

DRAFT

**Thunder Bay National Marine Sanctuary  
Advisory Council**

**- February 24, 2015 Meeting Minutes-**

**Date:** February 24, 2015

**Time:** 6:30pm

**Location:** Great Lakes Maritime Heritage Center, 500 W. Fletcher Street, Alpena, MI

**MEETING ATTENDEES**

**NOAA:** Jean Bauer, Jeff Gray, Cathy Green, Russ Green, Pat Saker, Phil Hartmeyer, Harriet Smith, Chuck Bennett, Tane Casserley, Sarah Waters, Americorps Members – Travis Wahl and Meaghan Gass

**State of Michigan:** Wayne Lusardi

**SAC Members:** Olin Joynton, Lynda VanDusen, Jeff Kowalski, Carol Shafto, Shawn Sexton

**SAC Alternates:** Chuck Wiesen, Ron Meneghel, Jim Dessenberg, Roger Baumgardner, Susan Nielsen

**Ex-officio Member:** None

**Public:** None.

**Media:** Nicole Grulke, *The Alpena News*

**WELCOME AND ACTION ITEMS**

Olin Joynton called the meeting to order.

Chuck motioned to approve the November 18, 2014 meeting minutes. Shawn Sexton seconded the motion. All were in favor.

Bill Lamar and Merl Melton have been appointed to represent the TB Underwater Preserve. Thank you to Mike Lakin and Joe Sobczak for serving on the council.

**SAC APPLICATIONS & CHARTER REVISIONS**

The Federal Register Notice was published on February 13<sup>th</sup> and the press release went out last week. We are accepting applications for the following seats:

- Tourism/Recreation (including recreational boating, water sports, tour boats) (2-year term)
- Business/Economic Development (3-year term)
- Fishing (recreational, charter, and/or commercial) (2-year term)
- Diving (including snorkeling) (3-year term)
- Education (K-12, home school, charter schools) (3-year term)

Education (higher education) (2-year term)

Maritime Industry/Business (2-year term)

Citizen-at-Large – (3 seats total, one is for a 2-year term and two are for 3-year terms)

All applications are due by March 31, 2015. Everyone is encouraged to reapply. Please be sure to check as many seats that apply to you.

Letters inviting Presque Isle and Alcona Counties to appoint a representative are being mailed this week. Each county is able to appoint a member and an alternate, which can be from their local government or a member of the public.

The SAC Charter has been updated to include the seat changes and additions that were voted on at the November 18<sup>th</sup> meeting.

### **FRIENDS UPDATE – Cathy Green**

The end of the year membership campaign doubled number of friends as well as donations. Engagement was also increased through events including the Sanctuary Celebration and the Film Festival. Trying to integrate the Friends into everything we do at the sanctuary.

In 2015 the Friends plan to focus on earned revenue, corporate sponsorship, community partnerships, and increased membership engagement.

The Friends will focus on growing the store and how it is being run. At the Alpena Chamber of Commerce Annual Dinner the store was recognized for their customer service. Sarah has really focused on training them for visitor experience. They don't just run the store they are greeters for the 90,000 visitors we have here.

Focus on engaging Friends' members with more regular group and individual communication.

The Friends' board meets three times per year. The next board meeting will be at the end of March. If you're interested in attending the meeting, please contact Cathy.

Olin Joynton asked about the funds being invested. Yes, the funds are in an endowment fund at the Community Foundation for Northeast Michigan which are invested.

Ron Meneghel asked if we have it set up so people know that we can take bequests. Yes, the CFNEM is set up accept bequests on our behalf but it hasn't been promoted. Jeff said we haven't pushed it publically, but we plan to. Cathy will work on literature in the next year to include bequests. Jeff mentioned Betty Krueger's bequest is what got the Friends started.

### **Thunder Bay International Film Festival – Stephanie Gandulla**

The Film Festival was a five day event in January. It's a great way to promote the sanctuary. We had lots of media coverage as well as lots of talk on Facebook. The festival appeals to a wide array of people.



Showed 39 films

4 venues – Rogers City, Thunder Bay Winery, Black Sheep, Great Lakes Maritime Heritage Center

9 filmmakers

15 community sponsors

274 volunteer hours

600 film fans

1 sanctuary

The weekend prior to the festival, Chuck Bennett and Joe Rybarczyk lead a filmmaking workshop. The films that were produced during the workshop were shown on the last day of the film festival. The participants' ages ranged from high school students to a retired school teacher. The film festival committee plans to keep the workshop as part of the festival and also add a student filmmaking competition.

Please email Stephanie at [steph.gandulla@noaa.gov](mailto:steph.gandulla@noaa.gov) if you have any feedback or ideas for next year's film festival.

### **GREAT LAKES MARITIME HERITAGE TRAIL UPDATE – Jeff Gray**

Jeff spoke about the Great Lakes Maritime Heritage Trail, which will be used to promote, interpret, and connect our maritime landscape and bring surrounding communities into the big picture.

The markers will include information on:

Shipwrecks

Lighthouses

Lifesaving stations

Industries and working ports

Historic vessels

Maritime culture

Archival collections

It's not just about the visitor; it's about our community as well.

Possible Locations:

DNR properties

Community parks

Lighthouses

Public waterfront

Marinas and other "jumping off" points

Partner Sites

### **SANCTUARY UPDATE**

Sarah introduced Travis Wahl and Meaghan Gass the new AmeriCorps Members we are hosting through Huron Pines.

We will be hosting a few more interns this summer. One is a Naval Academy Midshipman who will be working with Cathy and the research team for three weeks. The second one is an environmental journalism student from MSU that will be working with Stephanie. She will come here for a site visit and then work remotely to produce media and outreach products. The third intern will be here this summer through a 10-week NOAA scholarship.

Sarah distributed the 2014 Education and Outreach Highlights one pager (see attached.)

We saw an increase in family, tour, and school groups, so we have developed a new menu for group programs. This document will be posted on our website.

Sarah plans to start an education and outreach working group. Please contact her if you are interested in participating, [sarahawaters@noaa.gov](mailto:sarahawaters@noaa.gov).

#### **ISGP Climate Change Program - Alpena Working Group – Cathy Green**

Cathy Green is heading up a collaborative project with the Institute on Science for Global Policy (ISGP), an international advocacy group for engagement and thoughtful debate around scientific research on a variety of topics. The sanctuary will be co-hosting a conference later this summer (late July/early August) here in Alpena around the topic of Climate Issues, as they affect coastal communities in the Great Lakes. Our local working group consists of federal, regional, and local members who will recruit a representative constituency to participate in a jointly organized 2-day conference organized around the ISGP's unique format of invitation-only debates and caucuses.

If you would like to participate or know someone that would, please contact Cathy Green, [cathy.green@noaa.gov](mailto:cathy.green@noaa.gov) or 989-356-8805 x10.

#### **Research Team Update – Russ Green**

Russ shared information on last summer's multi-beam sonar projects and spoke about upcoming projects and the various partners involved.

The Great Lakes Environmental Research Lab recently installed a webcam on Thunder Bay Island. The webcam provides real time weather data which can be found at their website <http://www.glerl.noaa.gov/metdata/tbi/> or [www.ndbc.noaa.gov](http://www.ndbc.noaa.gov).

Russ also spoke about the ONMS Center of Excellence for Diving and Marine Technology (see attached handout.)

**PUBLIC COMMENT** – None.

**ADJOURN** – The meeting was adjourned at 7:55pm.



## Thunder Bay National Marine Sanctuary

### ONMS Center of Excellence for Diving and Marine Technology Education



The Center of Excellence for Diving and Marine Technology Education at Thunder Bay NMS has three interrelated goals:

- To become a hub for specialized dive training and innovation, serving partners within NOAA, the broader science community, and state and regional public safety agencies.
- To export diving expertise and capabilities that will enhance conservation efforts throughout the national marine sanctuary system, NOAA and the broader science community.
- To become a Great Lakes hub for applied marine technology education, offering teachers and students from elementary school through higher education a stimulating environment to develop projects, train, and supplement their own curriculum.



*Above*, a sanctuary archeologist samples microbial mats within a submerged sinkhole. The sanctuary's scientific diving capabilities are regularly leveraged by university and government researchers from a range of disciplines.

*Below*, the sanctuary's 50-foot RV *Storm* supports both science and education missions. The Center of Excellence allows students and teachers to develop and train as well as operationalize their equipment in areal-world application.



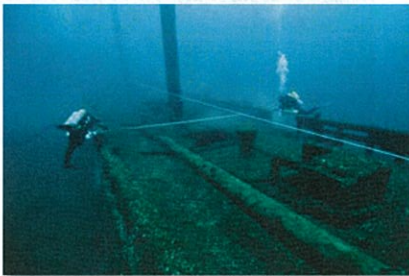
Students compete during the 2014 MATE International ROV competition. The 3-day event brought 59 teams from 13 countries and over 800 people to Alpena, Michigan.





### Current Training Capabilities and Assets

- NOAA Scientific Diver Instruction
- DAN Instruction including Emergency Oxygen, First Aid for Hazardous Marine Life, Neurological Assessment, CPR and First Aid, Diving Emergency Management Provider, CPR: Health Care Provider with First Aid, and Diving First Aid for Professional Divers
- OTS Guardian full face mask and hardwired/wireless communication instruction
- NOAA Specialty Task Endorsements working in cooperation with the NOAA Diving Center
- Nautical Archaeology Society (NAS) training with four instructors on staff
- 700 square foot climate controlled dive locker
- Full open circuit mixed gas diving capabilities to 250 foot depth; closed circuit rebreather capabilities to 150 foot depth.
- On site compressors, gas boosters and related equipment to support air, nitrox and mixed gas diving.
- Access to two mono-place recompression chambers at the Center for Wound Healing and Hyperbaric Medicine at the Alpena Regional Medical Center
- Ability to host up to 20 divers for operations; On site housing for 10 divers
- 50-seat classroom, 100-seat theater with video conference capabilities



*Above/Below*, diving and marine technology are fundamental to the sanctuary's conservation efforts. Using multiple types of remote sensing technology and modes of diving, the research team has assessed 74 of the 92 known shipwrecks in the 4,300 sq. mi. sanctuary.



**What is needed to fully operationalize the Center for Excellence and make a sustained cultural, economic and conservation impact in the Great Lakes?**

- Filtration system, epoxy interior coating, and three season cover/roof for training tank
- Funding for one educator dedicated to program development, marketing and facility oversight

### Training Tank and Open Water Environments

- 550,000 gallon fresh water concrete tank
- Measures 80 feet wide by 14 feet deep
- 14 foot deep decking around half of the tank; wheelchair accessible
- Multiple 110v power drops at tank side; 220v available
- Controlled environment for educational programs, outreach events, ROV/AUV, SAR drills, and archaeological training.
- 25 shipwreck sites with permanent moorings at depths from 8 feet to 100 feet
- Access to Olympic size pool; easy access to beach and river dive sites

### Research Vessel *Storm*

- 50 foot former Coast Guard vessel retrofit in 2009
- Capable of carrying 8 technical divers
- Twin 500 HP Detroit diesel engines
- 300 nautical mile range
- Onboard emergency oxygen system capable of lasting 8 hours and supporting two injured divers
- Drop down transom for easy diver deployment and recovery
- Through hull diver recall system
- RESON 8101 multi-beam sonar
- Klein 3000 side scan sonar
- Outland and VideoRay Remotely Operated Vehicles
- 2000 lbs crane
- Operated in partnership with the Great Lakes Environmental Research Lab (GLERL)

### NOAA and Partner Diving Projects

- Divers from Thunder Bay NMS have supported maritime archaeological and biological dive projects in Monterey Bay NMS, Cordell Bank NMS, Flower Garden Banks NMS, Florida Keys NMS, Monitor NMS, Stellwagen Bank NMS, Papahānaumokuākea MNM, and the National Marine Sanctuary of American Samoa
- Government and university partners include the National Park Service, Great Lakes Environmental Research Lab, US Geological Survey, US Fish and Wildlife Service, Bureau of Safety and Environmental Enforcement, Bureau of Ocean Energy Management, Michigan Department of Natural Resources, East Carolina University, UNC-Coast Studies Institute, Woods Hole Oceanographic Institute, University of Rhode Island, University of Vermont, University of Michigan, Grand Valley State University



## 2014 Education & Outreach Highlights



NOAA, Thunder Bay National Marine Sanctuary

Above, sanctuary staff member prepares students to test water quality near the mouth of the Thunder Bay River for an ongoing class project.



NOAA, Thunder Bay National Marine Sanctuary

Above, sanctuary staff member teaches STEM skills by building ROVs with 130 students as part of a National Guard Youth Leadership summer camp.



NOAA, Thunder Bay National Marine Sanctuary

1,300 teachers attended the annual Michigan Science Teachers Association Conference where the sanctuary hosted an outreach booth along with partner Alpena Community College.

## Protecting the Great Lakes and their rich maritime history through research, education, and resource protection.

### Formal Education

In 2014 sanctuary educators provided formal education programming for 1,600 K-12 and post-graduate students. With a focus on place-based learning, these programs represent a combination of field trips and classroom programs, with a strong emphasis on meaningful watershed experiences. As part of its formal education initiative the sanctuary completed the second year of the ["Our Rivers, Our Future"](#) project.

### Informal Education

This year sanctuary educators also organized activities for 2,655 students and 1,367 adults outside of the established formal education system. In 2014 these programs included field trips, site-based experiences, contests, trainings, and summer or after school programs.

Shipboard learning such as ["Classroom Cruises"](#) and science, technology, engineering, and math (STEM) learning by building [remotely operated vehicles](#) (ROVs) are two examples of the sanctuary's informal education programming.

### Outreach for Education

Outreach for education includes activities and products that build awareness, develop relationships, and encourage the pursuit of further learning opportunities. Sanctuary staff engaged an audience of 19,675 people this year through outreach activities such as lectures, conferences, events, booths, and [distance learning opportunities](#).

Sanctuary educators began using a new



NOAA, Thunder Bay National Marine Sanctuary

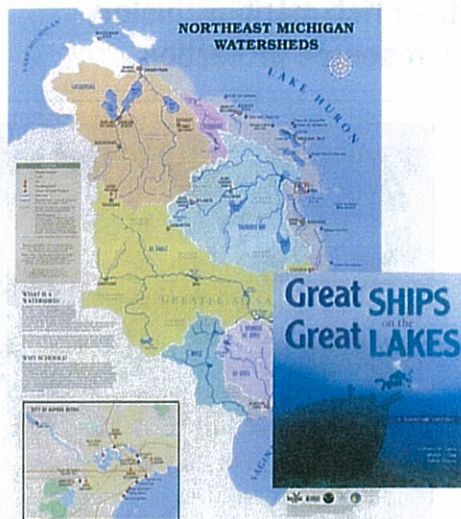
Students navigate their robots through a series of underwater missions in the sanctuary's training tank as they compete in the MATE International Student ROV Competition.

### Exploring the Great Lakes: shipwrecks, science, and conservation in Thunder Bay National Marine Sanctuary...

...was the theme of this year's [annual MATE International Student ROV Competition](#). The sanctuary hosted the contest, bringing 59 teams from 13 countries, 18 states, and over 800 people to Alpena. [For 13 years the competition](#) has used underwater robotics to teach science, technology, engineering, and math (STEM) and prepare students for careers in marine technology. Before the International event, teams from across the world participated in a network of [23 regional contests](#) that feed into the annual 3-day event. Thousands of students from sites throughout the U.S., Canada, Egypt, Scotland, Hong Kong, and Russia learned about the resources of Thunder Bay National Marine Sanctuary through their regional competitions.



outreach product this year called, "[Great Ships on the Great Lakes: A Maritime History](#)." This 136-page student reader has an accompanying teacher's guide that includes eighteen classroom activities, arranged by chapter, including lessons on exploring shipwrecks.



New outreach products include a poster of student watershed monitoring projects participating in the [Our Rivers, Our Future Great Lakes B-WET project](#), and the [Great Ships on the Great Lakes](#) book and teacher's guide.

## Professional Development

Sanctuary staff worked with partners to provide seven workshop series, webinars, and networking events for 162 teachers and informal educators this year. Topics included place-based education, ROV design/building, [web-based mapping](#) for field projects, and more. To provide these opportunities the sanctuary worked with partners such as the [Northeast Michigan Great Lakes Stewardship Initiative](#), [Chicago's Museum of Science and](#)

[Industry](#), [Michigan Sea Grant](#), 4-H, the [Michigan STEM Partnership](#), and the Charlevoix-Emmet County Intermediate School District.

## Visitor Center: The [Great Lakes Maritime Heritage Center](#)

An important gateway for the sanctuary, the center received 94,014 visitors between October 2013 and September 2014. Over 400 people attended January's annual [Thunder Bay International Film Festival](#), and thousands more arrived in July for the 14<sup>th</sup> annual Thunder Bay Maritime Festival. Other Center highlights this year included a [new exhibit](#) opening on the Alpena Wildlife Sanctuary, a walk-in series on the topic of climate change in the Great Lakes, and a live broadcast from the 38<sup>th</sup> voyage of the historic *Charles W. Morgan* whaling ship. The center also hosted the Northern Michigan [Watershed Summit](#), a northern Michigan conservation day fair, and a "sanctuary celebration" day, honoring the local community for their support of the recent [expansion](#) of the sanctuary boundary.

## Volunteers

Over 250 volunteers contributed 7,920 hours to their sanctuary this year, including participating in over 1,400 hours of outreach aboard the *Lady Michigan*. Through a unique partnership with the boat's owner, [Alpena Shipwreck Tours](#), sanctuary volunteers continue to act as sanctuary ambassadors for summer cruises. The sanctuary's community boat building program was also active this year, with volunteers finishing work on a Heritage 23 Mackinaw boat, the *Animikie*, in June.

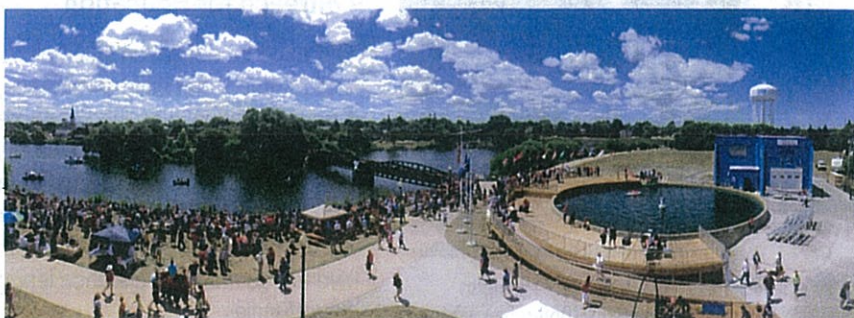
## Communications Highlights

- **Weekly live radio** program on True North Radio Network <http://www.truenorthradionetwork.com/>
- **Weekly appearances** on WBKB TV's early morning show and Sunday special feature, "Talk of the Town" <http://www.wbkb11.com/>
- **Monthly features** in the regional magazine, "The Guide" <http://infonortheast.com/>
- **PBS video series** Under the Radar Michigan <http://video.pbs.org/video/2365321628/>
- **PBS documentary** "Growing Up Green" <https://www.youtube.com/channel/UCHYnrLjQvrVZftsesT-Uw>
- **US 23 Heritage Route video feature**, "Shipwreck Alley" <https://www.youtube.com/watch?v=yBT0IQScldI>
- **Social Media** continued to build momentum this year as a sanctuary outreach tool, including the **campaigns**: "13<sup>th</sup> Annual MATE International ROV Competition," and "30 Days of Wrecks" <https://twitter.com/ThunderBayNMMS>, <https://www.facebook.com/ThunderBayShipwrecks>, <http://instagram.com/noaa>
- **Small Town, Big Heart video** by MadLawMedia <http://vimeo.com/108008551>



NOAA, Thunder Bay National Marine Sanctuary

Teachers from Chicago-area schools explore Thunder Bay aboard the *Lady Michigan* as part of a professional development workshop.



NOAA, Thunder Bay National Marine Sanctuary

The sanctuary hosts an annual Maritime Festival at its visitor center and surrounding campus along the banks of the Thunder Bay River. A celebration of the area's maritime heritage, the free event includes music, activities, and a cardboard boat regatta.



## Thunder Bay National Marine Sanctuary

### Maritime Heritage Preservation Above and Below the Waves

#### 2014 Resource Protection Highlights

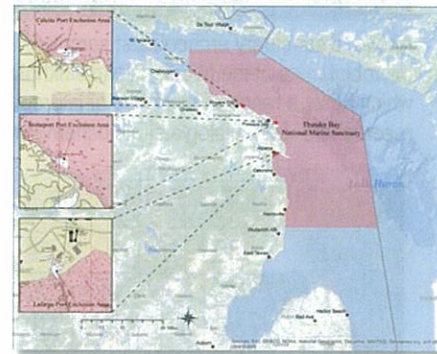
Based on several years of research by the sanctuary and its scientific partners, as well as public input and widespread support from local and regional interests, the sanctuary expanded from 448 square miles to 4,300 square miles. The newly expanded sanctuary contains 92 known shipwreck sites and as many as 100 yet to be discovered. To date, the sanctuary has conducted sonar and/or diver-based site evaluations at 78 of the 92 known shipwrecks sites.

In 2014, the sanctuary research team operated 48 days at sea in the sanctuary, performed 285 scientific and working dives in Thunder Bay and maintained moorings at 27 shipwreck sites.

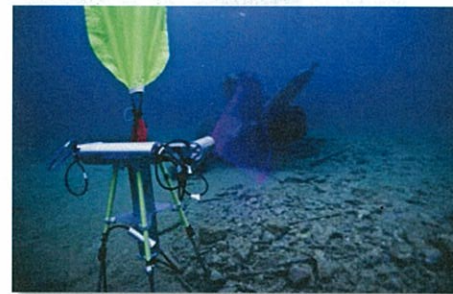
Using a new Kongsberg 2040c multibeam sonar on loan from U.S. Coast Survey, the sanctuary undertook a substrate classification survey requested and funded by U.S. Fish and Wildlife Service (USFWS). TBNMS partnered with the [USFW Alpena office](#) to acoustically map Six Fathom Bank, a productive spawning ground for lake trout 40 miles offshore. The two-year project will characterize the area's substrate and produce bathymetry maps that will help fine-tune USFWS monitoring. Other partners include the NOAA/UNH [Joint Hydrographic Center](#) and the [General Bathymetric Chart of the Oceans](#) program. The team mapped 14 square miles in 2014 obtaining bathymetry and backscatter data, and ground truthing 80 locations with HD camera drops.

Working in partnership with [2G Robotics](#), the sanctuary produced a laser scan/point cloud data of the steamer *Monohansett*. This pilot project sought to better understand laser scanning technology and the required operations. 2G Robotics equipment and services were provided in-kind.

With partners from the [Monitor NMS](#) and [East Carolina University Diving and Water Safety Program](#), the sanctuary conducted a two week technical diving project aimed at assessing and monitoring four shipwrecks. Using closed circuit rebreathers and decompression techniques the team produced 3 photomosaics and updated monitoring photos and video. Most striking were changes that occurred over a 9 year period at the steamer *Pewabic* site.



Above, the boundaries of the newly expanded 4,300 square mile Thunder Bay National Marine Sanctuary.



Above/Below, laser scanning the steamer *Monohansett*'s stern. The unit was moved incrementally around the wreck to create a 3D point cloud model of the wreck site.



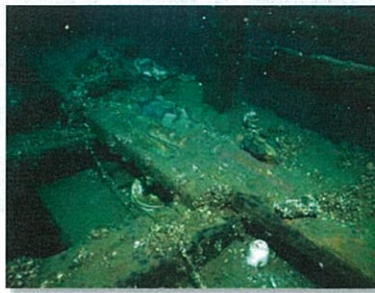
### Connecting Science and Education at Thunder Bay National Marine Sanctuary

The TBNMS research team maintains a regular media presence in northeast Michigan, including a monthly TV talk show, a live weekly TV news morning appearance, and a weekly radio spot. Sanctuary research is also highlighted in a monthly regional news magazine with a circulation of over 14,000. The team contributed to two "live connect" interactions with MATE ROV students and mentors from WA and CA, and gave 36 public presentations and lectures including support of Alpena High School's innovative Shipwreck Alley curriculum. The team also contributed to 3-weeks of teaching and on-water support for Alpena Community College's Marine Technology Program. Among other media, the sanctuary research team hosted writers from *Archaeology Magazine* and *New York Times Magazine* who will profile the sanctuary in upcoming issues.

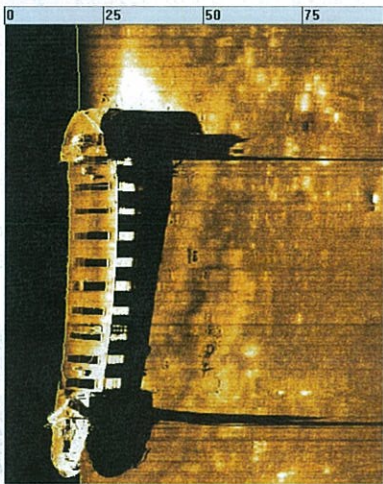




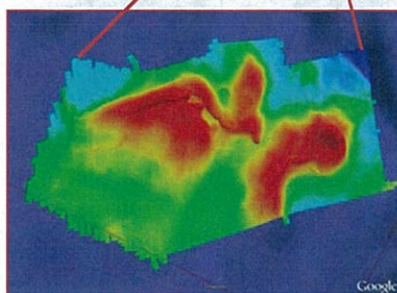
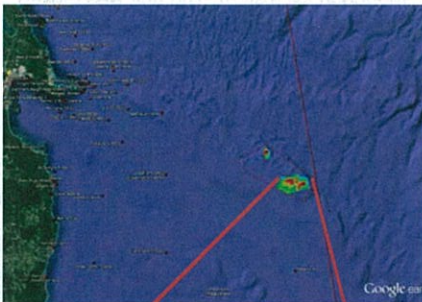
Above, a sanctuary archeologist samples microbial mats at the Middle Island sinkhole, which hosts a range of microbes of interest to researchers- from biologists to biochemists.



Above, images showing changes at the *Pewabic* site from 2005 to 2014. A dramatic increase in invasive quagga mussels is apparent, as is the removal of artifacts. These images are of the same area, from opposite perspectives.



Above, a 2014 sonar image of the steamer *W. C. Franz*, located in the expanded sanctuary. Below, multibeam coverage of Six Fathom Bank, collected by the sanctuary and U S Coast Survey for the USFW Service.



The sanctuary submitted four historic shipwrecks nominations to the National Register of Historic Places: *Pewabic*, *M. F. Merrick*, *Etruria*, and *Kyle Spangler*.

TBNMS continued its remote sensing efforts, producing new or updated sonar images of the *John Shaw*, *W. C. Franz*, *W. H. Gilbert*, *D. R. Hanna* and *Isaac Scott* using a Klein 3000 side scan. The team also utilized a Klein 3900, on loan from U.S. Coast Survey, to obtain higher resolution imagery of 30 sites. TBNMS and its research partners have now obtained good quality sonar images of 49 of the 92 known wrecks in the sanctuary.

With assistance from [U.S. Coast Survey](http://www.uscoastsurvey.gov), the sanctuary conducted reconnaissance bathymetric mapping at the port of Calcite in Rogers City. The multi-service deepwater port is being developed as [collaborative effort](#) between Carmeuse Lime and Stone, Moran Ironworks and the City of Rogers City. The survey will help the port plan for future growth, including ship building and repair.

Through diving, sample collection and vessel operations, the sanctuary research team continued to support two multidisciplinary projects: the Michigan Department of Environmental Quality and University of Vermont experimental [reef restoration project](#), and the Grand Valley State University and University of Michigan [microbial research](#) at the Middle Island sinkhole.

The sanctuary hosted the 13<sup>th</sup> Annual MATE International ROV Competition, bringing 59 teams from 13 countries, 18 states, and over 800 people to Alpena. Teams competed in the 80-diameter, 550,000 gallon training tank which is the centerpiece of the ONMS Center of Excellence for Diving and Marine Technology Education. In support of regional and international MATE competitions, 24 sanctuary and MI DNR volunteer divers contributed 125 hours of "bottom time." Above the water, 15 volunteers contributed 649 hours of work in the sanctuary's artifact conservation lab.

During the winter of 2014 the sanctuary will fulfill a successful grant proposal to NOAA's [Preserve America Initiative](#), creating and exhibit for the Great Lakes Maritime Heritage Center focusing on marine technology. The centerpiece will be an ROV simulator promoting sanctuary stewardship, STEM education, and Alpena Community College's [Marine Technology](#) program.



**Thunder Bay National Marine Sanctuary  
Advisory Council**

**- July 20, 2015 Meeting Minutes-**

**Date:** July 20, 2015

**Time:** 6:30pm

**Location:** Great Lakes Maritime Heritage Center, 500 W. Fletcher Street, Alpena, MI

**MEETING ATTENDEES**

**NOAA:** Jeff Gray, Jean Prevo, Russ Green, Cathy Green, Jacqueline Kendzierski, Meaghan Gass, Chuck Bennett, John Bright, Travis Wahl, Phil Hartmeyer, Makanani Bell – NOAA Hollings Scholar, Sarah Waters, Anne Gentry

**State of Michigan:** Sandra Clark

**SAC Members:** Mary Christensen-Cooper, Vera Kavanaugh, Nancy Kinney, Steve Kroll, John McVeety, Carol Shafto, Chuck Wiesen

**SAC Alternates:** Andrew Augustyn, Susan Austin, Roger Baumgardner, Anne Belanger, Michael Beaulac, Shari Davis, Jim Dessenberg, Robert Doyle, Steve Kroll, Merl Melton, Ron Meneghel, Susan Nielsen

**Ex-officio Member:** None

**Public:** None

**Media:** None

**WELCOME AND ACTION ITEMS**

Carol Shafto called the meeting to order. Jeff Gray welcomed everyone and announced that we had asked Carol Shafto to be the special chair for this meeting. This is the first council meeting since the council disbanded in February to allow for restructuring due to boundary expansion.

Excited to welcome 11 brand-new members, that is almost half of the council. Introductions were made.

Carol spoke about the role of being an advisory council member. Carol stated it is more than sitting at meetings; we look to SAC members for volunteering and supporting the sanctuary's programs and attending special events.

Carol encouraged alternates to attend all of the meetings and participate in discussions. When we are sitting at the table, everyone is equal. Alternates can do everything but vote when the member is there and they cannot hold an office.



Chuck Wiesen motioned to approve the February 24, 2015 meeting minutes. Roger Baumgardner seconded the motion. All were in favor.

SAC Orientation & Volunteer Reception – We will be hosting an orientation for new members but it is open to everyone. Email will go out late this week with all of the details.

### **EXECUTIVE COMMITTEE ELECTIONS**

Jeff went over the roles of the two positions available chair and vice chair. The chair helps plan the meetings and helps lead the council through major decisions. The chair also becomes the face of the sanctuary, talking to other people interested in having a sanctuary in their area, representing at events, as well as being involved with the national council, calls, and one time per year attending the national SAC Summit. The chair holds the superintendent and staff accountable and pushing in the right direction. The vice chair position is just as important as the chair, it's more like a co-chair than a vice chair. Both positions are 2 year terms.

Jeff asked if anyone is interested in holding the position of chair or vice chair. Carol Shafto said she was interested but only if no one else was interested in holding the position. She was chair of the SAC before so she is familiar with what is expected.

Chuck motioned to nominate Carol for the position of chair. Ron Meneghel seconded the motion to close nominations. All were in favor. Carol was elected chair.

Roger Baumgardner nominated Chuck Wiesen as vice chair, Steve Kroll seconded. No other nominations. Ron motioned to close the nominations – John McVeety seconded. All were in favor.

### **HOLLINGS SCHOLAR PRESENTATION – MAKANANI BELL**

Sarah introduced Makanani Bell, NOAA Hollings Scholar. Makanani gave the presentation “Shipwreck Archaeology Youth Camp: Building Lifelong Stewards of Sanctuary Cultural Resources through Engaging Young Community Members”

Sarah also spoke about the many other student opportunities within the sanctuary. For more information contact [sarah.a.waters@noaa.gov](mailto:sarah.a.waters@noaa.gov).

### **FRIENDS OF TBNMS UPDATE – Cathy Green**

Cathy gave an overview of the Friends. It's a 501c3 that is here to support the sanctuary. Having a non-profit allows us to do things we couldn't do as a government agency.

Events and Sponsorships  
Grants and Partnerships  
Individual Membership  
Donations  
Revenue Generation

The Sanctuary Store is run by the Friends of TBNMS, the revenue earned by the store is used to support education and outreach programs.



The Thunder Bay Maritime Festival and the July 3<sup>rd</sup> SUPs & Sud's events were both Friends events. The SUP race was a partnership with Dork Brother's Racing.

The Friends also received a \$20k grant from Meijer to be used for theater renovation and education programs.

When you donate to become a member of the Friend's you will receive a membership card which will get you 10% off items purchased in the store. Contact Cathy Green if you would like to become a Friend of TBNMS.

Carol spoke about the importance of being a member of the Friends group, \$5, \$10, no matter the amount it is helpful for Cathy to be able to say that the sanctuary advisory council is 100% behind the Friends group.

Chuck Wiesen is the President of the Friends board. Chuck spoke about the importance of having the Friends' money to help continue the sanctuaries mission and the amazing things that people do here, during times when the sanctuaries regular budget is on hold (ex. during continuing resolution). The Friends money has provided bussing to school groups, supported outreach and education programs, as well as staffing the store and visitor center.

#### **SANCTUARY UPDATE - TBNMS Staff**

##### **The Great Lakes Maritime Heritage Trail – Connecting and Protecting Our Maritime Past**

This project is part of a bigger trail project to interpret and connect our maritime landscapes. The trail started in 2003 behind Alpena's Federal Building with a cool cities grant. In 2006, more panels were added behind the GLMHC and along the trail. Sanctuary staff are in the process of developing 109 more panels in this next week. The trail will cover a three county area and will be located at state parks, community parks, lighthouses, public waterfront, marinas and other jumping off points.

Installation of the new signs will begin late this summer and hope to have them all installed by late May 2016.

Sandra Clark from the State of Michigan spoke about the importance of trails in Michigan right now. The Governor designated trail money and TBNMS is a poster child for the heritage trail landscapes. Trails make it more accessible to people.

##### **Education & Outreach Snapshot – Sarah Waters**

Sarah Waters gave a thorough overview of the sanctuary's Education and Outreach Action Plan by referring to three guidance documents: 1) NOAA's Education Strategic Plan 2009-2029; 2) ONMS's Education Strategic Plan 2010-2020; and 3) ONMS's Education Five Year Implementation Plan 2010-2015. Highlighting the sanctuary's current focus areas of Heritage, STEM - ROV, and STEM - watershed studies, Waters outlined how through various programs and initiatives, the sanctuary is successfully meeting the following five objectives previously laid out in the TBNMS Final Management Plan:



1. Build an education and outreach program that complements and promotes sanctuary resource protection and research programs.
2. Increase ocean and Great Lakes literacy.
3. Target user groups and underrepresented audiences for participation in sanctuary programs.
4. Promote the Great Lakes Maritime Heritage Center and Trail as primary mechanism to implement education and outreach programs.
5. Increase communication and coordination among sanctuary education and outreach programs and partners.

These objectives have driven the creation of such programs as interpretation and field trips aboard the glass bottom boat, a vigorous ROV program including professional development workshops, classes, field trips, and the regional competition, a number of distance learning events, a proven and robust media strategy, and place-based watershed education opportunities for students. The legacy of these programs is evident in the momentum of Alpena High School's Shipwreck Alley and Alpena Community College's Marine Technology Program.

TBNMS' Education & Outreach program continues to work with partners on a number of levels to build upon these successful programs.

### **Research Team –Russ Green**

Russ spoke about the importance of the sanctuaries mooring buoy program. Gets people out on the water but also protects the wrecks.

Visibility on the wrecks is best during the early spring.

Had a videographer here working on some shallow water wrecks.

Also did some work down in Alcona County. Working on putting mooring buoys on them.

John Bright did some work in Wisconsin with the *R/V Storm* and worked on baseline data for some of the wrecks that they've been working on. The partnership with Wisconsin was a good way to show them the opportunities a marine sanctuary can provide.

Research team did rebreather training for up to 200 feet certification with tri-mix.

Right now there is a team from the Monitor National Marine Sanctuary doing photogrammetry on a select group of wrecks.

Gilchrist Wrecks – Don LaBarr and Wayne Lusardi have been working on documenting those wrecks for Don LaBarr's thesis.

Technical diving projects going on through the next week.

Research team will be working with the ACC marine tech summer class.

Also working with Michigan tech with some high-tech gear and GLERL to do some sinkhole work.



**PUBLIC COMMENT** – August 1<sup>st</sup> dedicating range light park in Presque Isle. Installing a prototype of a reading rail there. – Nancy Kinney

Steve suggested giving out Management Plans to the new SAC members. They will be distributed at the SAC orientation.

**ADJOURN** – The meeting was adjourned at 9:10pm  
Next meeting is September 15<sup>th</sup> 6:30-9:00pm.



**Thunder Bay National Marine Sanctuary  
Advisory Council**

**- September 15, 2015 Meeting Minutes-**

**Date:** September 15, 2015

**Time:** 6:30pm

**Location:** Great Lakes Maritime Heritage Center, 500 W. Fletcher Street, Alpena, MI

**MEETING ATTENDEES**

**NOAA:** Jean Prevo, Stephanie Gandulla, Russ Green, Jacqueline Kendzierski, Meaghan Gass, Chuck Bennett, John Bright, Travis Wahl, Phil Hartmeyer, Sarah Waters, Anne Gentry

**State of Michigan:** Wayne Lusardi

**SAC Members:** Chuck Wiesen, Nancy Kinney, Vera Kavanaugh, Mark Upham, Don MacMaster, Steve Kroll, John McVeety, William LaMarre, Denise Cline

**SAC Alternates:** Ann-Marie Ruder, Merl Melton, Susan Austin, Ron Meneghel, Shari Davis, Eric Lawson, Shawn Sexton, Michael Beaulac

**Ex-officio Member:** None

**Public:** None

**Media:** Nicole Grulke – *The Alpena News*

**WELCOME AND ACTION ITEMS**

Chuck Wiesen called the meeting to order.

Steve Kroll motioned to approve the July 21, 2015 meeting minutes. Ann-Marie Ruder seconded the motion. All were in favor.

New SAC Member orientation is scheduled for October 20, 2015 from 5:30-7:00pm, volunteer appreciation reception to follow at 7:00pm. If someone is unable to attend the orientation, please contact Jean or Jeff and they will schedule a separate meeting. A copy of the Thunder Bay National Marine Sanctuary Management Plan was distributed for review prior to the orientation. The digital copy can be found at [www.thunderbay.noaa.gov](http://www.thunderbay.noaa.gov).

Sanctuary Store is a function of the friends of TBNMS. Sarah Waters introduced Anne Gentry, who was hired to fill the position of Visitor Experience Manager. Sarah showed some of the new items available for purchase in the store.

The visitor center hours are 9am-5pm, until the boat season ends on October 12<sup>th</sup>. Starting on October 13 the visitor center will be open seven days a week, 10am-5pm Monday through Saturday and Sunday noon-5pm.



## **FILM UPDATE**

*A Wreck Hunter's Evolution* – featuring Steve Kroll.

This film is currently part of our daily theater rotation and it will also be featured at the Thunder Bay International Film Festival in January.

## **4<sup>th</sup> Annual Thunder Bay International Film Festival – January 27-31, 2016 –**

Highlights:

Preview party w/local wine tasting

Award winning films

*Science on a Sphere* films

Michigan and visiting filmmakers

Filmmakers' panel

Kids' day – Sunday the Education Room will be turned into a space for kids to watch movies

Wrap party

Volunteer Opportunities:

Film screening

Sanctuary ambassador

Ticket takers

Theater ushers

Filmmaker liaison

Photographer, videographer

Event planning

And more

If you would like to volunteer please contact [steph.gandulla@noaa.gov](mailto:steph.gandulla@noaa.gov).

**Earth is Blue YouTube** – The Office of National Marine Sanctuaries lead a campaign last year called “Earth Is Blue,” which was used as a hashtag on all pictures and videos for during the campaign. You can see all of the videos and pictures at [www.sanctuaries.noaa.gov/earthisblue](http://www.sanctuaries.noaa.gov/earthisblue). If you have any videos or pictures you would like to submit, please send them to Stephanie and she will submit it.

**Sanctuary Media Library** - [www.marinelife.noaa.gov/medie lib/](http://www.marinelife.noaa.gov/medie_lib/)

**Ocean's Live** - [www.oceanslive.org](http://www.oceanslive.org)

## **PORT HURON TUSKEGEE PLANE PROJECT – Wayne Lusardi, State of Michigan Archaeologist**

During the middle years of World War II Michigan was home to several African American air combat units including many graduates of the Tuskegee pilot training program. While US Navy pilots were training on makeshift aircraft carriers in Lake Michigan far from the perils of the Atlantic and Pacific theaters, Army Air Force pilots were likewise simulating aerials combat and bombing exercises over Lake Huron. Airfields at Selfridge on Lake St. Clair and Oscoda on the



shores of Lake Huron became bases for many units including the All-African-American 332<sup>nd</sup> fighter group. As with many similar programs during the war, dozens of accidents occurred that resulted in the loss of both aircraft and crewmen. In August 2015 Michigan's State Maritime Archaeologist, Wayne Lusardi, led a team of volunteers including members of the National Association of Black Scuba Divers and Diving with a Purpose, and two law enforcement agencies to document the aircraft wreckage, inventorying and photographing all of the associated aircraft parts, munitions, and artifacts.

## **SANCTUARY UPDATE - TBNMS Staff**

### **Research Update – Phil Hartmeyer**

This summer archaeologists from Thunder Bay and Monitor National Marine Sanctuaries partnered to document some of Thunder Bay's historic shipwrecks in the newly-expanded boundaries of the sanctuary using cutting-edge imaging technology. First, archaeologists used the Catlin SVx camera system to take 360-degree panoramic shots of shipwrecks ranging in depths from 5 to 185 feet. This new tripod-mounted camera system will yield Google Maps Streetview-like imagery that users can interact with by clicking and scrolling. Second, photogrammetry was used to create 3D digital models of shipwrecks that archaeologists can use to further interpret, document, and manage sites. This method involves taking hundreds of still photographs around a shipwreck and stitching them together. Once cohesive and collated, these images produce the 3D model. These ground-breaking technologies further enhance our ability to interpret, research, protect, manage, and share these incredible historic sites with the public

### **Media Update – Stephanie Gandulla**

Through a partnership with the Office of National Marine Sanctuaries, Thunder Bay NMS was featured on a 3,685 square-foot screen in New York City's Times Square in August. The video played 20 times per day for one week. Times Square has approximately 1.5 million tourists per day.

The second part of this advertising campaign targeting New York travelers was a full-page ad in *Horizon Magazine*, an insert distributed in the *Wall Street Journal* that goes to 230,000 consumers.

There have also been a number of Associated Press stories since we made a connection with the Detroit AP office during the International ROV competition last year. In the spring, there was an article about classroom cruises aboard the *Lady Michigan*, then a story about the Tuskegee expedition in Port Huron, and finally the story about 3D imaging of sanctuary shipwrecks.

Many media outlets across the country, and even the globe, pick these AP stories up from the wire, including:

*Washington Post*

*Seattle Post-Intelligencer*

*The Detroit News*

*Detroit Free Press*

*Arizona Daily Star*

*The New York Times*

*The Guardian*

*USA Today*



Additional news coverage came in the form of various sanctuary articles and reports in:

*Dive Training Magazine*

CBC Radio News - Canada

*Lansing State Journal*

*Wall Street Journal*

*NPR's WCMU*

*NY Daily News*

*Michigan History Magazine*

Our regular media appearances continue with 101 print articles during the last fiscal year and 97 appearances on WBKB-TV's weekly and monthly shows, and weekly appearances on the True North Radio Network

Stephanie showed a video about the importance of social media. TBNMS has Facebook, Twitter and YouTube pages, with over 12,000 friends on Facebook. If you're on Facebook please like us and follow us on all of our social media accounts.

### **Interpretation Update – Sarah Waters**

Marine Technology & ROV Simulator Exhibit coming this fall. Alpena Community College and a Preserve America Grant provided funding for this exhibit.

Great Lakes Maritime Heritage Trail – staff are working on placement of the signs. There are a few different types of signs:

Trailblazer for people that want to snorkel or kayak a shipwreck. Larger signage will provide more interpretation and information on the wreck with underwater images and historical data and GPS coordinates and depth, and will also talk about the trail and the mooring buoy on the site.

Trailhead kiosk – small and large sizes, double sided.

Standard interpretive sign

Reading Rail signage – little larger than the standard interpretive sign

Sarah talked about the Harrisville Park and 40 Mile Point Lighthouse and where the different types of signage will be used at those two locations.

Signs will encourage people to continue to explore the trail and find more signs and shipwrecks along the way. All of the signs will contain a resource protection message.

There are over 60 sites, if you want to see all of the different locations, feel free to stop in and see Sarah Waters. Once all of the site locations have been verified the information will be posted on the website.



## **PUBLIC COMMENT –**

How does the sanctuary work with the CVB? If we have an event we notify them. The reverse is also true. Whenever they know of a bus tour, cruise ship, etc. they give us lead time so we can participate. The sanctuary is a positive partner for the DDA, CVB and Chamber. We have links on our webpage to the CVB. We also have staff members on the DDA, Chamber of Commerce and the CVB branding campaigns.

Shari Davis wanted to applaud everyone that has worked on the trail project.

Ann-Marie Ruder complimented the staff on the quality of the meeting presentations and how much outreach occurs and how far it reaches.

**ADJOURN** – The meeting was adjourned at 8:10pm.

**Next meeting is December 15<sup>th</sup> 6:30-9:00pm.**

**Thunder Bay National Marine Sanctuary  
Advisory Council**

**- December 15, 2015 Meeting Minutes-**

**Date:** December 15, 2015

**Time:** 6:30pm

**Location:** Great Lakes Maritime Heritage Center, 500 W. Fletcher Street, Alpena, MI

**MEETING ATTENDEES**

**NOAA:** Jeff Gray, Jean Prevo, Stephanie Gandulla, Russ Green, Jacqueline Kendziorski, Meaghan Gass, Chuck Bennett, John Bright, Travis Wahl, Phil Hartmeyer, Sarah Waters, Anne Gentry, Cathy Green, Bradley Imhoff

**State of Michigan:** Wayne Lusardi

**SAC Members:** Steve Kroll, Carol Shafto, Chuck Wiesen, Vera Kavanaugh, Don MacMaster, Mary Christensen-Cooper, Don Newport, Jason Snyder, Bill LaMarre

**SAC Alternates:** Jim Dessenberg, Susan Nielsen, Robert Doyle, Ron Menghel, Ann Marie Ruder, Shari Davis, Andrew Augustyn, Michael Beaulac, Roger Baumgardner

**Public:** Al Moe - Friends Board, Karen Upham, Hannah Thayer, Dr. Richard Bates - ARMC

**Media:** Nicole Grulke, *The Alpena News*

**WELCOME AND ACTION ITEMS**

Carol Shafto called the meeting to order. The council approved the September 15<sup>th</sup> meeting minutes and the list of 2016 meeting dates.

The council discussed submitting letters of support for the proposed sanctuary nominations in Wisconsin, Pennsylvania, and Maryland. Russ attended the scoping meetings in Wisconsin a few weeks ago and the public comments were overwhelmingly positive.

Roger Baumgartner motioned to support drafting a letter in support of the three proposed sanctuary sites. Ann Mari Ruder seconded. All were in favor. Carol Shafto will work with Ellen Brody to draft the support letters.

The annual SAC Summit will be held in Annapolis, MD January 12-14, 2016. Carol Shafto and Chuck Wiesen both had conflicts so Vera Kavanaugh will be representing our council. Jean Prevo will also be there representing the Northeast Great Lakes Region Council Coordinators.

Dan Basta director of ONMS has officially retired from the program. John Armor is the acting director.



## **ARMC HYPERBARIC & DIVE MEDICINE – Dr. Richard Bates, Vice President of Medical Affairs**

In 2005, ARMC partnered with Thunder Bay NMS to bring hyperbaric service to the hospital. They currently operate two mono-place hyperbaric chambers and have room for one more. The chambers are used for dive incidents and wound therapy.

## **ALPENA YOUTH SAILING CLUB – Mark Upham & Hannah Thayer**

The Alpena Youth Sailing Club teaches kids safe boating skills, rules of navigation, boat handling, leadership skills, and safety, but mostly it's about the kids having fun. The instructors look at it more like a club or summer camp than as a class.

The club is led by US Sailing Certified Instructors. 75% of costs are covered by tuition; the rest is covered by donations. The club receives great support from local sailors, no outside grant funding, it is all done locally.

For more information and to get the 2016 class schedule visit

<http://www.alpenayouthsailingclub.com/index.html> or contact council member Mark Upham.

## **NEMIGLSI PRESENTATION – Meaghan Gass**

Meaghan Gass presented information about the Northeast Michigan Great Lakes Stewardship Initiative (NE MI GLSI), a network of education and community partners (including TBNMS) that work together to integrate the environment into the classroom. As part of the presentation, attendees learned about microplastics in personal care products with a hands-on activity filtering microbeads from body soap.

## **FRIENDS OF TBNMS UPDATE - Cathy Green**

Friends' annual membership mailing went out in October. Did a push on Giving Tuesday in December, which included Jeff Gray jumping in the river in a turkey costume if enough donations were received.

## **Friends of TBNMS Grants & Partnerships**

### **Recently Awarded**

National Environmental Education Foundation – Hands on the Land Mini-grant - \$3,000

National Park Foundation - Every Kid in a Park - \$9,000

Michigan Humanities Council – Song of the Lakes Partnership - \$20,000

CFNEM – Marine Tech Partnership - \$2,000

### **Recently Completed or Ongoing**

B-WET 2012-2015 – 3 years of support over \$200,000 (final report just submitted!)

NEMIGLSI – one of the lead partners since inception – support in facilitation and administration

### **On the Horizon**

Great Lakes Foundation – theater project

NMSF Hollings Grant – MWEE programs

Office of Exploration – research and exploration

NSF Innovative Technology Experiences for Students & Teachers (ITEST) grant partner with MATE Center for Marine Technology grant

## **THUNDER BAY INTERNATIONAL FILM FESTIVAL – Stephanie Gandulla**

January 27-31, 2016

Showing 50 films. Programs with film information will be available soon.

There are many volunteer opportunities, please contact Stephanie if you are interested in volunteering. Her email is [steph.gandulla@noaa.gov](mailto:steph.gandulla@noaa.gov). The film festival volunteer training will be held on January 21.

Thunder Bay Film Festival tickets are on sale today and can be purchased in the sanctuary store. All of the information for the Film Festival can be found at [http://www.thunderbayfriends.org/film\\_fest.html](http://www.thunderbayfriends.org/film_fest.html).

## **SANCTUARY UPDATE – TBNMS Staff**

### **Media Update –**

Blogs – *Huffington Post*, *Grandma's Briefs* and *Penny in my Hand* by Tom Maloney

Michigan Country Lines

Scuba & H2O Adventure

Seven Seas – Marine Conservation & Travel – over 126 countries

Outdoor Channel – Fishing University

*Petoskey News Review*

*Detroit Free Press*

*Lake Huron Discovery Tour*

Don't forget to like us on Facebook.

### **Research Update – Russ Green**

The sanctuary is currently applying for grant funding from NOAA's Ocean Exploration and Research Office. The sanctuary's proposal includes surveying shallow and deep areas of the sanctuary using unmanned aircraft systems, autonomous underwater vehicles, ship-mounted sonar and divers. If awarded, the work will take place in 2017 and 2018.

### **Education Update**

**AmeriCorps & Huron Pines** – Thunder Bay will be hosting three AmeriCorps members through Huron Pines this year. The selected members are:

- 1) TBNMS Education & Outreach Specialist: Travis Wahl. Ohio native, starting graduate studies while returning for second AmeriCorps year of service.
- 2) TBNMS Education & Outreach Specialist: Michael Ekenstedt. Wisconsin native, completing MA in Maritime Archaeology from University of Southern Denmark.
- 3) NE MI GLSI Education Coordinator: Danielle Fegan. Recent Michigan State University graduate - MS Plant Biology. Interested in environmental education and conservation and strong background in scientific communication, with teaching experience.



### **2015 Christmas Tree Ship Outreach Program**

Besser Elementary School Special Project

2 staff newly trained

2 volunteers newly trained

16 classrooms (over 400 students engaged)

Includes 6 elementary schools in Alpena, and elementary schools in Posen, Rogers City, Alcona, and Hillman schools

Target age: 3rd grade

### **2016 – Connecting Kids to their National Marine Sanctuary**

#### **ANNOUNCING EVERY KID IN A PARK**

A new White House youth initiative to get all 4th graders and their families to experience the places that are home to our country's natural treasures, rich history, and vibrant culture FREE OF CHARGE!

Beginning September 1<sup>st</sup> all kids in the fourth grade have access to their own Every Kid in a Park pass at [www.everykidinapark.gov](http://www.everykidinapark.gov). This pass provides free access to national parks, national forests, national wildlife refuges, and more.

#### **Hands on the Land (HOL)**

HOL is a national network of field classrooms and agency resources to connect students, teachers, families, and volunteers with public lands and waterways. Hands on the Land brings classroom learning to life in America's largest classroom! <http://www.handsontheland.org>

#### **Office of National Marine Sanctuaries: National Webinar Series**

October 2015 – Ocean Acidification

January 13, 2016 – Maritime Archaeology: Exploring and Discovering Shipwrecks

April 13, 2016 – Great Ships on the Great Lakes

Summer 2016 look for Channel Islands Sharks and more....

#### **Marine Technology**

APS Outreach (Ella White, Hinks, Besser, TBJH, AHS, etc.) / Maker Space

Petoskey Schools Outreach

**MATE Center 2016 Great Lakes Regional: May 20-22, 2016** ([www.michigan.marinetech.org](http://www.michigan.marinetech.org))

**Teacher Workshop** – basic vehicle build, January 15/16, 2016 – see attached flyer

There is a new ROV exhibit being installed in the Great Lakes Maritime Heritage Center, funded in part by a NOAA Preserve America Grant.

Anne Gentry showed new items for sale in the sanctuary store – mugs, tickets for Film Fest, key chains, and ornaments, NOAA Fourth Element hats are back in stock.

**PUBLIC COMMENT – None.**

**ADJOURN –** The meeting was adjourned at 9:00pm.

**Next meeting is February 16<sup>th</sup> 6:30-9:00pm.**





## January 15/16, 2016 – Teacher Professional Development Workshop: Basic ROV Design and Build / MATE ROV Competition (Remotely Operated Vehicles, or “underwater robots”)

### Agenda

#### \*\*optional pre-workshop session Friday, January 15\*\*

6:30 pm – 8:30 pm

Science on a Sphere demonstration, facility tour, and MATE ROV Competition overview.

#### SATURDAY, January 16, 2016

9:00 am – 12:00 pm

Introductions followed by:

Lecture: “Introduction to ROVs & frame design” and “Electrical safety and how the switch box operates” followed by hands-on guided design and build of vehicle frame, tether, control and power box, and thruster attachment.

12:00 pm – Lunch provided

12:20 pm – 3:00 pm

Lecture: “where to use ROVs, competitions and projects” followed by continued building of vehicle.

3:00 pm -5:00 pm

Buoyancy and piloting vehicles in Maker Space pool. Final adjustments to vehicle

5:00 pm – 6:30 pm – optional additional lab time for Q&A

### Workshop will be held at the:

**Thunder Bay National Marine Sanctuary Visitor Center's Education Room & Maker Space. The Center is located at: 500 W. Fletcher St., Alpena, MI 49707. (989) 356-8805**

**\*\*Please wear comfortable, casual clothing and closed-toe shoes suitable for working with tools, soldering, getting splashed with water, etc. Bring safety glasses if you have a personal pair (we will provide if not). The visitor center can be very chilly in winter and we will be walking back and forth outside between our Maker Space and the visitor center classroom – please dress in warm layers!**

### Workshop Instructors:

Sarah Waters, Education Coordinator  
Thunder Bay National Marine Sanctuary &  
Robert Thomson, Teacher (5<sup>th</sup>)  
Alpena Public Schools

SPACE IS LIMITED! To sign up, please contact Sarah Waters at:  
sarah.a.waters@noaa.gov  
mobile: 989-915-9987

**\*\*teachers – if you are coming from out of town, you are invited to stay overnight for free in the sanctuary's visiting researcher quarters located above the visitor center on Friday and Saturday night. Please RSVP to Sarah Waters.**

### Workshop Overview and Cost:

The Workshop will provide a forum for educators to: 1) acquire the knowledge and skills needed to implement basic ROV design and building curriculum in their classrooms or as an after school activity, 2) Gain exposure to and develop an understanding of the type of work that ROV technicians do and the technologies they use for career pathways, 3) Learn about the MATE ROV Competition for students.

**COST:** This workshop is free, but workshop attendees will be asked to enter a team in the 2016 or 2017 Great Lakes Regional MATE ROV Competition in Alpena, MI (May 21 & 22, 2016). Cost to take home the ROV kit you build during the workshop is: **\$100**. Payment can be made at the workshop via check or credit card. Invoices available upon request.



## SANCTUARY ADVISORY COUNCIL

### Thunder Bay National Marine Sanctuary

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December 17, 2015

Kathy Dahlkemper, Executive  
Erie County  
140 West 6th St.  
Erie, PA 16501

Dear Ms. Dahlkemper,

The Thunder Bay National Marine Sanctuary Advisory Council believes our country needs more National Marine Sanctuaries to protect the natural and cultural heritage treasures found in our oceans and Great Lakes. We particularly support the idea of a network of sanctuaries in the Great Lakes. Since our communities both border one of the great lakes, we share a wonderful heritage and history. We also share a vision of the role that the National Marine Sanctuary Program plays in our local coastal communities. We are writing to support the Lake Erie Quadrangle National Marine Sanctuary nomination. That the conversation begins within the communities that are directly impacted by these decisions is essential, and we believe that each community must be engaged in the discussions about whether a national marine sanctuary is right for their area.

At least 15 years prior to designation as a National Marine Sanctuary the Alpena community was engaged in dialogue about protecting the shipwrecks and other cultural resources that lay off our shores. Active discussions with NOAA began in the middle 1990s that led to the formal designation of Thunder Bay National Marine Sanctuary in 2000. Since that time, the partnership between NOAA, the State of Michigan and the local shoreline communities has been successful beyond our initial projections or dreams. We are not only protecting Lake Huron and its rich history, we are also enhancing the local economy through destination tourism; bringing an appreciation of something much greater than ourselves to our young people through our education programming; advancing ocean and Great Lakes science through research; and so much more.

Strong communities are the fabric of a strong nation and we firmly agree that having the National Marine Sanctuary in our communities has made us a stronger, better, more stable region of Michigan. On behalf of the Sanctuary Advisory Council let me congratulate you on what you have accomplished to date and offer our assistance in working with stakeholders in the Lake Erie region as their vision for a sanctuary develops. Our Advisory Council unanimously offered a resolution of support for your efforts and we are eager to welcome you to the family of Sanctuaries across this great nation. If successful, you will join a very special club of dedicated communities all working for a set of common goals.

Please let us know how we can be of any assistance, now or in the future.

Sincerely,



Carol Shafto, Chair  
Thunder Bay National Marine Sanctuary Advisory Council