HEADWATERS

A core publication of the Lilly Center for Lakes & Streams | Spring 2022

Have you joined Lake Quest? Sign up today and prepare to set out on a summer adventure with your family and friends! Scan this QR code or turn to page 4 to learn more.

LILLY CENTER FOR LAKES & STREAMS

EXPLORING THE TIPPECANOE RIVER

Have you ever paddled or floated down the Tippecanoe River?

The river is a fixture in Kosciusko County. It flows nearly 200 miles from its headwaters just east of Kosciusko County to northern Lafayette, where it joins the Wabash River. Part of that journey takes the river straight through the Tippecanoe lakes!

The river hosts a wide variety of fish, crustaceans and other aquatic life. It has a drainage area of about 1,900 square miles and travels through nearly 90 natural lakes.

The water is home to a prolific number of species, including several state-endangered fish, such as stream darters.

Darters tend to live in shallow, fast-flowing sections of the Tippecanoe. As a result, these fish are especially subject to pollution. They are bioindicators, requiring clean, cool water to survive. The darters' presence is an indicator of the river's healthiness! •

Keep learning about the beautiful Tippecanoe! Go here: ***lakes.grace.edu/field-notes***

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LILLY CENTER FOR LAKES & STREAMS | GRACE COLLEGE

Excited for this summer? We are, too!

Summer lake sampling, events and more begin in just a few weeks. The team is ready to go! In preparation for lake season, we want to remind you of a few things you might find useful (or at least interesting):

lakes.grace.edu/microcystin

MICROCYSTIN TOXIN EMAILS

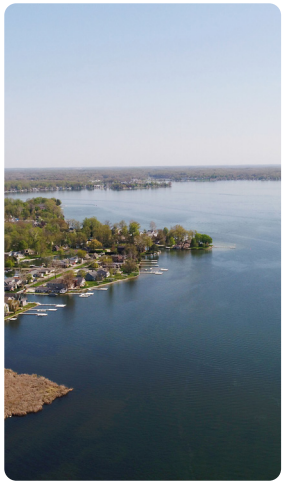
This summer, like last summer, we'll send weekly updates that share how much, if any, blue-green algae toxin (microcystin) is detected in 14 local lakes and 7 public beaches.

Get on our list! Use the QR code or URL to the left.

OH, BUOY!

This summer, we'll have a new piece of high-tech research equipment floating on Lake Wawasee.

Learn more about it on our website: **lakes.grace.edu/lakebuoy**



DID YOU KNOW?

When a frog catches its prey, it swallows. At the same time, the frog blinks - which pushes its eyeballs down on top of its mouth to help push the food down its throat.

👀

ATTEND AN EVENT

We're thrilled to bring you a series of educational events this summer! From workshops to boat tours, we're anticipating a busy (and fun) schedule.

Visit **lakes.grace.edu/events** to learn more.

3 WAYS TO KEEP THE LAKES HEALTHY THIS SUMMER

Go for native plants! They're beautiful, easy to care for and drought-resistant. They can also help keep geese away from and butterflies close to your lawn.

Wash and dry recreational equipment every time you pull it from the water. That helps keep invasive species from spreading to other bodies of water!

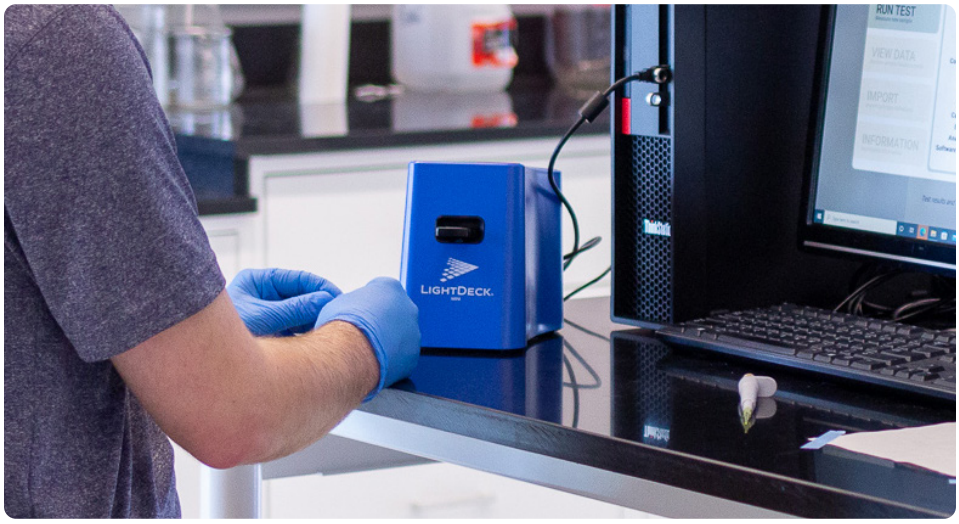
Keep lawn clippings away from the lake. Leaves, grass, stray branches and other landscaping leftovers will add to the nutrients in your lake. That means more weeds and algae in the future.

That's not all you can do! Visit our website to keep learning.

New testing technology "lights" faster route to sample analysis

LightDeck is the newest (and probably fastest) addition to the Lilly Center's lab.

For the past three years, the Lilly Center's primary means of quantifying blue-green algae toxins has been ELISA, state-of-the-art water sample testing equipment. "But LightDeck will expand our testing capacity even further," said Jed Harvey, the Lilly Center's research technician.



ABOVE: LightDeck is a small box with a big impact. Want to recieve our weekly microcystin updates this summer, directly to your inbox? Sign up here: **lakes.grace.edu/microcystin**.

Every week from June-August, the Lilly Center research team samples 14 local lakes. The team gathers data across many parameters; they also take water samples from each lake. The team is on the hunt for microcystin, a toxin produced by blue-green algae.

Toxic blooms usually happen with no warning. That is concerning for families who simply want to enjoy the lakes! Between ELISA and LightDeck, the Lilly Center research team is prepared to move **quickly and accurately** to let you know what is going on in your lake.

"LightDeck allows us to confirm if a sample has as high an amount of microcystin as we suspect," said Jed. "That saves us time and money when we run the sample on ELISA." In general, the research team plans to use LightDeck for extreme or emerging blooms. All in all, LightDeck technology **significantly speeds up the research team's sample analysis and data reporting!**

> **"LightDeck will expand our testing capacity even further."** *JED HARVEY*

To prepare a sample for testing, the team mixes the sample with a reagent. Both are put into a cartridge, which sits for 10 minutes to allow the reagent and microcystin to react. The team puts the cartridge into the LightDeck, which loosely quantifies the amount of toxin. The whole process (once the sample is in the lab) takes about 15 minutes.

By comparison, ELISA takes six hours to prepare and four hours to run - about two days of work.

"While LightDeck is faster, ELISA is more accurate," Jed said. "We need both to enable us to have a **quick response as well as an accurate understanding** of what's going on in the lakes."

The LightDeck equipment is made possible by a generous gift from Mike and Nancy Tynan, long-time residents of Lake Tippecanoe and supporters of the Lilly Center. **Thank you, Mike and Nancy!** •

ONE-OF-A-KIND K-12 EDUCATION HAPPENS AT THE LILLY CENTER

During the 2021-22 school year, our lake science-based programs reached more than **4,000 K-12 students in Kosciusko County.** We hosted a plethora of programs, including Lake Adventure Days, indoor and outdoor field trips, and in-school library lessons.

When asked to write about they learned while at the Lilly Center, one second-grader said, "I saw a turtle and a frog in a tank. I learned that wind, water and ice cause erosion. My favorite thing was mixing the chemicals. It was cool. **I even felt like I was a scientist.**" That's the kind of review we strive for! The education team will host nearly 900 students for programs this summer, too. More updates and pictures to come. •

MEMORIAL DAY, MAY 30, MARKS THE BEGINNING OF LAKE QUEST!

Sign up faster than you can say, "Lilly Center".

Simply download the GooseChase app, select "Play as Guest" and enter the following game code: ZMWQ79. That's it! We'll notify you when the scavenger hunt starts on Memorial Day. Throughout the summer, you can complete challenges to win points. Points lead to prizes! At the end of the summer, you will have a chance to win one of three incredible giveaways. For a complete explanation of the rules and prizes, visit: **lakes.grace.edu/15years** •



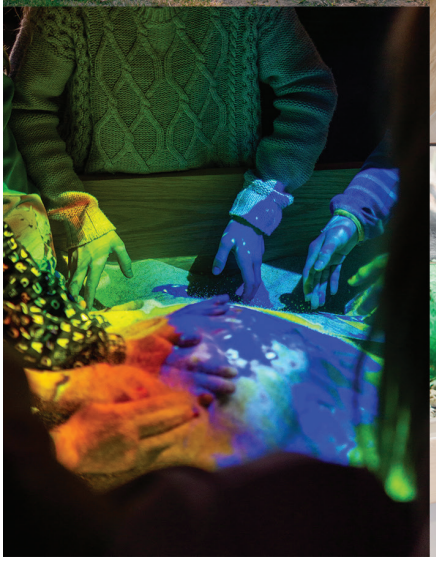


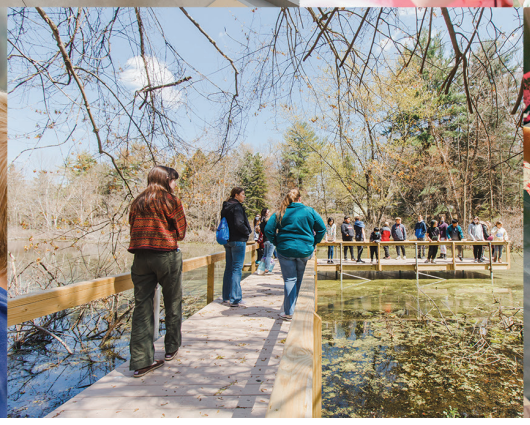













CELEBRATING 15 YEARS OF LAKE EDUCATION