SP23485

NIE

Connect with your environment

Learn about environmental issues, in your community and how you can get involved.

NASA

Lake Erie algal blooms have been increasing for more than a decade. This NASA image from 2011 demonstrates the extent of the problem.

Protect yourself against HABs

Harmful algal nlooms generally occur from late summer into early fall when water temperatures are warmest and an abundance of sunlight and nutrients are available. Check for posted HAB advisories or ask park managers. Confirmation can only be made under a microscope and colorless toxins can still be in the water after visible blooms have faded.

Humans, pets, livestock and wildlife that come into contact with or ingest HAB toxins can experience sickness, paralysis or even death, so know these signs of HAB poisoning:

Humans: rashes, blisters hives, eye and nose irritations, diarrhea, vomiting, abdominal pain, numbness in lips, tingling in fingers and toes, dizziness, headache. Animals: staggering, difficulty breathing, convulsions, salivation, weakness, and vomiting.

■Stay out of water that may have a HAB.

■Don't let children or pets play in HAB-infected water or debris on shore or allow pets to lick or eat material from their fur.

■After swimming/wading in water, even with no visible HABs, rinse off with fresh water.

■Never swallow untreated surface water. It may contain algal toxins or other bacteria, parasites or viruses that could cause illness.

■Don't drink/cook with suspected water. In-home treatments such as boiling, chlorine bleach or water filtration units offer no protection from HAB toxins!

Report a bloom to the Pennsylvania Department of Environmental Protection at (814) 332-6839. For more information, visit www.paseagrant.org/topics/water-quality/.

— *Anna McCartney*

REGIONAL SCIENCE CONSORTIUM

National Pollinator Week is one of many ways to stay connected to the environment.

Keep environment in mind on break

Join us again in September. While this is the last NIE environment page for this school year, don't miss the opportunities listed below to stay connected to the environment.

What: Environmental Exposition at the Millcreek Mall on June 13, from 11 a.m. to 2 p.m., will showcase environmental initiatives, projects and partnerships that are keeping fishing access areas open, improving water quality conditions and educating residents about the importance of natural resources and water in the Northwest Pennsylvania region. Contact Jake Moore at the state Department of Environmental Protection, Coastal Resources Management Program, at 217-9634 or Nate Millet with Environment Erie at 440-3953.

What: Celebrate National Pollinator Week at the Tom Ridge Environmental Center June 15-21. There are a variety of speakers from the Regional Science Consortium's member universities, workshops and displays each day. Don't miss the after-hours taste-testing event on Friday, June 19, highlighting pollinator products such as wines, honey, fruit, chocolate and juices. All proceeds support the Pollinator Certified Native Gardens at TREC. For more information and a schedule of events visit www.regsciconsort.com/events/.

What: Environment Erie Summer Field Studies Program Presque Isle State Park, Aug. 10-14. This eco-camp is for ages 10-14. Students interested in learning more about the environment, recreation, sustainability and water quality should contact Nate Millet at nmillet@environmenterie.org or call 440-3953.

What: Full-day professional development for educators for grades 4-12 on Saturday, Oct. 3, will refresh your Great Lakes knowledge and invigorate your teaching in 2015-16. Includes lessons and resources on pharmaceuticals and personal-care products; marine debris, stormwater management and invasive species. Facilitated by the Center for Great Lakes Literacy and PA Sea Grant, this opportunity offers support and resources for student field trips and project materials that promote the development and implementation of high-quality service projects. This program won the 2015 Pennsylvania Governor's Award for Environmental Excellence. For more information or an application, contact Marti Martz at 217-9011, Ext. 104 or mam60@psu.edu.

— *Anna McCartney*

USGS

Harmful algal blooms (HABs) caused by excess nitrogen and phosphorus in the air and water are keeping people out of Lake Erie and waterways around the country. According to the Environmental Protection Agency, more than 100,000 miles of rivers and streams, close to 2.5 million acres of lakes, reservoirs and ponds, and more than 800 square miles of bays and estuaries in the United States have poor water quality because of nitrogen and phosphorus pollution.

HAB-it forming work

Task force to monitor for harmful blooms

By ANNA McCARTNEY
Contributing writer

Summer should be a time to enjoy fishing, boating, and swimming with family and friends.

Yet instead of fresh clear waters, harmful algal blooms — HABs, also known as toxic algae — are keeping people out of Lake Erie and waterways around the country.

Despite the name, these blue-green algae are actually bacteria known as cyanobacteria that can produce toxins, including one called microcystin. The cells, usually too small to be seen, can form visible colonies, called an algal bloom. These "blooms" can be various colors, including blue, bright green, brown or red, and in some cases may look like paint floating on the water. HABs can produce liver and nerve toxins that threaten the health of people, pets and wildlife and even kill dogs that swim in or drink from infested waters.

HABs thrive on nutrients nitrogen (N) and phosphorus (P) from unregulated fertilizer and manure runoff from agriculture. Additional significant contributors including failing septic systems in rural communities, pet waste and residential lawn fertilizers that are largely not regulated. Sources of nitrogen pollution in the air and water include municipal and industrial wastewater, coal and gas-generated electricity, cars and airplanes.

A U.S. Geological Survey report in September 2010, "Nutrients in the Nation's Streams and Groundwater," found that: 50 percent of U.S. streams have medium to high levels of N and P pollution which can increase drinking water treatment costs, hurt the tourism industry, reduce property values and cause illnesses.

While the problems caused by HABs have been studied and documented extensively, few states have programs dedicated to monitoring or reporting on these outbreaks. A 50-state survey conducted in spring 2014 by Resource Media and the National Wildlife Federation found there is tremendous room for improvement in how the U.S. manages this risk to public health and local economies. Without a unified strategy, we are unlikely to be successful in stopping an increasingly pervasive source of pollution that comes from multiple sources in every state and affects not only near-field waters and habitats, but also those of neighboring and downstream communities, states and countries.

In this region, the Harmful Algal Bloom Task Force was formed to respond to the HAB on Presque Isle Bay in 2013. The task force has been working on implementing strategies, including public education, source reduction initiatives, prediction methods, monitoring planning and coordination for the 2015 season.

At the end of May, the Regional Science Consortium started conducting weekly microtoxin monitoring at Presque Isle State Park beaches, Presque Isle Bay and the Sommerhiem water intake. The state Department of Environmental Protection will complete routine visual observations of Presque Isle Bay and complete HAB confirmation sampling.

Water quality network sampling will also be complete in May, July, September and November this year. Erie Water Works will conduct microtoxin sampling from the raw water and finished water weekly starting in July.

For more information, contact HAB Task Force Facilitator Ron Lybrook, of the state DEP, Watershed Management Program, at (814) 332-6894 or rlybrook@pa.gov.

ANNA McCARTNEY, *a communications and education specialist for Pennsylvania Sea Grant, can be reached by e-mail at axm40@psu.edu.*

NOAA

A worker tests for toxins in Toledo, Ohio. In August 2014, a HAB in Lake Erie left half a million residents of Toledo without drinking water for two days.

CONTRIBUTED PHOTO

Lake Erie is under assault from lawn-care practices and from fertilizers; herbicides, fungicides and pesticides contained in many garden and lawn-care products, and from lawn clippings left on roads.

CONTRIBUTED PHOTO

Members of the Lake Erie Harmful Algal Bloom Task Force receive a 2015 Pennsylvania Governor's Award for Environmental Excellence from Davitt Woodwell, president of the Pennsylvania Environmental Council, third from left, and Acting DEP Secretary John Quigley, third from right.

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Check out these websites to learn more:

http://www2.epa.gov/nutrient-policy-data/cyanohabs
http://extension.psu.edu/plants/gardening/eco-friendly
www.glerl.noaa.gov/res/waterQuality/
www.paseagrant.org

A summer break for the Tuesday NIE environment page does not mean you should stop reading the newspaper. Over the summer, read your local newspaper and other news sources to keep track of environmental issues, especially those that impact Lake Erie and the other Great Lakes. Be ready to share what you learn and your ideas for solutions to any problems when we return in September.