

**Thunder Bay National Marine Sanctuary
Advisory Council**

-February 16, 2016 Meeting Minutes-

Date: February 16, 2016

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, Jacque Edwards, Meaghan Gass, Chuck Bennett, Travis Wahl, Phil Hartmeyer, Sarah Waters, Anne Gentry, Cathy Green, Dani Fegan, Michael Ekenstedt, Bradley Imhoff

State of Michigan: Wayne R. Lusardi

SAC Members: Robert Doyle, Vera Kavanaugh, Nancy Kinney, Don MacMaster, Shawn Sexton, Carol Shafto, Jason Snyder, Mark Upham, Chuck Wiesen

SAC Alternates: Andrew Augustyn, Susan Austin, Michael Beaulac, Jim Dessenberg, Merl Melton, Ron Meneghel, Susan Nielsen, Ann-Marie Ruder

Friends of TBNMS Board: Al Moe

Public: Ed Kavanaugh, John Madigan

Media: Nicole Grulke, *The Alpena News*

WELCOME AND ACTION ITEMS

Carol Shafto called the meeting to order. The council approved the December 15th meeting minutes.

Monitor NMS – The *Monitor* National Marine Sanctuary is looking to expand their boundaries to include the shipwrecks in the “Graveyard of the Atlantic” – specifically the wrecks from the Battle of the Atlantic. Their sanctuary advisory council passed a resolution to approve the expansion and public scoping meetings are currently being held. They have asked if we could submit a letter of support. Carol will work with the Thunder Bay NMS staff to draft and submit a letter of support from our council.

Representatives from Wisconsin, Maryland, and other sites looking at designating a marine sanctuary are interested in talking to representatives from current sanctuary sites. Jeff Gray has been connecting the interested parties with SAC members that share common interests; the information gained in talking to community members is invaluable.

Other communities have been requesting support from our advisory council. Chuck Wiesen motioned for blanket approval to submit letters of support to other sites as they are requested. Ann Marie Ruder and Mark Upham seconded. All approved.

April Meeting date is being rescheduled from April 19th to April 26th. Please update your meeting calendar.

SAC SUMMIT REPORT – Vera Kavanaugh

The 2016 National Marine Sanctuary Advisory Council Summit was held January 12-14, 2016, in Annapolis, Maryland. Executive committee members, Carol Shafto and Chuck Wiesen, were both unable to attend the SAC Summit this year, so councilmember Vera Kavanaugh was chosen to represent our council due to her many years of service on the council and as a sanctuary volunteer.

Vera gave an overview of the meeting which she said consisted of three very exciting days, busy from morning until night, with top notch information from presenters and other council chairs and members.

On Tuesday the summit opened with David Holst, Acting Deputy Administrator for NOS, talking about the grass roots efforts going into sanctuary designation and expansion. Bottom up instead of top down. He spoke about linking communities. Sanctuaries need to go from “a nice to have” to “a got to have” status. He talked a lot about Malloes Bay and the potential sanctuary in Wisconsin on Lake Michigan.

John Armor, Acting Director, spoke about the sanctuary program’s accomplishments in 2015 and the program’s future. He emphasized the importance of remaining relevant and enhancing relationships with local communities, Congress, and external partners in 2016 and beyond. During the summit and throughout the year, he would like to see participants learn from one another, connect, and bring ideas from the summit back to their advisory councils.

Overall, Tuesday’s main focus was on developing a plan forward for everyone - staff, councils and communities.

Vera pointed out that the number one thing the other council chairs wanted were visitor centers. She stressed to them that it takes the right staff and dedicated volunteers to keep it running effectively.

Wednesday the summit was focused on climate change. In the morning the participants walked to the pier and saw the effects of nuisance flooding and high tide events. As a result of climate change, Chesapeake Bay has warmed and sea level has risen.

Wednesday afternoon was the closed session for councilmembers and John Armor. Vera stated that there was lots of discussion about increasing the involvement during and between council meetings. She feels we don’t have a problem keeping members involved and engaged at our site so it was interesting for her to hear the perspectives from other councils.

One of the outcomes from that session was that the chairs would like to remain more connected throughout the year and would like to have regularly scheduled conference calls.

On Thursday there was a fundraising presentation by Dr. Lilya Wagner. Dr. Wagner did a great job presenting and made everyone in the room feel as though they could go out and ask anyone for money.

She focused on 7 questions:

1. What's happening today in giving?
2. Who would care about my cause?
3. How do I present my cause to donors?
4. What tools should I use?
5. Who should be involved?
6. Do we need a plan?
7. What else?

She really brought home that fundraising needs good leadership, being organized and being accountable, people willing to give and work, attention to details (database, policies, acknowledgements, recordkeeping) and communication. Never forget to thank your donors.

Dr. Wagner stated that "Ultimately, fundraising is...

- The right person asking
- The right person
- For the right cause
- In the right way
- For the right amount
- At the right time"

Jeff Gray stated that Dr. Lilya Wagner is one of the most respected persons in the fundraising world. He and Cathy met Dr. Wagner three years ago at a training they attended. Jeff was so impressed with her training program that he arranged for her to do a training session with all of the sanctuary superintendents. Dr. Wagner is also a donor to our Friends group and Jeff is hoping to get her to Alpena to do some training with the council and with the Friends board.

During the closing session, John Armor left the group with some food for thought – Who are your champions? Who would care if your site was de-designated? Do we know our community and what they are doing and what they care about?

Jeff Gray mentioned that the Office of National Marine Sanctuaries program is currently going through a strategic planning process. Jeff is one of the committee members working on this initiative.

Sarah Water and Stephanie Gandulla have been attending climate change meetings. They will present at one of our future meetings.

MARKETING CASE STUDY: PICTURE ROCK CRUISES – John Madigan, Manager/Shareholder

Jeff Gray introduced John Madigan of Alpena Shipwreck Tours and Picture Rock Cruises. John is a leader in natural resources, tourism, and business. Jeff originally met John 10 years ago when they both served on the Natural Resources Commission. John is currently on the Pure Michigan Board. Jeff stressed that our partnership with John and Alpena Shipwreck Tours is one of the most important partnerships we have – tourism, marketing, but most important student cruises. John has dropped his prices for school groups to make it possible to get as many kids out on the water as possible. John has taken a lot of time to invest in Alpena Shipwreck Tours.

John presentations focused on how marketing helped grow Picture Rock Cruises. He started his presentation asking the council what are a few things they would like to get out of the presentation?

- How do you analyze your market share and demographic?
- Outreach – How do you reach your market? How do you track?
- How do you tie the boat tour with other tourism attractions or events?
- Partnerships – Who do you partner with?
- Community involvement – How do you get the community to go on the boat to help spread the word?

Demographic Analysis - The Pictured Rock Cruises track every ticket sold by zip code. John stressed the importance of knowing your demographics. Through tracking they have learned that Pictured Rocks Cruises is dominantly a Michigan based tourist attraction, with Wisconsin, Illinois and Ohio to complete the top 4 consistently year after year. Using zip codes helps them dissect where the Michigan visitors are coming from. The number one year in and year out is Grand Rapids, MI. They see a lot of visitors coming from the west side of Michigan. Chicago is the top city outside of Michigan. They also see visitors from 50-60 countries every year.

Community Involvement - Four years ago they started to offer a free Yooper Day and give away free boat rides to all residents of their area to help create community support. They have increased from 900 visitors the first year to 3,000 last year. Most of these visitors came from Marquette. Yooper Day has turned into a community festival called “Pictured Rocks Days” in Munising and now includes vendors, shows in the park, kids’ activities, and music. This festival and the free boat tours gives back to a community where residents don’t have the extra income to spend on boat cruises and creates over 3,000 ambassadors for their business. It also brings commerce into Munising. The festival is held the second weekend of June and allows them to test the resources and operations at the beginning of the year to help work out any issues and be ready for tourism season.

Partnerships - How do you impact not only your business but the community? Marketing Picture Rocks Cruises impacts all of the businesses in the community; therefore, it made sense to partner with area and other Upper Peninsula businesses to create the most marketing impact.

They use many different marketing actions, billboards and internet sites are the biggest ones. They have also provided free boats to area Chambers of Commerce and CVBs to use for fundraising.

Pictured Rocks Cruises had been pretty stagnant in passengers for 20 years. They started marketing with directional billboards and then developed marketing billboards. In order to help pay for these billboards they went out and found partners to share the cost.

\$120,000 of their marketing budget comes from community partners. These partners include the Munising CVB which not only partnered on a billboard but also help pay for ads in travel guides and magazines. This year they have also partnered with Marquette. All billboard partners receive preferred marketing on the Pictured Rocks Cruises' website. As an example, there were 30,000 connections from their website to Manistique's website last year for their \$1,500 contribution toward the billboard campaign.

Joint marketing is very beneficial because most people coming to their area don't just come to do one thing, they will spend money at numerous businesses.

Picture Rocks Cruises has billboards along I75, with a total of 80 billboards across Michigan and Wisconsin.

These partnerships have all helped expand their business from 40,000 visitors to 121,071 visitors.

Motor coach tours are less than 2% of Pictured Rocks Cruises' business. John stated that they haven't done any marketing to that demographic but plan to do that in the future.

Pictured Rocks Cruises has also partnered with the city and other development committees on grants for improvements to docks and also to refurbish an historic building that will be used for an interpretive center.

John encouraged thinking outside of the box to spread the word. They give out free tickets to every 3rd and 4th grader during Santa's Secret Ship. They also have partners on their brochures.

John feels the key to success is branding, that's why they continue to work on branding the Upper Peninsula. Working together is much stronger than working separately.

John feels there is opportunity in Alpena for the same success but everyone needs to be a part of it or it's not going to happen.

SANCTUARY UPDATE – TBNMS Staff

Friends Update - Cathy Green said the annual membership campaign is wrapping up. We are working on grants to subsidize *Lady Michigan* cruises for students. We are hoping to get every 4th grader in the 3 counties on the boat this year.

Cathy will give a more extensive Friends update at the April council meeting.

Thunder Bay International Film Festival Update – This year's Thunder Bay Film Festival was another success. Stephanie gave an overview on some of the festival's highlights.

500 fans	45 films	10 countries	5 venues	8 filmmakers
50 volunteers (putting in lots of hours)			20 sponsors	1 film festival

Highlights – David Nicholas from CMU Radio broadcasted from the Film Festival. We received great air time reaching over 40 counties across central and northern Michigan.

Media – Stephanie Gandulla gave an update on the all of the media outlets that have picked up news stories since the last SAC meeting. She mentioned the *Ohio Magazine*, *Sun Times News* - Stockbridge Newspaper, and the *Alcona County Review*.

2016 ROV Competition –The 2016 ROV Competition will be held on May 21, 2016 at the Alpena High School. The competition has been growing every year. Currently there are 12 teams (41 students) signed up.

There are many volunteer opportunities – judges, food, wrangling teams, diving, etc. Please contact Stephanie to sign up. She will be hosting a volunteer training on May 12th. There will also be a judge's webinar on April 14th.

NEMIGLSI Meeting – The Northeast Michigan Great Lakes Stewardship's annual meeting was held at the Great Lakes Maritime Heritage Center on February 16. They heard presentations from a school superintendent and the keynote speaker was from the Michigan Department of Education.

AmeriCorps - Sarah Waters introduced the new AmeriCorps members Michael Ekenstedt and Danielle Fegan. Mike will be working with the sanctuary's education team and Dani will be working with NEMIGLSI.

Upcoming Events - Jeff said we are working on scheduling an open house at Alpena Regional Medical Center's hyperbaric chamber to encourage dive charter operators from around the state to visit the facility and see the capabilities available in Alpena.

Ellen Brody will present on expansion in our Great Lakes Northeast Region at a future SAC meeting.

PUBLIC COMMENT – None.

ADJOURN – The meeting was adjourned at 7:50pm and the council was encouraged to move to the theater for the public presentation of "*The Legend Lives on: S.S. Edmund Fitzgerald*" by Bruce Lynn.

Next meeting is April 26th 6:30-9:00pm.

**Thunder Bay National Marine Sanctuary
Advisory Council**

-April 26, 2016 Meeting Minutes-

Date: April 26, 2016

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, Jacque Edwards, Meaghan Gass, Chuck Bennett, Phil Hartmeyer, Sarah Waters, Anne Gentry, Dani Fegan

State of Michigan: Wayne R. Lusardi

SAC Members: Andrew Augustyn, Sheila Phillips, Carol Shafto, Shawn Sexton, Jason Snyder, Mark Upham, Chuck Wiesen, Don MacMaster, Don Newport, Steve Kroll

SAC Alternates: Susan Nielsen, Dense Cline, Michael Beaulac, Bob Doyle, Ron Meneghel, Ann-Marie Ruder, Shari Davis, Jim Dessenberg, Susie Austin, Nancy Kinney

Friends of TBNMS Board: Al Moe

Public: Tuffy Cross, David Cummins

Media: Nicole Grulke, *The Alpena News*

WELCOME AND ACTION ITEMS

Carol Shafto called the meeting to order. The council approved the minutes from the February 16, 2016 meeting.

Carol introduced Al Moe who will be representing the Friends of Thunder Bay NMS Board. Beach Hall will be his alternate.

Carol spoke about the Monitor boundary expansion letter that was sent on behalf of our council which was approved at the last meeting. A copy is attached.

David Alberg superintendent for the *Monitor* NMS will be here in May to speak at the Rotary International Meeting and he will also give a presentation at the Regional ROV Competition.

Dan Basta, the former Director of ONMS was instrumental in our expansion, building, exhibits, etc. recently retired. Carol would like to have permission from the council to send Dan a letter to thank him for everything he did for Thunder Bay NMS and wish him well in retirement. All approved.

Jeff congratulated Russ Green on his new position. Russ will be heading to Wisconsin in August to help get a sanctuary started. We will talk more about his new position at a later meeting. Jeff stated that this was a good thing for the Great Lakes.

EARTH DAY UPDATE– Meaghan Gass, Northeast Michigan Great Lakes Stewardship Initiative (NEMIGLSI)

In honor of Earth Day, Northeast Michigan youth participated in the Northeast Michigan Earth Day Bag Project. This project allowed students to learn more and raise awareness about the dangers of single-use plastic, like plastic bags, for the local environment and watershed. This project idea originated from the Earth Day Groceries Project, a world-wide activity coordinated online to develop educational activities on Earth Day. Working in partnership with the Northeast Michigan Great Lakes Stewardship Initiative, its community partners, and local grocery stores, students decorated paper bags to convey messages regarding conservation and preservation following a discussion about the dangers of using plastic bags. These bags were then distributed to customers at area grocery stores on Earth Day, April 22nd. Over 600 kids from Alpena participated.

Meaghan ended her presentation with a few simple tips on how we can help protect the Great Lakes. She recommends bringing your own bags to the store, using reusable water bottles, and refusing plastic straws at restaurants. The Sanctuary Store currently sells reusable shopping bags, bottles, and travel bamboo flatware and glass straws to help promote and encourage less plastic waste.

Meaghan will be giving a presentation on plastic pollution to the Association of Life Long Learners.

CLIMATE CHANGE INTERPRETATION – Sarah Waters and Stephanie Gandulla

Stephanie and Sarah applied for and received a grant from the National Network for Ocean and Climate Change Interpretation (NNOCCI). NNOCCI is a network of scientists trying to change the conversation about climate change through communities.

The NNOCCI Study Circle is a cross-disciplinary learning group made up of peers with expertise from fields including education, climate and ocean sciences and communications and cultural sciences. Through a series of facilitated in-person meetings, webinars, conference calls and practical activities, participants build knowledge of ocean and climate science and strategies for communication based on social and cognitive sciences. They apply lessons learned to educational opportunities in the context of their work environment through several cycles of development, practice, sharing and reflection. Participants continue to build knowledge of ocean and climate science and communications theory throughout the Study Circle, and gain resources and materials to train staff, volunteers, and other audiences at their home institutions.

The Study Circle has two major phases. During the first six months participants engage in a formal, facilitated learning process. Upon graduating participants join the larger network of colleagues and continue to practice, evaluate and share successes from their work with each other. Through the Study Circle, participants will learn about the latest findings in climate science and oceanography and how to apply these to interpretive contexts in their home institutions. In addition participants build trust and lasting bonds among colleagues from multiple institutions who share an interest in developing effective ways to engage audiences in learning about climate and ocean change.

NNOCCI is made possible with funding from the National Science Foundation's Climate Change Education Partnership.

Other partners in the project are:

Woods Hole Oceanographic Institution
Penn State
New England Aquarium
NewKnwoldedge.org
National Aquarium
Monterey Bay Aquarium
Frameworks Institute
Association of Zoos and Aquariums
Center for Research and Evaluation

For more information you can visit their website NNOCCI.org

Sarah and Stephanie will potentially set up a workshop for SAC members that are interested in learning more about this program.

FRIENDS UPDATE

Jeff encouraged everyone to stop by the sanctuary store. Anne is doing a great job stocking the store with new inventory. We are looking to test an online store.

SANCTUARY EDUCATION & OUTREACH UPDATE – Sarah Waters

Every Kid in a Park Grant – 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. Thunder Bay NMS received grants which made it possible for 4th graders from Alpena, Petoskey, Rogers City, Alcona, Hillman, and Atlanta schools to go out on the *Lady Michigan*.

Inland Seas Education Association – Thunder Bay National Marine Sanctuary is partnering with Inland Seas Education Association to host public education sails in Alpena. The sails will be July 15th and 16th. Purchase tickets in advance at www.schoolship.org.

Hannah MacDonald Thunder Bay NMS's 2015 volunteer of the year will be working on the *Inland Seas* this summer.

Students at the Sanctuary 2016 Summer Day Camps – The sanctuary will be hosting six sessions of summer camp this year for a variety of ages. See the attached flyer for more information. Help spread the word.

Volunteers – Volunteers are necessary for all of our sanctuary events. The Thunder Bay NMS Volunteer of the Year for 2016 is Brian Dort. He started working with the boat building program and has volunteered in many different capacities including on-water kayak safety for the cardboard boat race, master technician for the Thunder Bay Film Festival and head judge for the ROV Competition.

Thunder Bay NMS volunteer opportunities:

Ambassador on the Lady Michigan
Visitor Center Greeter
Maritime Festival
Halloween
Film Festival

Stephanie is working on online registration forms for volunteers.

Media & Outreach – Thunder Bay NMS is receiving lots of good media coverage. The sanctuary is featured weekly on WBKB TV and the Bay 108 Thursday morning radio show. Social media is also critical for marketing. Please invite all of your Facebook friends to like the Thunder Bay NMS Facebook page. Sanctuary staff has also been out on the road giving talks and have been featured in Wreck Diving Magazine.

SANCTUARY RESEARCH UPDATE

Marine Remote Sensing – John Bright

Since its designation in 2000, researchers at Thunder Bay NMS have conducted exploratory surveys to discover new shipwrecks and better document those at known locations. Throughout the years, many of these surveys resulted from partnerships between the sanctuary and various organizations in possession of the survey tools. Starting in 2012, however, the sanctuary began building an internal capacity for marine remote sensing, starting with the acquisition of two acoustic survey systems surplus by NOAA's Office of Coast Survey. Now Thunder Bay can supplement the numerous lake-bottom surveys already completed with new surveys for shipwrecks, especially in the newly expanded boundaries.

Marine remote sensing is more than just looking for shipwrecks. Remote sensing systems are a group of tools used to collect, query and further refine information about the lake bottom.

Essential features:

1. Data is recorded in highest resolution format (raw files)
2. All information is georeferenced (integrate GPS)
3. Data requires processing and corrections for output to end users

Applications:

Bathymetric Survey (nautical charts)
Archaeological survey
Benthic Habitat Classification
Geological Substrate Classification
Infrastructure Monitoring/Testing

Benthic Habitat = stuff on the bottom of the lake

Interpretation – Phil Hartmeyer

Thunder Bay continues to be on the cutting edge in managing submerged cultural resources in both shallow and deep water by using the latest technologies. Inventorying and assessing these 100

known sites is a big task, and the research team has been able to leverage partners to gain in-house capability of using the latest in advanced digital imaging technologies to make quick, yet thorough site assessments of these historic shipwrecks. The Catlin SVx tripod-mounted 360-degree panoramic camera is one tool that we began using last year to generate immersive, virtual dive experiences. These products have been hosted on our website, and through our own networks, but will be further pushed into the stratosphere through exciting ONMS partnerships with Underwater Earth, and Google. Photogrammetry is another tool that we have recently achieved in-house capacity to execute. Hundreds of images are stitched together in a powerful software that produces a digital 3D model. This model is both an incredible outreach product, and archaeological survey tool. Further off season research developments include a revamped shipwreck database, and an interactive mooring buoy map that shows boaters up-to-date news on which buoys are in or out of the lake. Thunder Bay continues to be at the forefront of submerged cultural resource management thanks greatly to our adaptation and utilization of cutting edge technologies.

Updated Data Management Strategies

The sanctuary has developed a database to capture all of the shipwreck information, which connects to the library's research page. All of the data in one spot

<http://thunderbay.noaa.gov/shipwrecks/welcome.html>

Also have a new interactive mooring buoy map which shows what buoys are in the lake

<http://thunderbay.noaa.gov/shipwrecks/moorings.html>

Mooring Buoys – Wayne Lusardi

This is the 14th season of mooring buoys. In 2003, sanctuary staff began installing independent mooring systems using train wheels as the anchor and attaching a chain and buoy system to the mooring buoy. The purpose of the mooring buoys was to prevent damage to wrecks.

In Alpena County there are currently mooring systems in place for 27 sites. Presque Isle and Alcona Counties currently have 11 mooring sites. Just added new sites by Black River.

The first step in the mooring buoy process is getting a permit. 1) Michigan Department of Environmental Quality looks at it first along with the US Army Corps of Engineers. After their approval it moves on to the Coast Guard for approval and charting. Permits are a one-time deal unless the sites have been inactive for a while. Sanctuary staff is responsible for informing the agencies when the buoys are in the lake and when they have been removed.

There are two types of systems one for deeper water and one for shallower water.

Sanctuary staff will start putting mooring buoys out at the end of April and will start with the ones that are used for the *Lady Michigan* tours. Mooring buoys increase public access to these shipwrecks. Great to know where they are and what they are. Website is real time data so if a buoy has to come off we will update the website. The website for the mooring buoy data is

<https://noaa.maps.arcgis.com/apps/MapTour/index.html?appid=49a9de9af2dd49ccad1e540b3dd07c86>.

ROV COMPETITION & MARINE TECH EXHIBIT – Sarah Waters

The ROV Competition will be held on Saturday, May 21st at the Alpena High School. There will be 28 teams participating in this year's competition. Sanctuary staff has done a great job building the ROV program helping make Alpena a hub for marine technology and it is a great way to get kids interested in science.

During the meeting the SAC was given the opportunity to tour the ACC Marine Technology Exhibit

ALPENA COMMUNITY COLLEGE MARINE TECHNOLOGY - David Cummins, ACC

David Cummins gave an overview of ACC's marine tech program. There are other marine tech programs in the state but ACC's program is the only that has an on-water section which is made possible because of their partnership with the sanctuary and ability to share resources. ACC is currently trying to fill up a marine tech summer camp.

Jeff mentioned that David and his team have become mentors to some of the younger kids in the community to help foster their programs. It's a great collaboration.

This summer David will be participating in Ocean Exploration Trust's "Wired Expeditions – inviting the internet into the conversation" program. He will be on board the *Nautilus* June 22nd through July 13th acting as an ambassador to our schools and community. He will have at least one live interaction and will bring back STEM curriculum to share with our schools. The expedition will be broadcast into the sanctuary's theater with the ability to answer live questions.

You can follow his expedition online at www.oceanexplorationtrust.org.

June 22 - July 2: Central California- Submarine Canyons (Monterey Bay NMS) ROV & Mapping
July 4 - July 13: Channel Island NMS – Mapping – Dr. Robert Ballard will be on board for that part of the expedition.

David's goal is to bring his experience back to our community in his fullest capacity and educate the community on the full range of opportunities available for working on the water. He is planning to do a presentation for the community in August.

PUBLIC COMMENT – None.

ADJOURN – The meeting was adjourned at 8:50pm.

Next meeting is June 21st 6:30-9:00pm.



Students at the Sanctuary 2016 Summer Day Camps

Take advantage of early bird rates before May 1. Sign up early, space is limited!

ONLINE REGISTRATION & PAYMENT: www.thunderbayfriends.org



Mini Maritimers' Day Camp (Ages 5-6)

Join us for four fun-filled days of activities, crafts, science, and stewardship at Thunder Bay National Marine Sanctuary's visitor center. Learn about our amazing blue planet above and below the waves!

- **Session 1: June 20 – 23 (9 am to noon daily) *Age 5-6**
- **Session 2: August 15–18 (9 am to noon daily) *Age 5-6**



Junior Maritime Archaeologist Day Camp (Ages 7-9 & 10-12)

It's hard to imagine just how important water is to our past and present, but as Junior Maritime Archaeologists we're going to try! We'll learn through hands-on activities why Romans moved rivers, what it was like to sail by the stars, how many ships it takes to make a beaver skin top-hat, and much more!

- **Session 1: June 27 – 30 (9 am to 3 pm daily) *Age 7 - 9**
- **Session 2: July 11 – 14 (9 am to 3 pm daily) *Age 10 - 12**



Marine Technology Day Camp (Ages 10-12 & 13-15)

Grab your control box and get ready to learn about, build, and test underwater robots or "remotely operated vehicles (ROVs)"! Everyday ROVs are being used to explore our blue planet, why not join in?

- **Session 1: July 18 - 21 (9 am to 3 pm daily) *Age 13 - 15**
- **Session 2: August 1 - 4 (9 am to 3 pm daily) *Age 10 - 12**

***Age at time of camp**

**QUESTIONS? Need a mailed copy of the registration form?
Contact Michael.Ekenstedt@noaa.gov or (989) 356-8805 ext. 19**

Students at the Sanctuary 2016 Day Camp Registration Form – All Sessions
THIS FORM IS ALSO AVAILABLE ONLINE: www.thunderbayfriends.org
 Secure online payment is also available by credit card at this site, click “SHOP” button and scroll through to the appropriate camp session to make payment

Camper Information

Camper Name: _____ Age (at time of camp): _____

Parent/Guardian Name(s): _____

Phone:(home/cell) _____ (Email) _____

Mailing Address: _____

Check all that apply:

Session	Age	Date (times)
Mini Maritimers' Session 1	5-6	June 20-23 (9am-noon)
Mini Maritimers' Session 2	5-6	August 15-18 (9am-noon)
Junior Maritime Archaeologist Session 1	7-9	June 27-30 (9am-3pm)
Junior Maritime Archaeologist Session 2	10-12	July 11-14 (9am-3pm)
Marine Technology Session 1	13-15	July 18-21 (9am-3pm)
Marine Technology Session 2	10-12	August 1-4 (9am-3pm)

*Partial scholarships are available, contact camp coordinator Michael Ekenstedt (contact information below)

Payment Before May 1, 2016	Rate	No. of Sessions	Subtotal
Mini Maritimer's - either session each:	\$40		
All other sessions each:	\$80		
Total due:			
Payment After May 1, 2016	Rate	No. of Sessions	Subtotal
Mini Maritimer's - either session each:	\$60		
All other sessions each:	\$100		
Total due:			

Member of the Friends of Thunder Bay National Marine Sanctuary? ☐ No ☐ Yes

If you would like to join as a member go to: www.Thunderbayfriends.org and click the “Donate” button, or call (989) 356-8805 ext. 10

Payment information: make checks payable to “Friends of TBNMS,” cash and credit cards also accepted at the Thunder Bay National Marine Sanctuary visitor center’s gift store, 500 W. Fletcher St., Alpena, MI 49707 or call: (989) 356-8805, ext. 18.

Refunds available up to one week before camp start date, less a 10% processing fee.

Please return this form to Michael.Ekenstedt@noaa.gov, or mail c/o Michael Ekenstedt, 500 W. Fletcher St., Alpena, MI 49707. Registrations will not be processed without payment and are accepted in order that both payment and registration are received at the TBNMS (sanctuary visitor center) business office, including online registration and payment. 1

**Thunder Bay National Marine Sanctuary
Advisory Council**

-June 21, 2016 Meeting Minutes-

Date: June 21, 2016

Time: 6:30pm

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

MEETING ATTENDEES

NOAA: Jean Prevo, Stephanie Gandulla, Russ Green, Chuck Bennett, Phil Hartmeyer, Sarah Waters, Anne Gentry, Dani Fegan, Joey Jackson, John Bright, Travis Wahl, Michael Ekenstedt

State of Michigan: Wayne Lusardi

SAC Members: Mary Christensen-Cooper, Vera Kavanaugh, Nancy Kinney, Steve Kroll, Bill LaMarre, Don MacMaster, Don Newport, Susan Nielsen, Carol Shafto, Jason Snyder, Mark Upham, Chuck Wiesen

SAC Alternates: Andrew Augustyn, Roger Baumgardner, Michael Beaulac, Shari Davis, Jim Dessenberg, Robert Doyle, Ron Meneghel, Ann-Marie Ruder

Friends of TBNMS Board: Al Moe, Beach Hall

Public: Greg Swallow

Ex Officio Member: James Pierce, US Coast Guard

Media: Nicole Grulke, *The Alpena News*

WELCOME AND ACTION ITEMS

Carol Shafto called the meeting to order. The council approved the minutes from the April 26, 2016 meeting.

Carol Shafto introduced Joey Jackson the sanctuary's new Multi-Media Designer. He will be replacing Jacque Edwards who is moving to Washington, DC at the end of the month.

Carol also introduced Beach Hall who is a representative from the Friends of TBNMS Board. Beach was the long-term mayor of Rogers City and is still very active there. He and Al Moe will be serving as the Friends Board representatives on the sanctuary advisory council.

MARINE PROTECTED AREAS MEETING UPDATE – Steve Kroll

The Marine Protected Areas (MPA) Federal Advisory Committee (FAC) advises NOAA and the Department of the Interior on ways to strengthen the nation's system of MPAs. It includes representatives of diverse stakeholder groups, including scientists, academia, commercial

fishermen, anglers, divers, state and tribal resource managers, the energy and tourism industries, and environmentalists, among others. MPA Federal Advisory Committee meetings are open to the public and provide opportunities for public comment.

Steve Kroll is a member of the FAC which recently met in Maine. During the meeting the group drafted a letter to the Secretary of Commerce and the Secretary of the Interior (see attached). The group strongly advised the secretaries to consult the local people when thinking about starting a marine protected area. The community members are generally the most knowledgeable about their areas and it has also been determined that the process works better if it comes from the bottom up, not from the top down. The entire document that was drafted can be found online at the MPA website <http://marineprotectedareas.noaa.gov/>.

The FAC meets once a year but the committee participates in teleconferences in between.

WISCONSIN UPDATE – Russ Green

For the first time since 2000, NOAA has announced its intent to designate new sanctuaries under the National Marine Sanctuaries Act. Information on the nomination process can be found at <http://www.nominate.noaa.gov/>.

Wisconsin has been nominated as a site for a potential sanctuary. The proposed Wisconsin site is an 875 square mile area of Lake Michigan with waters extending from Port Washington to Two Rivers. The state of Wisconsin nominated this area as a national marine sanctuary through the Sanctuary Nomination Process with broad community support.

The area encompasses historic shipwrecks of national significance that merit the additional management authority of the National Marine Sanctuaries Act. The nominated area contains an extraordinary collection of 39 known shipwrecks, 15 of which are listed on the National Register of Historic Places.

Fourteen of the known shipwrecks are essentially intact and three vessels possess standing masts – a rarity in the Great Lakes. The area also includes Wisconsin's two oldest known shipwrecks. Archival and archaeological research indicates that the proposed sanctuary also includes 123 reported vessel losses.

They plan to create a sanctuary advisory council there, possibly pre-designation.

Currently they are working on the draft environmental impact statement, as well as developing regulations/permitting for the early stages of drafting a management plan. They will possibly include some anchoring regulations in their plan.

MEDIA, STORE & VOLUNTEERS

Media – Stephanie Gandulla

Thunder Bay has been getting lots of great local and national media coverage.

CMU public radio and TV continue to be interested in doing stories with Thunder Bay NMS.

EDUCATION UPDATE

2016 MATE Great Lakes Regional ROV Competition – May 21st – Travis Wahl

Michigan students competed at Alpena Plaza Pool. The winner of the Ranger competition will go to the international competition which is being held at the NASA Johnson Space Center's Neutral Buoyancy Lab in Houston, Texas, June 23-25. Live video stream available at

<http://www.marinetech.org/live-videostream/>

22 teams with 138 competitors competed at the regional competition in Alpena.

The Winners:

Scout: Petoskey Water Warriors

Navigator: East Jordan Red Devils

Ranger: The Underwater Research Robot Company (UR2) from Alpena

An event of this scale was only made possible because of volunteers. There were 56 volunteers and a total of 276.5 hours donated. Thank you to all of our volunteers.

Education Programs – Anne Gentry

Every Kid in a Park Grant – To help engage and create our next generation of park visitors, supporters and advocates, the White House, in partnership with federal lands and waters management agencies, launched the Every Kid in a Park initiative. The immediate goal is to provide an opportunity for each and every 4th grade student across the country to experience their federal public lands and waters in person throughout the 2015-2016 school year. Thunder Bay NMS received grants which made it possible for 4th graders from Alpena, Petoskey, Rogers City, Alcona, Hillman, and Atlanta schools to go out on the *Lady Michigan*.

Spring 2016 at glance (May 5-June 13):

22 Every Kid in Park visits

19 General Field Trips

31 Schools

1,830 + students

16 Guided Tours

27 Classroom Cruises

33 Water Quality tests

36 ROV in a Bag sessions

45 SOS presentations

Schools that visited the GLMHC:

ACES

Sanborn

Mio

AHS

Thunder Bay Junior High

Onaway

All Saints

Wilson

Oscoda

Besser

Alcona

Petoskey

Ella White

Atlanta

Posen

Hinks

Grand Rapids

Rogers City

Immanuel

Hillman

Lincoln

Lewiston

Summer Camps – Michael Ekenstedt

Michael demonstrated a song he sang with the kids at camp and passed around *goop* which the students make in camp. This week's camp has been the Mini Maritimers' Day Camp for children ages 5-6. There will be a second session August 15-18.

The Junior Maritime Archaeology Camp for ages 7-9 kicks off next week. The 10-12 age group can participate July 11-14. There will also be a Marine Technology Day Camps for ages 10-12 & 13-15. See the attached flier with camp descriptions, dates and times.

Thunder Bay NMS received a \$1,000 grant through the Community Foundation for Northeast Michigan to help fund the camps.

Get Into Your Sanctuary – Stephanie Gandulla

In celebration of the Office of National Marine Sanctuaries' *Get Into Your Sanctuary* initiative, Thunder Bay NMS is inviting SAC and volunteers to go on the *Lady Michigan* on the Sunday, June 26, 4pm cruise.

UPCOMING EVENTS

July 3rd – Battle of the Paddles – John Bright

On July 3 the Friends of TBNMS in partnership with Dork Brothers Racing will be hosting a 3k paddle board and solo kayak race on the Thunder Bay River. The race starts at 5:30pm. The course goes from the Rotary Island footbridge to the 2nd Street Bridge and return. Race check-in will be held on Rotary Island starting at 4:00pm. Bring your own board or kayak. All competitors must wear appropriate PFD. View the race from behind the Great Lakes Maritime Heritage Center or on the roof deck. There will be live music by *The Wild Sully's* and adults over 21 can enjoy Austin Brothers' beer. Event is from 4:30-8:00pm. For more information contact cathy.green@noaa.gov.

July 4th – Maritime Festival – Jean Prevo

The annual Thunder Bay Maritime Festival will be held on July 4, 10:00am-5:00pm. This is a free community event featuring live music by *Song of the Lakes* and *The Moxie Strings*, kids' games and activities, storytelling by Genot Picor, food vendors and the annual cardboard boat regatta beginning at 2:00pm. See attached flyer or visit www.thunderbay.noaa.gov for more information. If you are interested in volunteering contact steph.gandulla@noaa.gov.

Hyperbaric Chamber Tour – John Bright

We are very excited to extend an invitation for an open house event at the Center for Wound Healing and Hyperbaric Medicine at MidMichigan Medical Center in Alpena. The event, scheduled for Tuesday, July 19, will replace the regularly scheduled SAC Coffee on that day and will take place between 6-8pm. The sanctuary has partnered with the Hyperbaric Department staff to deliver a series of short presentations. Thunder Bay Unit Diving Supervisor John Bright will discuss diving within the sanctuary and the importance of readily accessible emergency hyperbaric treatment, and the hospital's Dr. Rancont will present about other uses for hyperbaric medicine including wound care and hyperbaric oxygen therapy.

Presentations will start at 6:30pm, but the chamber will open for tours starting at 6:00pm. After the presentations, chamber tours will resume until 8:00pm. There have been several staffing changes at the center, and the whole staff will be present to mingle and introduce the newest members of their team. Refreshments will also be available. We look forward to seeing you there.

REVIEWING MANAGEMENT PLAN: RESEARCH – Russ Green

Our current management plan was created in 2009 and acts as a blue print/guide for running the sanctuary. The management plan is also used a marketing tool. It is simple and clear. Perfect for handing to congressionals, research partners, etc. Ideally the management plan would be reviewed and updated every 5-10 years. We plan to begin the review process in the winter and will be looking to the SAC for input. Russ said that Jeff is thinking that this will be more of an update than a complete review/overhaul.

Russ gave a brief over view management plan's current research section. He touched on the characterization, monitoring and volunteer sections. He suggested that as we look at the management plan we might want to tighten up some of the outcomes.

The management plan is available online at
http://thunderbay.noaa.gov/pdfs/management%20plan_final.pdf.

Carol encouraged everyone to look through the plan and find a section they might be interested in helping with and at a future meeting we will form working groups which will consist of council members and a staff member. Everyone can help, sometimes not knowing a lot of information on a topic is beneficial to get the conversations started.

PUBLIC COMMENT – None.

ADJOURN – The meeting was adjourned at 8:00pm.

Next council meeting is August 16th 6:30-9:00pm.



Marine Protected Areas Federal Advisory Committee

June 3, 2016

The Honorable Penny Pritzker
Secretary of Commerce
U.S. Department of Commerce 1401 Constitution Ave., NW Washington, D.C. 20230

The Honorable Sally Jewell
Secretary of the Interior
Department of the Interior 1849 C Street, N.W. Washington DC 20240

Dear Madam Secretary Pritzker and Madam Secretary Jewell:

On behalf of the Marine Protected Areas Federal Advisory Committee (MPA FAC), I am pleased to transmit the attached "Guiding Principles for Marine Protected Areas (MPAs) and MPA Networks in the Arctic." The MPA FAC was asked by the Departments of Commerce and the Interior to undertake this work in light of the U.S. Chairmanship of the Arctic Council and the Council's recognition of MPA networks as an important tool for protecting healthy ecosystems and the social, economic and cultural benefits they provide to local communities. The need for ecosystem conservation is particularly important and urgent in light of the environmental and ecological impacts of climate change already being observed in the Arctic, and their implications for the many ecosystem services derived in the region.

The MPA FAC endorses these principles and intends for them to help inform any efforts to manage and create MPAs in the Arctic. We request that they be shared with appropriate agencies, governments and non-governmental partners through the National Marine Protected Areas Center and other mechanisms. These principles build on previous work by the MPA FAC to advance the inclusion of natural and social science and a cultural landscape approach in MPA planning and management.

The MPA FAC relied on its Arctic MPA Working Group to develop the enclosed Guiding Principles. This group was comprised of diverse stakeholder interests (see membership list, attached) reflecting varied perspectives on MPAs and MPA networks. While all of these principles are important, the Working Group, and the members of the public who participated in the open Working Group meeting, particularly emphasized several points. First, the meaningful participation of local and indigenous communities and other stakeholders in decisions about the management and creation of MPAs is essential. Second, the group recognized the significant climate change

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Center for Responsible Travel

John Jensen, Ph.D.
Sea Education Association

Stephen Kroll
Great Lakes Divers & Sweetwater Charters

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Surfrider Foundation

Trisha Kehaulani Watson
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Commercial Fisherman

Margaret Williams
World Wildlife Fund

DESIGNATED FEDERAL OFFICIAL

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Marine Protected Areas Federal Advisory Committee

impacts already being observed in Alaska. Third, the group noted the cultural, economic and biological diversity within the US Arctic (among the Bering, Beaufort, and Chukchi Seas) and the need for management and conservation approaches that reflect that diversity. Finally, participants agreed on the need to apply the best available natural and social science, technology and indigenous knowledge in the design and management of MPAs.

The MPA FAC hopes these Guiding Principles will be the start of a new conversation with those who live in the U.S. Arctic about the potential role of MPAs and MPA networks in helping to ensure the long-term protection and sustainable uses of Arctic marine resources. Given the vast geographic scale and the remote distribution of many Arctic communities, such engagement will require significant, long-term commitment and resources. The Arctic is changing dramatically and rapidly, and the MPA FAC urges the Departments of Commerce and the Interior to support the science and public engagement needed to inform productive planning processes to ensure a resilient and sustainable future for the US Arctic.

Sincerely,

George Geiger
Chair

cc. Dr. Russell Callender, NOAA Assistant Administrator for Ocean Services and Coastal Management
Lauren Wenzel, MPA FAC Designated Federal Official

Attachments:

- Guiding Principles for Marine Protected Areas and MPA Networks in the Arctic
- Arctic Marine Protected Areas Working Group Cover Letter

References: (links)

- [Committee Recommendations on Marine Protected Areas and Healthy Coastal Communities](#) (2011)
- [Committee Recommendations for Integrated Management Using a Cultural Landscape Approach](#) (2011)

EXECUTIVE SUMMARY

GUIDING PRINCIPLES FOR MARINE PROTECTED AREAS (MPAs) AND MPA NETWORKS IN THE ARCTIC

MAY 2016

Working Group Charge

In May 2015, the Departments of Commerce and the Interior formed an Arctic Marine Protected Areas (MPA) Working Group under the MPA Federal Advisory Committee (MPA FAC) to address the needs and opportunities to strengthen and connect MPAs in the Arctic while recognizing the importance of subsistence and other uses. MPAs are areas in our oceans, estuaries, intertidal areas and Great Lakes that have some level of protection for long-term conservation purposes. Examples include national parks, national wildlife refuges, state-managed fish and wildlife areas, and some federal fishery management areas. Many marine scientists recommend the use of MPA networks as a conservation tool because they connect individual MPAs, allowing for more effective protection of species that move across significant distances, such as migratory species and fish larvae. MPA networks can also focus on institutional linkages to improve management across diverse MPAs, for example by fostering common management objectives, methodologies, or tools.

Background

The U.S. Chairmanship of the Arctic Council during 2015-2017 provides an opportunity for input from U.S. stakeholders on Arctic Council priorities, including the development of a regional MPA network across the broader Arctic, and the U.S. role in such an international network. The Working Group used the definition of the Arctic established by the US Arctic Research and Policy Act that includes the Bering, Chukchi, and Beaufort Seas.

Guiding Principles

The Working Group developed fourteen guiding principles. These principles do not advocate for or against the establishment of new MPAs. They were developed to contribute to ongoing dialogue through the Arctic Council and other venues on the role of MPAs as a conservation tool. We offer these principles for consideration when managing, developing or networking existing or potential new MPAs, particularly in the context of rapid environmental change in the Arctic, while emphasizing the importance of substantive involvement from local communities and other affected stakeholders.

1. Recognize the geographic and ecological diversity of the Arctic

Given the major physical, ecological and economic differences among the Bering, Chukchi and Beaufort Seas, any future MPA networks should be organized to reflect this diversity, and stakeholder processes should recognize the differences and economic importance of commercial and subsistence uses within and across these subregions.

2. Recognize the context of a changing climate

Climate change effects are occurring at a more rapid pace and at a greater magnitude in the Arctic than elsewhere on the planet. These changes, particularly melting sea ice, create the potential for increased shipping and port development, tourism, energy exploration and

extraction, and research. Protecting important ecological areas of the Arctic through MPA networks and other area-based management tools can help sustain healthy ecosystems and the cultural diversity essential to long term economic and social well-being.

3. Employ MPAs and MPA networks to address a clear management need

MPAs and MPA networks are conservation and management tools, and should begin with a clear statement of management need and objective. Consideration of an MPA to fill management gaps should include an analysis of the purpose, benefit, structure, and function of the MPA.

4. Include local and indigenous communities in the decision-making process.

Engaging local and indigenous communities means connecting with, collaborating with, and relying upon insights from peoples who are born, live, and raise families in the Arctic. Special attention should be given to communities and stakeholders affected by management actions. MPA programs should also learn from others who have developed best practices for, and successfully engaged in, appropriate tribal consultation.

5. Ensure that any MPA planning and management processes are open and transparent.

Open and transparent processes allow stakeholders to; understand how the process works, and have substantive involvement in decisions about MPA planning and management. These processes must address the challenges of engaging remote and diverse communities, building trust with stakeholders and providing opportunities for diverse opinions and perspectives to be shared.

6. Better understand and analyze existing Arctic MPAs.

NOAA's MPA Inventory catalogs and classifies U.S. Marine Protected Areas using a broad classification system designed to evaluate national scale patterns and trends of marine protection. A review and refinement of this system is needed to better understand and represent the current status of marine protection in Arctic waters.

7. Apply the best available science, technology and indigenous knowledge

Science and indigenous knowledge should be the foundation of environmental stewardship and conservation. Existing science is extensive, but there are still gaps in Arctic knowledge. Managers should work with indigenous Arctic communities to incorporate both western and indigenous knowledge into decision-making.

8. Strengthen connections among MPAs

The Working Group recommends looking at potential connections among existing MPAs to see how they could be managed to better support ecosystem and community resilience. MPA research, management, monitoring and enforcement can all be strengthened through enhanced collaboration and networking.

9. Strengthen connections between MPAs and other area-based management tools

The U.S. Arctic has many marine areas utilizing various types of area-based management tools that have a range of objectives and are managed by different agencies and

management bodies. MPA managers can learn from alternate initiatives in managing existing MPAs or determining whether additional MPA designations are appropriate.

10. Further explore the use of MPAs as a tool for protecting the living and historical cultural heritage of the Arctic

An Arctic MPA network should enhance the protection of living and historic cultural heritage of the region. The living cultural heritage of subsistence hunting and fishing is central to the food security, cultural identity, and maintenance of household and community economies in the Arctic region.

11. Explore dynamic and flexible approaches to MPAs

Given the dynamic nature of ecosystems, species, and changing ecological conditions in the Arctic, the Working Group recommends an adaptive management approach to planning any new MPAs, maintaining existing MPAs, and the further development of other area-based management measures.

12. Consider MPA monitoring and compliance during development

When considering future MPAs in the Arctic, management agencies should consider the unique aspects of the Arctic that may challenge implementation, and incorporate lessons from other regions on how to successfully address implementation challenges. Proposed MPA regulations should be developed to facilitate compliance, for example, by building stakeholder ownership in the process and ensuring implementing regulations are enforceable and well communicated.

13. Enhance agency coordination

Federal and state agencies should capitalize upon already existing opportunities to share information regarding efforts and activities related to both the development and implementation of MPAs in the Arctic (e.g. the Alaska Marine Ecosystem Forum).

14. Enhance international cooperation on MPAs

Ecosystems cross national boundaries, and international cooperation among MPA networks may offer efficiencies and increase the effectiveness of domestic management efforts, providing an opportunity to expand upon benefits to the marine resources and stakeholders living in or around MPAs, or depending upon the marine resources therein. The Working Group recommends that Arctic MPA programs develop partnerships, encourage scientific collaboration, and share information on MPA planning and management at an international level.

GUIDING PRINCIPLES

FOR MARINE PROTECTED AREAS (MPAs) AND MPA NETWORKS IN THE ARCTIC

MAY 2016

Working Group Charge

In May 2015, the Departments of Commerce and the Interior formed an Arctic Marine Protected Areas (MPA) Working Group under the MPA Federal Advisory Committee (MPA FAC) to address the following charge to the MPA FAC (in part below):

The Arctic is experiencing rapid changes due to climate change impacts. These have direct impacts on Arctic ecosystems marine resources, as well as creating opportunities for major and rapid changes in human uses of the region. The Arctic Council is currently developing a Framework for a Pan Arctic Network of Marine Protected Areas, outlining common goals and principles for international collaboration to link the efforts within individual Arctic states to develop and strengthen MPAs and MPA networks. Working through the MPA FAC, an Arctic Workgroup will develop guidelines and principles for U.S. actions to strengthen and connect MPAs and MPA programs in U.S. waters.

In response to this charge, the Working Group developed fourteen guiding principles. These principles do not advocate for or against the establishment of new MPAs. They were developed to contribute to ongoing dialogue through the Arctic Council and other international and national venues on the role of MPAs as a conservation tool. We offer these principles for consideration when developing, managing, or networking existing or potential new MPAs, particularly in the context of rapid environmental change in the Arctic, while emphasizing the importance of substantive involvement from local communities and other affected stakeholders.

Understanding Key Terms – Marine Protected Area and MPA Network

The Working Group used the U.S. definition of an MPA from Executive Order 13158, which defines an MPA as “any area of the marine environment that has been reserved by Federal, State, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein.” In plain language, this refers to areas in our oceans, estuaries, intertidal areas, and Great Lakes that have some level of protection for long-term conservation purposes. Examples of MPAs established through federal or state initiatives include parts of national parks, national wildlife refuges, state-managed fish and wildlife areas, and some federal fishery management areas.

MPA networks are defined by the International Union for the Conservation of Nature as “a collection of individual MPAs operating cooperatively and synergistically, at various spatial scales, and with a range of protection levels that are designed to meet objectives that a single [MPA] cannot achieve.” Ecological MPA networks are a conservation tool recommended by many marine scientists because they connect individual MPAs, allowing for more effective protection of species that move across significant distances, such as migratory species and fish larvae. MPA networks can also focus on institutional linkages to improve management across diverse MPAs, for example by fostering common management objectives or tools.

Arctic Boundary as defined by the Arctic Research and Policy Act (ARPA)

All United States and foreign territory north of the Arctic Circle and all United States territory north and west of the boundary formed by the Porcupine, Yukon, and Kuskokwim Rivers; all contiguous seas, including the Arctic Ocean and the Beaufort, Bering and Chukchi Seas; and the Aleutian chain.¹



Credit: US Arctic Research Commission
Acknowledgement: Funding for this map was provided by the National Science Foundation through the Arctic Research Mapping Application (amap.org) and Contract #0520837 to CH2M HILL for the Interagency Arctic Research Policy Committee (IARPC).

Map author: Allison Gaylord, Nuna Technologies. May 27, 2009.

1. The Aleutian chain boundary is demarcated by the 'Contiguous zone' limit of 24-nautical miles.

Figure 1. Arctic Boundary. The Arctic Research and Policy Act defines the U.S. Arctic as shown and was used by the Working Group as the geographic scope of the Arctic. It includes the Bering, Chukchi, and Beaufort Seas.

Building on a Foundation of Work on Arctic Policy

In recent years, several major efforts have emerged to articulate international, national, and state policies for the Arctic. These include (but are not limited to):

- The Arctic Council's [Framework for a Pan-Arctic Framework of Marine Protected Areas](#) (2015) – which outlines a vision and goals for a regional, ecologically representative and connected MPA network across the Arctic to strengthen ecological resilience, stewardship, public awareness and international collaboration.
- The [Arctic Research and Policy Act](#) (1984) –establishes the geographic definition of the U.S. Arctic as including the large marine ecosystems of the Aleutian Islands, East Bering, Northern Bering, Chukchi, and Beaufort Seas.
- [National Strategy for the Arctic Region](#) (2013) –describes lines of effort focused on advancing security, pursuing stewardship, and strengthening international cooperation in the context of integrated Arctic management while seeking to balances economic development, environmental protection, and cultural values.

- The [Alaska Arctic Policy Commission](#) (2015) –outlines four vision statements focused on economically vibrant communities and a healthy environment; transparent and inclusive Arctic decision making; enhanced security of the state, individuals and communities; and strengthening the resilience of communities and integrating the cultural and knowledge of Arctic peoples.
- The [Arctic Fishery Management Plan](#) (2009) – closed all Federal waters in the Chukchi and Beaufort Seas to commercial fishing until sufficient scientific information is available to inform fisheries management decisions. This proactive policy by the North Pacific Fishery Management Council and NOAA has served as a model for recent international efforts by the United States, Canada, Denmark (on behalf of Greenland), Norway, and Russia, to ban commercial fishing in the high seas of the [Central Arctic Ocean](#) until there is sufficient scientific information to determine that fishing there can also be conducted sustainably.

GUIDING PRINCIPLES

The fourteen guiding principles provided here are intended to build on these earlier policy documents. The Working Group recognized the unique and special characteristics of the Arctic – “an amazing place” in the words of the National Strategy– and the work that has been done to build a common vision and approach to build both community and ecological resilience to the rapid change occurring. The Working Group also recognized that there could be tradeoffs between economic development and conservation policy goals. To identify common ground and build consensus, these tradeoffs need to be discussed by all potentially affected stakeholders.

1. Recognize the geographic, economic and ecological diversity of the Arctic

Given the major physical, ecological and economic differences among the areas that make up the U.S. Arctic, particularly between the Bering, Chukchi, and Beaufort Seas, any future MPA networks should reflect this diversity. For example, the Bering Sea is the center of large commercial fisheries, while the Beaufort and Chukchi Seas hold a significant portion of offshore oil and gas important for energy development. Stakeholder processes should recognize the significant differences and economic importance of commercial and subsistence uses within and across these sub-regions.

2. Recognize the context of a changing climate

Climate change effects are occurring at a more rapid pace and at a greater magnitude in the Arctic than elsewhere on the planet. These changes, particularly melting sea ice, create the potential for new shipping routes and ports, increased tourism, increased access to fishing grounds, oil and gas exploration and extraction, and research. Arctic communities are working to ensure that this period of change does not undermine their way of life or food security, while they explore the potential for new economic opportunities. The Arctic is an area important to biological diversity, with relatively intact ecosystems and important populations of migratory and endemic species. Protecting important ecological areas of the

Arctic through MPAs and other area-based management tools can help sustain healthy ecosystems and the cultural diversity essential to long term economic and social well-being.

3. Employ MPAs and MPA networks to address a clear management need

MPAs and MPA networks are conservation management tools. Plans for MPAs or MPA networks should begin with a clear statement of management need and a management objective. If gaps are identified in existing management frameworks that can be resolved with the creation of an MPA or MPA networks, an analysis of the purpose, benefit, structure, and function of an MPA to fill those gaps should be developed through a process that engages local, regional, state and national interests. A clear objective also provides a necessary basis for future evaluation of the effectiveness of an MPA or network of MPAs.

4. Include local and indigenous communities in the decision-making process

Engaging local and indigenous communities means connecting with, collaborating with, and relying upon insights from peoples who are born, live, and raise families in the Arctic. Special attention should be given to communities and stakeholders affected by management decisions. Executive Order 13175 (2000) recognizes the unique trust relationship between the federal and tribal governments and directs that, “when formulating and implementing policies that have tribal implications... agencies shall respect Indian tribal self-government and sovereignty, honor tribal treaty and other rights, and strive to meet the responsibilities that arise from the unique legal relationship between the Federal Government and Indian tribal governments.” Additionally, considering the uniquely high productivity of Alaska’s oceans and the deep connections between communities and marine resources, engaging user groups such as subsistence users, fishermen, hunters, recreationists, and others will likely enhance a better understanding of the natural environment.

MPA programs should learn from others who have developed best practices for, and successfully engaged in tribal consultations. A positive example includes the Indigenous People’s Council for Marine Mammals, which published [tribal consultation procedures for Alaska](#) in January 2016. In Arctic Alaska, some Alaska Native Organizations serve as representatives of Tribal interests for purposes of managing and protecting marine mammals and their subsistence uses.

Governance or management of MPAs should include broad local representation, recognizing that diverse stakeholders and multiple opinions exist within, as well as among, Arctic communities. Meaningful engagement with local and indigenous communities also needs to address ways to improve communication and allow sufficient time for their involvement. MPA management plans and budgets should identify specific ways to achieve meaningful community participation.

5. Ensure that MPA planning and management processes are open and transparent

Open and transparent processes allow stakeholders to understand how the process works and have substantive involvement in decisions about MPA planning and management. These processes must address the challenges of actively involving remote and diverse communities while building trust with stakeholders and providing opportunities for diverse opinions and perspectives to be shared. The process should include identifying and including all relevant stakeholders (including indigenous communities, towns and municipalities, Federal and state agencies, industry representatives, and non-governmental organizations). The process should ensure equal access to, and consideration of, scientific and indigenous knowledge, as well as any other relevant information. It should also allow for the additional time needed to communicate with remote communities engaged in subsistence activities.

Because of the sheer scale and rural character of Alaska, the remoteness of many communities and the unique geographic features of the state (most communities are not on a road system), special effort must be invested to ensure adequate communication and information sharing. Involving local communities requires time, funding for travel, and creativity. Ocean and coastal resource management agencies should look at different models of engagement to identify and emulate successful approaches to engage a broad mix of community members (e.g. community-based meetings, virtual listening sessions, and webinars).

In order to address the limited capacity that communities and some other organizations have to be involved in multiple governmental processes, MPA processes should also leverage the networks and processes of existing organizations (e.g. Alaska Native Organizations, Arctic Waterways Safety Committee, North Pacific Fishery Management Council, and other user groups). Special efforts should be made to engage communities and other stakeholders directly affected by management decisions.

6. Better understand and analyze existing Arctic MPAs

NOAA's MPA Inventory catalogs and classifies U.S. Marine Protected Areas using a broad classification system designed to evaluate national scale patterns and trends of marine protection. All sites in the MPA Inventory are assigned a primary conservation focus of natural heritage, cultural heritage, or sustainable production. Currently, under the existing inventory, nearly all Arctic MPAs are classified as having a sustainable production focus. With only a few MPAs focused on natural or cultural heritage, this approach suggests that little marine protection in the Arctic is explicitly directed toward the protection of natural and cultural heritage resources, as distinguished from fishery resources. A review and refinement of the MPA Inventory for Alaska is needed to better understand and represent the current status of marine protection in Arctic waters. A map and inventory of existing MPAs in the U.S. Arctic are shown in Appendix 1.

7. Apply the best available science, technology and indigenous knowledge

Science and indigenous knowledge should be the foundation of environmental stewardship and conservation. Existing science is extensive, but there are still gaps in Arctic knowledge.

Managers should work with indigenous Arctic communities to incorporate both western and indigenous knowledge into decision-making. Indigenous knowledge is rooted in history, time, and place, but is adaptable and dynamic in ways that keep it relevant and useful in contemporary life. Based on generations of observation, practice, and cultural memory, indigenous knowledge is a dynamic system of research, information gathering, and experimentation.

The use of emerging technologies can provide effective and efficient inputs for the management of existing and new MPAs. Technologies, such as vessel monitoring, underwater autonomous vehicles (UAVs), and other surveillance and monitoring tools, can help address the challenges of a vast expanse and harsh environmental conditions in the Arctic.

8. Strengthen connections among MPAs

Potential connections among existing MPAs should be assessed to see how they could be managed to better support ecosystem and community resilience. MPA research, management, monitoring and enforcement can all be strengthened through enhanced collaboration and networking. Examples of MPA connections that could be further explored include collaborative research on shared species and habitats; harmonizing monitoring approaches; and shared planning for climate change impacts, including understanding potential impacts to key marine species and habitats in the Arctic region.

9. Strengthen connections between MPAs and other area-based management tools

The U.S. Arctic has many marine areas utilizing various types of area-based management tools. These areas are focused on a variety of activities, have a range of objectives, and are managed by different agencies and management or co-management bodies. A few examples include ship traffic separation schemes, open-water season time-area closures for protection of marine mammal migrations and subsistence harvests, and fishery management areas. It is important to learn from alternate, including locally based, initiatives in managing existing MPAs or determining whether additional MPA designations are appropriate. This includes understanding how existing and potential future MPAs and other spatial management in the Arctic contributes to long-term conservation and economic sustainability goals. In addition, discussions and analysis with managers and stakeholders involved in other types of place-based management can help minimize unintended consequences of MPAs on other important objectives, such as maritime safety.

10. Further explore the use of MPAs as a tool for protecting the living and historical cultural heritage of the Arctic

An Arctic MPA network should enhance the protection of the living and historic cultural heritage of the region. The living cultural heritage of subsistence hunting and fishing is central to the food security, cultural identity, and maintenance of household and community economies in the Arctic region, which has adapted and will continue to adapt to changing conditions.

MPA managers and planners should draw on the [cultural landscape approach](#) recommended by the MPA Federal Advisory Committee, which recognizes the interconnectedness of natural and cultural resources and takes an integrated approach to resource management.

Many stakeholders are concerned that the establishment of new MPAs could adversely impact subsistence activities. However, it should be noted that many existing Arctic MPAs explicitly cite helping to maintain the sustainability of subsistence activities as one of their objectives. Other Arctic nations can also serve as models regarding how MPAs can help sustain local communities and traditional livelihoods. For example, the largest MPA in the Bering Sea, Russia's Commander Islands Biosphere Reserve, was designed to allow for protected human uses in some designated zones. Collaboration between management agencies, organizations, communities, and individuals is essential to achieve objectives that protect marine habitats while navigating the need to balance cultural, nutritional, and other human activities. The Working Group recommends documenting lessons learned from other regions and countries on this issue.

11. Explore dynamic and flexible approaches to MPAs

Adaptive management is the integration of design, management, and monitoring to systematically test assumptions in order to adapt and learn.¹ Given the especially dynamic nature of ecosystems, species, and changing ecological conditions in the Arctic, adaptive management approaches to planning new MPAs, maintaining existing MPAs, and developing other area-based management measures should be considered. Successful adaptive management requires regular monitoring and evaluation to inform decision making, together with engagement with stakeholders to discuss management outcomes and, where needed, potential new or adapted management approaches.

Ecosystem-based management is an accepted framework that integrates humans as part of the ecosystem, and explicitly acknowledges the need for adaptive management. This

¹ <http://www.fosonline.org/wordpress/wp-content/uploads/2010/06/AdaptiveManagementTool.pdf>

framework allows for the dynamic and flexible approach that is an important component of area-based management in a changing Arctic.

A cultural landscape approach (CLA) is recommended practice in managing cultural heritage in MPAs. CLA complements ecosystem-based management and emphasizes the connections between humans and the environment in a specific place as well as multiple cultural perspectives. Tribal cultural landscape approaches (TCLA) have been developed with tribal and indigenous communities in the continental U.S. and Hawaii, and may be able to be adapted for use in the Arctic with great benefit.

Flexibility will be required in the Arctic as ecosystem and species distributions are expected to shift as temperatures increase. New science and data, as well as indigenous knowledge, will highlight issues that need attention. To ensure that an MPA is meeting its objectives, boundaries may need to be shifted or new management tools may need to be applied. The movement of species into new areas, or the identification of areas that remain important for biodiversity, may highlight the need for additional place-based protection measures. For example, a component of the Conflict Avoidance Agreement process between the oil and gas industry and indigenous communities on the North Slope aims to minimize industry impacts to whales and hunters through seasonal/time area closures. While not an MPA, this flexible, area-based measure can contribute to conservation as well as cultural preservation and food security outcomes.

Examples of flexible approaches that could be explored in the future include:

- MPAs with dynamic boundaries as environmental conditions or species move
- Speed limits for vessels in sensitive areas, at certain times of the year or under certain conditions (e.g. when whales are sighted)

12. Consider MPA monitoring and compliance during development

When considering future MPAs in the Arctic, management agencies should consider the unique aspects of the Arctic that may challenge implementation, and incorporate lessons from other regions on how to successfully address implementation challenges. For example, lack of infrastructure and insufficient hydrographic information pose significant challenges to Arctic operations. Proposed MPA regulations should be developed to facilitate compliance, for example, by building stakeholder ownership in the process and ensuring implementing regulations are enforceable and well communicated. Regulations are more enforceable if they are simple and straightforward, clearly explain the intent of the MPA and its restrictions, encourage the use of monitoring technology (i.e. AIS technologies, VMS advanced features, etc.), and allow for means to measure compliance (see [*Enforcement Considerations for NOAA Fisheries and North Pacific Fishery Management Council*](#) developed by NOAA Fisheries and the U.S. Coast Guard). Due to the remoteness of Arctic waters, emerging AIS technologies may be cost effectively applied to disseminate MPA information to vessels as well as to aid their compliance.

13. Enhance agency coordination

Federal and state agencies should capitalize upon existing opportunities to share information regarding efforts and activities related to both the development and implementation of MPAs in the Arctic. This coordination is particularly important to support an ecosystem approach for management across state and federal waters. The Alaska Marine Ecosystem Forum (AMEF), consisting of Federal and State agencies as well as the North Pacific Fishery Management Council, is one example of an existing coordination body. Agencies at the state and federal level should seek to identify opportunities to communicate current activities and coordinate Arctic MPA planning and management. If AMEF is found to be a preferred forum, DOI and NOAA should consider initiating a special session of the AMEF to facilitate agency discussion surrounding MPAs in the Arctic.

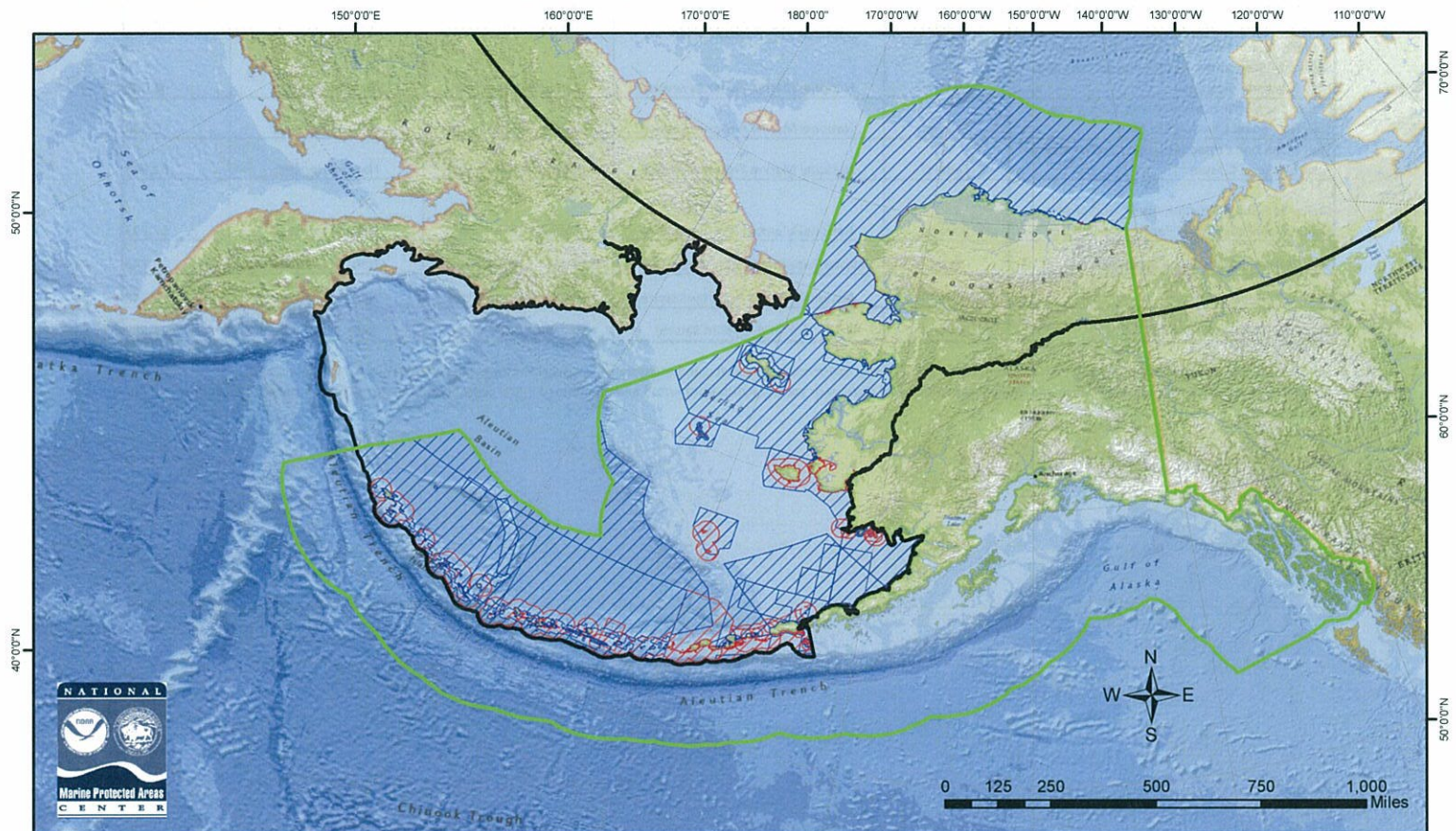
14. Enhance international cooperation on MPAs

Ecosystems cross national boundaries, and international cooperation among MPA networks may offer efficiencies and increase the effectiveness of domestic management efforts, providing an opportunity to expand upon benefits to marine resources and stakeholders living in or around MPAs, or depending upon the marine resources therein. Although the Arctic is increasingly accessible, it will remain a difficult and costly place to inhabit, govern, and do business. Activities in the Arctic may be more cost effective when information, technology, capacity, and infrastructure can be shared across multiple countries. In addition, holistic ecosystem-based management can be achieved in trans-boundary settings only through cooperation. Many Arctic MPAs support habitat for migratory species that breed and live in the Arctic for only a portion of the year and return to wintering grounds in non-Arctic locations, in some cases in the southern hemisphere. Cooperation between Arctic and non-Arctic States is therefore critical to understanding the comprehensive nature of the status of, and threats to, these species.

International cooperation among MPA managers will be increasingly important as the Arctic becomes more accessible to humans and development and as ecosystems and species respond to warming temperatures. Domestic Arctic MPA programs should work across international boundaries to:

- Develop partnerships for dialogue and exchanges of experts, managers and stakeholders. For example, exchanges of Chukchi and Inupiaq hunters from Alaska and Russia have facilitated the sharing information on rapidly changing Arctic environmental conditions between indigenous communities and fostered ways in which local communities have taken a leadership role in protecting wildlife, including through monitoring and establishing community-managed protected areas.
- Encourage international scientific collaboration. Examples could include development and implementation of joint monitoring programs to allow for cross-border comparison and analysis of data on status and changes in Arctic biodiversity, and to detect the presence of invasive species.
- Share information on planning and management of MPAs for shared species or habitats, including impacts to marine resources from existing or emerging uses and appropriate management tools.

U.S. MPAs in the Arctic (as defined by ARPA)



- U.S. EEZ Boundary
- Arctic Boundary as defined by ARPA
- Natural Heritage/Cultural Heritage MPAs
- Sustainable Production Sites

SUMMARY STATISTICS

- The U.S. EEZ covers 2 million sq km within the ARPA boundary.
- 83% of this area is covered in a marine protected or managed area.
- Sustainable Production sites cover 1.6 million sq km or 80% of the U.S. EEZ area.
- Natural Heritage and Cultural Heritage MPAs cover 226,000 sq km or 11% of the U.S. EEZ area.

Drafted April 2016 - Data from 2014 MPA Inventory

Natural Heritage and Cultural Heritage Marine Protected Areas within ARPA
(data from NOAA MPA Inventory 2014)

Site Name	Level of	Management Agency	Level of Protection	Primary Conservation	Marine Area
Cape Krusenstern National Monument	Federal	National Park Service	Uniform Multiple Use	Cultural Heritage	36
Alaska Maritime National Wildlife Refuge	Federal	U.S. Fish and Wildlife Service	Uniform Multiple Use	Natural Heritage	595
Arctic National Wildlife Refuge	Federal	U.S. Fish and Wildlife Service	Uniform Multiple Use	Natural Heritage	407
Bering Land Bridge National Park and Preserve	Federal	National Park Service	Uniform Multiple Use	Natural Heritage	358
Steller Sea Lion Protection Areas, Aleutian Islands Subarea - Groundfish, Pollock, Pacific Cod, and Atka Mackerel Closures	Federal	National Marine Fisheries Service	Zoned Multiple Use	Natural Heritage	96,403
Steller Sea Lion Protection Areas, Aleutian Islands Subarea - Seguam Foraging Area	Federal	National Marine Fisheries Service	Uniform Multiple Use	Natural Heritage	7,282
Steller Sea Lion Protection Areas, Bering Sea Subarea - Bogoslof Area	Federal	National Marine Fisheries Service	Zoned Multiple Use	Natural Heritage	36,862
Steller Sea Lion Protection Areas, Bering Sea Subarea - Groundfish, Pollock, Pacific Cod, and Atka Mackerel Closures	Federal	National Marine Fisheries Service	Zoned Multiple Use	Natural Heritage	41,001
Steller Sea Lion Protection Areas, Bering Sea Subarea - Pollock Restriction Area	Federal	National Marine Fisheries Service	Uniform Multiple Use	Natural Heritage	5,350
Steller Sea Lion Protection Areas, Gulf of Alaska - Atka Mackerel Closure	Federal	National Marine Fisheries Service	Uniform Multiple Use	Natural Heritage	32,686
Steller Sea Lion Protection Areas, Gulf of Alaska - Groundfish, Pollock, and Pacific Cod Closures	Federal	National Marine Fisheries Service	Zoned Multiple Use	Natural Heritage	17,727
Walrus Islands State Game Sanctuary	State	Alaska Department of Fish and Game	Zoned with No Take Areas	Natural Heritage	743
Walrus Protection Areas	Federal	National Marine Fisheries Service	Uniform Multiple Use	Natural Heritage	2,748
Yukon Delta National Wildlife Refuge	Federal	U.S. Fish and Wildlife Service	Uniform Multiple Use	Natural Heritage	11,882

Natural Heritage sites are established to protect biodiversity, populations, communities, habitats, and ecosystems; Cultural Heritage sites are established to protect and understand the legacy of physical evidence and intangible attributes of a group or society which is inherited and maintained in the present and bestowed for the benefit of future generations.

**Sustainable Production Sites within ARPA
(data from NOAA MPA Inventory 2014)**

Site Name	Level of Government	Management Agency	Level of Protection	Primary Conservation Focus	Marine Area (km2)*
Alaska Seamount Habitat Protection Areas	Federal	National Marine Fisheries Service	Uniform Multiple Use	Sustainable Production	99
Aleutian Islands Coral Habitat Protection Area	Federal	National Marine Fisheries Service	Uniform Multiple Use	Sustainable Production	371
Aleutian Islands Habitat Conservation Area	Federal	National Marine Fisheries Service	Uniform Multiple Use	Sustainable Production	421,512
Arctic Management Area	Federal	National Marine Fisheries Service	Uniform Multiple Use	Sustainable Production	497,614
Bering Sea Habitat Conservation Area	Federal	National Marine Fisheries Service	Uniform Multiple Use	Sustainable Production	157,558
Bowers Ridge Habitat Conservation Zone	Federal	National Marine Fisheries Service	Uniform Multiple Use	Sustainable Production	18,109
Catcher Vessel Operational Area	Federal	National Marine Fisheries Service	Uniform Multiple Use	Sustainable Production	50,730
Chum Salmon Savings Area	Federal	National Marine Fisheries Service	Uniform Multiple Use	Sustainable Production	17,555
Dungeness Crab Commercial Fishery Closures	State	Alaska Department of Fish and Game	Uniform Multiple Use	Sustainable Production	1
Groundfish Closed Waters - St. Matthew, Hall, & Pinnacle Islands	State	Alaska Department of Fish and Game	Uniform Multiple Use	Sustainable Production	1,132
Gulf of Alaska Slope Habitat Conservation Areas	Federal	National Marine Fisheries Service	Uniform Multiple Use	Sustainable Production	2,666
Halibut Longline Closed Area	Federal	National Marine Fisheries Service	Uniform Multiple Use	Sustainable Production	122,215
King Crab Closed Areas	State	Alaska Department of Fish and Game	Zoned Multiple Use	Sustainable Production	23,552
King Crab Closed Areas - St. Matthews, Hall and Pinnacles Islands	State	Alaska Department of Fish and Game	Uniform Multiple Use	Sustainable Production	1,132
Nearshore Bristol Bay Trawl Closure	Federal	National Marine Fisheries Service	Zoned Multiple Use	Sustainable Production	64,822
Non-Pelagic Trawl Gear Restriction Area - Alaska Peninsula	State	Alaska Department of Fish and Game	Uniform Multiple Use	Sustainable Production	1,813
Non-Pelagic Trawl Gear Restriction Area - Eastern Aleutian Islands	State	Alaska Department of Fish and Game	Uniform Multiple Use	Sustainable Production	2,483
Northern Bering Sea Research Area	Federal	National Marine Fisheries Service	Uniform Multiple Use	Sustainable Production*	206,114
Nunivak/Etolin/Kuskokwim Habitat Conservation Area	Federal	National Marine Fisheries Service	Uniform Multiple Use	Sustainable Production	32,987
Pribilof Island Area Habitat Conservation Area	Federal	National Marine Fisheries Service	Uniform Multiple Use	Sustainable Production	19,276
Red King Crab Savings Area	Federal	National Marine Fisheries Service	Zoned Multiple Use	Sustainable Production	13,680
Scallop Closed Areas - Eastern Aleutian Islands	State	Alaska Department of Fish and Game	Uniform Multiple Use	Sustainable Production	2,483
Scallop Closed Areas - Eastern Bering Sea	State	Alaska Department of Fish and Game	Uniform Multiple Use	Sustainable Production	98,514
Scallop Closed Areas - Petrel Bank	State	Alaska Department of Fish and Game	Uniform Multiple Use	Sustainable Production	44,542
Scallop Closed Areas - Western Bering Sea / Aleutian Islands	State	Alaska Department of Fish and Game	Uniform Multiple Use	Sustainable Production	44,541
Scallop Closed Areas - Westward Gulf, South Alaska Peninsula	State	Alaska Department of Fish and Game	Uniform Multiple Use	Sustainable Production	8,371
St. Lawrence Island Habitat Conservation Area	Federal	National Marine Fisheries Service	Uniform Multiple Use	Sustainable Production	24,136
St. Matthews Island Habitat Conservation Area	Federal	National Marine Fisheries Service	Uniform Multiple Use	Sustainable Production	14,953
Trawl Gear Restricted Area - Bristol Bay	State	Alaska Department of Fish and Game	Uniform Multiple Use	Sustainable Production	20,620
Zone 1 (512) Closure to Trawl Gear	Federal	National Marine Fisheries Service	Uniform Multiple Use	Sustainable Production	26,915
Zone 1 (516) Closure to Trawl Gear	Federal	National Marine Fisheries Service	Uniform Multiple Use	Sustainable Production	16,911

*Northern Bering Sea Research Area is classified with a primary conservation focus of Sustainable Production until further clarification.

Sustainable Production sites are established for fishery management purposes to support the continued extraction of renewable living resources, including the recovery of over-fished stocks, reduction of by-catch, and protection of essential fish habitats. As these sites are often temporary and not established with the primary intention of biodiversity protection, they are not *traditionally* considered MPAs by the global MPA community.

May 19, 2016

Mr. George Geiger Chair
Marine Protected Areas Federal Advisory Committee
c/o National Marine Protected Areas Center
National Oceanic and Atmospheric Administration
1305 East West Highway
Silver Spring, MD 20910

Dear Mr. Geiger:

On behalf of the Arctic Marine Protected Areas Working Group, we are pleased to provide the following work product for consideration by the Marine Protected Areas (MPA) Federal Advisory Committee (FAC). The Arctic MPA Working Group was made up of diverse interests, convened under the auspices of the MPA FAC, and was asked to provide recommendations on the role of MPAs in conserving Arctic marine resources and U.S. actions to strengthen and connect MPAs and MPA programs in U.S. Arctic waters.

The Working Group membership encompassed a wide range of perspectives about MPAs in the Arctic, and attempted as best as possible to allow for representation of the geographic and stakeholder diversity of the region (see membership list attached). As such, members expressed diverse views on MPAs and their role as a management tool in the region. The attached guiding principles represent our collective advice on the approach that should be taken when considering MPAs and MPA networks as a management tool in the Arctic, including the importance of substantive involvement from local communities and other affected stakeholders.

Much of our work was conducted at an in-person meeting held in Anchorage on November 9-10, 2015. The meeting included detailed discussions about the need for processes to engage local and indigenous communities and other ocean users, and the need for a clearly defined objective when creating an MPA. Some participants expressed the view that MPAs could have negative impacts or that an MPA network may result in limiting economic opportunities and/or cultural practices by local communities. Other participants described examples where MPAs confer biological, economic, and cultural benefits to local stakeholders in many parts of the world, including the Arctic. Nearly all participants acknowledged the rapid changes the Arctic is now undergoing due to climate impacts, and expressed the desire for healthy ecosystems that, even in the face of rapid change, will continue to sustain lives and livelihoods. The Working Group meeting was open to the public, but some Arctic communities who attended expressed concern that they had not been engaged earlier in the process. The Working Group was subsequently expanded to include the Alaska Eskimo Whaling Commission following this meeting.

Following the November 2015 meeting, the Working Group conducted its work via a series of conference calls to finalize these guiding principles. We feel they represent a common sense approach to protecting our valuable marine resources and cultural heritage, as well as recognizing the important social, cultural and economic value of our oceans and the diversity of the Arctic region (which includes the Bering, Beaufort and Chukchi Seas).

Sincerely,



Lauren Wenzel
Arctic MPA Working Group Co-Chair



Stephanie Madsen
Arctic MPA Working Group Co-Chair

Alaska Marine Protected Areas Working Group Members

Co-Chairs:

Stephanie Madsen, At-Sea Processors Association (MPA FAC member)
Lauren Wenzel, NOAA National Marine Protected Areas Center

Members:

Larry Cotter, Western Alaska Community Development Association
Mike Davis, commercial fisherman
Willie Goodwin, Alaska Marine Mammal Coalition
Jessica Lefevre, Alaska Eskimo Whaling Commission
Chris Hladick, Alaska Department of Commerce, Community and Economic Development
John Jensen, University of Rhode Island (MPA FAC member)
Nicole Kanayurak, Graduate Student, University of Washington Marine Affairs
Kathy Metcalf, American Chamber of Shipping
Vera Metcalf, Eskimo Walrus Commission
Ed Page, Alaska Maritime Exchange
Caryn Rea, Conoco-Phillips
Chris Siddon, Alaska Department of Fish and Game
Jon Warrenchuk, Oceana
Margaret Williams, WWF (MPA FAC member)
David Witherell, North Pacific Fishery Management Council

Federal Agency Members:

CMDR Chris Barrows, US Coast Guard – 17th District, AK (Alternate: LCDR Courtney Sergeant)
Catherine Coon, Bureau of Ocean Energy Management
Amy Holman, NOAA – Alaska Region
Tahzay Jones, Alaska Region, National Park Service
Ryan Mollnow, Alaska Region, US Fish and Wildlife Service
Candace Nachman, NOAA Fisheries
David Payer, Arctic Landscape Conservation Cooperative
Cheryl Rosa, US Arctic Research Commission



Students at the Sanctuary 2016 Summer Day Camps

Take advantage of early bird rates before May 1. Sign up early, space is limited!

ONLINE REGISTRATION & PAYMENT: www.thunderbayfriends.org



Mini Maritimers' Day Camp (Ages 5-6)

Join us for four fun-filled days of activities, crafts, science, and stewardship at Thunder Bay National Marine Sanctuary's visitor center. Learn about our amazing blue planet above and below the waves!

- Session 1: June 20 – 23 (9 am to noon daily) *Age 5-6
- Session 2: August 15–18 (9 am to noon daily) *Age 5-6



Junior Maritime Archaeologist Day Camp (Ages 7-9 & 10-12)

It's hard to imagine just how important water is to our past and present, but as Junior Maritime Archaeologists we're going to try! We'll learn through hands-on activities why Romans moved rivers, what it was like to sail by the stars, how many ships it takes to make a beaver skin top-hat, and much more!

- ~~Session 1: June 27 – 30 (9 am to 3 pm daily) *Age 7 - 9~~
- Session 2: July 11 – 14 (9 am to 3 pm daily) *Age 10 - 12



Marine Technology Day Camp (Ages 10-12 & 13-15)

Grab your control box and get ready to learn about, build, and test underwater robots or "remotely operated vehicles (ROVs)"! Everyday ROVs are being used to explore our blue planet, why not join in?

- ~~Session 1: July 11 – 14 (9 am to 3 pm daily) *Age 13 – 15~~
- Session 2: August 15 – 18 (9 am to 3 pm daily) *Age 10 - 12



*Age at time of camp

QUESTIONS? Need a mailed copy of the registration form?
Contact Michael.Ekenstedt@noaa.gov or (989) 356-8805 ext. 19

Students at the Sanctuary 2016 Day Camp Registration Form – All Sessions
THIS FORM IS ALSO AVAILABLE ONLINE: www.thunderbayfriends.org
 Secure online payment is also available by credit card at this site, click “SHOP” button and scroll
 through to the appropriate camp session to make payment

Camper Information

Camper Name: _____ Age (at time of camp): _____

Parent/Guardian Name(s): _____

Phone:(home/cell) _____ (Email) _____

Mailing Address: _____

Check all that apply:

	Session	Age	Date (times)
	Mini Maritimers' Session 1	5-6	June 20-23 (9am-noon)
	Mini Maritimers' Session 2	5-6	August 15-18 (9am-noon)
Full	Junior Maritime Archaeologist Session 1	7-9	June 27-30 (9am-3pm)
	Junior Maritime Archaeologist Session 2	10-12	July 11-14 (9am-3pm)
CANCELLED	Marine Technology Session 1	13-15	July 18-21 (9am-3pm)
Full	Marine Technology Session 2	10-12	August 1-4 (9am-3pm)

*Partial scholarships are available, contact camp coordinator Michael Ekenstedt (contact information below)

Payment Before May 1, 2016	Rate	No. of Sessions	Subtotal
Mini Maritimer's - either session each:	\$40		
All other sessions each:	\$80		
Total due:			
Payment After May 1, 2016	Rate	No. of Sessions	Subtotal
Mini Maritimer's - either session each:	\$60		
All other sessions each:	\$100		
Total due:			

Member of the Friends of Thunder Bay National Marine Sanctuary? ☐ No ☐ Yes

If you would like to join as a member go to: www.Thunderbayfriends.org and click the “Donate” button, or call (989) 356-8805 ext. 10

Payment information: make checks payable to “Friends of TBNMS,” cash and credit cards also accepted at the Thunder Bay National Marine Sanctuary visitor center’s gift store, 500 W. Fletcher St., Alpena, MI 49707 or call: (989) 356-8805, ext. 18.

Refunds available up to one week before camp start date, less a 10% processing fee.

Please return this form to Michael.Ekenstedt@noaa.gov, or mail c/o Michael Ekenstedt, 500 W. Fletcher St., Alpena, MI 49707. Registrations will not be processed without payment and are accepted in order that both payment and registration are received at the TBNMS (sanctuary visitor center) business office, including online registration and payment.

**Thunder Bay National Marine Sanctuary
Advisory Council**

-August 16, 2016 Meeting Minutes-

Date: August 16, 2016

Time: 6:30pm

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

MEETING ATTENDEES

NOAA: Chuck Bennett, John Bright, Stephanie Gandulla, Jeff Gray, Phil Hartmeyer, Joey Jackson, Jean Prevo, Michael Ekenstedt, Travis Wahl

State of Michigan: Wayne Lusardi

SAC Members: Mary Christensen-Cooper, Vera Kavanaugh, Nancy Kinney, Don MacMaster, Merl Melton, Carol Shafto, Jason Snyder, Chuck Wiesen

SAC Alternates: Susie Austin, Roger Baumgardner, Anne Belanger, Michael Beaulac, Shari Davis, Jim Dessenberg, Robert Doyle, Ron Meneghel, Susan Nielsen, Ann-Marie Ruder

Friends of TBNMS Board: Al Moe, Beach Hall

Public: Ed Kavanaugh, Bob Thompson, Katie Thompson, AHS ROV Team

Ex Officio Member: James Pierce, U.S. Coast Guard

Media: None

WELCOME AND ACTION ITEMS

Carol Shafto called the meeting to order. The council approved the minutes from the June 21, 2016 meeting.

FRIENDS/STAFFING UPDATE - Jeff Gray

Jeff talked about the staffing changes. Russ Green, Cathy Green and Anne Gentry moved on last week. Anne is pursuing a teaching certificate in Australia, Russ is in Wisconsin helping with the sanctuary designation there and Cathy will continue administering the NOAA BWET grant along with a little bit of Thunder Bay NMS and regional stuff.

Andrew Augustyn will be replacing Anne as the sanctuary store manager. Andrew is a graduate of the ACC Marine Tech program, he worked on the *Lady Michigan* and has been a member of the team in other capacities.

Jeff announced the new position that will be filled by Katie Wolf who was formerly with the Community Foundation of Northeast Michigan. She will be a part of Thunder Bay NMS's communication team and will also focus on outside partnerships, grants and working with the Friends of TBNMS Board.

Stephanie introduced David VanHoof who was a former Lieutenant in the U.S. Marine Corps and an attorney. David came to Thunder Bay NMS to do an externship. He is working on his master's degree in Public History at Arizona State University. He has been working with Stephanie on a shallow shipwreck database.

Underwater Research Robot Company ROV Team - Bob Thompson, Teacher at Ella White and Mentor for the AHS ROV Team

The Alpena High School ROV team competed at the International ROV Competition in Houston, TX. The team placed 12th, however, they received the 2016 Marty Klein MATE Mariner Award which is given to people and teams who go beyond the competition in marine exploration. Marty Klein's son was one of the judges that they presented to during the competition and he was impressed with all of the things they have done in their community.

The team spoke about their experiences at the competition. While they were at the natural buoyancy lab at NASA they received a private tour where they got to see scientists working on space suits and a mock space station. They said it was an eye opening experience.

Chuck suggested they put together a shopping list for items that they didn't have but need for future competition.

SANCTUARY UPDATE

NEMGLSI - The Northeast Michigan Great Lakes Stewardship Initiative was named one of five winners in international program to advance environmental and STEM education.

2015 – 2016 School Year:

- 94 educators
- 32 schools
- 8 counties
- 4,100 youth in stewardship

Since 2009, over 19,000 students have engaged as Great Lakes stewards, environmental STEM learners and community leaders.

As a partner Thunder Bay NMS has direct contact with the teachers and we also house the coordinator Meghan Gass and the education specialist Danielle Fegan.

TBNMS Summer Camps – Five camps for ages 5-13. The camps covered everything from ancient Rome to robotics. The camp received great reviews and had kids asking to come back next year. One camper said, "It's like going to school but fun." SAC member Susan Nielsen has been a volunteer with the camp for 2 years.

Future Education Programs – Fall classroom cruises onboard *Lady Michigan*.

Field trips to the Great Lakes Maritime Heritage Center have become a staple for most classrooms in the area.

2016 Maritime Festival – The Maritime Festival is our biggest outreach event and continues to be a huge success. This year also included the Battle of the Paddle's fundraiser on July 3rd.

Volunteers play a huge role in the festival's success; please think about signing up next year.

Tall Ships - Two tall ships visited us this summer. The *Inland Seas* from Suttons Bay was here doing place-based education and also hosted some public sails. Hoping they will be back.

The *Draken*, a Norwegian Viking Ship stopped here on their way from Norway to Lake Michigan. The ship wasn't planning to stop here but heard about our welcoming port for tall ships so they contacted us for a place to stay. They hosted public tours while they were docked in the river.

National Association for Interpretation – The Great Lakes Maritime Heritage Center will be hosting a certified interpretive guide training August 29 – September 2. The National Association for Interpretation is the training agency for parks and zoos and it is one of the leading agencies in interpretation and has been working in the field for more than 50 years. TBNMS will be offering this training to our partners and visitor center staff. For more information visit <http://www.interpnet.com/nai/Certification>.

Association for Great Lakes Maritime History Conference – September 9-10 - The Association for Great Lakes Maritime History is an organization of institutions and individuals from throughout Canada and the U.S. involved in preserving and interpreting the unique maritime history of the Great Lakes region. The Association sponsors an annual maritime history conference, encourages new research by both professional and avocational historians, financially supports the publishing of new research results, and promotes the regular exchange of news and information among its members. This year's annual meeting is being hosted at the GLMHC with a small portion open to the public. For more information visit www.aglmh.net.

2016 Volunteer Appreciation Event – September 20 at 5:30pm - We will be celebrating the great work of sanctuary volunteers and enjoying some light hors d'oeuvres aboard the *Lady Michigan*. We will also be awarding the *Betty Krueger Volunteer of the Year Award* to Bryan Dort. Please rsvp to Jean Prevo or Stephanie Gandulla.

Downtown Trick-or-Treat Event - October 28 - Halloween is right around the corner so we will be looking for volunteers. Please consider signing up to help. Sign up by emailing phil.hartmeyer@noaa.gov or steph.gandulla@noaa.gov.

Thunder Bay International Film Festival 2017 – January 25-29, 2017

Thunder Bay International Film Festival is coming up. This year we will include a screening at Rogers City Theater on January 25. If you would like to volunteer please contact steph.gandulla@noaa.gov.

Michigan Mathematics and Science Centers Network – September 22 - The Michigan Mathematics and Science Centers Network is developing collaborations with partners across Michigan to improve Mathematics and Science teaching and learning.
<http://www.mimathandscience.org/>

This year's meeting is being held in Alpena. SAC member Mary Christensen-Cooper of the AMA ESD is on the board and is helping host the meeting. As part of the meeting they will do a glass-bottom boat tour, a *Science on a Sphere* demo and tour the Great Lakes Maritime Heritage Center.

Historical Society of Michigan – The 142nd Annual Meeting and State History Conference will be held September 23-25, 2016, in Alpena, Michigan. The State History Conference moves to a different location in the Lower Peninsula each year. This conference celebrates all aspects of Michigan's history and offers a close-up look at the heritage of the host area. The State History Awards are also presented during the conference. Each year, the Historical Society of Michigan presents a State History Award to those individuals and organizations that have made outstanding contributions to the appreciation and understanding of Michigan history.
www.hsmichigan.org/conferences/annual-state-history-conference/

Lake Huron discovery tour – October 7-10, 2016

www.us23heritageroute.org

Pure Michigan will be doing a sweepstakes which will include tickets on the glass bottom boat to promote Thunder Bay NMS and *Lady Michigan*.

Media – Stephanie Gandulla

Up North Live - 9 & 10 News from Cadillac did a live show from the Great Lakes Maritime Heritage Center.

Magazine article in the *Bridge* – economic magazine

NPR piece

WCMU public radio did a 3 part series on the sanctuary and talked about shipwrecks, sinkholes and economic development of the area.

Mlive.com – biggest news outlet in Michigan reaches 4 million households every month interviewed Wayne Lusardi and the story should be out within the next few days.

PBS contacted Stephanie about a potential series – *Tough Boats*. They will be visiting us here in a few weeks.

July SAC Coffee - Last month's SAC coffee was replaced with a tour of the hyperbaric facility at MidMichigan Medical Center, trying to increase the awareness of the hyperbaric chambers in the dive community.

Governor Snyder was here last month on vacation with his family. Spent the day in Alpena snorkeling.

RESEARCH UPDATE

Multi Beam and Side Scan Sonar Surveys off Thunder Bay Island and R 4207 Overwater Range – Phil Hartmeyer

Research staff in partnership with the Office of Coast Survey are conducting a three-week remote sensing project using the R/V *Storm* in Thunder Bay. The team will be using different instruments to sonify the bottom of the lake.

Tyan Fox from the Office of Coast Survey is collecting data for nautical charts and models for coastal management. Their office is responsible for creating over 1,000 charts. They don't have a vessel in the Great Lakes so they are excited to have this partnership with us.

The area being surveyed is a 10 mile square between Thunder Bay and Middle Islands. 1974 was the last verified data for this area.

R 4207 Overwater Range Survey – The team will also be looking at the bombing range that is being used for overwater bombing training. 20 square miles of that area will be surveyed.

BIG FIVE DIVE AND SEDNA EXPEDITION – Stephanie Gandulla

As a part of PADI (Professional Association of Diving Instructors) Women's Dive Day on Saturday, July 16, 2016, fourteen adventurous women from the United States, Canada, and Mexico embarked on a journey: SCUBA diving to one historic site in each of the five Great Lakes in less than 24 hours. Sarah Waters, Stephanie Gandulla, Meaghan Gass, Jacque Edwards and Hannah MacDonald all participated in this diving adventure.

Sedna Epic Expedition 2016 – www.sednaepic.com

In July of 2016, maritime archaeologist Stephanie Gandulla joined the Sedna Epic Expedition, a team of explorers, educators, and artists who aim to empower young women to become the next generation of Inuit leaders to tackle climate change in the Arctic. Working in Iqaluit, Nunavut, the all-female team worked with Inuit youth, girls and Elders to deliver their innovative ocean outreach program using touch aquariums and underwater robots. Stephanie will be doing bigger arctic expedition presentations later in the fall.

OCEAN EXPLORATION TRUST'S "WIRED EXPEDITIONS" ONBOARD THE NAUTILUS – David Cummins, Alpena Community College

The Ocean Exploration Trust was founded in 2008 by *Titanic*-discoverer and National Geographic Explorer-in-Residence Dr. Robert Ballard to engage in pure ocean exploration. Their international programs center on scientific exploration of the seafloor and many of the expeditions are launched from aboard Exploration Vessel (E/V) *Nautilus*, a 64-meter research vessel operated by the Ocean Exploration Trust. In addition to conducting scientific research, they offer expeditions to explorers on shore via live video, audio, and data feeds from the field. They also bring educators and students of all ages aboard during E/V *Nautilus* expeditions, offering them hands-on experience in ocean exploration, research, and communications.

David Cummins had the opportunity to participate in a 3-week Pacific Ocean expedition this summer. David gave a presentation on his experience and outlined a normal day at sea. David worked two shifts a day monitoring the live feed that is broadcast to the website.

During the expedition they visited four of the sanctuaries on the west coast – Cordell Bank NMS, Greater Farallones NMS, Channel Islands NMS and Monterey Bay NMS.

PUBLIC COMMENT – None.

ADJOURN – The meeting was adjourned at 8:40pm.

Next council meeting is October 18th 6:30-9:00pm.

**Thunder Bay National Marine Sanctuary
Advisory Council**

-October 18, 2016 Meeting Minutes-

Date: October 18, 2016

Time: 6:30pm

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

MEETING ATTENDEES

NOAA: Andrew Augustyn, John Bright, Michael Ekenstedt, Danielle Fegan, Stephanie Gandulla, Jeff Gray, Phil Hartmeyer, Bradley Imhoff, Joey Jackson, Jean Prevo, Sarah Waters, Katie Wolf

State of Michigan: Wayne Lusardi

SAC Members: Vera Kavanaugh, Steve Kroll, William LaMarre, Donald Newport, Shawn Sexton, Carol Shafto, Chuck Wiesen

SAC Alternates: Roger Baumgardner, Michael Beaulac, James Dessenberg, Robert Doyle, Ron Meneghel, Susan Nielsen, Anne-Marie Ruder

Friends of TBNMS Board: Al Moe, Beach Hall

Public: Jane Kroll

Ex Officio Member: None

Media: None

WELCOME AND ACTION ITEMS

Carol Shafto called the meeting to order. The council approved the minutes from the August 16, 2016 meeting.

The council discussed and approved the attached 2017 meeting dates. There was a discussion about the December date and it was decided to move that meeting to December 12, 2017 to avoid it interfering with the holidays. Please mark your calendars accordingly.

There is a SAC Lunch on **November 29 at 1:00pm at Alpena Community College** for a tour of the Marine Tech Program. Jean will send out directions.

Jeff announced that John Armor who has been the acting director of ONMS since Dan Basta left has officially been hired as the new director. We are very excited about that. John couldn't be more excited about the great lakes and the work we do here, so this will be a great thing for the Northeast Great Lakes Region and our entire program. Carol will send a welcome card from the council.

The National Marine Sanctuary Foundation has also chosen Kristen Sarri as their new President and CEO. Kris joins the NMSF team after nearly 20 years in senior positions in Congress and federal agencies including the Department of the Interior, Department of Commerce and the Office of Management and Budget. While her experience is diverse, the consistent threads across all her roles are a deep involvement in shaping ocean and environmental issues, strong strategic and operational management skills, wide-ranging expertise in the legislative and regulatory sectors, a track record of success in engaging disparate stakeholders and – most of all – a passion for the ocean and the critical importance of sanctuaries in the ocean's healthy future.

Kris's mandate is to set a transformational strategy for NMSF's future. While that's no simple task, she will be building it on an auspicious foundation. Among its accomplishments in the past six months, NMSF had its best-attended, most successful Capitol Hill Ocean Week conference and Ocean Awards Gala event; distributed its largest-ever pool of Hollings Grants funding; and launched a new digital presence including an online call-to-action advocacy tool to seamlessly rally public support of sanctuary priorities.

Carol and Jean will work on getting a card out to welcome Kristen.

Carol Shafto proposed that the SAC pass a resolution to honor Reed Bohne on his retirement. The council approved. She will draft the resolution and send to Jean. Jeff will present it to Reed before his retirement. Chuck Wiesen motioned to approve the resolution, Ann Marie Ruder seconded. The resolution was passed.

ONMS STRATEGIC PLAN - Jeff Gray

The Office of National Marine Sanctuaries has been working on drafting a 5- year strategic plan. Jeff Gray is on the committee of sanctuary staff that was selected to help draft the plan which is a higher level framework that will help guide us with our management plan when it comes time to revise it. Jeff gave a brief overview of the skeleton plan which the council chairs were given a chance to view and comment on. The more detailed information is still being fleshed out (the draft copy is attached).

This document will detail how we make decisions at HQ level, regional and sites. The goal is to keep it a simple, focused document.

Carol spoke about the webinar she attended where she was able to comment on the draft. Feels this one is very well done.

FRIENDS UPDATE – Katie Wolf

John Armor met with the Friends board and talked about possibility having the first meeting with the new National Marine Sanctuary Foundation director here.

Annual mailing went out last month. Katie handed out a copy of the mailing (see attached). She asked that everyone take time to read the letter because it contains important information and good talking points.

Chuck Wiesen asked that everyone consider being a donor. The level doesn't matter, it's just a good talking point to say all of the Friends board and Sanctuary Advisory Council members are donors. People like to see that there is good internal support when they are considering donating.

There will be a new Friends' fundraiser on October 29, 6:00-9:00pm. It is a Halloween themed event. Tickets cost \$20 and can be purchased online or in the store.

Giving Tuesday is also coming up on November 29. We would like to beat the number of donations raised during last year's Giving Tuesday campaign.

Lake Huron Discovery Tour – Thunder Bay NMS has been included in all of the advertising and helped submit a grant to help with out-of-state advertising.

Beach Hall connected us with the Great Lakes Foundation Grant for technology upgrades to the educational media centers at the Great Lakes Maritime Heritage Center.

The Friends also received a grant from NOAA's Ocean of Exploration and Research.

The Friends submitted a grant yesterday with the Community Foundation for Northeast Michigan to help with out-of-state promotion for the TB film festival.

UPCOMING EVENTS

Halloween Events – Friday, October 28, 5:00-8:00pm free kids' trick-or-treating Saturday, October 29, 6:00-9:00pm, Friends' fundraiser. Tickets cost \$20.

Contact Phil if you are interested in volunteering for either event or if you would like to donate candy for Friday's free kids' event.

Paddle-to-the-Sea – Friday, October 28th at 7-8:30pm – free concert at the Alpena High School. The Friends in partnership with Song of the Lakes received a Michigan Humanities Council Grant to produce this show all about the *Paddle-to-the-Sea* book. This grant allows for dozens of classrooms in the area to see the performance and a special free community evening event. *Paddle-to-the-Sea* books are available for sale in the sanctuary store.

Daniel J. Morrell Shipwreck 50th Anniversary Memorial Event - November 29, 2016 at 6:30pm. The Great Lakes Shipwreck Historical Society and the Thunder Bay National Marine Sanctuary will remember the sinking of the 600' freighter, *Daniel J. Morrell*, on the evening of Tuesday, November 29, 2016. This memorial event will take place at the Great Lakes Maritime Heritage Center at 6:30pm, admission is free.

Many of our Shipwreck Museum guests will remember Dennis Hale, whom visited Whitefish Point on numerous occasions through the years and was the sole survivor of the ship's sinking. Mr. Hale and his fellow *Morrell* crew-members will be remembered during this special program. Ric Mixter, Great Lakes maritime historian and author will be the keynote speaker for the event.

5th Annual Thunder Bay International Film Festival – January 24-29, 2017

Every year, the Friends of Thunder Bay National Marine Sanctuary bring the world of cinema to Alpena! For five days in January, northeast Michigan is treated to some of the most impressive ocean and Great Lakes-inspired films from around the world. Film screenings are complemented by social events, educational activities, and opportunities to meet filmmakers.

Stephanie and the film festival team are working on selecting films. There are volunteer opportunities available, please contact Stephanie if you are interested.

During this year's film festival there will be a student film competition focusing on biodiversity. Learn more about the competition at <http://www.nemiglsi.org/searchglsi.asp?ogt=pv&pid=94>

SANCTUARY UPDATE

Volunteers – The total number of volunteer hours for 2015 was 8,261 almost double 2014. Over 3,000 of those hours were donated by AmeriCorps members. The 2015 Thunder Bay National Marine Sanctuary Betty Krueger Volunteer of the Year was Brian Dort.

Media Update – Thunder Bay NMS has been featured in a diverse array of media. Including John Bright at the bottom of the sinkhole featured in the *Earth & Space Science News*, one of the top and most trustworthy new sources for space and science. *The Lansing State Journal* mentioned the Great Lakes Maritime Heritage Center as a great stopping place along the shoreline of Lake Huron. *Deeper Blue* had an article that talked about Thunder Bay NMS and included a picture of Steve Kroll diving. *The Plain Dealer*, Ohio's largest newspaper, had an article about shipwrecks in Lake Erie and Lake Huron.

Other media headlines included:

Michigan State Police Marine Service Team Meet for Dive Training
Alpena Woman Undertakes First Part of Northwest Passage Swim
AGLMH Conference Visiting Alpena
Youth Stewardship Ready to Grow through National Collaboration with Safety Science Co.
US Senator Gary Peters Visit Sanctuary
Great Lakes May Hold Clues to Beginning of Life on Earth

Education Update – Sarah Waters

TBNMS hosted the National Association for Interpretation's Certified Interpretive Guide Training August 29 through September 2, 2016, and included 10 representatives affiliated with TBNMS, several interpretive staff from other National Marine Sanctuaries, local museums, forestry and state parks, as well as AmeriCorps members and place-based educators with the Northeast Michigan Great Lakes Stewardship Initiative. The week-long program included group problem-solving, presentations and a final examination as part of the certification process.

NEMIGLSI Place-Based Summer Institute for Teachers – week long professional development opportunity, included adopt-a-beach cleanup training for teachers to use in their classrooms and communities.

Mackinaw Boat Exhibit installed into the GLMHC with partners: Heritage Coast and Rowing.

Summer Wrap Up and Heading into Fall - Field support for classrooms engaging in place based education stewardship projects. From water quality monitoring to invasive species removal, to planting native species, to collecting data for “Earth caches,” to microplastics monitoring, to marine debris and sinkhole studies, to vernal pool monitoring.

Presenting to Michigan Math and Science Centers, and MI Department of Education staff and at the NAEF!

Fall visits to the Great Lakes Maritime Heritage Center from pre-school to college to group tours.

Coming up this fall:

Great Lakes Fishing Heritage Trail Conference - November 2-3, 2016

Volunteer opportunities at the Great Lakes Maritime Heritage Center - Discovery Cart activities, Science on a Sphere theater, and tours.

Sanctuary staff will be at the Great Lakes Stewardship Initiative all hub event in November.

2017 MATE ROV Regional Competition – The date for this year’s regional competition is April 22, 2017. The international competition is being held at Long Beach City College in Long Beach, CA, June 23-25. This year’s mission: Port Cities of the Future: Commerce, Entertainment, Health and Safety. For mission details visit www.marinetech.org.

Marine Technology Education – Upcoming teacher/instructor workshops, webinars for teams. Other items in the works include:

Ella White School 5th grade – weekly class at the Sanctuary Makerspace starting in December

Alpena Public Schools ROV Club:

Bob Thomson head coach, sanctuary supporting through Makerspace. High School team member actively volunteering to support the sanctuary’s marine technology outreach and education.

Petoskey schools – Michigan STEM Grant award to integrate ROVs across curriculum

East Jordan Schools – propose hosting and partnering additional event for elementary school students (Scout Class)

Support requests received from: Alcona, Atlanta, Au Gres, Cheboygan, Genesee County, St. Ignace, and Marquette, among others.

TBNMS will be applying this fall for 2017 NSF ITEST (Innovative Technology Experiences for Students and Teachers) funding from the MATE Center to support K-12 marine tech initiatives and the GL Regional Competition.

Exhibit Updates in the Works:

Marine Debris

Reef restoration work

Marine technology area

Updates to maps and panel text to reflect boundary expansion at TBNMS and also system-wide

Potential updates to enhance experience for hearing impaired, vision impaired visitors

Research Update –

Thunder Bay Mooring Buoys – There are currently 43 mooring buoys marking 38 sites. This summer there were three new systems installed – *John J. Shaw* off of Harrisville, *James Davidson* and *Galena*. Another mooring buoy was added at the *Nordmeer*.

Research Team Presentations & Outreach - The research team has also been busy giving presentations throughout Michigan and into Toledo, OH, reaching nearly 2,500 adults, students, and historians.

Alpena County Library

Oscoda High School

MAST Seminar

Michigan Archaeology Day

State History Conference

ASLH/MMA Conference

AGLMH Conference

Great Lakes History Museum

John Bright spoke about partnerships, many of them have been reoccurring partnerships. These partnerships include Project Baseline (a global underwater explorers' initiative) which Stephanie has been involved with since 2012.

Phil spoke about The American Academy of Underwater Sciences 2017 Annual Symposium: which was held September 12-16.

The National Register of Historic Places – Thunder Bay NMS staff continue working on getting National Registration of Historic Places designations for some of the sanctuary's shipwrecks. The National Register of Historic places is the nation's official list of districts, sites, and structures significant in American history, architecture, archaeology, engineering and culture. It is managed by the State Historic Preservation Office (SHPO), Tribal Historic Preservation Office (THPO) and the National Park Service.

Thunder Bay NMS pursues these designations as part of Strategy R-1 of TBNMS's Management Plan. The designation also emphasizes local, regional, and national significance of the resource and is great for marketing and promotion.

We have submitted applications for the *Pewabic* and *Kyle Spangler*. Next on the list to submit are the *Norman* and the *M.F. Merrick*.

Remote Sensing Survey - John Bright spoke about the remote sensing survey project that occurred in August 2016 in partnership with the Great Lakes Environmental Research Lab and the Grand Valley State University Deep Sinkhole Characterization project. During the survey the team was able to survey sinkholes where they discovered many new sinkhole features. Thunder Bay NMS will be using this data to apply for another Office of Exploration Grant for 2018.

John also spoke about a new GIS program launching this fall which will allow sanctuary staff to access data online in real time

Sanctuary Store - Andrew Augustyn

New holiday shopping items will be arriving in the store. Lots of great gift ideas – Michigan mittens, coasters, drinkware, Paddle-to-the-Sea books and much more. Remember if you are a Friend of TBNMS you receive 10% off your purchase.

PUBLIC COMMENT – None.

ADJOURN – The meeting was adjourned at 8:55pm.

Next council meeting is December 13th 6:30-9:00pm.

**Thunder Bay National Marine Sanctuary
Advisory Council**

-December 13, 2016 Meeting Minutes-

Date: December 13, 2016

Time: 6:30pm

Location: Great Lakes Maritime Heritage Center (GLMHC), 500 W. Fletcher Street,
Alpena, MI

MEETING ATTENDEES

NOAA: Andrew Augustyn, Chuck Bennett, John Bright, Stephanie Gandulla, Jeff Gray, Joey Jackson, Sarah Waters, Katie Wolf

SAC Members: Mary Christensen-Cooper, Nancy Kinney, Steve Kroll, Don MacMaster, Don Newport, Carol Shafto, Chuck Wiesen

SAC Alternates: Roger Baumgardner, Michael Beaulac, Robert Doyle, Merl Melton, Ron Meneghel, Susan Nielsen, Ann-Marie Ruder

Guest: Bob Theiner

Media: None

WELCOME AND ACTION ITEMS

Carol Shafto called the meeting to order. The council approved the minutes from the October 18, 2016 meeting.

Jeff gave the council an update on the status of NOAA/ONMS Northeast Great Lakes Regional Director Reed Bohne. While Reed had planned to retire soon, he will be staying in his current position to assist with the selection of superintendents for Lake Michigan/Wisconsin and Mallows Bay sanctuaries.

OLE SUPPORT LETTER

Carol Shafto reviewed a proposed sign-on letter for advisory council chairs. The letter requests that NOAA and ONMS consider specific new sanctuary law enforcement measures. It is the hope of the SAC chairs that they will soon see “plans to address the improvement of enforcement services in the National Marine Sanctuary System”.

The council unanimously approved the letter. Carol will sign the letter and forward it to ONMS.

GLMHC HOLIDAY UPDATE

Andrew Augustyn gave the council an overview of new merchandise now available at the GLMHC store. Additionally, our store is a “test site” for new merchandise from ONMS headquarters. Staff must monitor sales and report on which items are most popular with customers.

Staff member Erin Pilarski is offering a two hour program for children and parents on “The Christmas Tree Ship”. The last program for this season will be Saturday, December 17 at the GLMHC.

The council was reminded that they have a 10% discount and that the store has many different items for the holiday season.

FRIENDS UPDATE – Katie Wolf

Friends of Thunder Bay National Marine Sanctuary (FTBNMS) director gave the council a detailed summary of recent friends’ activities.

- The October direct mail campaign is ongoing. To date FTBNMS has received 89 gifts totaling \$18,667. The average gift to date is \$210.
- FTBNMS partnered with the Community Foundation for Northeast Michigan (CFNEM) and many other area non-profit organizations for a very successful “Giving Tuesday”. FTBNMS had by far the most gifts pledged during the 24-hour event.
- FTBNMS has submitted grant proposals to CFNEM and to the National Marine Sanctuary Foundation Hollings fund. Results to follow.
- A final direct mailing will be sent to selected donor prospects before the end of 2016.

The plan for FTBNMS for 2017 will include expanding both individual and organizational donor opportunities, increasing Friends’ presence with the Thunder Bay International Film Festival, the Thunder Bay Maritime Festival, and the GLMHC Halloween event, and constantly seeking new grant partners.

Note that as you shop on *Amazon*, you now have the opportunity to be redirected to *Amazon Smile* where you can make a donation to FTBNMS. THANK YOU!

THUNDER BAY INTERNATIONAL FILM FESTIVAL (TBIFF) – Stephanie Gandulla

Stephanie reported that the 2017 Thunder Bay International Film Festival will be bigger and better than ever. The schedule includes:

- Friday, January 20-On the Road to the Alcona County Library in Harrisville
- Tuesday, January 24-Sanctuary Sneak Peek at the Thunder Bay Winery in Alpena
- Wednesday, January 25- On the Road to Rogers City Theatre, Rogers City
- Thursday, January 26- Opening Reception and Films GLMHC, Alpena
- Friday, January 27- Reception and Films GLMHC, Alpena
- Saturday, January 28- Filmmaker’s panel and Student Films, GLMHC, Alpena
- Sunday, January 29-Films screened all day GLMHC, Alpena

This year's TBIFF objectives include awareness, action, tourism, education, culture, collaboration, the economy, and volunteerism.

For more information, go to thunderbayfriends.org or contact Stephanie Gandulla at 989.356.8805 x38 or steph.gandulla@noaa.gov.

2017 ROV/MARINE TECHNOLOGY

The 2017 MATE Great Lakes Regional Competition will be hosted by the Thunder Bay National Marine Sanctuary and held at Alpena High School in Alpena, Michigan on April 22.

As a partner with MATE, TBNMS has a makerspace and holds training sessions for teachers and students interested in ROV technology. To support this training, TBNMS has "ROV in a BOX" kits that can be checked out for use in any classroom. Additionally, staff can be scheduled for classroom visits.

Over the past several years MATE, through TBNMS has developed strong student and teacher development partnerships with Alpena Community College, Alpena Public Schools, Stockbridge Public Schools, Petoskey Public Schools, Inland Lakes Public Schools, Wolverine Public Schools, and Cheboygan Public Schools. Watch for news on the next teacher development programs coming in February and March, 2017.

SANCTUARY UPDATE

Halloween Event – Joey Jackson

Joey reported on this year's super Halloween event. Held at the GLMHC over two days, 86 volunteers provided 1,302 hours of time. Friday, 1,200 children and their families visited GLMHC. Saturday, 70 adults enjoyed the displays. Special thanks to Phil and Joey for providing leadership to this ever growing annual event.

Research Update – John Bright

John gave a detailed summary of the research team's activities.

- Project Baseline is an activity of the Global Underwater Explorers Initiative. TBNMS is their first research site in the Great Lakes.
- The team placed and recovered shipwreck location buoys throughout the sanctuary's 4,300 square-mile area.
- The team continued its mapping of the sanctuary bottom land.
- Laser scanning technology allows the sanctuary to much more accurately prepare video images of selected wreck sites and geologic features located in the sanctuary.
- The team partnered with graduate students to continue sampling sinkhole water and bottom materials.
- Using ARC/GIS, the team will continue to improve their near shore and off shore mapping skills
- National Register of Historic Sites nominations will continue as time permits.

Public Comment – None.

Adjourn – The meeting was adjourned at 8:15pm.

2017 TBNMS/SAC Schedule of Meetings

February 21

April 18

June 20

August 15

October 17

December 12

All meetings are 6:30-9:00 p.m. at the GLMHC unless otherwise specified.