

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

Nov-Dec 2014



Haddock shelters in sanctuary seafloor habitat .
Credit: NURTEC-UConn and SBNMS

Comment Period now open for proposed Stellwagen Dedicated Habitat Research Area with Reference Area

After several years of data analysis, planning and public meetings, the New England Fishery Management Council selected the Stellwagen Dedicated Habitat Research Area (DHRA) with Northern Reference Area (Option B) as the preferred alternative in *Volume 3/Spatial Management Alternatives* of the massive 1,000+ page **Omnibus Essential Fish Habitat Amendment 2 and Draft Environmental Impact Statement**. The Council vote was 13 in favor, 2 opposed and one abstention. Now, the public process involves an open comment period with a January 8, 2015 deadline.

The proposed Stellwagen DHRA consists of a section of the Western Gulf of Maine Closure area and would maintain the same provisions (exclusion of all commercial bottom fishing gear capable of catching groundfish) but could allow bottom fishing for research purposes if a permit is granted. Forty percent of the Stellwagen DHRA is located in the sanctuary. The proposed Northern Reference Area is a small section within the DHRA that would have the same provisions as the DHRA plus exclude all party/charter and recreational fishing for groundfish. Fishing for tuna and other pelagic fish would be allowed.

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Comment period ends on January 8, 2015

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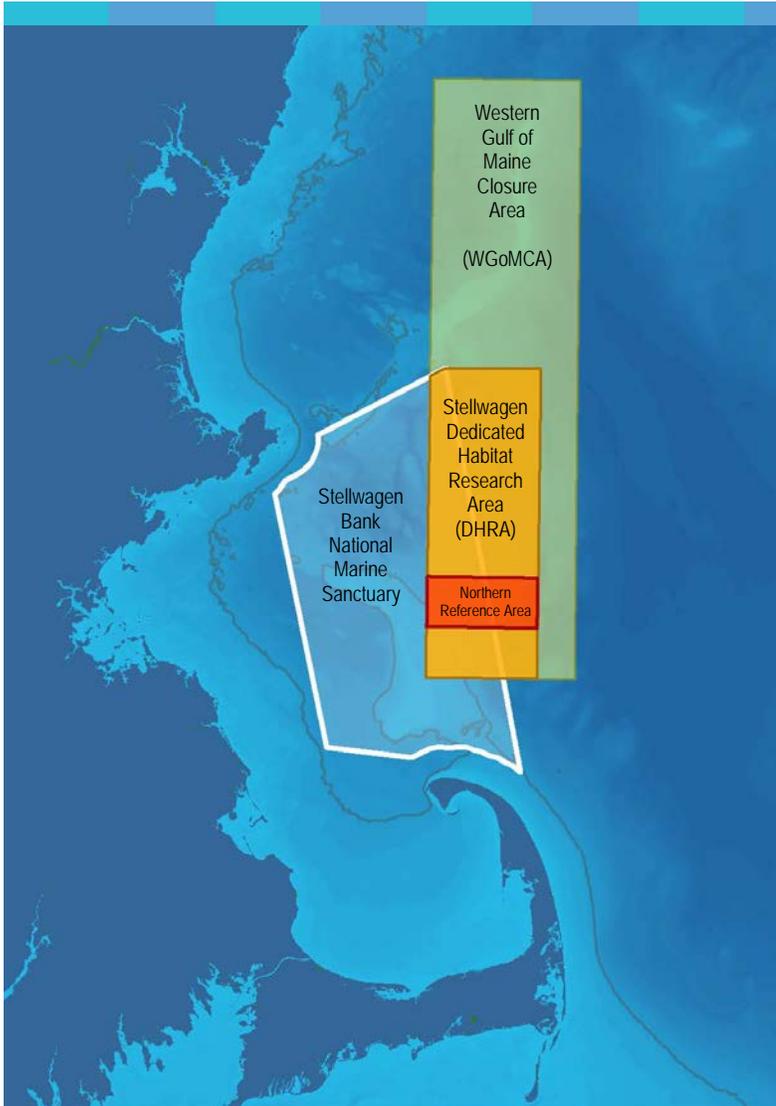
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Western Gulf of Maine Closure Area (light green):
Remains the same as originally established in 1998; excludes all bottom fishing gear capable of catching groundfish (includes DHRA and Reference Area)

DHRA -- Dedicated Habitat Research Area (yellowish-orange):
A section of the Western Gulf of Maine Closure Area (WGoMCA); partially located in Stellwagen Bank National Marine Sanctuary; same provisions as WGoMCA but allows permitted fishing for research.

Option B: Preferred Alternative – Northern Reference Area (red):
Same provisions as DHRA but excludes party/charter and recreational fishing for groundfish ([fishing for tuna and other pelagic fish would be allowed](#)).

Comment Now!

The public comment period opened on October 10 and will close on January 8, 2015. You can submit your comments by mail, email or fax. Please include "OA2 DEIS Comments" in the subject line or on the outside of the envelope. Recommended content includes: name, address, and issue-related affiliations.

Email to: nmfs.qar.OA2.DEIS@noaa.gov

Mail to:

John K. Bullard, Regional Administrator
Greater Atlantic Regional Fisheries Office
55 Great Republic Drive
Gloucester, MA 01930

Fax to: 978-281-9315

DHRA (continued)

In creating the Northern Reference Area, researchers would have a study site in which all fishing activities that cause seafloor habitat disturbance and removal of groundfish species would be eliminated, offering a scientific control area. The other portions of the DHRA would continue to be available for recreational and party/charter bottom fishing while sanctuary seafloor habitat outside the DHRA would continue to be subject to traditional fishing activities as regulated under the NOAA Fisheries Service.

The sanctuary supports the Stellwagen DHRA with Northern Reference Area (Option B).

The design of the DHRA and Northern Reference Area involved a careful, deliberative process by the New England Fishery Management Council with much attention given to the habitat types, level of use and proximity to fishing ports. After January 8, the Council will review all comments and make a recommendation about the designation to NOAA's Fisheries Service.

Photo Credits: *Cod* by Doug Costa, SBNMS file photo; *Sculpin and Invertebrates* by Ben Cowie-Haskell, SBNMS; *Haddock and Anemones* by NURTEC/UConn and SBNMS.



10 Reasons Why the Sanctuary Supports Option B: Stellwagen DHRA with Northern Reference Area

1. There are no other similarly protected seafloor habitat research areas with a reference site in the Gulf of Maine.
2. There would be a place where carefully coordinated, long-term studies of Essential Fish Habitat could be done without the risk of interventions that could bias research results.
3. The entire proposed Stellwagen DHRA has already been closed to commercial groundfishing since 1998 (Western Gulf of Maine Closure Area) so no new areas would be restricted to commercial fishermen.
4. Researchers have a base of 16 years of data focused on seafloor habitat recovery from this area to provide a strong foundation for new and on-going studies.
5. The careful design of the proposed Stellwagen DHRA would allow scientists to compare impacts of all types of fishing gear on all major habitat types in the Gulf of Maine. The science-based results from such studies in the proposed Stellwagen DHRA would have the potential to guide resource decision-making in the Gulf of Maine region.
6. Use of the Reference Area could provide valuable assessments of the role groundfish removals (both commercial and recreational) play in habitat recovery, biodiversity and the productivity of managed species. NOAA Fisheries reported that recreational fishing accounted for 20 to 31 percent of total cod removals from the Gulf of Maine from 1999 through 2011.
7. The proposed Stellwagen DHRA's Northern Reference Area would minimally impact recreational fishing. Analysis of Vessel Trip Reports from party/charter boats shows that an average of 31 boats fished the Northern Reference Area annually during 2006-2012. In 2010-2012, these boats generated approximately \$400K in revenue annually with five boats accounting for the majority of that total (DEIS Vol 3, pp 458 & 461).
8. In both the 2010 and 2012 Massachusetts Recreational Boater Surveys, no recreational fishermen reported fishing in the Northern Reference Area.
9. Option B: Northern Reference Area is expected to generate a net positive benefit when compared to no action, i.e., in the form of improved groundfish management in the long term (DEIS Vol. 3, p. 576).
10. The sanctuary's 2010 Final Management Plan calls for establishment of this sort of research area.



Northern red anemones, pink shrimp and other marine life were observed in this study site in the Western Gulf of Maine Closure Area. Photo: NURTEC-UConn.

“Research results from the proposed Stellwagen Dedicated Habitat Research Area with Northern Reference Area should provide the science-based answers to help guide future decision-making in support of healthy fisheries and the conservation of marine biodiversity.”

— Dr. Craig MacDonald, sanctuary superintendent

Public Hearings for Draft Omnibus Habitat Amendment 2

- Nov. 24 -- Portsmouth, NH (6-8pm)
- Nov. 25 -- Plymouth, MA (6-8pm)
- Dec. 2 -- Warwick, RI (6-8pm)
- Dec. 4 -- Riverhead, NY (6-8pm)
- Dec. 5 -- Cape May, NJ (6-8pm)
- Dec. 9 -- Baltimore, MD (10-11:45am)
- Dec. 16 -- New Bedford, MA (6-8pm)
- Dec. 17 -- Gloucester, MA (6-8pm)
- Dec. 18 -- Newport News, VA (6-8pm)
- Jan. 5 -- Webinar (3-5pm)
- Jan. 6 -- Brewer, ME (6-8pm)
- Jan. 7 -- Portland, ME (6-8pm)

For more information about the locations for these public hearings and to confirm dates, go to the New England Fishery Management Council website:
<http://www.nefmc.org/calendar>



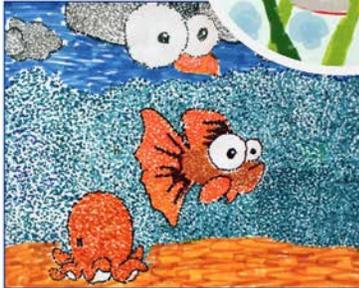
Massachusetts Marine Educators K-12 Marine Art Contest



Deadline: May 1, 2015

DIVISIONS:

Elementary (K-4)
Middle School (5-8)
High School (9-12)
Computer Graphics
(all grades)



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ART CREDITS:
Wolfish by Sayra Rivera,
Greater Lawrence Tech HS;
Harbor Seal by Milan S.,
Pierce MS, Milton; Waves &
Bluefin Tuna by Desanna
Longo, Old Colony Reg Voc
Tech HS, Rochester;
Capepod by Michael N.,
Provincetown-Scholar;
Octopus, Gull & Black Sea
Bass by Oakes A. Lincoln
School, Extended Day,
Brookline; Ocean Sunfish
by Luke Barrows, Norfolk
County Agricultural HS.

THEME: Amazing Ocean Creatures of Stellwagen Bank National Marine Sanctuary

Celebrating the marine biodiversity of New England's national marine sanctuary

Marine Art Contest Seeks Sanctuary Species

The annual Massachusetts Marine Educators Marine Art Contest for students in grades K-12 is now underway. The contest is free and open to all students (public, private, homeschool) and any geographic location. The theme of the contest is “*Amazing Ocean Creatures of Stellwagen Bank National Marine Sanctuary: Celebrating the marine biodiversity of New England's national marine sanctuary.*” Deadline for the contest is Friday, May 1, 2015.

There are five divisions in the contest:

- Elementary School — Grades K-4
- Middle School — Grades 5-8
- High School — Grades 9-12
- Scientific Illustration — All Grades
- Computer Graphics & Photography — All Grades

Prizes include cash awards, New England Aquarium passes and certificates. There are special awards for best seabird art; best marine mammal art; best sea turtle or plankton art; best invertebrate art, and best fish art.

Winning artwork (including all honorable mentions) will be posted on the Stellwagen Bank sanctuary website. All prize winning art and some of the honorable mentions become part of a traveling exhibit that will tour New England national park visitor centers, museums, federal buildings and other sites throughout the school year. The 2014 winning art will begin its tour in December (check the sanctuary website for locations, dates and times).

Artwork should depict a single or several Stellwagen Bank National Marine Sanctuary species. It is recommended that the piece should be no smaller than 8”x10” and no larger than 18”x24” although smaller/larger pieces will be accepted. Please do not fold or laminate the artwork and include the following information on each piece: student’s name, age, grade, teacher’s name, school name, address, school phone, teacher’s email, and name of the species illustrated in the artwork.

For more information, contact anne.smrcina@noaa.gov or visit the sanctuary website <http://stellwagen.noaa.gov>



When astronauts first launched toward the moon and looked back at our planet for the first time, they made an unexpected discovery: **Earth is Blue**. The Office of National Marine Sanctuaries is now sharing a photo each day and a video each week highlighting the wonder and beauty of our special marine places and the work sanctuary staff and our partners do to protect them.

Join with your sanctuaries to explore America's treasured marine places and share your own images of our national marine sanctuaries using the hashtag **#EarthIsBlue**.

You can also visit the new image-filled website at <http://sanctuaries.noaa.gov/earthisblue.html>

THANKSGIVING TRIVIA:

The *Mayflower* with its 102 passengers and approximately 30 crew members sailed into Provincetown Harbor in November 1620 and then on to what became the Plimoth Colony (Plymouth, MA), probably without entering today's Stellwagen Bank National Marine Sanctuary. However, when the *Mayflower* left the next spring on its return trip to England, it almost definitely passed over Stellwagen Bank. Since that time, innumerable ships have made their way through the waters of this special place – New England's only national marine sanctuary.

WINTER WISHES

The Stellwagen Bank Sanctuary staff extends its best wishes for a healthy and happy holiday season and new year!

Sarah Guitart – Sanctuary Volunteer of the Year



At the October Sanctuary Advisory Council (SAC) meeting, Sarah Guitart was presented with the Volunteer of the Year Award. Pictured here are (from left to right) Anne-Marie Runfola, sanctuary volunteer coordinator; SAC Chair Richard Delaney, Sarah, and Craig MacDonald, sanctuary superintendent. Credit: SBNMS

Each year, the National Marine Sanctuary Foundation and the sanctuaries celebrate the contributions of volunteers through the Volunteer of the Year Program. Each sanctuary chooses a person or organization who has made a significant contribution to their home sanctuary and the national system. Sarah Guitart was recognized as the Stellwagen Bank sanctuary 2014 Volunteer of the Year.

In May 2013, Sarah became the lead volunteer program assistant for the Stellwagen Sanctuary Seabird Stewards (S4), a ground-breaking citizen science research and monitoring effort. Since then, she has contributed to every aspect of the S4 program, including collecting data during 10 research cruises, reviewing and improving training and protocol documents, training and organizing some 50 volunteer stewards, acting as a liaison with six whale watch business partners, creating an operating guide for S4 equipment, pilot testing a new database, performing quality controls on the 2011-12 data, and entering data for seabird research cruises undertaken throughout 2013.

Sarah has helped the sanctuary expand a citizen science research, monitoring, and education effort that is already being used as a model that can be replicated nationally. These volunteer hours were meshed into a busy schedule that included completion of her final semester at Boston University and outside employment. After receiving her degree in December 2013, Sarah continued to support the S4 program and completed data entry for 45 seabird survey cruises and has been generously donating approximately 16 hours per week to the program.

Long-term listening post deployed

It looks a bit like a giant version of a child's Erector Set, but the equipment recently deployed in the sanctuary has a very important, grown-up purpose. The hydrophone (underwater microphone) package will record ocean noises, some of which are generated by human activities and some of which are natural sounds, such as fish, marine mammals and other marine life. The installation is part of a long-term NOAA project to measure ocean sound levels around the nation and establish an Ocean Noise Reference Station Network. Our unit is one of three in national marine sanctuaries.

Ocean noise is increasingly being recognized as a potential threat to marine life. Scientific data suggest that these sound levels can impact endangered large whales by hindering communication, altering behavior and inducing stress. Other marine life, such as fish and invertebrates, are also impacted by the noise.

This equipment will monitor long-term trends in ocean noise and changes in the ambient sound field. It will be recording all sounds in the 10 Hz to 2,500 Hz frequency range and will be deployed for up to two years.

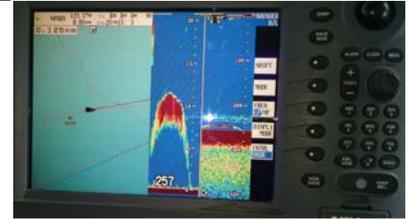
Although other sites in the network will be in deep water, the Stellwagen Bank sanctuary's AUH is anchored at a depth of 200 feet in the proposed Dedicated Habitat Research Area's Northern Reference Area (see pages 1-3) within the Western Gulf of Maine Closure Area. This site is closed to active bottom fishing gear, which provides a measure of protection for equipment.

Here at Stellwagen Bank sanctuary, the shallow water site offers a long-term acoustic monitoring history with data for comparison purposes. The AUHs at other regional sites around the nation (including Channel Islands and Olympic Coast sanctuaries) will be recording noises in the deep sound channel at 500-1,000 meters depth. [New England's deep site is off Georges Bank.] The overall project goal is to standardize instruments and mooring systems so that acoustic data sets from different locations can be better compared.

The sanctuaries are partnering with NOAA's Office of Oceanic and Atmospheric Research's Pacific Marine Environmental Laboratory and all NOAA Fisheries Science Centers. Dr. Leila Hatch, the sanctuary's marine ecologist is one of the principle investigators for this project and advises the Office of National Marine Sanctuaries on the development of acoustic science.



An Autonomous Underwater Hydrophone (AUH) package was deployed in the sanctuary. The echosounder image at right shows the equipment as it was lowered 200 feet down to the seafloor. The station is located in the proposed Designated Habitat Research Area-Northern Reference Area. Credit: SBNMS.



You Said It!

Welcome to a new periodic feature in *Stellwagen Bank E-Notes* – "You Said It!" – an interactive activity in two parts.

1. Readers are invited to submit their guesses (or informed beliefs) about the pictured event, item and/or place. The first person to email us the correct answer will receive a sanctuary poster.
2. Readers can write their own humorous captions – the funnier the better (but 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*. Again, the winner gets a sanctuary poster.

Winning selections (1. real-life caption and 2. humorous caption) will run in the following issue.



Submit your entries to: stellwagen@noaa.gov. In the subject line of your email write: (real or humorous) caption. Include your name and mailing address in the body of the email text along with your caption. Deadline: Dec.31

The skin(ny) on humpback whales

Sampling whale skin for science

How do humpback whales and other marine mammals gather information about the environment? Sherri Eldridge thinks a lot of information might come through sensory nerves in their skin. To find out, she is working with Stellwagen Bank National Marine Sanctuary scientists to collect skin biopsy samples from free-swimming humpback whales. The biopsies, which are the same diameter as a pencil eraser, are studied to identify sensory nerves.

Working under a NOAA Fisheries Service research permit, Dr. Dave Wiley, research coordinator at the sanctuary, directs a biopsy team to follow protocols that prevent undue disturbance to the whale. A low-impact crossbow, fitted with an arrow with a specially designed tip, removes a small nip from the skin. After the shot is made and the sample collected, the floating arrow is scooped out of the ocean, the biopsy extracted, and the skin placed in a preservative solution. Back on land, Sherri brings the sample to the laboratory of neuroanatomist Dr. Doug Rosene at Boston University School of Medicine. Here, she stains the skin with special markers to show nerve fibers. The shapes and locations of nerve fibers are then studied under a microscope.

By comparing the nerves in whale skin with those of terrestrial mammals, Sherri is attempting to determine what a whale can sense with its unique skin receptors. Different types of nerves detect different information. It is likely that whales can feel through their skin not just touch and temperature, but also vibrations, compression (dive depth), motion from a favorite prey fish, and perhaps even the low-frequency sound waves of another whale's calls. Environmental information, transmitted by waves reflecting off coastlines or seafloor topography, could also be received by body surface nerves.

Since whales descended from a land mammal that last walked on four legs 53 million years ago, comparing the skin nerves of marine and land mammals will help explain sensory adaptations to the aquatic realm. Sherri's long-term goal is to understand how whales "feel the world," receive and interpret sensory cues, traverse migratory routes, and find prey and other whales in the vastness of the ocean.

Sherri is a long-time friend of the National Marine Sanctuaries and a fellow in NOAA's prestigious Dr. Nancy Foster Scholarship Program. She is completing her doctoral degree in Marine Sciences through the University of Massachusetts/ Dartmouth, and dissertation research in the Department of Anatomy and Neurobiology at Boston University School of Medicine.



The goal of this modern whale hunt is to capture small bits of skin for scientific study. Under a NOAA permit, researchers use a crossbow and modified arrows to retrieve skin samples. This ocean-going procedure is somewhat comparable to human biopsies, although medical doctors would never be seen using crossbows in their work. All photos this page credit: SBNMS.



The arrow tip penetrates only a short distance into the skin, then the arrow with sample falls away and floats in the water, ready for retrieval.



Whale skin is often compared to a wetsuit for its insulating and body protection roles. Scientists believe it may have even more complex roles in the life of the whale.

Stellwagen Bank National Marine Sanctuary seeks advisory council applicants

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

"Each of the members brings a unique perspective to the council based on their long experience in the New England area," said Craig MacDonald, sanctuary superintendent. "Since its establishment, the council has played a vital role in advising the sanctuary and NOAA on critical issues. We are very pleased that council members offer their considerable talents to help us manage the resources of Stellwagen Bank National Marine Sanctuary."

The sanctuary is accepting applications for the following seats: research (primary) and mobile gear commercial fishing (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 **December 31**. To receive an application kit or for further information please contact Elizabeth Stokes via email at Elizabeth.Stokes@noaa.gov; by phone at 781-545-8026 ext. 201; 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/>.

SANCTUARY TRIVIA

On November 4, Stellwagen Bank National Marine Sanctuary celebrated its 22nd anniversary.



Our Sanctuary's Veteran

In this issue we honor our sanctuary's foremost veteran and the site's namesake – Henry Schreiner Stellwagen. Stellwagen retired in 1865 as a U.S. Navy Captain after a career that included serving in the Home Squadron under Commodore Matthew Perry during the Mexican-American War and commanding ships during the Civil War. For several periods during his service he was detailed to the U.S. Coast Survey (now part of NOAA) to map coastal areas and potential lighthouse positions along the eastern seaboard (including New England, where he discovered a bank at the mouth of Massachusetts Bay). *Photo: Capt. Henry S. Stellwagen, courtesy of the Stellwagen family*

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/>