The Guide

June 2013

FREE

leading you to the best that Northeast Michigan has to offer.

Students to old salts
Alpena Youth Sailing Club

Timberland Quilt Trail
Scenic tour of Oscoda County

Dark county queen
Grayling singer strikes a chord

Fresh from the farm
Local produce markets in full swing

Classic attractions
NE MI towns welcome vintage iron

The Road Home Returns
The Guide offers up some suggestions to lead you off the beaten path

INVADERS!

By DANIEL MOFFATT & BRANDON SCHROEDER
special to The Guide

ALPENA PUBLIC SCHOOL'S STUDENT RESEARCHERS UNITE WITH LOCAL AGENCIES TO STUDY AQUATIC INVASIVE SPECIES

THUNDER BAY WATERSHED – Invasive species are an issue of enormous magnitude for the Great Lakes and our coastal Lake Huron communities, impacting the health of our fisheries and costing all of Northeast Michigan millions of dollars a year in lost tourism.

Students from Sanborn Elementary in Ossineke are not intimidated by these foreign invaders.

Their student-led Thunder Bay River Watershed Project tracks water quality while providing a vehicle for scientific research, allowing the students to tackle the problems caused by invasive species head on.

Supported by the Northeast Michigan Great Lakes Stewardship Initiative network, this place-based educational experience has science-minded students researching real-world ecological problems caused by invasive species on our local watershed and then presenting possible solutions.

With a goal of understanding how invasive species affect the health of the watershed by disrupting the ecosystem and food web, students take on real-world issues in collaboration with community partners such as Michigan Sea Grant, US Fish & Wildlife Service, DNR Fisheries and the NOAA Thunder Bay National Marine Sanctuary.

The high-profile, 1980s invasion of the Great Lakes by zebra and quagga mussels have arguably caused some of the most dramatic ecological changes in our local freshwater resources, resulting in costly consequences to our communities.

The invasion also provides a natural topic for research for students who began by monitoring zebra mussel populations in their very own Thunder Bay River watershed. Benefiting from the support of area agencies that were already working on the problem, the highly-skilled students work with USFWS to understand population densities and the locations of the mussels in the river. Knowing that each mussel alone filters one liter of water per day, students applied science and math to understand how nutrients are being filtered out of the river rather than flowing into the Lake Huron food web to benefit the Great Lakes fishery.

It turns out that invasive mussels are as equally bad for shipwrecks and other maritime artifacts. In a separate study, students work with reasearchers from NOAA's Thunder Bay Marine Sanctuary to better understand the effect of mussels on wrecks and learn which types of substrates mussels prefer when anchoring themselves to objects underwater. With the help of the sanctuary's dive team, students submerged a sample of substrates near the Oscar T. Flint shipwreck, a 1909 wreck that lies in 30 feet of water, to monitor mussel presence. The students return each year aboard the R/V Storm to deploy the underwater robots built by the grade-schoolers themselves, using the vehicles' underwater cameras to observe what organisms live on the substrates.

Research goes well beyond mussels.

Diving deeper into other invasive species negatively affecting our local freshwater resources, students worked with Michigan Sea Grant to study the lesser known invasive rusty crayfish, an aggressive species that displaces native crayfish. Using a crayfish survey conducted by Michigan State

University in the 1970s, the team discovered how far the invasive crayfish have spread in the past 30 years. Spending time wading local waters, capturing and counting crayfish, students document the spread of this invasive and looking for areas where native crayfish might still remain. Using this capture, mark and recapture method, student researchers apply math skills to estimate rusty crayfish populations in certain stretches of the Thunder Bay River, then calculate an estimated population of these invaders for the entire river.

With fisheries researchers from the DNR, students identified smallmouth bass – voracious feeders on crayfish – as a potential biological control. A healthy smallmouth population could help control invasives, as well as provide increased fishing opportunities for people who use the river. Students think this could be a real solution and are communicating through public service announcements to promote catch and release of smallmouth bass to help combat the crayfish problem.

Students are applying writing and communication skills in developing posters and presentations, in support of their education and outreach efforts. Coordinated with Michigan Sea Grant, they are cooperating as partners in the distribution of AIS educational materials within their community, incorporating the regional "Stop Aquatic Hitchhikers" campaign as part of their educational efforts. Sanborn's students also contributed much of the text on the "Lake Huron's Most Un-Wanted" poster for the rusty crayfish, of which they have become expert. Some of the rusty crayfish that they collected have been cast in acrylic blocks and are now used across the Great Lakes region as specimen examples, teaching others about the important environmental issue of aquatic invasive species.

The Thunder Bay River Watershed Project is a great example of multidisciplinary learning. Not only does it engage these third, fourth and fifth grade students in science, technology, engineering and math, but also history, language arts, social studies and communication. Students must apply artistic creativity in designing their displays and presentations, while learning life skills such as problem solving, team-building, leadership, communication and civic engagement.

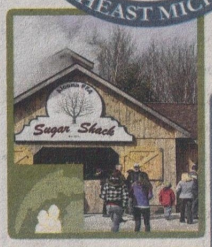
Sanborn students, through their learning, are ensuring a bright future for Thunder Bay River and their local communities.

www.NEMIGLSI.org

The Northeast Michigan Great Lakes Stewardship Initiative

The Northeast Michigan Great Lakes Stewardship Initiative is a regional partnership of schools and community partners working to promote place-based, community-based learning experiences. This network serves to engage youth as partners in protecting our Great Lakes and natural resources of Northeast Michigan through hands-on, feet-wet learning in (and with) the community.

Visit **NEMIGLSI** online to see projects in action & learn how ***you*** can participate **www.NEMIGLSI.org**



The NE MI GLSI supports:

- **Place-based education programs with youth:** Hands-on, place-based education is a proven method for developing knowledgeable and active stewards of the environment.
- **Educators and school improvement:** Through training and professional development for teachers, NEMI GLSI supports the use of best practices that maximize the effectiveness of PBE.
- **Strong school-community partnerships:** Schools and communities working together producing powerful partnerships that are beneficial to all.

Help NE MI GLSI support youth development and environmental stewardship in our communities!

To donate contact:
Community Foundation for Northeast Michigan
(877) 354-6881
or
www.cfnem.org

Funding in support of the NE MI GLSI provided by Great Lakes Fishery Trust, Community Foundation for NE MI, NOAA B-WET, and Toyota 4-H20, among many other local contributing partners.