



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of National Marine Sanctuaries
Stellwagen Bank National Marine Sanctuary
175 Edward Foster Road
Scituate, Massachusetts 02066
Tel: 781.545.8026 Fax: 781.545.8036

46th SANCTUARY ADVISORY COUNCIL
March 9, 2016 9:30 am-3:00 pm
Holiday Inn, Rockland MA
MINUTES of MEETING

Present:

Bill Adler	Primary: Fixed Gear Commercial Fishing
Jennifer Anderson	Federal: NOAA Fisheries GARFO
Michelle Bachman	Federal: New England Fishery Management Council
Jeanine Boyle	Alternate: At Large
Priscilla Brooks	Primary: Conservation
Todd Callaghan	State: Coastal Zone Management
Alyssa Catalano	Alternate: Education
Deborah Cramer	Primary: At Large
Tracey Dalton	Research: Member
Rich Delaney	Education: Primary (Chair)
CPT Brian Fiedler	Federal: First US Coast Guard District
John Galluzzo	Alternate: Maritime Heritage
Jonathan Grant	Alternate: At Large
Laura Howes	Primary: Whale Watching
Martin Klein	Alternate: Maritime Heritage
Heather Knowles	Primary: Diving (Vice Chair)
Joseph Levine	Research: Alternate
Marissa Marcoux	Diving: Alternate
Michael Pierdinock	Primary: Recreational Fishing
Kevin Powers	Primary: At Large
Charlie Rasak	Alternate: Business Industry
Bob Rocha	Alternate: Education
Howard Rosenbaum	Primary: Conservation
Capt Roger Thurlow	Federal: Mass Environmental Police
Mason Weinrich	Primary: Research
John Williamson	At Large: Primary (Secretary)

SBNMS Staff:

Craig MacDonald	Anne-Marie Runfola	Mike Thompson
Ben Cowie-Haskell	Anne Smrcina	Nathalie Ward
Matthew Lawrence	Elizabeth Stokes	Dave Wiley

I. Welcome, Review of Agenda and Approval of 45th SAC Minutes (R. Delaney)

The 45th SAC Minutes were approved. The 46th SAC agenda was approved.

Howard Rosenbaum remark: In the 43rd SAC Minutes requested that the following correction be made:

- Howard Rosenbaum, Conservation Primary Member. Dr. Rosenbaum is the Director for Ocean Giants Program, Whale Conservation Society, Bronx, NY.

II. SAC Business

i. SAC Recruitment (R. Delaney and N. Ward)

On October 21, 2015, seven new members and four incumbents were seated resulting from September 30th, 2015 recruitment. These are 3-year terms (2015-2018):

- Bill Adler Fixed Gear Commercial Fishing Primary
- William Bartlett Fixed Gear Commercial Fishing Alternate
- Rich Delaney Education Primary (incumbent)
- Susan Farady Education Primary (incumbent)
- Alyssa Hall Research Alternate
- Laura Howes Whale Watch Primary (former Alternate)
- Heather Knowles Diving Primary (incumbent)
- Joseph Levine Research Alternate
- Marissa Marcoux Diving Alternate
- Kevin Powers At-Large Primary (former Alternate)
- Charlie Rasak Business and Industry Primary (former Alternate)

The following SAC vacancies were announced in the Federal Register Notice published on February 29, 2016 (5 Alternate seats). Selectees will be announced in May 2016.

- At Large
- Business Industry
- Mobile Gear Commercial Fishing
- Whale Watch Alternate
- Youth Alternate

The next recruitment will be announced in the Federal Register Notice on 2 May 2016. Seats to be announced have yet to be determined.

Rich Delaney asked SAC members to get the word out. This is everyone's Sanctuary Advisory Council.

ii. 2016 SAC Meetings

There are three SAC meetings per year: In February/March; May/June; September/October time frames. The next SAC meeting (47th SAC) will be held on June 1st at NOAA Fisheries GARFO in Gloucester MA. The fall meeting (48th SAC) will be held in September/October time frame at the Plymouth Yacht Club in Plymouth.

iii. Council Photos and Bios

SAC members who have not provided their bios and photos are asked to submit them to Elizabeth.Stokes@noaa.gov by April 1st.

iv. Programmatic Highlights

Nathalie Ward explained what the programmatic updates entail. Programmatic updates are highlights from each sanctuary program on staff accomplishments during the past summer/winter time frame. They contain a lot of interesting and important information and describe extensively the scope and breadth of what goes on at the sanctuary. These updates also keep the SAC informed of current and innovative research and education outreach that sanctuary staff is involved with.

v. SAC Summit Update (R. Delaney)

Rich Delaney attended the ONMS SAC Summit held last January in Annapolis, MD. All 14 SAC Chairs from across the sanctuaries were represented, including ONMS top leadership. It was a very positive meeting. There was a lot of enthusiasm with a lot of good exchanges. There were seminar-type sessions on messaging, fund raising, climate change, and visibility in public relations, among other topics.

The new Director of NOAA Office of Law Enforcement, Jim Landon, also attended. He was very informed about the sanctuary program, and there was a great exchange on enforcement issues and support to provide to the sanctuaries. Rich believes that there may be 40 new OLE positions to be filled over the next few months. Jim Landon is trying to get his officers assigned to the different sanctuaries. Sanctuaries are clearly a priority on the new OLE Director's agenda.

Another interesting discussion was from the Gulf of Farallones, which has created an excellent model around developing collaborations and partnerships focused on climate change in the sanctuaries and adjacent coastal areas with several SAC subcommittees actively involved. This may be an area the SAC would pursue as a future priority.

ONMS leadership has been working hard to develop a business advisory council and partnerships with businesses that utilize Sanctuaries. Stellwagen SAC has already been active in this area.

The SAC chairs engaged in frank conversation about the limitations that most sanctuary management plans have in providing effective conservation of their natural resources. Several examples of sanctuary policies and goals to accommodate sustainable levels of fishing within the sanctuary do not seem to be working. Meanwhile new issues and threats are coming along at increased speed not the least of which is climate change impacts. Rather than waiting for the long, process of revising a management plan, maybe sites should initially conduct a self-assessment to have a more immediate sense of their effectiveness in this regard.

In all, the summit was so productive that the Chairs will have regular conference calls to keep up the momentum. New leadership at NOAA ONMS is quite refreshing, open and transparent. John Armor, ONMS Acting Director and his leadership team were there the entire time and made all of the PowerPoint presentations available to the Chairs. For a copy of the presentations, please contact Nathalie.Ward@noaa.gov.

vi. Business and Industry Subcommittee (C. Rasak)

The goal of this project is to obtain a corporate sponsor for Stellwagen Bank National Marine Sanctuary and create joint public service announcements to air on Boston broadcast television stations. The PSA's would be beneficial for both SBNMS and the corporate sponsor. SBNMS would gain much needed recognition with the general public, increase website traffic, and increase membership and donations, etc. For the corporate sponsor, the partnership would endear them to

local residents, branding their company as uniquely Massachusetts-grown, a company that cares for our people and our local marine environment.

Status Update:

Since our last meeting, Creative Resources Group has made several strides in the proposed project.

Most importantly, one of the Boston broadcast network affiliate stations has pledged their support, offering to match media funds up to \$200,000. This means that when SBNMS's corporate sponsor purchases commercial airtime for the PSA's, the station will match it, with additional airtime of the same value. This is a huge value for the corporate sponsor and equates to more airtime for SBNMS.

Creative Resources Group has spoken with several prospective corporate sponsors, but at this point, we need to present a rough draft of the PSA's. (Everyone wants to see the creative.) However, without having any video content, and no budget to create our own as of yet, CRG was at a standstill.

Thankfully, Nathalie Ward obtained permission for CRG to repurpose some high-resolution video footage she was already using for another project. With this footage in hand, CRG will create the spec PSA's to use for our presentation, to give the sponsors an idea of the final product and gain buy-in. These will be just rough drafts. Once the partnership is finalized, CRG will be able to create the actual PSA's.

Craig MacDonald reported that *USA Today* is holding a poll to select the 10 Best Places to View Aquatic Life. Stellwagen Bank National Marine Sanctuary has been nominated and currently is in the running for top spot. This is a wonderful chance to raise the visibility of the sanctuary, which may also translate into interest in local businesses (e.g., whale watching, fishing) that operate in and near the sanctuary and organizations that work with us (e.g., museums, research partners, etc.). Craig encouraged everyone to vote. You can vote once a day, every day until March 28th. All you need do is click on the vote button. SAC members are also encourage to forward this link to others who may be interested in raising public awareness of Stellwagen Bank National Marine Sanctuary, and to please take full advantage of your social media networks (FaceBook, Twitter, etc.) to spread the word. The competition is fierce. There are other sites are pulling out all stops to win.

Web link to vote: <http://www.10best.com/awards/travel/best-place-to-see-aquatic-life/stellwagen-bank-national-marine-sanctuary-massachusetts/>

III. Discussion Topics

i. Council "Round Robin" (R. Delaney)

SAC members introduced themselves and provided updates on issues within their respective organizations. The Council Round Robin is very informative, originally intended as a short snapshot from each member's organization. If a SAC member wants their Round Robin write-up included in the SAC Minutes, please email it to Nathalie.Ward@noaa.gov and Elizabeth.Stokes@noaa.gov.

John Galluzzo Round Robin: The South Shore Natural Science Center in Norwell is now hosting the 2015 Mass Marine Educators Art Show, featuring the amazing animals of Stellwagen Bank

National Marine Sanctuary. Artwork is now being accepted for the 2016 contest, so anybody involved with K-12 students, please get involved. Deadline is at the end of April. John submitted an article to *Birdwatching Magazine* on the S4 program and the birds of Stellwagen Bank National Marine Sanctuary, with tremendous support from Wayne Petersen, SAC Education Alternate and Anne-Marie Runfola, sanctuary Volunteer Program Coordinator.

ii. ONMS Budget Update (C. MacDonald)

There is no new budget update to report to the Council. This fiscal year, the sanctuary received level funding, e.g., this year's funding will cover the sanctuary's regular expenses. Sanctuary staff continue to be successful with proposal writing in collaboration with partners and constituents.

iii. Charter Amendment (C. MacDonald)

NOAA Office of Law Enforcement has been invited to become an ex-officio member of the SAC. There is an MOU in the works to encourage joint enforcement in the sanctuary with the USCG. There is an ongoing effort for OLE to become more engaged across the sanctuary system and OLE has expressed interest in joining the SAC. The sanctuary is working with ONMS headquarters to get its approval. Once that is done, the SAC charter can be amended to include OLE as an ex-officio member.

There are two commercial fishing seats on the SAC: Fixed Gear Commercial Fishing and Mobile Gear Commercial Fishing. The sanctuary has not been able to fill the Mobile Gear Commercial Fishing alternate seat over the last 8 recruitments, and it again will be posted on the next recruitment to be announced on May 2nd. Due to this difficulty in filling the seat, the SAC may want to consider identifying both fixed and mobile gear seats as "commercial fishing". Intent is not to decrease the number of commercial fishing seats. We want full representation for all commercial fishing slots but haven't had this for the last 2 years. This is a conundrum that needs to be addressed.

Bill Adler: Need to keep the mobile gear commercial seat. The mobile gear fleets are a major part of New England. They need to be at the table. He will raise this issue at the next meeting of the Massachusetts Fishermen's Partnership, which incorporates every commercial fishing sector in MA. He will make an attempt to push this at the meeting and to have someone apply for the mobile seat. The SAC will lose credibility if that drifts away. The mobile gear commercial sector already feels they are outnumbered by other sectors. So it's good when you have both fixed gear and mobile gear seats at the table. You need to have both seats identified as such, including recreational fishing. Sometimes the sectors don't even agree with each other.

Michael Pierdinock: Agrees. Will reach out to some of his constituents. It seems to be a large commercial versus smaller druggers separation. What is their position on this?

Craig: This hasn't been raised. Essentially looking at a possible charter amendment. Encouraged to hear that Bill Adler proposes to retain both seats. But it has to be recognized that mobile gear folks need to regularly attend these meetings. Hopefully this will be resolved by the June SAC meeting; applications will be received from the May round of recruitments. So there will be some indication if anyone has applied.

John Williamson. Agrees. We need to keep the structure we have now. Ultimately 6 seats on the SAC, between mobile, fixed, and recreational. There is a wide array of fishing vessels covered but still not enough to capture all of them. This SAC and the sanctuary at this point are not relevant to the fishing industry and we have conceded that. We are not meaningful to this sector. We need

to do some strategic internal thinking and look at the industry -- start to think in terms of how to reach out to this industry and make commercial relevance of the sanctuary. We are kind of trapped in an adversarial position and we need to rethink our position.

Rich Delaney: Appreciates the collective advice and fisheries colleagues going out with a more aggressive recruitment process.

IV. SAC 101 (C. MacDonald and N. Ward)

i. SAC Charter and Handbook

Craig MacDonald: Presented an overview of the SBNMS Sanctuary Advisory Council, the SAC Charter and Handbook, and related documents. (Please refer to the attached "Tour of the Website and Documents" for more detailed information. The PowerPoint presentation that Craig gave is also available upon request.)

a. Council Term Limits (Members, Officers):

Council Member Term Limits:

Officers - Positions include Chair, Vice-Chair and Secretary now filled by:

Chair: Rich Delaney
Vice Chair: Heather Knowles
Secretary: John Williamson

Terms of the Chair and Vice Chair are two years. Both may serve a maximum of two consecutive terms (four years) if reelected. The term of Secretary is one year and may serve consecutive terms if reelected, no limit.

All officers may run for another Council officer position however. Elections for all positions are by majority vote of the voting members; votes by written ballot.

Council members are appointed for three-year terms and may compete for reappointment BUT cannot serve more than three consecutive terms. For those of you on the Council for longer period, terms begin from 2/8/2013. The policy applies to the seat, so if qualified, the same individual may apply for another seat on the Council once they are term-limited on their previous seat.

b. SAC Attendance and Coordination:

Nathalie Ward references the SAC Charter:

Council members serve as liaisons between their communities and the sanctuary, keeping sanctuary staff informed of issues and concerns, as well as providing information to their respective communities on the sanctuary's behalf.

This assumes that there will be communication between the Member and the Alternate, **and** that if a voting member will not attend a meeting it is incumbent on the Member to notify the Alternate.

Role of Alternate: The Alternate shall have all the rights of the Member at such times that the Alternate is officially substituting for the Member, i.e. voting. The Alternate may also be appointed to complete a primary Member's term if that member resigns or is removed.

Attendance: If you will not attend a meeting, we expect you to notify the SAC Coordinator (Nathalie Ward) well before the meeting in writing and provide the reason why. It is important for the sanctuary to know that there will be a quorum of members well ahead of time *and* to be able to project lunch attendees, which is costly.

In the past there has been non-responsiveness wherein sanctuary sends multiple emails and calls members to inquire about attendance to ensure a quorum. To minimize these efforts, we found a solution (proposed by the SAC Executive Committee) as evidenced by the recent "Doodle Poll". The sanctuary superintendent may recommend to the Director ONMS the removal of a Council Member if he/she misses *three consecutive meetings without reasonable justification*.

It is hoped that this clarification has been helpful and sanctuary staff appreciates all efforts for productive communication to provide for fruitful coordination between the SAC and the sanctuary staff.

Heather Knowles summarized: SAC members need to recognize the importance of their roles. We're not just volunteers. We are representing a seat; we are representing a constituency; we are providing a service to the sanctuary and to the public at large. There is a lot of responsibility that comes with this role. We are all very busy, but we are coming here because we have been selected and are serving a purpose. We need a quorum to have a meeting. It's a plea and a request to please take this seriously. The role of the Primary and Alternate members is a partnership. We encourage everyone to attend. If the Primary cannot attend, then they should coordinate with their Alternate to make sure there is representation. Please interact with your Alternate and make sure there is representation for each seat. Would really appreciate if everyone responds to queries for SAC meeting attendance.

ii. Final Management Plan and Environmental Assessment

The sanctuary's priorities flow from the Management Plan. This plan is available at stellwagen.noaa.gov website.

Rich Delaney: Always healthy to take a minute to look at the structure, mission statement, and responsibility taken as SAC members. Encourages everyone to take a look at the Management Plan. This is really why we are here. It is what drives activities of all sorts such as science, education and policy in the sanctuary. So we should be familiar with it and refer to it from time to time. Maybe another way to begin to get at updating the Management Plan outside of a formal extensive process of a full blown revision is to take a look at an informal way to update the Management Plan as an alternative. The Management Plan process went on for years and no one really wants to go through a full blown process again. Maybe just a quick revision with a strategic focus.

V. The Heat-Trapping Blanket: Tips for Talking about Climate Change (A-M. Runfola)

Recently many sanctuary educators, communicators, and scientists around the country have been trained in communicating about climate change through an organization called the National Network on Ocean and Climate Change Interpretation. In 30 minutes, Anne-Marie Runfola presented what she and Anne Smrcina had been learning by participating in this 3-month long training program. She shared quick tips about communicating climate change using well-tested messages and a technique called "Strategic Framing."

Elements of Strategic Framing:

- Use a conversational tone
- Lead with a value
- Put issues into context
- Use tested metaphors
- Connect to solutions
- Awaken social responsibility

Video Links to People on the Street Interviews (before and after hearing a quick framed message re. climate change)

Before: <https://vimeo.com/152928342>

Password: Trigger1

After: <https://vimeo.com/152928670>

Password: Trigger2

The goal of the session was to help launch discussions on how we can talk to our sanctuary communities about climate change, its impact on our sanctuary and our human lives, and how we can work on innovative solutions together.

Anne-Marie will share the presentation and handouts with SAC and welcomes SAC members to contact her and Anne Smrcina to continue discussions and collaborations.

The SAC briefly discussed creating a working group on this topic. Joseph Levine and Deborah Cramer expressed interest in joining the working group and presenting to their communities, and Michael Pierdinock expressed interest in working together to help him talk to his constituents about climate change.

VI. Working Luncheon - Climate Change in the Northeast (J. Hare, NMFS/NEFSC)

Climate change and variability is impacting the Northeast U.S. Shelf Ecosystem. Temperatures and sea levels are rising. Precipitation is increasing and hydrological cycles are changing. Salinity is increasing in the south and decreasing in the north as circulation patterns in the region change. These changes represent the combined effect of anthropogenic climate change and natural variability. Populations can respond four ways and most population responses will be some combination of the four. 1) The productivity of a population may change. Recruitment could decrease or growth could decrease, which would result in a decrease in productivity. 2) Individuals in a population can also move. Many species in the Northeast U.S. Shelf make seasonal migrations. As conditions change, individuals may migrate further north – an example is likely adult black sea bass showing up in the western Gulf of Maine. 3) Most marine species have very small offspring that are dispersed by ocean currents. As conditions change, these offspring may find new locations to survive thus “moving the population” generationally. Many warm-temperate species drift into the Northeast U.S. Shelf system as larvae; as conditions change these young may be able to establish new populations. 4) The final response is acclimation or adaptation to the new conditions. Acclimation is a physiological response; adaptation is an evolutionary response. Of the four responses the least is known about the ability of organisms to adapt or acclimate to new conditions. These population responses have a range of management implications. As populations move, new fisheries may develop. Identifying and managing new fisheries creates challenges for the fisheries management system. Similarly as distribution change and / or productivity changes, the distribution of the population may become out-of-sync with spatial management structures. For example, as black sea bass have appeared in the Gulf of Maine, the fishery for black sea bass in

limited by allocations based on the historically low landings of this species in the Gulf of Maine. There are a number of other management implications: stock identification, stock assessment parameterization, etc.). Ecosystem-based fisheries management (EBFM) provides a construct for including climate change in fisheries management. EBFM can also include habitat considerations, species interactions, and social-economic factors. Additionally, EBFM can have spatial components and including Stellwagen Bank National Marine Sanctuary in the development of regional EBFM will be very important.

VII. Sand Lance, Seabirds, and Ships: Latest Research in SBNMS (D. Wiley)

David Wiley, sanctuary Research Coordinator, summarized some of the current research projects led by SBNMS (David Wiley, Michael Thompson and Brad Cabe). These included:

- Sand Lance - Research trips to monitor the distribution and relative abundance of sand lance fish in the SBNMS. The project uses a USGS SEABOSS video and grab sample platform to collect data from 44 sites in the SBNMS. Concurrent with sand lance data, at each site, data are collected on marine mammals, seabirds and fishes (video transects). The goal of the project is to understand how the distribution and abundance of forage fish (sand lance) impact the distribution and abundance of a variety of taxa. This information will improve the sanctuary's approach to ecosystems based management. Collaborators are the USGS and University of Connecticut.
- Humpback Whales - The collection and analysis of biopsy samples for use in profiling gene expression of sensory ion channels and neurotransmitters in the skin of humpback whales. The project is in collaboration with PhD student Sherri Eldridge of the Laboratory of Cognitive Neurobiology, Boston University School of Medicine, University of Massachusetts-Dartmouth and the Boston University Marine Program. Understanding the mechanisms and sensitivities of sensory perception may lead to improved policies and technologies to protect whales from gear entanglement, ship strike, and anthropogenic noise. Research was conducted under a permit from the NMFS.
- Great Shearwater - Investigation of the foraging ecology and health of Great Shearwater seabirds. The team captured birds and collected blood, feathers and exhaled gas for stable isotope analysis of food habits and gender determination. They also took oral-pharyngeal and cloacal swabs to test for the presence of avian influenza virus (AIV) and blood to investigate the possibility of past infection. Wing measurements were taken to help standardize body weight data and model flight patterns. Work was conducted from the NOAA R/V Auk and included scientists from the USF&WS, Boston University, University of Long Island and Massachusetts Institute of Technology. Data will help inform ecosystem based management of the SBNMS and the Gulf of Maine and help understand how transmission of AIV circulates in marine vertebrates. As part of this study, in July the team placed PTT tags on 10 Great Shearwaters.

VIII. Constituent Reports

i. Whales in your Backyard (J. Galluzzo)

The South Shore Natural Science Center and SBNMS co-wrote a grant application to get a lifelike inflatable humpback whale ("Salt") and funds to develop new curriculum around it. We received partial funding that allowed for the whale to be purchased. After design and fabrication, we received it this past fall and inflated it at the Gates Middle School in Scituate for volunteer training in preparation for an event in Weymouth in early January.

In January, a combined team of SBNMS volunteers, Science Center naturalists and volunteers and Weymouth High School students brought the whale to the Chapman Middle School in Weymouth for a "STEM Hotspot" program. The group had formerly partnered on a Hotspot featuring the Shipwreck Kit put together as a result of a Preserve America Grant and seen a crowd of 200 people in two hours. With the whale, they expected a bigger crowd, and welcomed approximately 450 people in a two-hour span. The program featured interior tours of the whale (Salt) and numerous stations with various whale biology learning opportunities.

After the program, Anne Smrcina brought the whale down to the Norwalk Aquarium where it was visited by 6,400 people in eight days, 4,400 during the Martin Luther King, Jr., Day weekend alone. The total would have been higher had the next weekend not been blizzarded out. Hope is that the whale will go to the Dominican Republic in January 2017 for the 10th anniversary of the Sister Sanctuary program, the 30th of the DR's sanctuary and the 40th of the first sighting of Salt in DR waters. Groups are encouraged to schedule the whale for programs.

ii. Mass Bay Disposal Site (A. Gramaldi, EPA RI, and J. Boyle)

The Massachusetts Bay Industrial Waste Site (IWS) is located in Stellwagen Basin, approximately 22 nautical miles east of Boston, and just west of the Stellwagen Bank National Marine Sanctuary. The IWS was historically used to dispose of low-level radioactive waste, munitions, industrial and chemical waste, contaminated dredged materials, etc. Records of disposal in the IWS begin in the 1940's and all ended in 1977. NOAA NMFS has included a warning on navigational charts warning against harvesting fish and shellfish in the area since 1980.

From 1977 through 1992, an Interim Massachusetts Bay Disposal Site was used by the EPA for the disposal of dredged material. In 1992, the final Massachusetts Bay Disposal Site (MBDS) was designated in a location that avoids Stellwagen Bank and the known barrel fields of the IWS. Research has been conducted since the 1990's to confirm the location, condition, and impact of the barrels in the IWS. The EPA is proposing an expansion of the MBDS to allow the barrels to be covered by material generated during the deepening of Boston Harbor. The U.S. Army Corps of Engineers has proposed and tested a method to minimize impacts to the barrels and resuspension of potentially contaminated sediment.

The program is DAMOS – Disposal Area Monitoring System:

[http://www.nae.usace.army.mil/Missions/DisposalAreaMonitoringSystem\(DAMOS\).aspx](http://www.nae.usace.army.mil/Missions/DisposalAreaMonitoringSystem(DAMOS).aspx).

And the report is Contribution Report 198 – Massachusetts Bay Disposal Site Restoration Demonstration 2008-2009 – available at:

[http://www.nae.usace.army.mil/Missions/DisposalAreaMonitoringSystem\(DAMOS\)/Reports.aspx](http://www.nae.usace.army.mil/Missions/DisposalAreaMonitoringSystem(DAMOS)/Reports.aspx)

IX. Agency/Government Reports

i. MA Coastal Zone Management (T. Callaghan)

CZM continues to advance two aspects of the Commonwealth's ocean plan that may be of interest to members of the Stellwagen Bank NMS. One is that CZM will be standing up an Offshore Sand Task Force that will be charged with: 1) reviewing the existing preliminary compatibility and screening analysis for identifying offshore sand resources, 2) identifying additional data to be integrated into the compatibility and screening analysis, 3) providing advice on the necessary site characterization work, 4) helping to develop pre- and post-monitoring standards for dredging locations, and 5) recommending criteria for ensuring that dredging projects are in the public interest.

CZM will also be standing up an Aquaculture Advisory Group to examine the issue of aquaculture siting, performance standards, and formal review under the ocean plan. The advisory group will consider possible revisions to the plan that include: 1) reviewing thresholds for aquaculture projects under the ocean plan, 2) identifying which designated Special Sensitive or Unique resources and water-dependent uses should be addressed in siting aquaculture projects, and 3) exploring the benefits and feasibility of siting potential areas for certain future aquaculture project types.

Lastly, CZM helped facilitate a meeting between Anbaric Transmission and state agencies on the possibility of a seafloor cable crossing into state waters and connecting with the grid. Anbaric is proposing to bring 1000 MW of renewable energy from Searsport, ME to Plymouth, MA (<http://anbarictransmission.com/projects/mainegreenline/>). CZM provided Anbaric with a list of groups (including SBNMS and several NGOs that sit on the SBNMS SAC) that should be consulted regarding the siting of the project.

ii. MA Environmental Police and NOAA Law Enforcement (R. Thurlow and T. Wilmarth)

Over the past several months there have been numerous personnel changes within the environmental police, Major Pat Moran was selected as the new coastal bureau chief filling the vacancy created by the retirement of Major Len Roberts. Major Moran was previously the south coastal bureau chief and has spent his entire career with the environmental police in the coastal bureau starting out on the off shore patrol boats. Captain Anthony Abdal-Khabir has assumed command of the south coastal bureau vacated by Major Moran.

The Major is a strong supporter of the sanctuary and wanted to assure the council members that the Environmental Police would continue to provide an enforcement presence working closely with our federal law enforcement partners (Coast Guard, NOAA OLE). He also wanted to recognize the efforts of the Center for Coastal Studies who's over flights of the seasonal trap closure area have greatly assisted our patrol vessels with locating and documenting illegally set gear.

In addition to management level personnel changes we have filled many of our vacant coastal districts with new Officers. This will no doubt provide us the ability to increase our presence on the water both in and out of the sanctuary as the busy boating and recreational fishing season approaches.

Our two large coastal patrol boats, the *Thomas Paine* and *Jessie* have been tasked to provide an increased presence in the sanctuary. Recent patrols have documented and initiated enforcement action for non-compliant lobster gear. The patrol boat *Thomas Paine* has been checking gillnets for compliance with the assistance of a pinger detector on loan from NOAA/OLE. To date all located gillnets have been in compliance.

Supplementing and complementing the offshore large patrol boat program we have 27' and 31' patrol boats operating out of Sandwich, Plymouth, Hingham, Boston and Gloucester. The respective Regional supervisors of these vessels have been tasked to conduct regular patrols within the sanctuary as weather permits.

iii. New England Fisheries Management Council (M. Bachman)

The NEFMC has meet twice since the October SAC meeting, December 1-3 and January 26-28. Actions taken at these meetings included fishery catch limits for large mesh multispecies, scallops, skates, and spiny dogfish. The Council also approved Scallop Amendment 19 in December, which

will change the fishing year from March 1 to April 1. The Council is currently working on a variety of fishery management plan amendments, including:

- **Herring Amendment 8**, which will establish a long term harvest strategy for the stock to account for the role of herring in the ecosystem, and will address the issue of possible localized depletion. This amendment is in the early stages of development and the scoping report was reviewed in December.
- **Small Mesh Multispecies Amendment 22**, which will establish a limited access program for whiting and red hake. This amendment is also in the early stages of development and the scoping hearings and comments were reviewed in January.
- **Omnibus Deep-Sea Coral Amendment**, which will establish deep-sea coral management zones in the New England region. The Council is currently in the process of refining management alternatives for further analysis and approval.
- The Council is also developing a prototype **Fishery Ecosystem Plan for Georges Bank**.

The Council's Omnibus Essential Fish Habitat Amendment 2, which includes a proposal for a research area overlapping the Sanctuary, is currently undergoing review at NMFS GARFO. The estimated publication date for the proposed regulations is mid-June, with implementation at the very end of 2016.

iv. GARFO Fisheries (J. Anderson)

Recreational Fishing Plan

We are currently finalizing our 2016-2017 Regional Recreational Fishing Implementation Plan, which supports the National Recreational Fishing Policy that NMFS released last spring. The Plan is intended to guide the region in better supporting recreational fishing and describes both what we currently do, as well as areas where we intend to increase effort. We will be rolling the Plan out in the coming weeks.

National Bycatch Strategy

NOAA Fisheries, as part of our commitment to reducing bycatch in U.S. fisheries, has developed a draft National Bycatch Strategy. For the purposes of the bycatch strategy, we have defined "bycatch" broadly, as discarded fish or interactions between fishing operations and protected species. Similarly, "reducing bycatch" refers to efforts that can minimize the amount of bycatch, as well as minimize the mortality, serious injury, and impact (e.g. biological, economic and social) of bycatch that occurs. Reducing bycatch may also include efforts to encourage utilization of economic discards in commercial fisheries.

We welcome your feedback through June 3, 2016, at nmfs.bycatch@noaa.gov

GARFO Communications Survey

The Regional Office is conducting a survey of our recreational and commercial fishery stakeholders to gain a better understanding of our constituents communications needs. Our goal in conducting this survey is to help ensure the fishing industry is informed about the actions we take that may affect you and your businesses.

The survey is open from March 1–31, 2016, and may be accessed through our web page.

Proposed Cod and Haddock Recreational Measures

On March 3rd, NMFS proposed new recreational fishery management measures for GOM cod and haddock, including daily bag limits, size limits, and seasonal possession restrictions. This action is intended to ensure that the recreational fishery can achieve, but not exceed, its catch limits.

Comments can be submitted through the mail or electronically by March 18, 2016.

X. New Business. None.

XI. Public Comment. None.

XII. Adjourn. 3 pm.

Tour of Website and Documents

Stellwagen Bank National Marine Sanctuary (SBNMS)

- 1) NOAA and NOS Organizational Chart (<http://www.noaa.gov/about/organization>)
(http://oceanservice.noaa.gov/about/nos_org_chart.pdf)
- 2) National Marine Sanctuaries Act (NMSA) (<http://sanctuaries.noaa.gov/library/national/nmsa.pdf>)

The NMSA and SBNMS Regulations do the following:

- a. Define boundaries
 - b. List prohibited activities
 - c. Outline permit procedures
- 3) SAC Handbook (system wide)
(<http://sanctuaries.noaa.gov/management/pdfs/2010-ac-handbook-appendices-07162015.pdf>)

Guidance for SAC members and alternates:

- a. You are agents of federal government when in this role and subject to same lobbying and ethics restrictions
 - b. You are not volunteers
 - c. Roles:
 - i. You serve as liaison between sanctuary and community, disseminate info, bringing concerns to staff
 - ii. ID partners and constituent groups
 - iii. ID and solve issues and conflicts
 - iv. Review and provide input on sanctuary plans, proposals, products
 - v. Participate in sanctuary events, activities and programs
 - vi. Support sanctuary Friends groups and NMSF
 - vii. Provide technical and background info on issues facing the sanctuary
 - viii. Validate accuracy and quality of info sanctuary uses for management decisions
 - d. Terms and Elections
 - i. Chair and Vice Chair serve 2 years - maximum of 2 consecutive terms (four years) if elected
 - e. Grounds for removal
 - i. Break any laws
 - ii. Abuse of position - use council info for personal gain, use of position to advance a personal agenda or harm another member of council or community, has a change in professional affiliation that makes you not represent your constituency anymore, misses three consecutive meetings without reasonable justification
 - f. Communication guidelines – pp.35 - 40.
 - i. P. 46 no member may speak to the public on behalf of the council as a body unless the full council approved. Individual opinions shall not be represented as those of the council.
- 4) SBNMS Charter (site specific)
<http://stellwagen.noaa.gov/management/sac/charter.pdf>

The Charter provides background on the Office of National Marine Sanctuaries (ONMS) and Stellwagen Bank National Marine Sanctuary, and describes the objectives and roles of the council's activities, procedural requirements regarding the appointment of council members and

officers, requirements for the conduct of council members and meetings, and other requirements. All council activities must be conducted pursuant to this charter.

5) ONMS Strategic Plan

(http://sanctuaries.noaa.gov/management/pdfs/nms_strategic_plan_2005.pdf)

a. Vision: The National Marine Sanctuary Program is a world-class system of sanctuaries that protect the nation's natural and cultural marine resources for this and future generations and provides both national and international leadership for marine conservation.

b. Identify, protect, conserve, and enhance the natural and cultural resources, values, and qualities of the National Marine Sanctuary System for this and future generations throughout the nation.

6) Sanctuary Watch (<http://sanctuaries.noaa.gov/news/sw/>)

This is a national newsletter to keep colleagues, collaborators and constituents informed about the many program activities and accomplishments that take place within the 13 national marine sanctuaries and two marine national monuments.

7) ONMS link: (<http://sanctuaries.noaa.gov/about/welcome.html>)

ONMS-wide website with more helpful information about the ONMS sites, programs, etc.

SAC PROGRAMMATIC UPDATE

SUMMER 2015 - WINTER 2016

Science:

Team: M. Thompson, L. Hatch, A-M. Runfola, D. Wiley; Grant funded: B. Cabe, J. Stanley

1. Tagging humpback whales with synchronous motion, acoustic recording tags

Partners: WHOI, Oregon State University, Syracuse University, Center for Coastal Studies, Stanford University

Platform: R/V Auk

Funding: Volgenau Foundation

PI: Wiley

Description: Use suction-cup attached tags to investigate the behavioral ecology of endangered whales relative to vulnerability to lethal collisions with ships and entanglement in commercial fishing gear

2. Habitat use, foraging ecology and bycatch risk of Great Shearwaters based on PTT tags and Stable Isotope Analysis

Partners: USF&WS, UMASS-Amherst, Boston University, University of Long Island, National Marine Fisheries Service, University of Canterbury (New Zealand)

Platform: R/V Auk

Funding: Volgenau Foundation; Davis Foundation

PI: Wiley

Projects:

- Great Shearwater habitat use in the SBNMS and Gulf of Maine based on state-space modeling;
- Food habits of Great Shearwaters based on stable isotope analysis of feather, blood and exhaled gas samples;
- Demonstrating the relationship between sand lance forage fish and the abundance of shearwaters to provide support to limit the development of a commercial sand lance fishery;
- Co-occurrence modeling of Great Shearwater habitat use and sink gillnet fishing effort to identify areas of predicted bycatch;
- Combining bycatch modeling with fisheries dependent data to test co-occurrence predictions, identify factors contributing to bycatch and make recommendations for bycatch mitigation;
- Using PTT tracked Great Shearwaters for dynamic management of large whales;
- Testing a new theoretical framework, chord and clock navigation, capable of explaining the precise spatial orientation and temporal pacing performed by great shearwaters during their long-distance migrations over open ocean.

3. The Role of Sand Lance Fish (*Ammodytes* spp.) in Structuring the Abundance and Distribution of Marine Mammals, Seabirds and Commercial Fishes in the Stellwagen Bank National Marine Sanctuary

Partners: USGS, Boston University, UCONN

Platform: R/V Auk

Funding: Volgenau Foundation, SBNMS and USGS. Grants submitted

PI: Wiley

Description: We are monitoring 44 sights within the SBNMS to determine the distribution and relative abundance of sand lance. These data will be correlated with simultaneous

data from surface sightings of marine mammals and seabirds and video transects of commercial and recreational fishes

4. Sensitivity of early stage sand lance *Ammodytes dubius* on Stellwagen Bank to predicted ocean warming, acidification, and deoxygenation

Partners: SBNMS, UCONN, USGS, BU

Platform: R/V Auk; UCONN fish rearing laboratory

Funding: pending. Preproposal accepted by Sea Grant

PIs: Baumann; Wiley

Description: Live SBNMS captured northern sand lance will be spawned and reared at UCONN. Larval fish will be reared in future projected oceanographic conditions to quantify individual and combined effects of elevated temperature, low pH, and low DO conditions on the development, growth, and survival of early life stage *A. dubius* (northern sand lance).

5. Sensitivity of early stage sand lance *Ammodytes dubius* to ocean noise

Partners: SBNMS, UCONN, USGS, BU

Platform: R/V Auk; UCONN fish rearing laboratory

Funding: NMFS/ONMS

PIs: Baumann; Stanley, Hatch

Description: Live SBNMS captured northern sand lance will be spawned and reared at UCONN. Larval fish will be exposed to various sound levels to examine developmental impact.

6. Otolith microstructure analysis as a tool to address source-sink problems in marine fish populations

Partners: SBNMS, UCONN, USGS, BU

Platform: R/V Auk

Funding:

PIs: Baumann; Wiley

Description: The origin of sand lance in the SBNMS is unknown. We will address this question by conducting a targeted otolith study on YOY sand lance from Stellwagen Bank. Otolith microstructure analysis will be used to determine ages and hatch distributions and ultimately couple the data with a hydrodynamic model of the coastal shelf to evaluate the probability of self- vs. external recruitment.

7. Whales and waves: zooplankton accumulation, fish and humpback whale foraging response, and the jump waves in the SBNMS

Partners: WHOI, University of Lisbon

Platform: R/V Auk

Funding: Seagrant

PI: Pinada, Wiley

Description: This is a long-term (2009) ongoing investigation into the role of internal waves in concentrating predators and prey in the SBNMS.

8. Using Corporate Responsibility to Increase Vessel Compliance with NOAA's Right Whale Ship Strike Rule, Provide Increased Protection of North Atlantic Right Whales, and Recognize the Achievements of Deserving Maritime Companies

Partners: International Fund for Animal Welfare (Australia), USCG

Platform: SBNMS AIS infrastructure

Funding: International Fund for Animal Welfare

PIs: Ramage, Wiley

Description: AIS derived data on mariner compliance and commitment with NOAA Ship Strike Rule will be used to create report cards that categorize shipping companies relative to their level of commitment in the two speed restriction areas.

Compliance/Commitment grades will be determined and Certificates will be sent to ships and companies receiving A+ and A grades.

9. Whale Alert

Partners: West coast sanctuaries. IFAW, Conserve IO, Canadian Whale Institute, New England Aquarium, Cornell University, USCG, on-and-on...

Funding: IFAW

PIs: M. Carver, R. Ramage, B. Winney, D. Wiley

Description: Version 2.0 includes substantial updates as follows:

(1) expansion of Whale Alert to the west coast (focus on blue whales); (2) expansion of Whale Alert to Atlantic Canada and Quebec; (3) inclusion of NOAA PORTS data where available; (4) the ability of mariners and other to report whale sightings (citizen science); (5) the ability of mariners and other to report dead, injured or distressed (e.g., entangled) animals; (6) provide weather data; (7) creation of a cloud database that scientists can use.

10. Somatosensory sensory capabilities of whale skin

Partners: BU Medical School, UMD

Funding: NOAA

PIs: Eldridge, Mortazavi, Wiley

Description: Biopsy samples of humpback whale skin are collected and analyzed to identify and classify nerve fiber organization and presumptive functions using specific antibody staining (immunohistochemistry).

11. Microbial Genomics & Novel Drug Discovery in the Stellwagen Bank National Marine Sanctuary

Partners: Gloucester Marine Genomics Institute

Funding:

PIs: Bucci

Description: To characterize the sediment microbial community and bio-diversity at study sites using metagenomic tools. The goal is to generate draft genomes of marine microbes isolated from samples. An additional aim is to identify bio-synthetic gene clusters (i.e. *Actinomycetes*) with the potential to develop drug products with biotech applications.

12. Development of Metrics to Characterize Marine Soundscapes

(FY15 funding to L Hatch and S Van Parijs-NEFSC from the NMFS Ocean Acoustics Program; collaboration with P Auster-UConn/Mystic Aquarium and National Parks Service's Natural Sounds Program/Fort Collins, CO)

The US National Park Service's Natural Sounds Program has developed machine learning tools to relate their substantial acoustic recording data from across US continental park holdings to various GIS predictive variables such as vegetation, topography and climate. Through this collaboration, we are using the high resolution recording data collected within the SBNMS and similarly high resolution GIS predictor variables (e.g., bathymetry, sediment type, oceanography) to see whether and how much such variables can predict variance in noise levels throughout the sanctuary. The goal is to be able to groundtruth the behavior of such a model within the sanctuary, where such data assets are rich, so that we can develop acoustic metrics that can be used in less well studied coastal marine environments. Ultimately, this would support the use of

autonomous acoustic recordings as bioassay tools. Preliminary model results were presented at an international conference in Spain in May 2015. Next steps were discussed at an in-person meeting at the National Park Service's HQ in Fort Collins CO in June 2015, leading to plans to integrate additional data from the greater Gulf of Maine to fine-tune predictions. These analyses are ongoing, and progress will be assessed at an in person meeting in CO in May 2016.

13. Identification and Characterization of Atlantic Cod Spawning Activity

(FY14-16 NMFS Collaborative Research funding to S Van Parijs/NEFSC; FY14-16 funding to Saltonstall-Kennedy Grant Program to C McGuire-The Nature Conservancy, Micah Dean, Bill Hoffman --Massachusetts Division of Marine Fisheries & D Zemeckis-U Mass Dartmouth; in collaboration with L Hatch-SBNMS, S Van Parijs-NEFSC and Sector 10 groundfish fleet) Collaborative effort between SBNMS, Northeast Fisheries Science Center, Woods Hole Oceanographic Institution, U Mass Dartmouth, Massachusetts Division of Marine Fisheries, The Nature Conservancy and fishermen from Sector X to incorporate autonomous recording units and gliders that listen for cod spawning sounds into long-term research using acoustic tags and other methods to locate cod spawning areas. NEFSC and SBNMS directed funds were acquired from NMFS programs, with external partners funded by a successful Saltonstall Kennedy grant active for three years. Fall-winter 2015-16 deployments included 5 archival passive acoustic units, 50+ telemetry receivers and three passive acoustic gliders. Engagement continues with ongoing Northeast Fishery Management Council efforts to further protect spawning cod, including poster and oral presentations at Council meetings and for specialized Council task forces. <http://www.capecodtimes.com/article/20141223/NEWS/141229792>

14. NOAA Noise Reference Station Deployment and Permitting

(FY14-ongoing project leveraging OAR-PMEL capacity, NMFS Science Center vessel time and NMFS Ocean Acoustics Program funding)

Olympic Coast, Channel Islands, Cordell Bank and Stellwagen Bank NMSs have acquired long term listening stations (1-2 year sequential deployments) as part of a NOAA-wide initiative to increase passive acoustic data holdings for the purpose of informing the agency's management of ocean noise. The OC sensor was deployed in June 2014, the CI and SB sensors were deployed in October 2014 and the CB sensor was deployed in October 2015. The SB sensor is located within the proposed Dedicated Habitat Research Area. Data from these units (placed in all nine NOAA-managed regions) will be used to compare trends in mostly deep water low frequency ambient noise levels, with SBNMS providing a shallow water exception. Support and expansion of this work to address noise issues within other sanctuaries is a focus of a newly-convened ONMS Ocean Noise Working Group, in partnership with the NOAA Ocean Noise Strategy effort (see below). SB's sensor was successfully retrieved and redeployed in October 2015 for another year of recording. Analysis of the first year's data is now underway.

<https://www.st.nmfs.noaa.gov/feature-news/acoustics>

<http://www.pmel.noaa.gov/acoustics/ocean-noise-reference.html>

15. Stellwagen Bank Soundscape Analysis

(FY16-18 project leveraging NMFS and ONMS support for post doctoral researcher working jointly with SBNMS and NEFSC)

Dr. Jenni Stanley began her position as a post doctoral researcher specializing in soundscape ecology in September 2015, and was introduced to the SAC in fall 2015. She has been examining various acoustic recording assets currently in hand to further describe less well documented acoustically active marine species that are contributing to the sanctuary's lower frequency soundscape, including several species of fish and marine invertebrates. She is using this data-mining stage to inform field work that will begin in summer 2016 to record fuller bandwidth soundscape conditions in the sanctuary at two locations for representative lunar

months for every season. She will also use continuous year-round recording data, though limited to lower frequencies, from the sanctuary's Noise Reference Station (above). These efforts will inform the site's understanding of the presence and habitat preferences of acoustically sensitive species, especially fish and marine invertebrates. Understanding which species and in which areas of the sanctuary animals are using sound in important ways will serve as the basis for designed further field and experimental studies to determine whether and how human-induced noise (such as produced by vessels) is impacting sanctuary resources.

<http://sciencelearn.org.nz/Contexts/The-Noisy-Reef/People/Dr-Jenni-Stanley>

16. NOAA Ocean Noise Strategy

(Co-chaired by L. Hatch, SBNMS, J. Harrison, NOAA Fisheries Office of Protected Resources & J. Gedamke, NOAA Fisheries Office of Science and Technology)

In a January 19, 2010 letter to the Council on Environmental Quality, NOAA Administrator Dr. Jane Lubchenco committed to convening two workshops to develop a comprehensive noise budget for the oceans and model marine mammal distributions and densities. This effort subsequently led to the development a new cross line office Strategy to promote more comprehensive management of underwater noise in US waters, and to continue to direct science tool development to support NOAA's noise management objectives. An internal NOAA team worked to create a guidance Framework document to support the agency's collective efforts to achieve the Strategy's goals. This document is close to finalization and will be published in spring 2016. In parallel, Strategy leads have been working with cross-agency and cross federal partners to implement key recommendations identified in the framework, including establishing an interagency passive acoustic monitoring network and archive, supporting the development of the NOAA Noise Reference Station Network and more closely coordinated co-management of noise impacts to marine mammals in places such as National Marine Sanctuaries.

See <http://noaa.cetsound.gov> for more information.

Maritime Heritage:

M. Lawrence

In October 2015, maritime heritage staff and sanctuary volunteers participated in the 9th Annual Archaeology Fair at Boston's Museum of Science hosted in partnership with the Archaeological Institute of America (AIA) and Massachusetts Foundation for the Humanities. The event brought together archaeologists and historic preservation professionals from around New England to provide the public with hands-on activities, live presentations, and special programs about archaeology. The event allows sanctuary staff to reach a broader audience not previously familiar with the sanctuary, its maritime heritage, and ocean conservation issues. This year the Office of National Marine Sanctuaries sponsored the AIA's International Archaeology Day on Saturday, 17 October.

The Winter 2016 edition of *Flotsam & Jetsam*, the newsletter of Massachusetts Marine Educators focused on marine archaeology and featured an article on SBNMS maritime heritage research.

In promotion of the new SBNMS shipwreck book, Matthew Lawrence presented on the sanctuary's maritime heritage at the Nantasket Beach Lecture series hosted by the Hull Lifesaving Museum, Hull Public Library, and Massachusetts Department of Conservation and Recreation in October. Ninety attendees enjoyed the multimedia presentation that was filmed for future broadcast on Hull's community access TV network. Similarly, the Falmouth Historical Society sponsored a sanctuary maritime heritage presentation that coincided with the steamship

Portland's loss in November. Noted maritime artist William G. Muller, whose art graces the book's cover, attended the presentation and signed copies of the book.

As part of the National Marine Sanctuary Foundation (NMSF) Congressional Members Roundtable on Maritime Heritage, Matthew Lawrence joined ONMS Maritime Heritage Program Director Dr. James P. Delgado, and NMSF President Jason Patlis to discuss the role of maritime heritage in the sanctuary system. Representatives that have sanctuaries in their districts (including Rep. Keating) were joined by others whose constituents are considering nominating their special ocean and Great Lakes places to be national marine sanctuaries. Each member that attended received a copy of the SBNMS shipwreck book.

SBNMS Dive Unit:

M. Lawrence; D. Slocum

Boston University's scientific diving class returned to the Scituate campus in September. Professor Phil Lobel trained 10 open water divers in scientific diving procedures from the sanctuary's dock. Matthew Lawrence facilitated their access, provided the class with a site overview and a presentation on the sanctuary and NOAA scientific diving. On the class' last day, Matthew also presented on underwater archaeological mapping techniques.

Unit Diving Supervisor Matthew Lawrence and Operations Coordinator David Slocum traveled to Panama City, Florida in January 2016 for NOAA Diving Program training. Matthew received Divemaster training, while David was certified as a NOAA diver.

OPERATIONS AND SPECIAL PROJECTS:

B. Cowie-Haskell, Deputy Superintendent; D. Slocum, Facility Operations Specialist;
A. Stratton, Ecologist

Vessel Operations

The R/V Auk is at its winter berth at the Brewer Yacht Yard in Plymouth. It will return to Scituate sometime in April. Auk will be drydocked for annual maintenance for approximately two weeks but has yet to be scheduled.

Facility Operations

Boathouse

Before the boathouse can be converted into a Marine Operations Center an environmental assessment has to be conducted due to the fact that the boathouse is in the floodplain and is subject to the effects of sea level rise. The assessment will ascertain whether NOAA can proceed with its plan to renovate in place or whether it has to consider other options such as raising the floor elevation. The purpose of converting the boathouse into a Marine Operations Center is to better support the sanctuary's mission by increasing science capabilities (e.g., multi-day research missions with R/V Auk, dive locker, wet and dry labs) and by providing educational programming for area schools.

Timeline

Fall 2015- Parking lot construction completed.

Winter 2016- Environmental Assessment for boathouse renovation

FY17- Renovation of boathouse (contingent on funding)

FY18- Complete waterfront improvements (contingent on funding)

Parking Lot

The grassy lot adjacent to the boathouse was purchased by NOAA in 2011. The grass was replaced by pervious crushed gravel in order to make 15 parking spaces. The property line is defined by a split rail fence.



Contingency Planning

SBNMS oil spill exercise: Ben Cowie-Haskell and Alice Stratton continue to work with the USCG Sector Boston on regional contingency planning efforts. We are currently working with USCG to plan a Preparedness Response Exercise (PREP) for this spring that will simulate an oil spill in SBNMS that also has the potential to impact the Boston Harbor Islands. This will be a one-day tabletop drill that will provide an opportunity for SBNMS, USCG, and other Federal and State partners to ensure appropriate communication protocols are in places, evaluate best practices, discuss the potential tradeoffs regarding the use of dispersants or alternative oil spill clean-up methodologies, and allow SBNMS staff to better understand their potential roles in an emergency response.

Special Projects

Ecology of Shipwrecks: Alice Stratton is continuing the analysis of archived photos and videos from SBNMS shipwrecks to document the fish and benthic communities that use these habitats and to enhance our understanding of community structure in the sanctuary. Analysis of data from the *Portland* and the *Paul Palmer* was completed in 2015, and Alice has begun to review the data from the *Frank A. Palmer* and *Louise B. Creary*, located in deep water, and will follow that up with data from the shallow wreck of an unidentified trawler.

Volunteer Program Updates:

A-M. Runfola

Headquarters Work Detail

Anne-Marie Runfola, Volunteer Program Coordinator, was invited to apply for a three-month position with National Ocean Service (NOS) at NOAA HQ in Silver Spring, MD and was accepted as a Program Analyst, filling in for someone on leave from January-March 2016. She is now in her second month in the position, working for the Policy Director & Chief of Policy and Constituent Affairs and supporting NOS leadership and two programs: the Office of Response and Restoration and the Office of National Marine Sanctuaries. This is a great opportunity for her to represent sanctuaries and SBNMS at the NOS leadership level, increase awareness about our work, and bring back the larger NOAA perspective to our team. She will return to her Volunteer

Program Coordinator role in April 2016, and even while in DC, she's working with volunteers, interns, fellow colleagues, and partner organizations to keep up the volunteer program's momentum.

Stellwagen Sanctuary Seabird Stewards (S4)

We finished the 2015 season with the annual S4/Christmas Bird Count cruise. Broke 3 records. Stats from this season: Over 55,000 sightings from April – Dec. We collected data on five Auk trips (standardized) and 55 whale watch trips, ran two training events and involved 40 active volunteers, including 5 new stewards, and four interns. Thanks to great help from Mike Thompson, our GIS Analyst, and our interns, our data from 2011-2015 is now all in one database, quality checked and ready for analysis. One of our interns is starting to analyze the data this semester, and Anne-Marie will present the first quick numbers at the Mass Audubon Annual Birder Meeting on March 13th.

We are honored that the US Geological Survey and US Fish and Wildlife Service have recently accepted the S4 standardized data into their Avian Compendium database to help aid decisions about using and protecting our ocean resources. This is the only citizen science dataset to be included in this high-level project.

New Sanctuary Ambassador: Meet *Salt*, our 43-foot Inflatable Whale

Lefty and Delilah, our faithful inflatable right whales have been entertaining and educating communities for years. They are starting to wear out, and since these inflatables garner so much attention from the public and the press, we knew it was time for a more professional-looking product. Last year, the Volunteer Program received a grant from the National Marine Sanctuary Foundation and NOAA/National Marine Fisheries Service to design a new indoor/outdoor life-size inflatable whale for sanctuary events and those we are increasingly offering with NOAA Fisheries and external organizations. We worked with a company to create *Salt*, designed to look like our grand dame humpback of the sanctuary, and unveiled her at Gates Intermediate School, in November 2015. Since then she has already garnered more than 10 news articles at four events, and reached more than 7,500 people, including at the kickoff for the Animals Without Passports Sister Sanctuary exhibit at the Maritime Aquarium in Norwalk, CT. Volunteers are being trained to take care of her and help us provide tours and related educational activities to groups throughout the year.

Sample of Media, with photos:

<http://www.courant.com/entertainment/museums-galleries/hc-whale-exhibit-in-norwalk-aquarium-0115-20160114-story.html>

<http://scituate.wickedlocal.com/article/20151114/NEWS/151118483>

Twitter: <https://pbs.twimg.com/media/CY5IYZNWUAAD00h.jpg:large>

Facebook: <https://www.facebook.com/SBNMS/posts/10153786364366897>

Sanctuary Volunteer Program Partners with Weymouth School System on Series of STEM Events

Stellwagen Bank National Marine Sanctuary Volunteer Program has started a new partnership with the Weymouth Public School System to run educational activities at the schools' new STEM series (Science, Technology, Engineering and Math). John Galluzzo, lead volunteer, SAC member and partner through the South Shore Natural Science Center/SSYMCA invited the Volunteer Program to help offer maritime heritage activities for the first program and then *Salt* and sanctuary whale activities for a second program, reaching a total of over 750 students and

family members. We will work with both partners, and sanctuary Education Coordinator, Anne Smrcina, to develop future programming, increasing sanctuary outreach within a neighboring community and media reach. Anne Smrcina visited the second event and met with school system administrative staff to discuss the possibility of developing sanctuary-specific curricular materials for use in the Weymouth public schools.

SISTER SANCTUARY PROGRAM:

N. Ward

The SBNMS Sister Sanctuary Program (SSP), initiated by SBNMS (2006) to protect our shared population of humpback whales in collaboration with marine mammal sanctuaries/initiatives in the Dominican Republic, Bermuda, French Antilles (Agoa) and the Caribbean Netherlands, is a pioneering program of the United Nations Environment Program/ Special Protected Areas and Wildlife's Marine Mammal Action Plan for the Wider Caribbean Region. In 2014, SBNMS launched CARIB Tails, a citizen science program that enlists recreational yachters and cruisers to contribute tail fluke photographs of humpbacks in the Wider Caribbean Region. In 2015, SBNMS and the Caribbean Netherlands provided financial support for photographic analyses of individual humpback whales from the Eastern Caribbean. This support contributed to a total of 93 individuals being added to North Atlantic Humpback Whale Catalog (NAHWC: n=8,000). The analysis more than doubles the number of individuals in the NAHWC database that have been identified in these waters, bringing the total to 155 from this remote and previously under-sampled area. This study was presented to the Scientific Committee of the International Whaling Commission as paper SC/66a/AWMP2.

Significance: Current results show trends that the Eastern Caribbean may be considered a Distinct Population Segment—an additional breeding ground for our shared endangered North Atlantic Humpback Whale population.

"So close and yet so far: Are humpback whales in the southeast Caribbean a distinct from those off the Dominican Republic a distinct breeding group?"

Nathalie Ward, PhD and colleagues (Stevick *et al.* 2015) presented a poster at the Biennial Conference on the Biology of Marine Mammals (December)—"So close and yet so far: Are humpback whales in the southeast Caribbean a distinct from those off the Dominican Republic a distinct breeding group?" The poster presented data on the timing and movement patterns of humpback whales from the southeastern Caribbean showing that the whales mating and calving in this region are not a representative subset of those that winter in the Dominican Republic. The peak in abundance in the southeastern Caribbean occurs during March and April, declining rapidly during May. This seasonal distribution pattern is in stark contrast to that for sightings reported in the Dominican Republic, where whales are at their peak abundances in February and early March, with few animals remaining by early April. The timing difference may be related to the feeding ground destination of these whales, as it has been previously demonstrated that humpback whales from eastern North Atlantic feeding areas are sighted in the Dominican Republic later than are those with feeding area sightings in the western North Atlantic. Stevick *et al.* data demonstrates that there is a strong tendency for whales from the southeastern Caribbean to migrate to feeding areas in the eastern North Atlantic, notably to Norway; and, therefore, the whales using the southeastern Caribbean represent a previously un-described and behaviorally distinct population segment within the North Atlantic. Given this, the widely held idea that there is a single West Indies breeding population is in need of reconsideration.

Significance: The poster session featured SBNMS's preeminent role in the Caribbean to an audience of more than 3,000 scientists, managers, policy makers and educators from more than 30 countries to engage in interdisciplinary dialogue regarding the definition of the West Indian humpback whale breeding stock and provided the opportunity for the necessity for continued evaluation and caution about changing the conservation status of this population. As importantly, SBNMS/NOAA presence fosters international partnerships with the goal of enhancing collaboration, sharing ideas, and improving the quality of research on marine mammals within the scientific community.

"Humpback Tails Wanted": CARIB Tails Is Focus Feature for Scientific American's Citizen Science Projects

CARIB Tails' citizen science initiative is an international research collaboration between NOAA's Stellwagen Bank National Marine Sanctuary and UNEP's Caribbean Environment Programme. The feature story encouraged yachters and cruisers to take on a special role as citizen scientists to assist with marine mammal research, by photographing the distinct patterns on the tails of humpback whales in their Caribbean breeding grounds. The project involves citizen scientists and researchers collaborating across continents. The information submitted will be used in mark-recapture studies to help monitor the recovery of this endangered species.

Link: <http://www.scientificamerican.com/citizen-science/>

Significance: Scientific American's feature article showcases the innovative citizen science research being conducted by SBNMS's Sister Sanctuary Program and demonstrates NOAA/ONMS -SBNMS's leadership role in humpback whale conservation. Scientific American has a social media reach of 3.5 million and is published in 14 local language editions worldwide, including the U.S. edition of Scientific American, read in more than 30 countries, with a worldwide audience of more than 5 million people.

Marine Mammal Research and Conservation Connecting New England and the Caribbean.

Nathalie Ward gave a presentation to the SEA Semester students, faculty and staff in Woods Hole, MA on January 27th, titled: *Marine Mammal Research and Conservation Connecting New England and the Caribbean*. The lecture highlighted Stellwagen Bank NMS's CARIB Tails citizen science program. SEA is a CARIB Tail's education partner/sponsor, wherein students and crew serve as citizen scientists on their sailing vessels to North Atlantic humpback whales' Caribbean breeding ground in hopes of contributing fluke photographs to assist with the Sister Sanctuary Program's mark-recapture studies.

Significance: SEA vessels routinely travel through regions not frequented by other research vessels, providing the opportunity to collect data in observation-sparse or remote areas, and to build long-term data sets on annually repeated cruise tracks to contribute to CARIB Tails datasets. These professional collaborations in scholarly research and in education and outreach activities both enhance SBNMS and SEA Semester programs and contribute to the academic community at large.

Marine Mammal Protected Areas Network (MaMPAN-SSP) 2015-2016 Publication Highlights and Resources

- Stevick, P.T., L. Bouveret, N. Gandilhon, C. Rinaldi, R. Rinaldi, F. Broms, C. Carlson, A. Kennedy, N. Ward, and F. Wenzel. 2015. "Humpback whales in the southeast Caribbean are behaviorally distinct from those off the Dominican Republic." *Journal of Cetacean Research Management*. Presented to IWC sub-committee on Aboriginal Whaling

Management Plans and the sub-committee on Stock Definition {IWC, San Diego, California, USA May 2015 as paper SC/66a/AWMP2}.

- UNEP-SPAW Newsletter: Newsletter N°17 - October 2015.
Link: http://www.car-spaw-rac.org/IMG/pdf/spaw_newsletter_no17.pdf
- CARIB Tails website: www.caribtails.org
- Partnerships for Transboundary Protection—a joint program supported by NMFS's Office of Protected Resources and NOS's Office of National Marine Sanctuaries to protect marine resources that live within and beyond U.S. waters. Link: <http://www.fisheries.noaa.gov/pr/ptp.html>
- Humpback Tails Wanted: focus feature for Scientific American's Citizen Science Projects (November 20, 2015) Link: <http://www.scientificamerican.com/citizen-science/>

SANCTUARY ADVISORY COUNCIL:

N. Ward; E. Stokes

The Sanctuary Advisory Council (SAC) is a community-based body that advises the Sanctuary Superintendent on issues relevant to the effective implementation of the Sanctuary Management Plan. The Council is the formal organizational link to the Sanctuary's user community and others interested in the management of this nationally significant area of the marine environment. There are three Council meetings per year. To date (fiscal year 2015-2016), there have been two SAC meetings: 7 October 2015 (Plymouth, MA) and 9 March 2016 (Rockland, MA); the spring/summer meeting is planned for 1 June 2016 (Gloucester, MA).

Recruitment

September 30, 2015 (recruited for 14 seats; 11 seated):

7 new members: 3-year terms (2015-2018):

- Alyssa Hall—Research Alternate
- Joseph Levine—Research Alternate
- William Bartlett—Mobile Gear Commercial Fishing Alternate
- Marissa Marcoux—Diving Alternate
- Charlie Rasak—Business and Industry Primary (former Alternate)
- Kevin Powers—At-Large Primary (former Alternate)
- Laura Howes—Whale Watch Primary

4 incumbents: 3-year terms (2015-2018):

- Susan Farady—Education Primary
- Rich Delaney—Education Primary
- Bill Adler—Fixed Gear Commercial Fishing Primary
- Heather Knowles—Diving Primary

Feb-29, 2016 (5 Alternate seats):

- At Large
- Business Industry
- Mobile Gear Commercial Fishing
- Whale Watch Alternate
- Youth Alternate