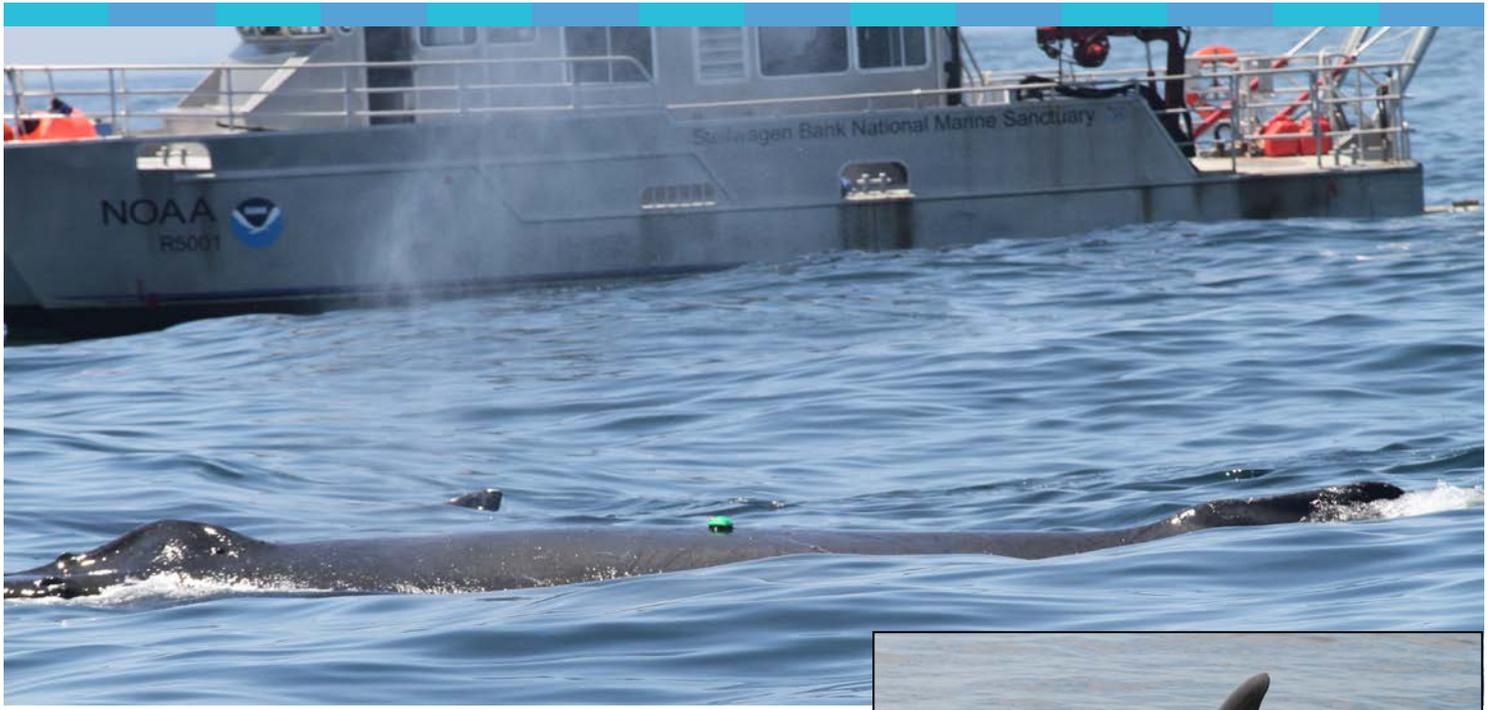


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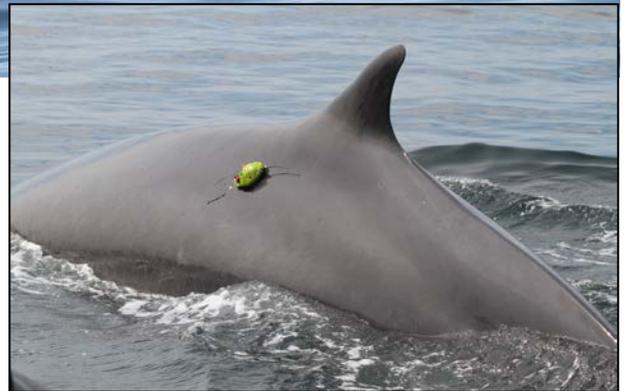
Summary of 2015 whale tagging research

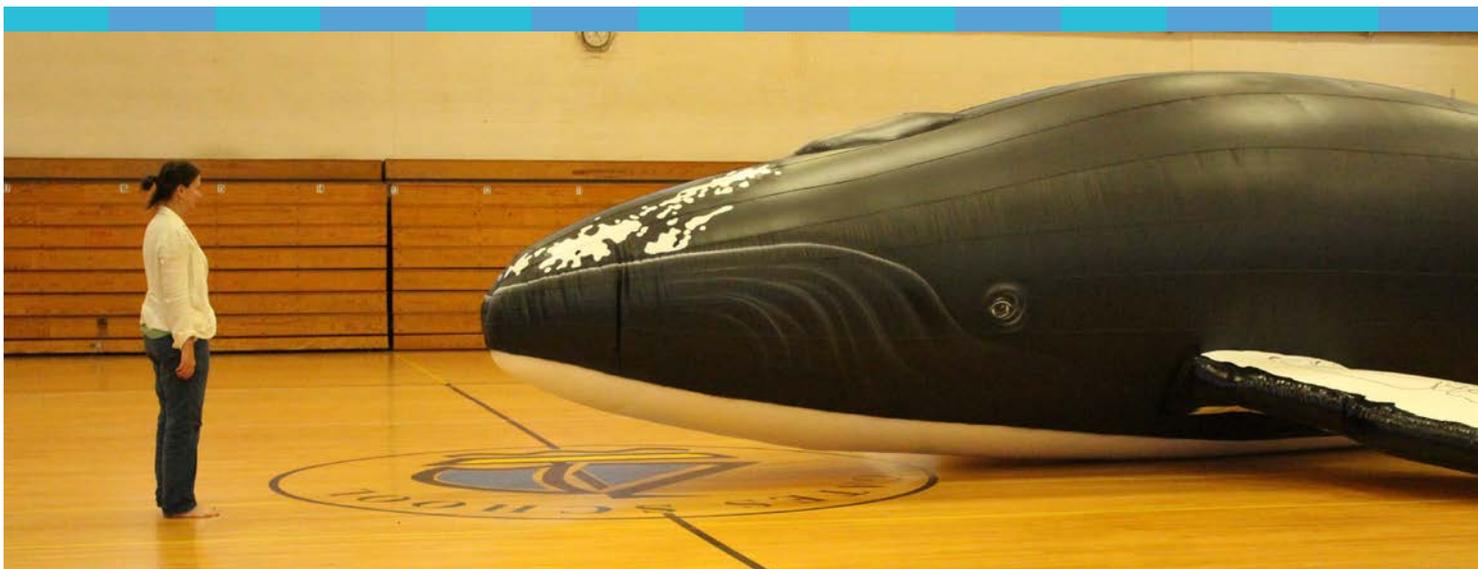
What do the humpback whales, Colt and Mouse, have in common? These two whales wore data tags this past summer, along with Embroidery, Entropy, Ganesh, Inchworm, Iota, Moray's calf, Mudskipper, Springboard and Swimmer. In addition, researchers were also able to tag six fin whales.

These 17 whales join 133 other whales whose under-water behaviors have been recorded since 2004. Researchers used a variety of data recording equipment, including digital acoustic recording tags (Dtags) that capture depth, direction, pitch, roll and sounds made and heard, and the Crittercam video recording unit from National Geographic Society. All of these tags use safe, non-invasive suction-cups for attachment.

From June 16 through June 25, the team, under the direction of sanctuary research coordinator David Wiley, searched for appropriate test subjects, eventually tagging known male and female humpbacks and several whales of unknown sex (including the calf and most of the fin whales). Humpback whales in the sanctuary are well known from years of whale watch and research observations and have been named to simplify identification. They generally receive their names from the pigmentation and scarring patterns on the undersides of their tails, which are unique to each whale. Fin whales are less well studied and more difficult to identify – usually from scars and faint pigmentation patterns on their backs.

Photos (from top): A humpback whale with one of the Dtags cruises past the sanctuary's research vessel Auk; a Dtag sits on the flank of a fin whale that is preparing to dive – attachment of tags to this species was more difficult due to their smoother skin; a pole-mounted Crittercam is ready for tagging; the Crittercam sits on the back of a lobtailling humpback. Credit: Jenn Tackaberry, photo taken under NOAA Permit #14809.





SALT II

Inflatable whale becomes sanctuary's largest ambassador

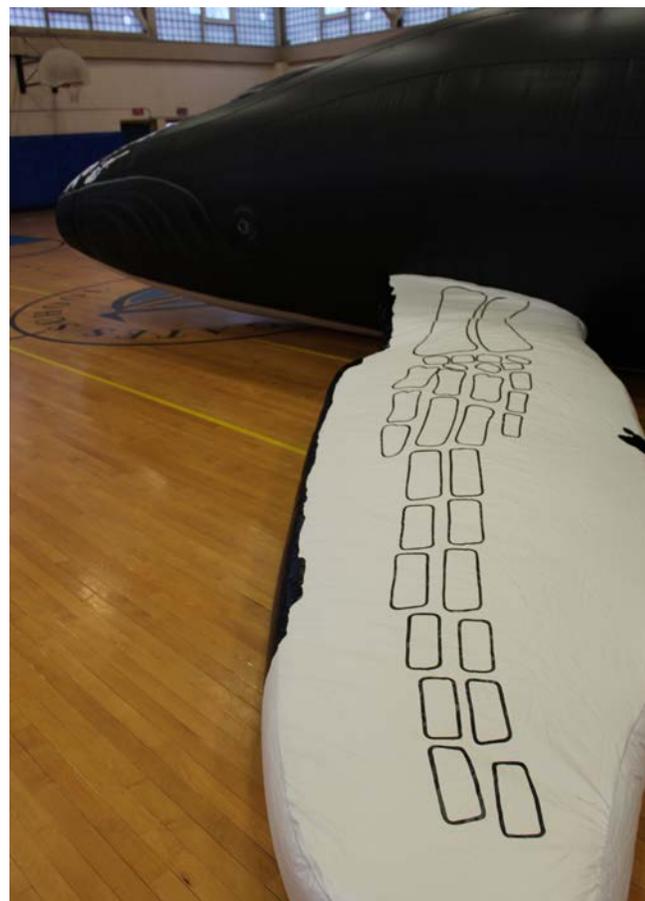
A life-sized inflatable humpback whale, modeled after a whale named “Salt” (the grand dame of Stellwagen Bank humpbacks), arrived at the sanctuary office, packed in two cases. In a “birthday” celebration at the Gates Intermediate School gym in Scituate, the cases were opened and the contents displayed for the first time, accompanied by a rendition of “Happy Birthday” and the consumption of cake and ice cream by the students of the Environmental Club.

The purchase of the 43-foot-long model was made possible by a grant from the National Marine Sanctuary Foundation and NOAA Fisheries. The whale inflates with a fan in only a few minutes. Once inflated, the whale can be entered via a door in her side. On display are major organs – heart, lungs, digestive system, backbone and ribs. LED lights provide illumination inside the “body” cavity. On the outside of the model, the underside of the whale’s tail shows the distinctive pattern unique to Salt, and an artist’s representation of the bone structure has been painted on one of the flippers.

Salt supplements the sanctuary’s “homemade” inflatable North Atlantic right whales, “Lefty” and “Delilah,” constructed from large sheets of plastic tarp with the help of area high school students. All of the whales will be used in traveling education programs that visit libraries, schools and other venues, staffed by sanctuary educators and a growing corps of volunteers and education partners. For more information about sanctuary whale education and/or volunteer programs, email stellwagen@noaa.gov.

Photos (from top): Sanctuary volunteer coordinator Anne-Marie Runfola checks out the inflatable humpback whale named Salt; the whale’s flipper bones resemble human hand bones, with some significant size differences; a journey into the inside of the whale reveals internal organs.

All photos by Anne Smrcina, NOAA/SBNMS

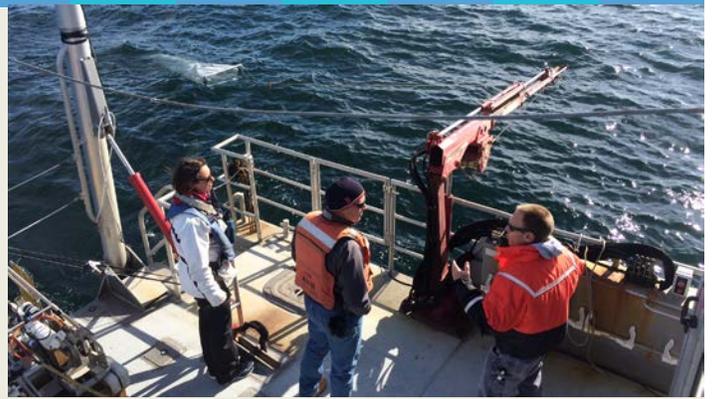


Sanctuary serves as living laboratory

High school students and teachers from the Cohasset Center for Student Coastal Research traveled into the sanctuary on Halloween, not as trick-or-treaters but as full-fledged researchers. The students deployed two center-made satellite-linked drifters to track ocean currents and conducted a 15-minute plankton net tow for microplastics. This applied hands-on research gives the students valuable real-world experiences and provides the sanctuary with site-specific data in fields not normally targeted by sanctuary research programs.

On the way home from the sanctuary, the team confronted “Casper” the floating ghost; the partially deflated Mylar balloon was bobbing at the surface (see photo on page 1). The R/V *Auk* crew and students rescued the ghost in order to dispose of it properly.

Lost balloons, and especially large-scale balloon releases, contribute dangerous debris items into the marine environment. Floating plastic bags and sheeting and balloons of various types and sizes can be mistaken for jellyfish, an important prey item for sea turtles and other marine life. The ingested items can clog digestive tracts, leading to starvation or other lethal health threats. Microplastics, the focus of the plankton tow, can be eaten by fish, birds and invertebrates and move up the food chain, with potentially serious problems for animals and humans.



Photos (clockwise from top): The R/V *Auk* tows a plankton net through sanctuary waters; collected plankton and microplastics will be analyzed at the Cohasset Center for Student Coastal Research; a drifter, which will measure ocean currents is readied for deployment. Photos: Ben Cowie-Haskell, NOAA/SBNMS

Ghostly Fogbow

During an October cruise, sanctuary researchers viewed this weather phenomenon. As the R/V *Auk* broke out of a fogbank at mid-day, the sun's light hit the fog's water molecules. The ray's high angle prevented the normal prismatic separation of light from becoming a typical rainbow. Instead, the light hitting the fog stayed white (with shadowed underside), creating this ghostly arch – a fogbow.. Photo by Ben Cowie-Haskell, NOAA/SBNMS.



Credit: NOAA/SBNMS

K-12 Student Marine Art News

Traveling Exhibit

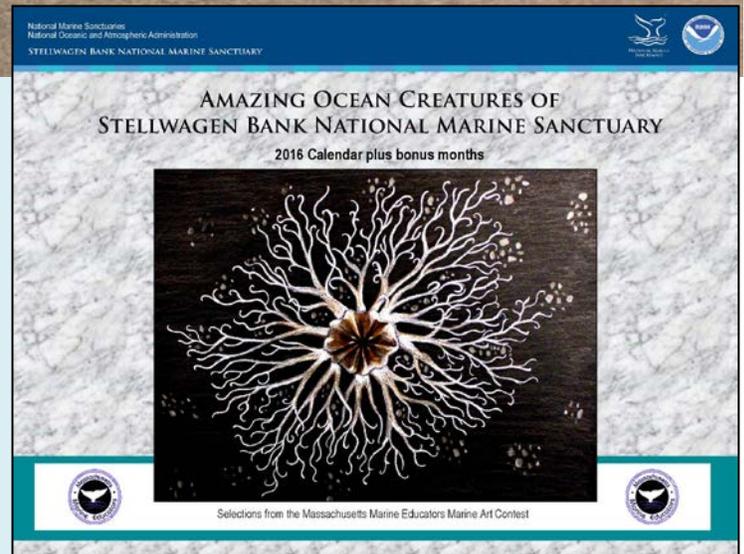
Winning art from the Massachusetts Marine Educators 2015 marine art contest begins its tour at the J.F.K. Federal Building in Boston's Government Center. The show will remain in the lobby between the high and low towers until mid-December. In January the exhibit will move to the Rhode Island Audubon Environmental Education Center in Bristol, RI for the month.

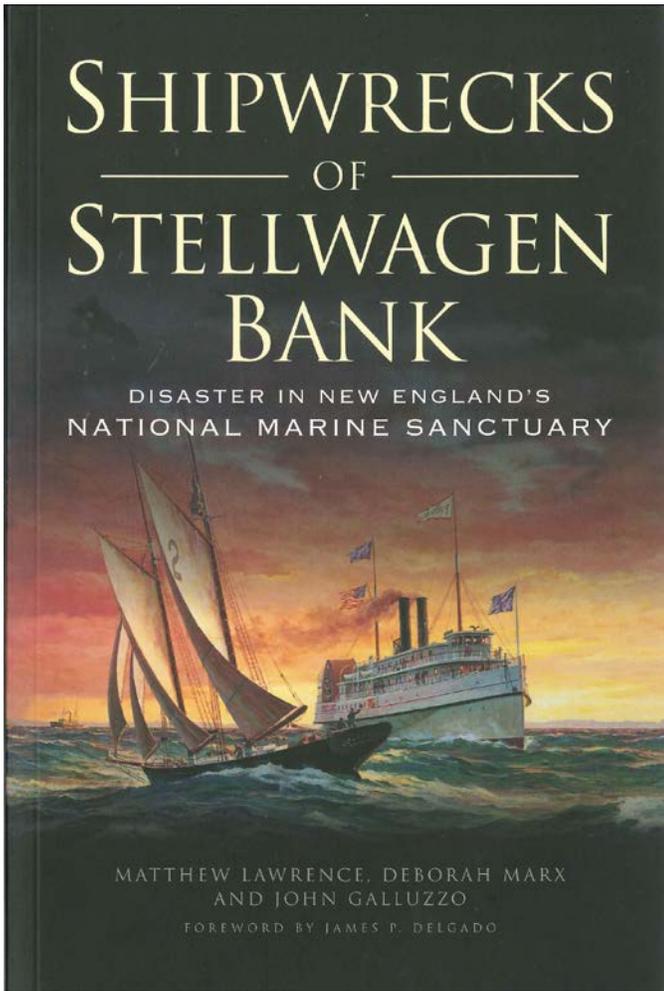
2016 Marine Art Calendar

A 2016 calendar that showcases all prize winning and honorable mention art from the Massachusetts Marine Educators annual marine art contest is now available for download from the sanctuary website (<http://stellwagen.noaa.gov>); high and low resolution versions are available in pdf format. You can download the entire document or individual months.

2016 K-12 Art Contest

Massachusetts Marine Educators has announced the 2016 Marine Art Contest for grades K-12. The contest is open to all students and is free of charge; divisions are High School (grades 9-12), Middle School (4-8), Elementary School (K-4), Scientific Illustration (all grades) and Computer Graphics (all grades). Joining MME as sponsors are Stellwagen Bank National Marine Sanctuary, New England Aquarium, Marine Genome Legacy at Northeastern University., Center for Coastal Studies, and Whale and Dolphin Conservation. The deadline is April 29, 2016; and the theme is "Marine Biodiversity of Stellwagen Bank National Marine Sanctuary. Contest rules can be obtained from the MME website at www.ma-marine-ed.org or the sanctuary website <http://stellwagen.noaa.gov>.





Explore sanctuary shipwrecks in newly published book

Sanctuary maritime archaeologists Matthew Lawrence and Deborah Marx and Sanctuary Advisory Council At-Large member John Galluzzo wrote a book that reveals some of the exciting stories of maritime disasters that occurred in the waters of what is now Stellwagen Bank National Marine Sanctuary.

The 144-page book covers the ill-fated last voyage of the coastal steamship *Portland*, the loss of coal and granite schooners, workhorses of maritime trade, and other captivating tales of maritime tragedies and recent investigations of these sunken vessels.

The book is available online through the National Marine Sanctuary Foundation at https://store.nmsfocean.org/category_s/2.htm.

All proceeds from the sale of the book will benefit maritime heritage conservation.

You Said It!

"You Said It!" – is your chance to contribute to the sanctuary newsletter.

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 next issue of "Stellwagen Bank E-Notes." Winners in each category get a sanctuary poster.

November 2015 Photo



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

August 2015 Answers



Photo by David Wiley, SBNMS, taken under NOAA Fisheries Permit #14245.

REAL:

A humpback whale propels itself completely out of the water. The action, called a breach, will end up with the animal landing on its back with a resounding splash. This type of breach, showing the full body, is rarely seen.

HUMOR:

Look Ma – No hands!
What – you've never heard of a levitating leviathan?
Beware below!!!

Volunteer appreciation whale watch marks a season of active participation and program growth

On August 30, 120 Stellwagen Bank National Marine Sanctuary volunteers and their guests took to the water to view whales, seabirds and other marine life in the special marine protected area they treasure. The group included representatives from the Stellwagen Sanctuary Seabird Stewards (S4); Youth Ambassadors; sanctuary advisory council; Stellwagen Bank Coast Guard Auxiliary Patrol; and a variety of technical specialists (editorial and photographic skills, data logging, GIS, whale observers) and generalists (a total of 120 volunteers) which, over the past year, helped contribute 8,353 hours of time to assist sanctuary operations. The trip was sponsored by the National Marine Sanctuary Foundation as thanks for the generous contributions.



Photos (clockwise from top left): Sanctuary Superintendent Craig MacDonald welcomes the volunteers while Volunteer Coordinator Anne-Marie Runfola looks on; underwater technology pioneer Marty Klein looks out over the top of the waves this trip; Evelyn Ganson, volunteer "supreme" with more than 341 logged hours chats with Craig; S4 birders keep watch for both seabirds and whales. Below: a humpback calf checks out the whale watch vessel -- eventually its mother came up from below to escort her calf.



Photos (top to bottom): A humpback whale spouts at the one o'clock position; sanctuary advisory council member John Galluzzo's son practices with his dad's camera; Wayne Peterson of Mass Audubon (another SAC member) searches for seabirds; Youth Ambassadors cluster on the top deck. Photos: Anne Smrcina, NOAA/SBNMS

Line in the sky

A gray streak stretches across the sky and appears to touch the ocean's surface. This is the shadow of the contrail from a jet, probably on its way to Europe or other points east. Due to the curvature of the earth, the track looks like it falls into the sea, but, in truth, it continues on its very high atmospheric flight.



earth is blue

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VOLUNTEER TOTALS FOR 2015

Stellwagen Sanctuary Seabird Stewards, 38 volunteers, 1,982 hours;
 Other Research Cruise Support/Observers, 21 volunteers, 2,301 hrs.;
 Coast Guard Auxiliary Observer Corps, 10 volunteers, 500 hours;
 Ambassador, Child's Sanctuary, and Other Education/ Outreach Programs: 66 volunteers, 1,339 hours;
 Other Programs/Operations Support: 5 volunteers, 1,101 hours;
 Sanctuary Advisory Council, 28 current active volunteers, 1,130 hours.

TOTALS: 120 Volunteers, 8,353 hours for FY15 (10/1/2014-9/30/2015)
 Vol. #s do not tally; some volunteers support more than one program

NATIONAL MARINE SANCTUARY SYSTEM



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

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

