

2014 Education & Outreach Highlights

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



NOAA, Thunder Bay National Marine Sanctuary

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



NOAA, Thunder Bay National Marine Sanctuary

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



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

Formal Education

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

Informal Education

This year sanctuary educators also organized activities for 2,655 students and 1,367 adults outside of the established formal education system. In 2014 these programs included field trips, site-based experiences, contests, trainings, and summer or after school programs. Shipboard learning such as [“Classroom Cruises”](#) and science, technology, engineering, and math (STEM) learning by building [remotely operated vehicles](#) (ROVs) are two examples of the sanctuary’s informal education programming.

Outreach for Education

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

Sanctuary educators began using a new



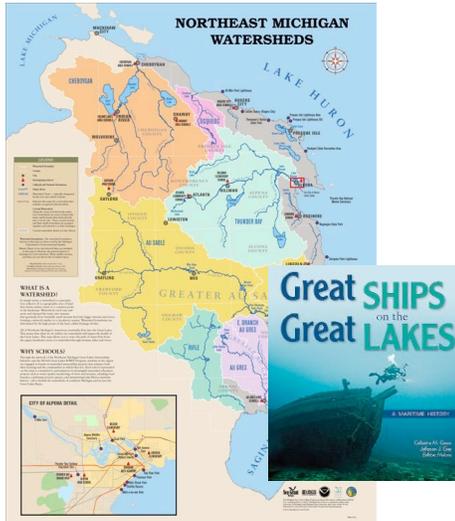
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Students navigate their robots through a series of underwater missions in the sanctuary’s training tank as they compete in the MATE International Student ROV Competition.

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

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

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



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

Professional Development

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



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

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

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

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

Volunteers

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



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

Communications Highlights

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