# BENEATH THE SURFACE

## DATA SUMMARY | **16** LAKES, **3** SUMMERS, **1** COUNTY

USE THIS **2025 REPORT** TO INVESTIGATE AND CLARIFY THE COMPLEX RELATIONSHIPS BETWEEN LAND, WATER, AND LIVING ORGANISMS IN KOSCIUSKO COUNTY, IN.

LILLY CENTER FOR LAKES & STREAMS | GRACE COLLEGE

*Dr. Nate Bosch*
*Director*

This summer, the Lilly Center unveiled a new initiative called **Lake $R_x$**. Through this program, we are creating custom prescriptions to fix the problems on individual lakes. By allocating more resources to projects and partnerships, we can move the needle for a lake's health faster. Learn more about Lake $R_x$ on page 34.

The data contained in Beneath the Surface is the foundation for Lake $R_x$. Through strategic research, weekly data collection, and detailed analysis, we gather high-quality information about the health of our lakes and streams. Beneath the Surface **is a tool** for you, your organization, or your agency to use as we steward these important resources together.

I am grateful to KCCRVC, K21 Health Foundation, and The Papers for making this publication possible.

This library of data shows patterns and differences in the health of our lakes, which in turn reveal **specific management steps**. After reading the data, I encourage you to follow the action steps on page 33, taken from Lake $R_x$. By sharing them with your neighbors and community, we can make our lakes cleaner and healthier!

View a digital version at **lakes.grace.edu/bts**.

*We invite you to dive Beneath the Surface with us!*

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## RESEARCH



## LAKE DATA



# MISSION & VISION

The Lilly Center for Lakes & Streams uses research, education, and collaboration to make the lakes and streams of Kosciusko County clean, healthy, safe, and beautiful.


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LILLY CENTER FOR LAKES & STREAMS
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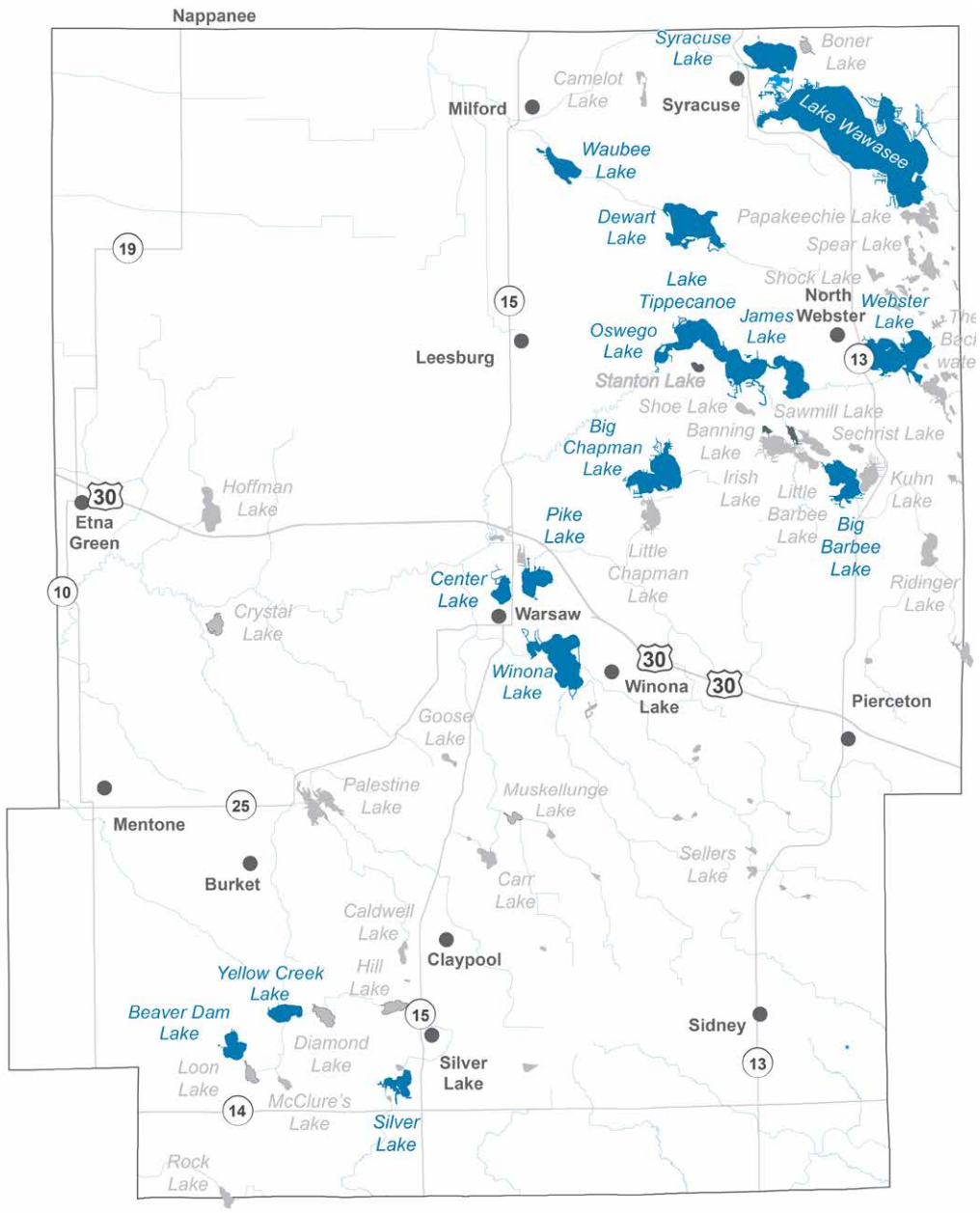



## What is *Beneath the Surface?*

Beneath the Surface is a condensed form of the data Lilly Center staff and students gathered on 16 lakes during the summers of 2023-25. Reviewing several years of data helps us accurately compare and contrast data points and dissect any potential changes that may have occurred.

## How should you use this report?

We want you to understand this data and use it to make the best decisions for your local lakes and their watersheds. That's what this report helps us do: **investigate and clarify the complex relationships** between land, water, and living organisms.

## How do we conduct lake research?

Every week from Memorial Day to Labor Day, the Lilly Center research team samples 12 all-sport lakes in Kosciusko County (since 2012), Center and Pike (since 2015), and Silver and Waubee lakes (since 2023), and seven public swimming beaches (since 2018). Learn more about our **extended sampling** season on page 11.

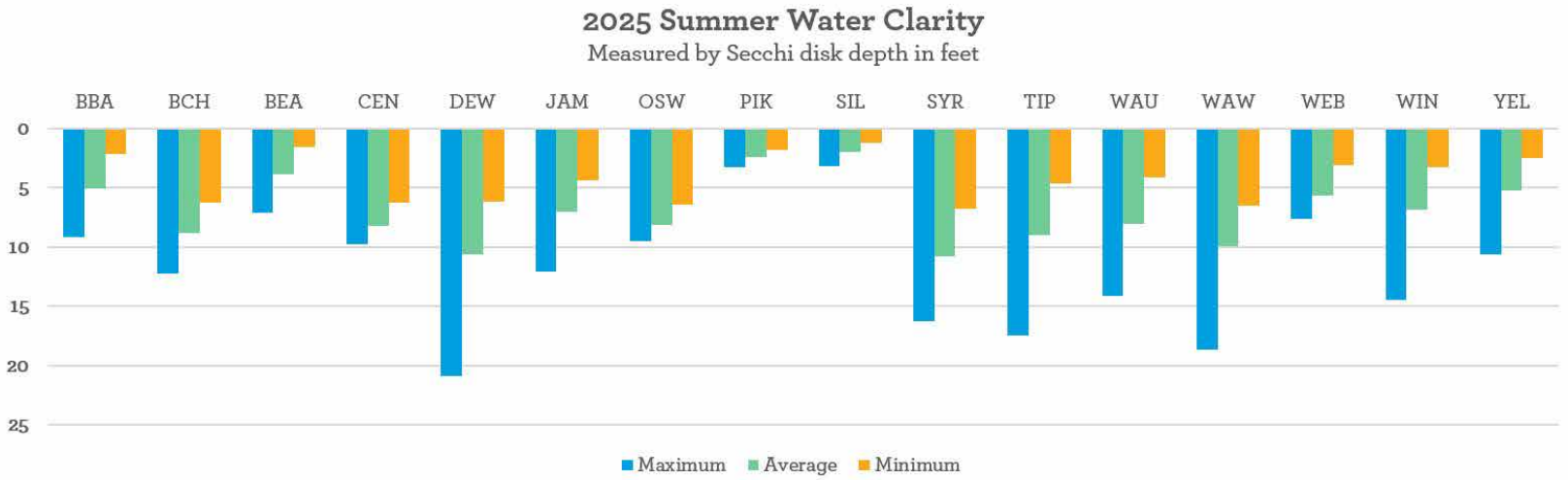
Each lake is sampled at its deepest point to get a full vertical profile of its temperature, dissolved oxygen, pH, and conductivity. Nutrient samples are collected from one meter above the bottom and one meter below the surface to observe both distinct layers of lake water in the summer.

At all 16 lakes, we take **microcystin** and **saxitoxin** (blue-green algae toxins) samples from the top six feet of open water and the top three feet at seven public beaches. Measurements and notes are also recorded on atmospheric conditions, past and present weather, resident observations, and recent management work. See page 8 for more information on blue-green algae.

# WATER CLARITY

Measuring a lake's clarity is just one way scientists determine the health of a lake. However, a clear lake is not always a clean lake. Harmful toxins can be hiding in a clear lake, while a lake with cloudy water may contain a thriving ecosystem. Invasive species like zebra mussels can make your lake clearer but encourage blue-green algae growth.

The **Secchi disk** graph below shows the maximum, average, and minimum depths we observed at each lake during the summer of 2025. The average of all Secchi disk readings was **7.0 ft**. This average is about one foot deeper than the average in 2024 (5.9 ft) and similar to 2023 (6.7 ft). Water clarity varied within each watershed; the clearest lakes were




in the Great Lakes watershed (Dewart, Syracuse, Waubee, and Wawasee). The average Secchi depth for these lakes was 9.9 ft compared to 3.7 ft in the county's southern-most lakes in the Lower Tippecanoe watershed area. Silver Lake, which flows into the Eel River and eventually into the Wabash River, had an average Secchi depth of 2.0 ft.

Water clarity in the lakes of the Upper Tippecanoe watershed averaged 7.0 ft, but lakes in the Middle Tippecanoe watershed averaged 6.6 ft. This is a noticeable distinction in water clarity the further downstream these lakes are in the Tippecanoe watershed. Except for Beaver Dam and Yellow Creek, the lakes in the southern part of the county are relatively shallow and appear more eutrophic than many other lakes in Kosciusko County. This difference in water clarity could be due to the type of land use, the amount and quality of wetlands, as well as conservation efforts targeted to reduce nutrient and sedimentation inputs into streams and lakes.

## LAKE ABBREVIATIONS

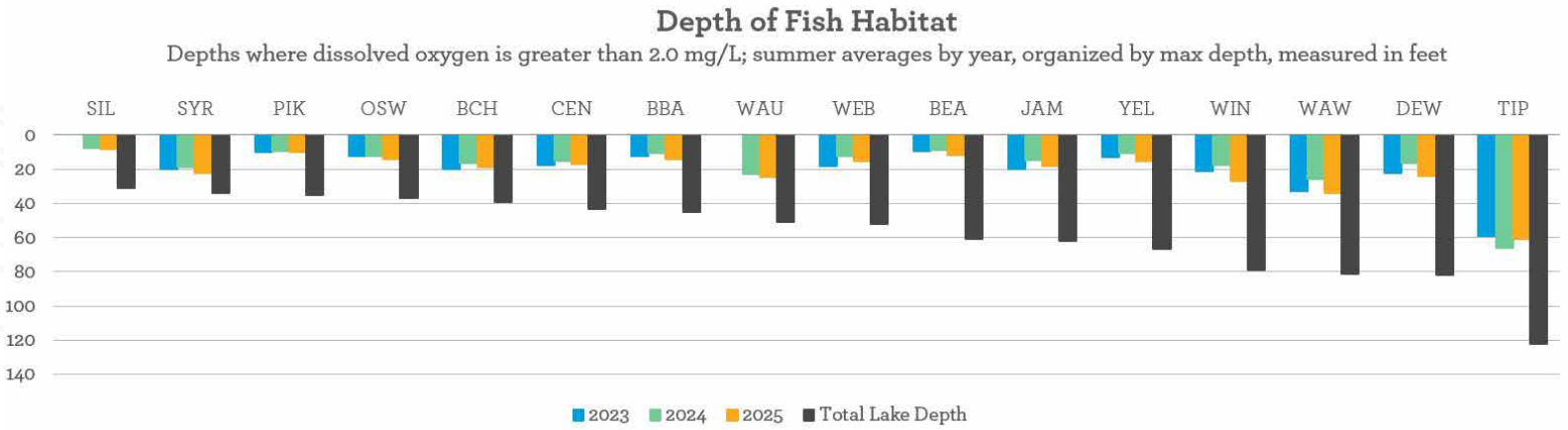
**These abbreviations will be used throughout Beneath the Surface.**

Beaver Dam..... BEA
Big Barbee..... BBA
Big Chapman..... BCH
Center..... CEN
Dewart..... DEW
James..... JAM
Oswego..... OSW
Pike..... PIK

# DISSOLVED OXYGEN

Understanding dissolved oxygen is key to lake health — and good fishing! When enough dissolved oxygen is present in a lake, it can support a complex and diverse ecosystem. Turnover, the process where wind and wave action recharges a lake's oxygen supply through mixing, happens twice a year. Turnover allows fish to survive winter and successfully reproduce in the spring.

The lakes in this graph are organized from shallowest to deepest at their deepest point. Fish require at least 2.0 mg/L of oxygen in the water to survive; however, many fish species require three or more times that amount of oxygen to thrive and spawn. The bars in this graph represent the depth of fish habitat where dissolved oxygen is greater than or equal to **2.0 mg/L** of oxygen.




The depth of dissolved oxygen averaged **21 ft** in 2025. While dissolved oxygen depths do not vary much within each lake across years, dissolved oxygen depths differ, similar to water clarity, between watersheds. The lakes in the Upper Tippecanoe (26.5 ft) and Great Lakes (26.3 ft) watersheds had the best dissolved oxygen levels.

On the other hand, the more eutrophic lakes in the Lower Tippecanoe watershed, further south in the county, exhibit an average fish habitat depth of only 11.9 ft. Lakes in the Middle Tippecanoe watershed showed depths of dissolved oxygen averaging 18.2 ft.

Algae play a vital role in lake ecosystems by producing dissolved oxygen through photosynthesis, supporting aquatic life like fish. When too many nutrients — mainly nitrogen and phosphorus — enter a lake, they can trigger dense algal blooms. When these blooms die and decompose, they use large amounts of oxygen, leading to low-oxygen conditions that stress and even kill fish. Reducing nutrients helps prevent harmful blooms and maintain a healthy oxygen balance. Learn about practical ways you can protect your lake — and improve the fishing — on page 33.

**Lake abbreviations continued.**

Silver.....SIL
Syracuse.....SYR
Tippecanoe.....TIP
Waubee.....WAU
Wawasee.....WAW
Webster.....WEB
Winona.....WIN
Yellow Creek.....YEL

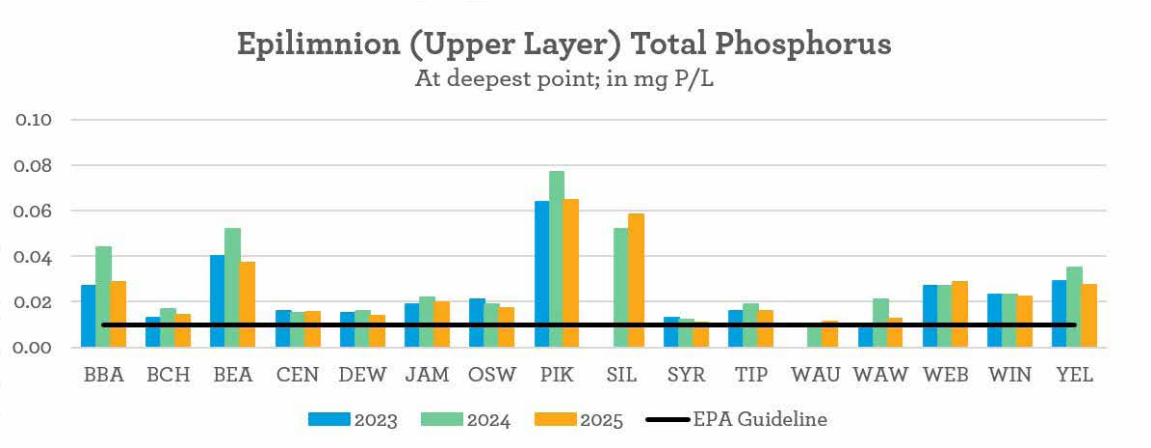
# TOTAL PHOSPHORUS, TOTAL NITROGEN

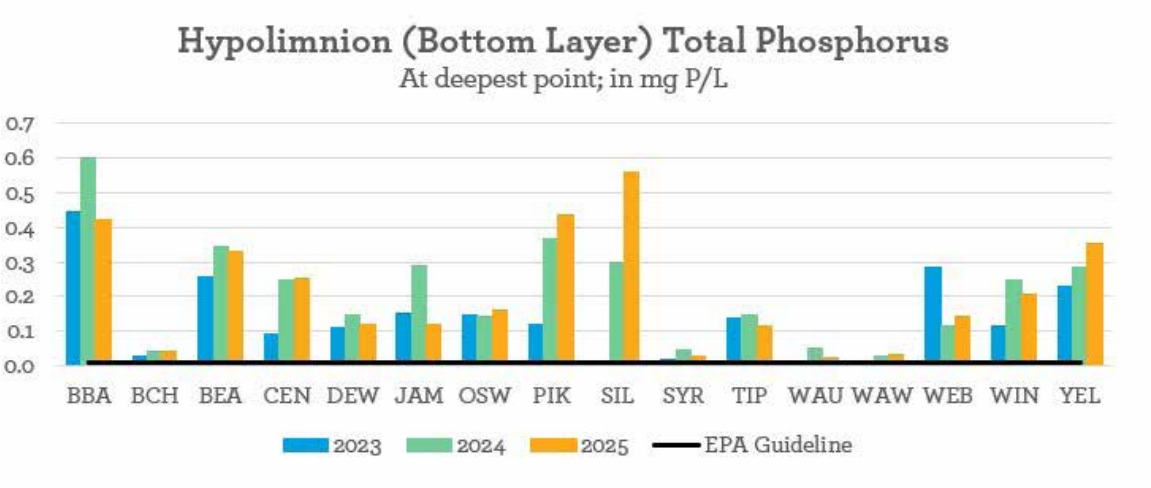
During the spring and fall, our lakes experience turnover—the mixing of the top and bottom layers of the lake (the **epilimnion** and the **hypolimnion**). But what about the summer months? The warm surface water separates from the cold water below. Our field research team takes samples from both layers to look at a lake's full nutrient profile. Nutrients like phosphorus and nitrogen are the "limiting factors" in our lakes. Finding ways to limit these nutrients is key to improving a lake's health.

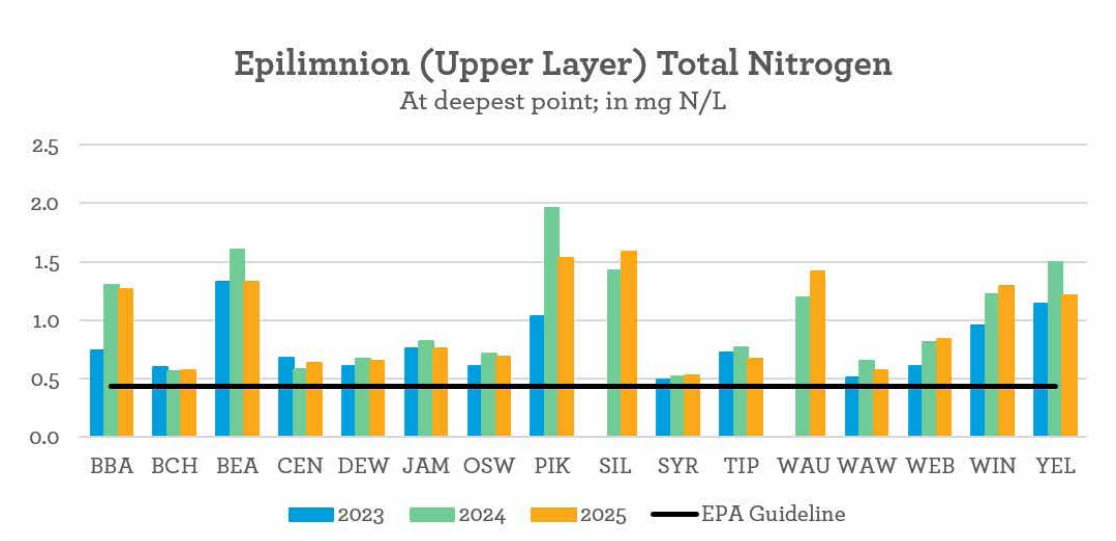
The black bar on each graph shows the threshold that the Environmental Protection Agency (EPA) designates as a water quality guideline for a minimally impacted lake in our ecoregion. Although it is a low bar, it is a high goal! All of our lakes need help to reduce the nutrient load they receive from runoff, decomposition, and fertilizer use.

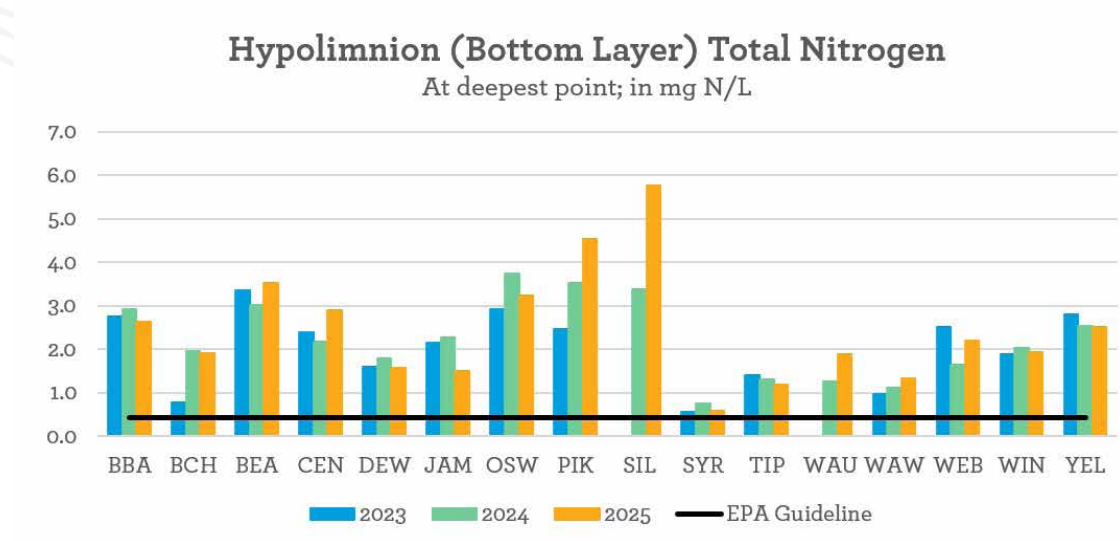
Note that the scales on these graphs are different, highlighting the fact that there are typically more nutrients in the hypolimnion than epilimnion in our lakes. That indicates that nutrients are coming from the bottom sediments of the lakes in addition to inflowing streams.

Phosphorus levels in Kosciusko County lakes do not meet the EPA's acceptable levels. In 2025, the average total phosphorus level in the epilimnion, across all 16






lakes, was **0.03 mg P/L** — three times the EPA guideline for phosphorus. Phosphorus levels in the hypolimnion were even higher and averaged **0.21 mg P/L**. Pike, Silver, and Beaver Dam lakes continue to be the most nutrient-rich lakes, followed closely by Yellow Creek and Big Barbee.

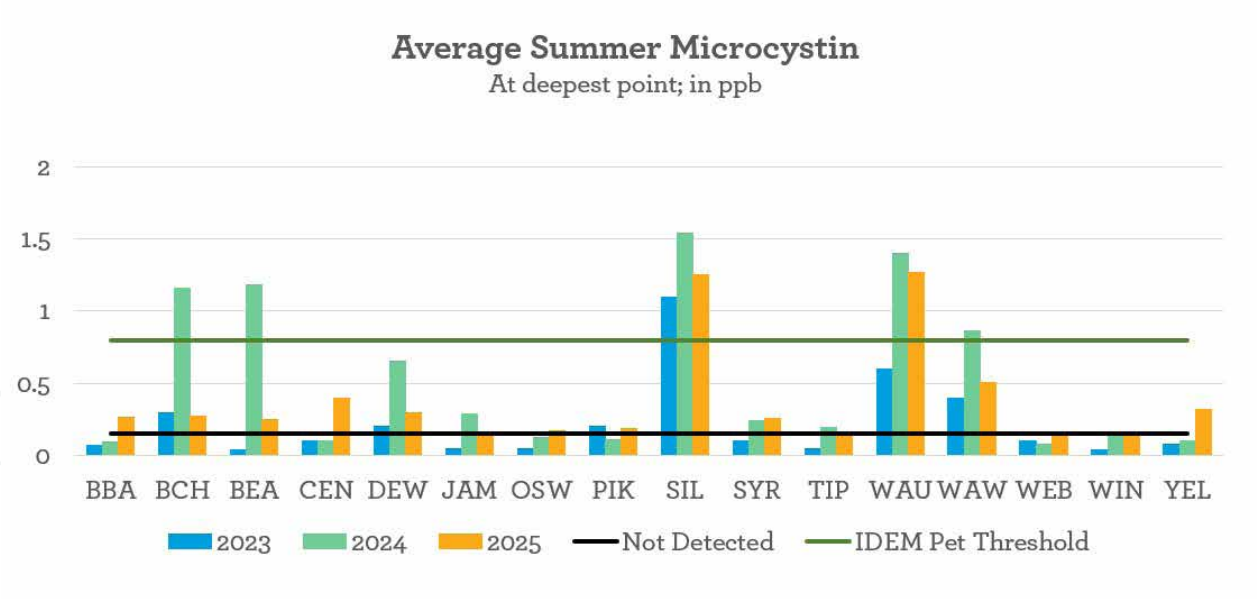
Nearly half of our study lakes have nitrogen levels in the epilimnion well above the EPA standard of **0.43 mg N/L**. Similar to phosphorus, Pike, Silver, and Beaver Dam show the highest levels of total nitrogen. Big Barbee and Winona also have high levels of total nitrogen in the epilimnion and hypolimnion. On average, total nitrogen levels in 2025 were **0.97 mg N/L** and **2.44 mg N/L** in the epilimnion and hypolimnion, respectively, and greatly exceeded the EPA guidelines.

In most cases, lakes with high levels of total phosphorus typically have high levels of total nitrogen. If you compare the two epilimnetic graphs, you can see that they track similarly as you move from lake to lake. Despite having total phosphorus concentrations similar to the EPA recommended levels, total nitrogen concentrations in Waubee Lake are quite high — especially in the epilimnion.

Activating solutions that will reduce nutrients in our lakes is core to **Lake $R_X$**. Through Lake $R_X$ prescriptions, the Lilly Center and its partners can move the needle in lake health. Turn to page 34 to learn more about Lake $R_X$.

# BLUE-GREEN ALGAE: MICROCYSTIN

Research on blue-green algae (BGA) is happening around the world. Blue-green algae is a natural freshwater bacteria that can produce toxins — a more accurate name for blue-green algae is cyanobacteria. Scientists are working to correlate nutrient data, environmental data, and algae populations to toxin production. The goal? Make lakes safe for people and pets to recreate. Although cyanobacteria are abundant in our lakes, data show that microcystin toxins are usually below the safety threshold for pets (0.8 ppb).




**Indiana Department of Environmental Management's (IDEM) microcystin exposure thresholds**

Human Recreation Caution
**8.0** ppb
Dog Recreation Prohibited*
**0.8** ppb
**State lakes & ponds*

## What we learned

While 2024 began wet and warm, kick-starting a summer of above-average microcystin concentrations, the summer of 2025 started cool and dry. This resulted in better water clarity than normal, well into June. However, a heat wave and subsequent rain following the early dry summer period prompted BGA blooms, many of which produced toxins.

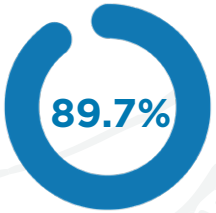
The average microcystin concentration this year (**0.38 ppb**) was lower than in 2024 (0.52 ppb), but still higher than the average recorded in 2023 (0.22 ppb) or 2022 (0.24 ppb). Six lakes had elevated microcystin levels in 2024. This summer, Silver, Waubee, and Wawasee had elevated toxin levels, which led to an increased average concentration.

**Did you receive our weekly microcystin update emails this summer? These data are just a taste of what we discovered while sampling. Stay in the loop when you follow this QR code and sign up for weekly microcystin updates, or visit *lakes.grace.edu/blue-green-algae* to learn more.**

## A Note About Comparisons

Something to keep in mind when comparing values from this year to any values in 2023 or earlier: adding Silver and Waubee, lakes with consistently higher toxin levels, increased the yearly average. Without those two lakes, the average is 0.25 ppb, which is similar to values from 2022 and 2023.

## BY THE NUMBERS




Average percent of algae population that is BGA to date


Summer microcystin samples over the dog threshold (0.8)

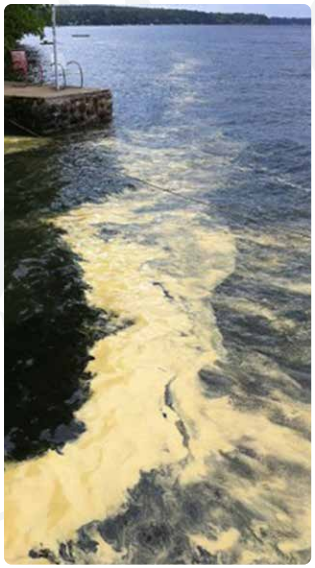
## BGA Look-alikes

Can you identify a blue-green algae bloom? Reporting blooms on public lakes to the Lilly Center activates a quick response to test the bloom for toxins to keep you and your pets safe. Call **574-372-5281** or email **lakes@grace.edu** to report a bloom sighting.

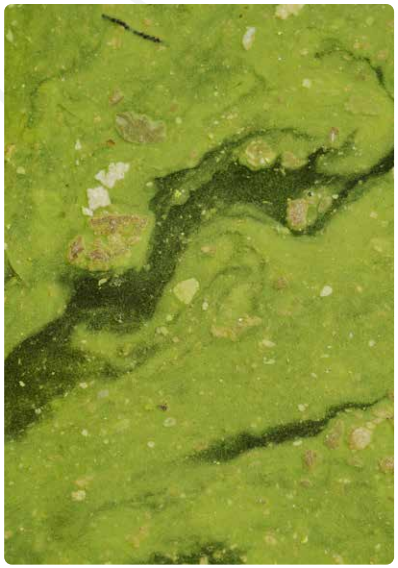
**Duckweed**

**Watermeal**

**Green algae**
naturalakes.com



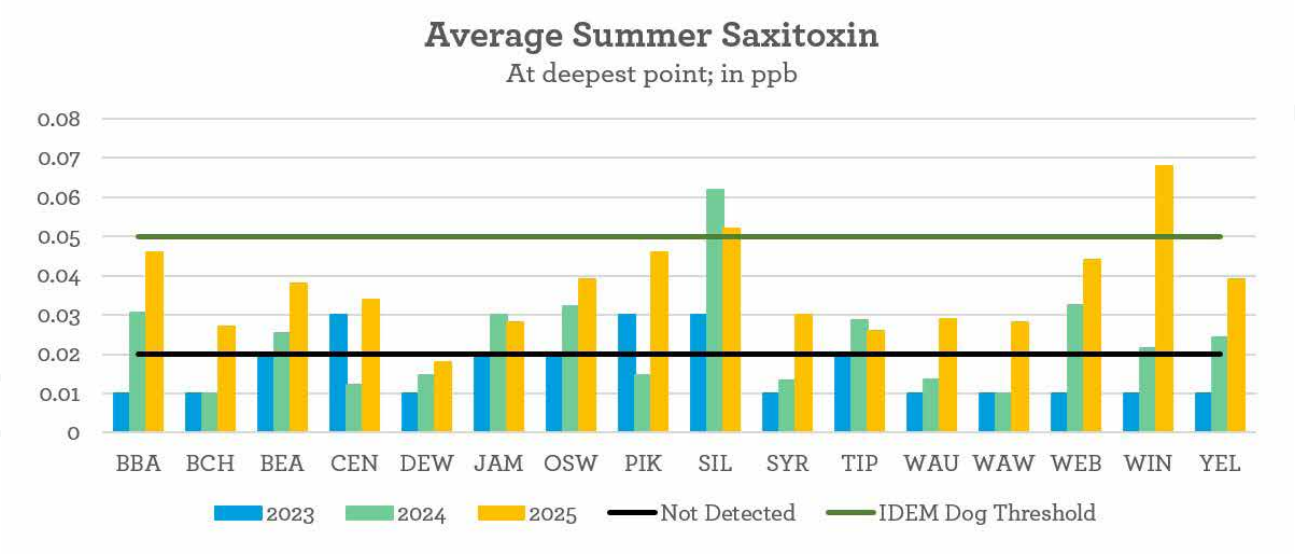
**Tree pollen**
John Stetson



**Blue-green algae bloom**

# BLUE-GREEN ALGAE: SAXITOXIN

The Lilly Center continues to investigate saxitoxin, another toxin produced by cyanobacteria. Both freshwater and saltwater cyanobacteria are capable of producing saxitoxin. In marine environments, saxitoxin is produced by the same organisms responsible for red tide. Like microcystin, saxitoxin can cause harm to pets (**0.05 ppb**) and humans (**0.8 ppb**) at elevated levels.




**Indiana Department of Environmental Management's (IDEM) saxitoxin exposure thresholds**

Human Recreation Caution
**0.8** ppb
Dog Recreation Prohibited*
**0.05** ppb

**State lakes & ponds*

## What we learned

This graph shows average summer concentrations of saxitoxin, measured at the deepest points of 16 area lakes in 2023, 2024, and 2025. In all lakes and years, concentrations were far below the human health threshold of 0.8 ppb. However, some lakes did surpass the IDEM advisory threshold for dogs of 0.05 ppb. In 2024, average toxin levels at Silver Lake exceeded this dog safety threshold, while in 2025, both Silver Lake and Winona Lake averages reached levels at or just above it. Roughly one-third of the samples from both lakes exceeded 0.05 ppb. Other lakes, including Big Barbee, Beaver Dam, Center, Pike, Syracuse, Webster, and Yellow Creek, showed increases in 2025 compared to earlier years, though still below the pet threshold. Overall, saxitoxin was consistently detected across the lakes, with modest year-to-year increases. But most concentrations remain at levels considered safe for both people and pets.

More information is needed to better understand saxitoxin and its correlation to algae species. The Lilly Center will continue studying this toxin to ensure that our communities are safe.

# EXTENDED SAMPLING SEASON

For ten years, we consistently sampled ten weeks during the summer. What began as an internal research project quickly found ways to have a **community impact**. In 2019, the Lilly Center began sending toxin notifications: weekly emails delivering that week's toxin data directly to your inbox.

Over time, we heard from our community, including many of you, that toxin notifications are not only helpful but also an opportunity. Our data collection did not account for one of the busiest weekends of the year: Labor Day weekend. The Lilly Center team listened to the community's requests and looked at our blue-green algae data. We noticed that late summer often experiences less rain, leading to warm, stagnant water, ideal for blue-green algae and its toxins. Perhaps we were missing an important piece of the puzzle.

*Above: Boat captains like John O'Neil make it possible to study Kosciusko County lakes each summer.*

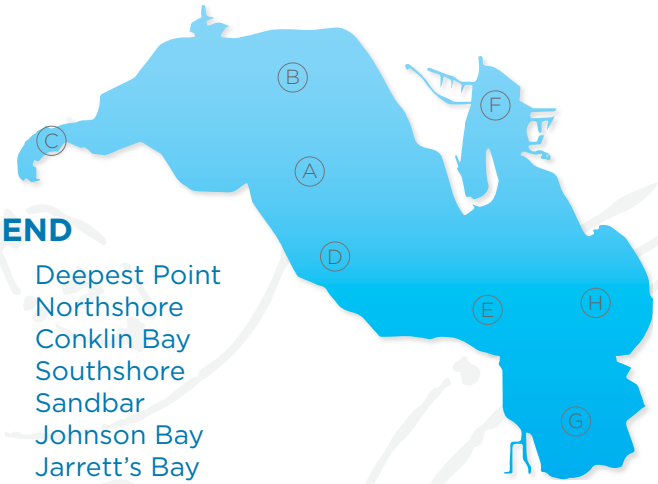
In 2025, the Lilly Center **extended its sampling season** to include Memorial Day to Labor Day. As a result, any data you see in this publication from 2025 is an aggregate of 15 weeks of data. Averages from 2024 and earlier only record 10 weeks. While this makes direct comparison more difficult in the short term, we believe that this method provides a better look at what is going on **beneath the surface** of our lakes each summer.

**The Lilly Center relies on volunteer captains to facilitate strategic lake research. Some boat captains provide snacks for our team or bring their dogs for extra loving! Thank you to the following boat captains for their investment in their lake:**

Fran Allen, Chuck Brinkman, Dave & Susan Brumley, Brett Burch, Jill Colwell, Marsha Coop, Jason Detweiler, Rick Elliott, Garry England, Ron England, Jerry & Cindy Gackenheimer, Bill Gordon, Steve Hepler, Jeff Herdrich, Greg & Teresa Kroh, Wayne Kubek, Darr Lawson, Joyce & Baxter Lee, Anna Leuer, Frank & Becky Levinson, Mike McCarty, Tom & Judy Van Meter, Max Mock, John O'Neil, Whitey Russell, John Schalgenhauf, Al & Kathy Schmidt, Scott Smith, Jack Sutton, Mike & Nancy Tynan.

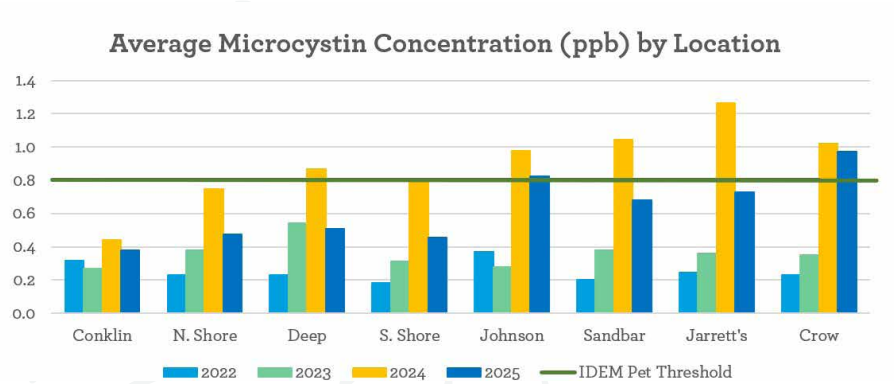
# SPATIAL VARIABILITY STUDY

Lake Wawasee, Indiana's largest natural lake, provides a unique setting to answer an important question: Can microcystin levels **vary in a predictable way** across a lake? Here, we look at how clarity, temperature, dissolved oxygen, and toxins may help answer this question.




**LEGEND**

| | |
|---|---|
| A | Deepest Point |
| B | Northshore |
| C | Conklin Bay |
| D | Southshore |
| E | Sandbar |
| F | Johnson Bay |
| G | Jarrett's Bay |
| H | Crow Bay |




Like last year, microcystin concentrations measured at eight sites around Lake Wawasee seem to indicate that those concentrations change based on location. While microcystin concentrations at each location were not as high in 2025 as in 2024, it still appears that the four eastern-most locations on the lake — Johnson Bay, the Sandbar, Jarrett's Bay, and Crow Bay — have noticeably higher toxin levels than the other locations to the west. However, data from 2022 and 2023 indicate that microcystin concentrations are relatively consistent from west to east. Now that we have four years of data, a more detailed analysis of these results can be conducted to determine if statistical differences exist from west to east.

We will continue collecting spatial variability data to identify specific correlations between toxin levels and spatial differences across Lake Wawasee.

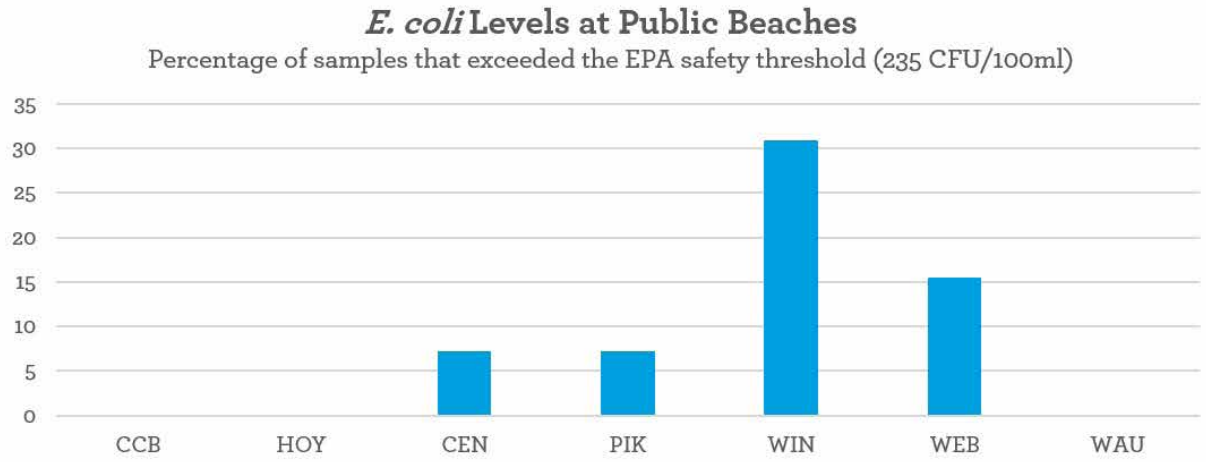
**Thanks to the support of a generous Lake Wawasee family, the Finches, as well as generous support from the K21 Health Foundation, the Lilly Center was able to sample these seven additional sites on Lake Wawasee. The additional data from this study provides insight into potential management steps on other lakes as well.**

# *E. COLI*

Cyanobacteria and *E. coli* are both bacteria. Unlike cyanobacteria, *E. coli* is predominantly found in the intestines of warm-blooded animals, including humans. *E. coli* can often persist in warm, stagnant water. Most *E. coli* is harmless, but some strains can pose a health risk.

The Lilly Center's research lab is now certified to test for *E. coli* by the Indiana State Department of Health. This certification gives us great confidence in our procedures and data. By understanding *E. coli* better, we can identify the presence of excess nutrients and eventually **address the source**.

Testing at public beaches showed that most locations met state safety standards for *E. coli*. At the Community Center and Hoy beaches on Syracuse Lake, as well as at Waubee Lake, **none** of the samples exceeded the Environmental Protection Agency (EPA) safety limit. Center Lake and Pike Lake had only a small number of exceedances, with about **7–8%** of samples testing above the threshold. Webster Lake had a moderate number of exceedances at around **16%**. Winona Lake stood out with the highest levels of concern, as nearly one-third of the samples were above the safety standard. These results show that most local beaches are generally safe for swimming. However, Winona Lake Beach presents a greater potential health risk and should be monitored closely.




**Did you know that you can access weekly *E. coli* data on our website? The Lilly Center not only tests the seven beaches on this page each summer, we also test 14 stream sites around the county. See the data by scanning the QR code or visit *lakes.grace.edu/ecoli*.**

# STREAM SENSORS

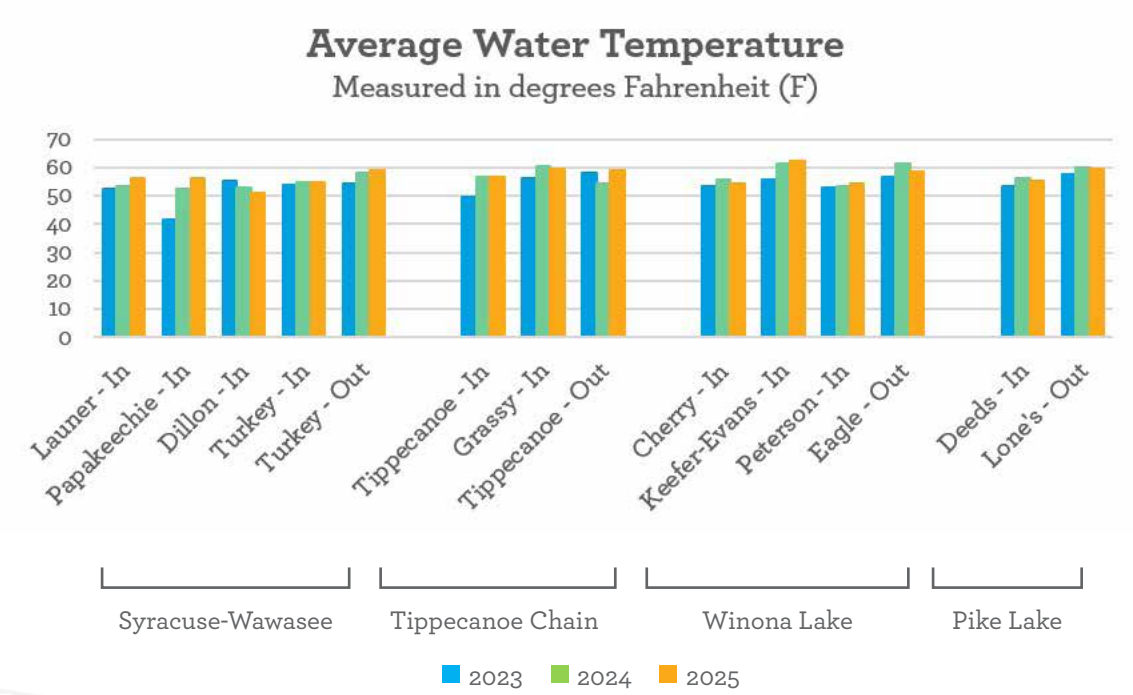
The health of Kosciusko County's lakes is directly connected to the health of its streams. As a result, the Lilly Center's stream sampling goes hand-in-hand with lake sampling. A network of **14 remote stream sensors** monitors the inflows and outflows of Winona, Pike, Wawasee, Syracuse, Tippecanoe, Oswego, and James lakes.

The stream sensors collect data from the stream, including flow, temperature, depth, velocity, and other relevant parameters. The field research team visits each site every other week to collect additional data, including *E. coli* and nutrient data. Together, this information helps us create a picture of a **lake's diet** and pinpoint where work must be done.

The average water temperatures of our streams are mostly consistent from year to year. Temperatures tended to increase from 2023 to 2024, but differences between 2024 and 2025 are variable. It appears that the average water temperature in Papakeechie outlet has increased each of the last three years, similar to Launer Ditch and the Turkey Creek outflow. This summer was very warm and likely impacted the streams' water temperatures.

Stream sensors give us the ability to collect detailed **long-term information** that, when combined with other datasets, re-

*Clockwise from top left: A stream sensor box houses electronics and a solar panel to ensure consistent data collection. College interns record data. Flow, depth, oxygen, and other parameters are collected across the entire width of a stream..*




*Above: Normally, this part of the stream sensors is hidden below the surface of a stream. It captures data at regular intervals and sends it back to the computer above ground, and then sent to our website.*

veals important trends in water quality across the watershed. By pairing sensor data with nutrient samples from the field, we can build **nutrient budgets** for our lakes. These budgets track nutrients entering the system and their origin. Over time, these nutrient budgets allow us to see how the watershed is changing and evaluate the impact of projects like agricultural best management practices, wetland restorations, and other efforts designed to improve water quality.

Did you know that our stream sensor data is available **on our website for free**? By viewing the Live Data page, you can see the water depth, temperature, and other parameters from the comfort of your home.

Visit **lakes.grace.edu** to dive deeper into stream data.

# LILLY CENTER PARTNERS

We collaborate with each of these organizations to analyze or provide relevant data to local communities. We also co-host events, provide lake-focused presentations, and collaborate on other activities within the county's watersheds. It is a privilege to work with dozens of individuals and businesses, including many more not on this list!

## LAKE ASSOCIATIONS

Consider becoming a member of your local lake association to participate in the work already being done to protect your lake.

BARBEE LAKES PROPERTY OWNERS ASSOCIATION
***North Webster, IN | barbeelakes.org***

BEAVER DAM LAKE
***Claypool, IN***

CENTER LAKE CONSERVATION ASSOCIATION
***Warsaw, IN***

CHAPMAN LAKES CONSERVATION ASSOCIATION
***Warsaw, IN | chapmanlake.com***

DEWART LAKE PROTECTIVE ASSOCIATION
***Syracuse, IN | dewartlake.org***

LAKE TIPPECANOE PROPERTY OWNERS ASSOCIATION
***Leesburg, IN | ltpo.org***

PIKE LAKE ASSOCIATION
***Warsaw, IN***

SILVER LAKE ASSOCIATION
***Silver Lake, IN***

SYRACUSE LAKE ASSOCIATION
***Syracuse, IN***

WAUBEE LAKE ASSOCIATION
***Milford, IN***

WAWASEE PROPERTY OWNERS ASSOCIATION
***Syracuse, IN | wawaseepoa.org***

WEBSTER LAKE CONSERVATION ASSOCIATION
***North Webster, IN | lakewebster.net***

WINONA LAKE PRESERVATION ASSOCIATION
***Winona Lake, IN***

YELLOW CREEK LAKE CONSERVATION CLUB
***Claypool, IN***

# GOVERNMENTAL & CONSERVATION ORGANIZATIONS

Searching for an expert on local environmental efforts or ongoing statewide projects? Reach out to one of these organizations!

CITY OF WARSAW STORMWATER UTILITY
***Warsaw, IN | warsaw.in.gov/301/stormwater-utility***

U.S. ENVIRONMENTAL PROTECTION AGENCY
***epa.gov***

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
***Indianapolis, IN | in.gov/idem***

INDIANA DEPARTMENT OF NATURAL RESOURCES
***Indianapolis, IN | in.gov/dnr***

KOSCIUSKO COUNTY CONVENTION, RECREATION, AND VISITORS BUREAU
***Warsaw, IN | visitkosciuskocounty.org***

KOSCIUSKO COUNTY SOIL AND WATER CONSERVATION DISTRICT
***Warsaw, IN | kosciuskoswcd.org***

THE WATERSHED FOUNDATION
***North Webster, IN | watershedfoundation.org***

WAWASEE AREA CONSERVANCY FOUNDATION
***Syracuse, IN | wacf.com***

INDIANA STATE DEPARTMENT OF HEALTH
***Indianapolis, IN | in.gov/health***

K21 HEALTH FOUNDATION

***Warsaw, IN | k21healthfoundation.org***

In 2012, the K21 Health Foundation provided the initial funding for the Lilly Center's cyanobacteria (blue-green algae) research. They share our vision for healthy communities around healthy waterways and continue to provide invaluable support. Most recently, they invested over $300,000 into the Lilly Center's research. Their support also provides equipment for in-house water testing and toxin analysis, and will provide resources for continued development and proactive measures to protect public health.

GRACE COLLEGE

***Winona Lake, IN | grace.edu***

The Lilly Center was founded and is based at Grace College. Over the years, our connection with the School of Science and Engineering has proven exceedingly valuable; the Lilly Center's research would be incomplete without the expert insight of the department's professors. The Lilly Center also works closely with the School of Education and other departments on campus, drawing from a seemingly endless supply of resources and knowledge. The Lilly Center employs over 40 Grace College interns every year.

# syracuse & wawasee

Researchers collected data on Lake Wawasee as early as 1875 when the Indiana Geological Survey examined several lakes in Kosciusko County. Did you know? At that time, the lake was called Turkey Lake.

**SYR**

| | |
|---|---|
| Surface area | 411 acres |
| Max. depth | 34 ft |
| Avg. depth | 13 ft |
| Watershed | 24,498 acres |

**WAW**

| | |
|---|---|
| Surface area | 3,006 acres |
| Max. depth | 81 ft |
| Avg. depth | 22 ft |
| Watershed | 24,448 acres |

## MICROCYSTIN

Average microcystin concentrations ranged from 0.1 ppb at Community Center Beach in Syracuse Lake to 0.5 ppb at the Wawasee open water site. In general, values this year are lower than those observed in 2024. The exception is Syracuse's open water location, where the 2025 average and maximum were higher than values recorded in 2023 and 2024. Only four samples from these four locations exhibited microcystin values above the IDEM pet threshold (0.8 ppb) during this summer's sampling season.

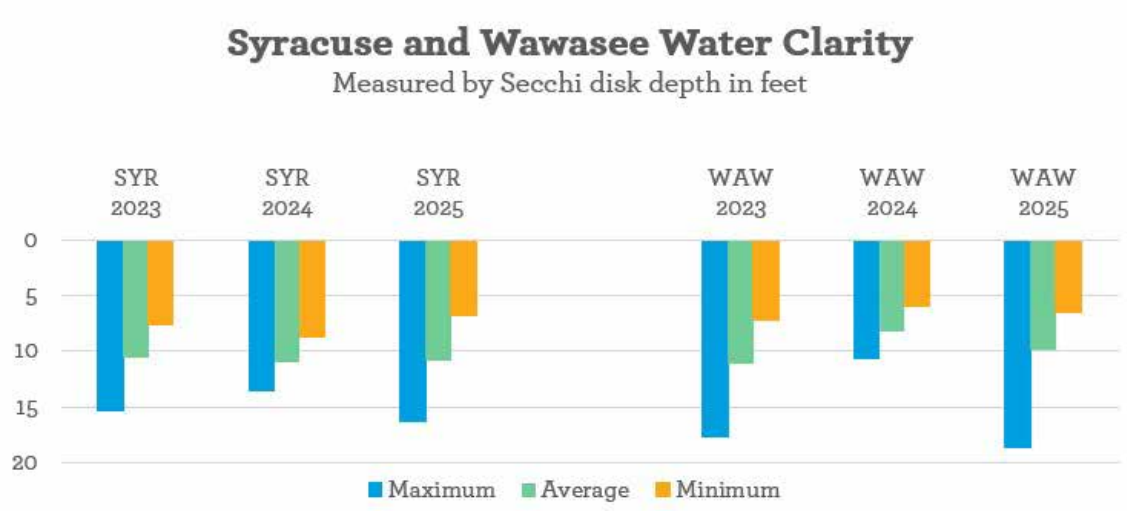
Summer Microcystin Concentrations

| Sampling Location | | 2023 | 2024 | 2025 |
|---|---|---|---|---|
| Wawasee Open Water | max. | 2.2 | 2.2 | 1.1 |
| | avg. | 0.4 | 0.9 | 0.5 |
| Syracuse Open Water | max. | 0.2 | 0.7 | 0.9 |
| | avg. | 0.1 | 0.2 | 0.3 |
| Syracuse Community Center Beach | max. | 1.6 | 0.4 | 0.5 |
| | avg. | 0.3 | 0.2 | 0.1 |
| Syracuse Hoy's Beach | max. | 0.4 | 0.6 | 0.5 |
| | avg. | 0.2 | 0.2 | 0.2 |

*Measured in parts per billion (ppb)*
*nd - no toxin detected*

## WATER CLARITY

Water clarity at Syracuse Lake has been relatively stable over the last three years, ranging from 10.6 ft in 2023 to 11.0 ft last summer. The average water clarity decreased slightly in 2025 (10.8 ft). At Wawasee, Secchi depth has been more variable. Clarity increased by 1.7 ft from 2024 to 2025, but is still less than the 11.1 ft Secchi depth recorded in 2023.




### LIMIT of FISH HABITAT

SYR 22.5'
WAW 34.0'

### WATER CLARITY

SYR 10.8'
WAW 9.9'

### AVERAGE TEMPERATURE

SYR 77.1°F
WAW 75.4°F

ALL NUMBERS IN THIS SIDEBAR ARE AVERAGES FROM 2025 RESEARCH

# dewart & waubee

Dewart and Waubee lakes are in the Great Lakes watershed, meaning that water in these lakes drains north into Lake Michigan. These lakes share another characteristic: both are home to camps — Camp Alexander Mack on Waubee and Quaker Haven Camp on Dewart.

**DEW**

| | |
|---|---|
| Surface area | 554 acres |
| Max. depth | 82 ft |
| Avg. depth | 16 ft |
| Watershed | 5,059 acres |

**WAU**

| | |
|---|---|
| Surface area | 187 acres |
| Max. depth | 51 ft |
| Watershed | 9,370 acres |

## MICROCYSTIN

Microcystin levels at Waubee beach and open water sites were once again high in 2025. The maximum microcystin levels at the open water site were 4.0 ppb in both 2024 and 2025. The average value in 2025 was also similar to that recorded in the previous year. Waubee beach microcystin concentrations were higher this year compared to the previous two years, and the average and maximum were above the IDEM pet threshold (0.8 ppb). Dewart Lake's average (0.3 ppb) and maximum (0.9 ppb) were lower this year compared to 2024 and similar to those levels observed in 2023.

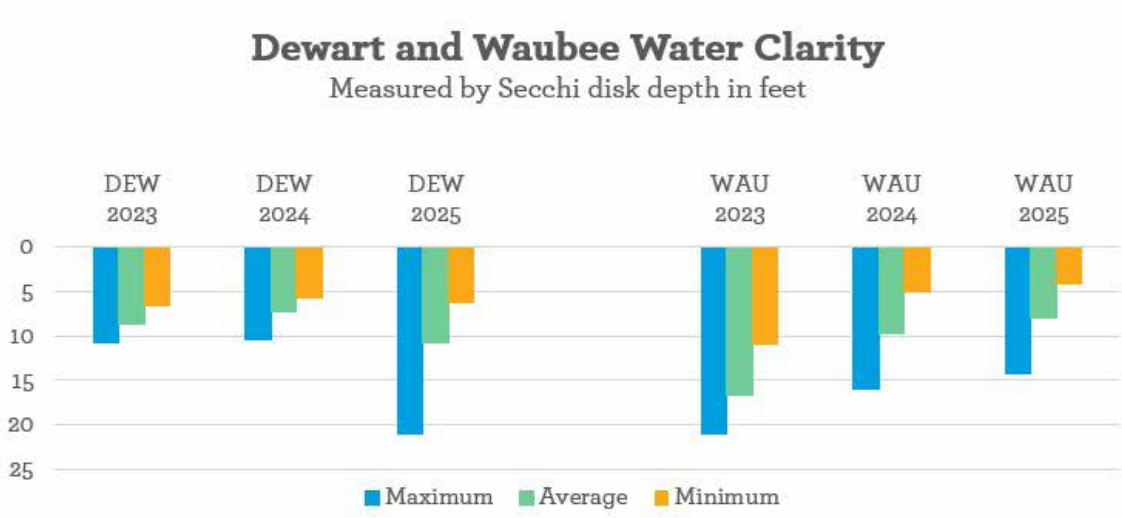
Summer Microcystin Concentrations

| Sampling Location | | 2023 | 2024 | 2025 |
|---|---|---|---|---|
| Waubee Open Water | max. | 0.8 | 4.0 | 4.0 |
| | avg. | 0.4 | 1.4 | 1.3 |
| Waubee Beach | max. | 1.9 | 2.7 | 4.9 |
| | avg. | 0.6 | 1.2 | 1.6 |
| Dewart | max. | 0.7 | 1.7 | 0.9 |
| | avg. | 0.3 | 1.0 | 0.3 |

*Measured in parts per billion (ppb)*
*nd - no toxin detected*

## WATER CLARITY

The average water clarity at Dewart Lake improved substantially in 2025 from the previous two years. Secchi depth this year averaged 10.7 ft compared to 8.7 ft and 7.4 ft in 2023 and 2024, respectively. Conversely, water clarity on Waubee has decreased over the last three years. The average Secchi depth recorded at Waubee in 2023 (16.7 ft) was based on three monthly samples instead of the normal 10 weekly samples and therefore may not offer a direct comparison. However, clarity still decreased on Waubee over the last year by approximately 1.5 ft.




### LIMIT of FISH HABITAT

DEW 23.8'
WAU 24.8'

### WATER CLARITY

DEW 10.7'
WAU 8.0'

### AVERAGE TEMPERATURE

DEW 77.0˚F
WAU 76.7˚F

ALL NUMBERS IN THIS SIDEBAR ARE AVERAGES FROM 2025 RESEARCH

# james & oswego tippecanoe

Modern recreation on Indiana's deepest natural lake goes back over 100 years. From marinas and resorts to concert halls, there is something for everyone. Tippy Dance Hall at one time boasted such acts as Duke Ellington and Louis Armstrong.

**JAM**

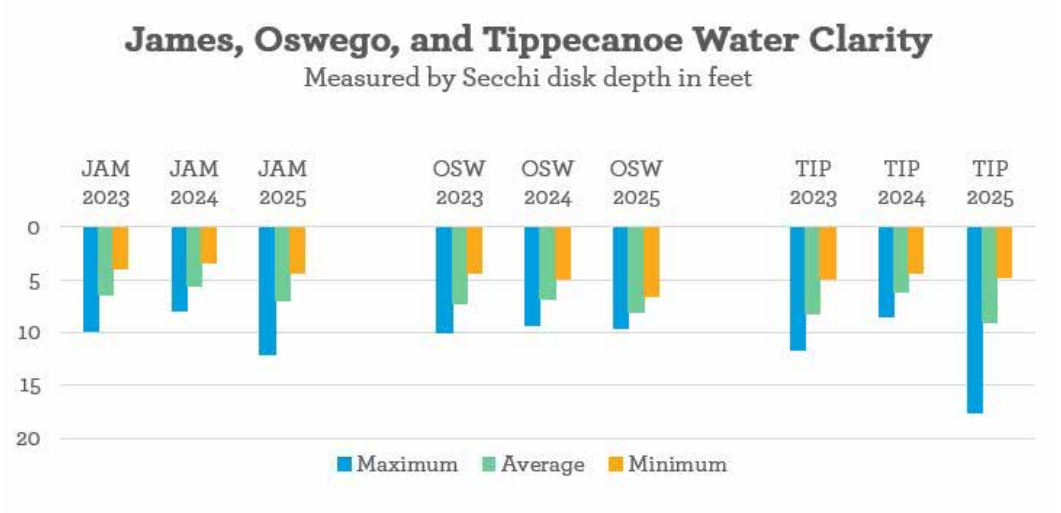
| | |
|---|---|
| Surface area | 278 acres |
| Max. depth | 62 ft |
| Avg. depth | 27 ft |
| Watershed | 35,776 acres |

**OSW**

| | |
|---|---|
| Surface area | 78 acres |
| Max. depth | 37 ft |
| Avg. depth | 13.7 ft |
| Watershed | 72,847 acres |

**TIP**

| | |
|---|---|
| Surface area | 876 acres |
| Max. depth | 122 ft |
| Avg. depth | 37 ft |
| Watershed | 72,847 acres |




## WATER CLARITY

James, Oswego, and Tippecanoe lakes all experienced increases in water clarity in 2025. Secchi depth readings on Oswego averaged 8.1 ft in 2025, a 1.5 ft increase from 2024. James Lake averaged 7.0 ft of clarity this summer. Similar to Oswego, this was about a 1.5 ft increase compared to last year's average. Clarity on Lake Tippecanoe averaged 8.2 ft in 2023, decreased to 6.1 ft in 2024, and rebounded in 2025 to an average of 9.0 ft.

## MICROCYSTIN

For the second year in a row, microcystin levels at James, Tippecanoe, and Oswego were substantially higher than in 2023. This summer, microcystin concentrations in Oswego increased to an average of 0.2 ppb and a maximum of 0.9 ppb. In Tippecanoe, the average microcystin level decreased from 2024, but the maximum value recorded increased from 0.7 ppb to 0.9 ppb. Microcystin levels in James Lake decreased from 2024 to 2025. Average microcystin concentration was 0.3 ppb in 2024 and 0.2 ppb in 2025. Similarly, maximum values decreased in James from 1.2 ppb to 0.8 ppb.

Summer Microcystin Concentrations

| Sampling Location | | 2023 | 2024 | 2025 |
|---|---|---|---|---|
| James | max. | 0.2 | 1.2 | 0.8 |
| | avg. | <0.1 | 0.3 | 0.2 |
| Tippecanoe | max. | nd | 0.7 | 0.9 |
| | avg. | nd | 0.2 | 0.1 |
| Oswego | max. | nd | 0.4 | 0.9 |
| | avg. | nd | 0.1 | 0.2 |

*Measured in parts per billion (ppb)*
*nd - no toxin detected*

### LIMIT of FISH HABITAT

| | |
|---|---|
| JAM | 17.9' |
| OSW | 14.0' |
| TIP | 61.0' |

### WATER CLARITY

| | |
|---|---|
| JAM | 7.0' |
| OSW | 8.1' |
| TIP | 9.0' |

### AVERAGE TEMPERATURE

| | |
|---|---|
| JAM | 77.3˚F |
| OSW | 78.1˚F |
| TIP | 77.5˚F |

ALL NUMBERS IN THIS SIDEBAR ARE AVERAGES FROM 2025 RESEARCH

# big barbee & webster

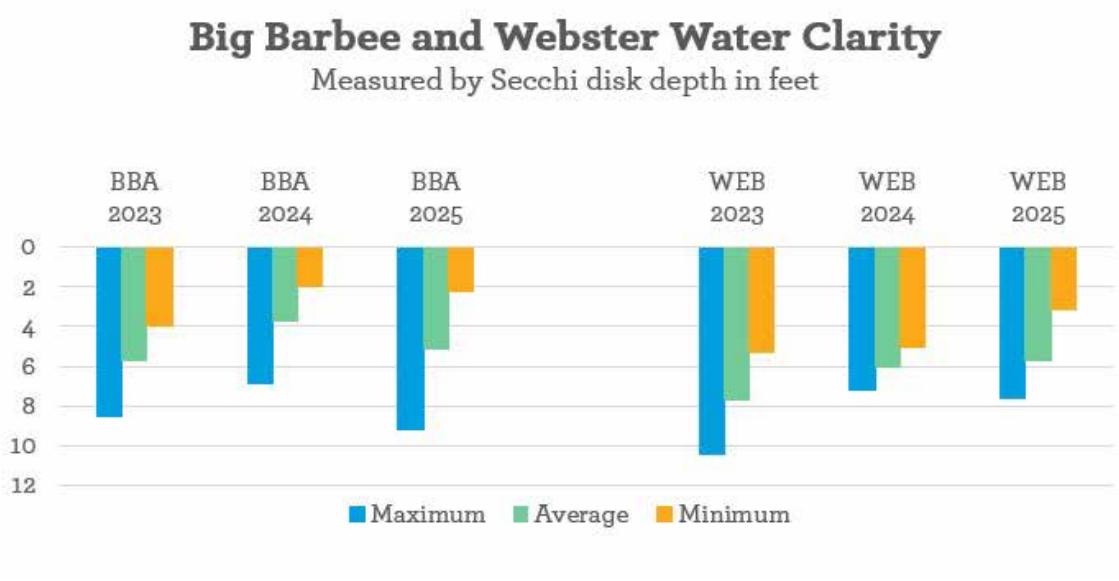
Two miles north of Webster Lake lies a continental divide. This north-south divide can be found near the Indiana Weather Forecast Office on State Road 13. Rain that falls south of this line and runs into Webster Lake and the Barbee lake chain eventually drains into the Mississippi River.

**BBA**

| | |
|---|---|
| Surface area | 311 acres |
| Max. depth | 45 ft |
| Avg. depth | 15.6 ft |
| Watershed | 28,737 acres |

**WEB**

| | |
|---|---|
| Surface area | 653 acres |
| Max. depth | 52 ft |
| Avg. depth | 12.5 ft |
| Watershed | 31,459 acres |




## WATER CLARITY

Secchi depth readings on Webster have decreased over the last three years. In 2023, the average Secchi depth was 7.7 ft, then dropped to 6.1 ft in 2024, and decreased to 5.7 ft this year. Data from Big Barbee showed that clarity decreased from 2023 to 2024. However, the average secchi depth increased in 2025 to 5.1 ft.

## MICROCYSTIN

Despite a sizable increase in water clarity from 2024 to 2025, microcystin concentrations at Big Barbee increased from last year's levels. The average toxin level last year was less than 0.1 ppb. This summer, the average increased to 0.3 ppb. Likewise, the maximum microcystin value recorded last year was 0.3 ppb compared to 1.4 ppb this summer. Webster Lake and Webster beach also showed increases in the average and maximum microcystin levels from 2024 to 2025.

Summer Microcystin Concentrations

| Sampling Location | | 2023 | 2024 | 2025 |
|---|---|---|---|---|
| Big Barbee | max. | nd | 0.3 | 1.4 |
| | avg. | nd | <0.1 | 0.3 |
| Webster Open Water | max. | 0.2 | nd | 0.4 |
| | avg. | 0.1 | nd | 0.2 |
| Webster Beach | max. | 0.2 | 0.2 | 0.5 |
| | avg. | 0.1 | <0.1 | 0.2 |

*Measured in parts per billion (ppb)*
*nd - no toxin detected*

### LIMIT of FISH HABITAT

BBA 14.2'
WEB 15.2'

### WATER CLARITY

BBA 5.1'
WEB 5.7'

### AVERAGE TEMPERATURE

BBA 77.8˚F
WEB 77.2˚F

ALL NUMBERS IN THIS SIDEBAR ARE AVERAGES FROM 2025 RESEARCH

# center & pike & winona

In 2013, the Lilly Center studied the causes of high *E. coli* concentrations at Center and Pike lake beaches. By implementing Lilly Center recommendations, the city of Warsaw improved recreation. Learn more about *E. coli* at public beaches on page 13.

**CEN**

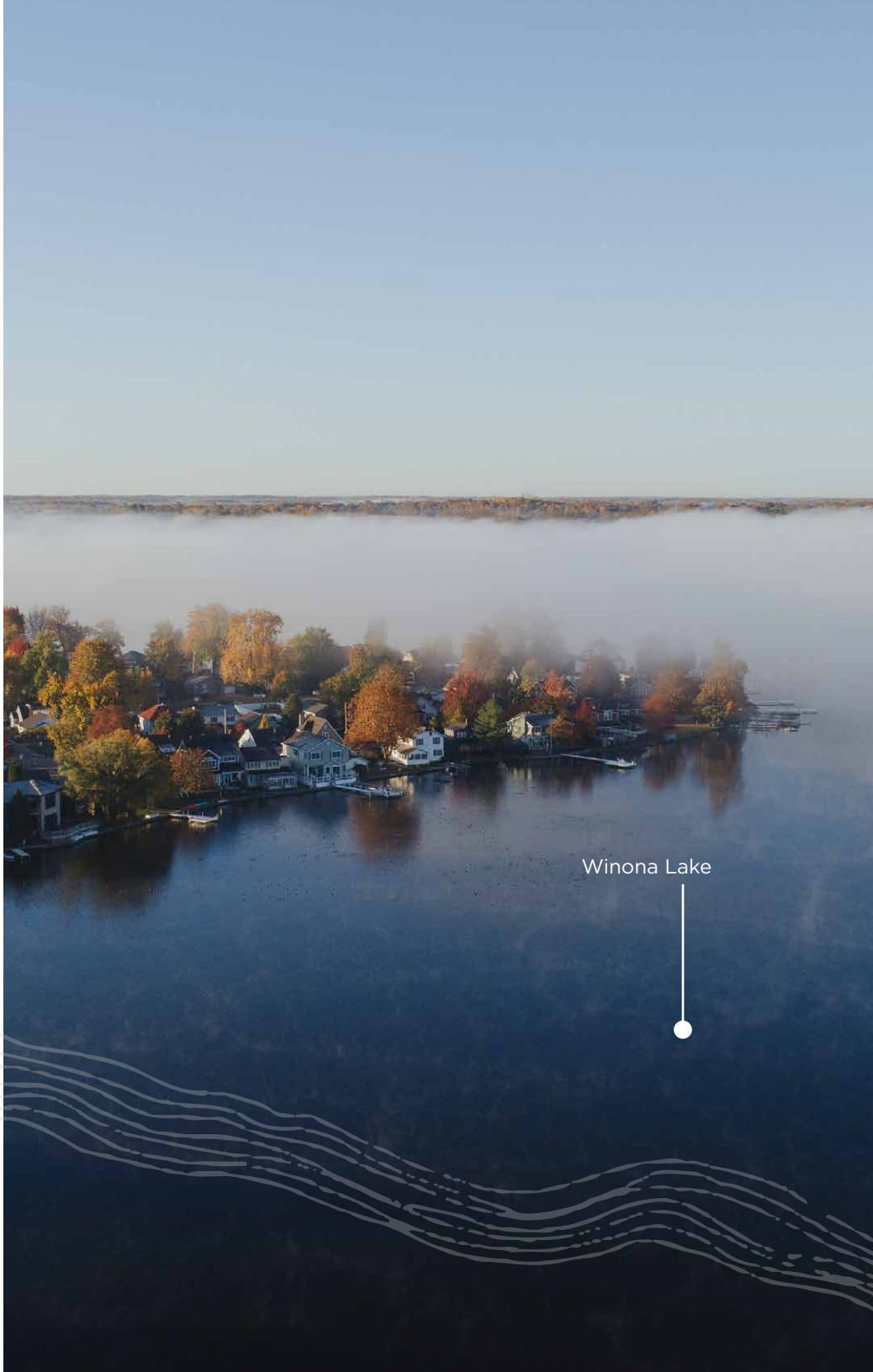
| | |
|---|---|
| Surface area | 120 acres |
| Max. depth | 43 ft |
| Avg. depth | 16.5 ft |
| Watershed | 9,611 acres |

**PIK**

| | |
|---|---|
| Surface area | 228 acres |
| Max. depth | 35 ft |
| Avg. depth | 14 ft |
| Watershed | 23,405 acres |

**WIN**

| | |
|---|---|
| Surface area | 571 acres |
| Max. depth | 79 ft |
| Avg. depth | 30 ft |
| Watershed | 18,730 acres |



Summer Microcystin Concentrations

| Sampling Location | | 2023 | 2024 | 2025 |
|---|---|---|---|---|
| Center Open Water | max. | 0.3 | 0.2 | 1.6 |
| | avg. | 0.1 | 0.1 | 0.4 |
| Center Beach | max. | 0.2 | 0.3 | 1.9 |
| | avg. | 0.1 | 0.1 | 0.3 |
| Pike Open Water | max. | 0.5 | 0.3 | 0.9 |
| | avg. | 0.2 | 0.1 | 0.2 |
| Pike Beach | max. | 0.4 | 0.3 | 0.3 |
| | avg. | 0.2 | 0.1 | 0.1 |
| Winona Open Water | max. | 0.2 | 0.4 | 0.9 |
| | avg. | <0.1 | 0.1 | 0.1 |
| Winona Beach | max. | nd | 1.0 | 0.3 |
| | avg. | nd | 0.3 | 0.1 |

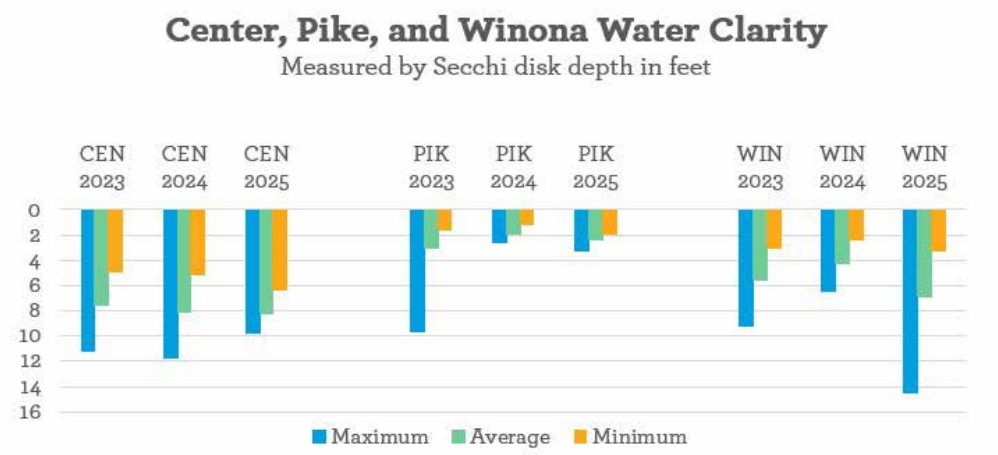
*Measured in parts per billion (ppb)*
*nd - no toxin detected*

## MICROCYSTIN

Microcystin levels were higher this summer at all three lakes' open water sites compared to the previous two years. Despite this, only five samples all summer were above the pet threshold of 0.8 ppb. Center Lake's microcystin levels increased the most. In 2023 and 2024, the average microcystin concentration was 0.1 ppb compared to 0.4 ppb this year. The maximum value recorded this year was 1.6 ppb. Microcystin levels at Center Lake beach were similar. Winona and Pike beach microcystin levels stayed the same or decreased slightly this summer compared to 2024. The average open water microcystin concentration in Winona was the same as last year, but the maximum increased. Both the average and maximum microcystin levels at Pike's open water site increased in 2025. However, only one observation at Pike and Winona was above the pet threshold.

## WATER CLARITY

Center Lake water clarity has been steady over the last three years, varying only by about 0.5 ft from 2023 to 2025. Secchi depth averaged 8.2 ft this summer and is slightly higher than the clarity recorded during the last two years. Average secchi depths at Pike Lake have also experienced limited variation. Pike had the second-lowest average water clarity of the 16 lakes sampled. This summer, Secchi depth at Pike averaged 2.4 ft. The lake typically has an average Secchi depth of 2-3 ft. Winona Lake's water clarity averaged 6.9 ft in 2025. Clarity was substantially better this year than in 2023 and in 2024, when averages were 5.2 ft and 4.3 ft, respectively.




### LIMIT of FISH HABITAT

| | |
|---|---|
| CEN | 17.1' |
| PIK | 10.1' |
| WIN | 26.9' |

### WATER CLARITY

| | |
|---|---|
| CEN | 8.2' |
| PIK | 2.4' |
| WIN | 6.9' |

### AVERAGE TEMPERATURE

| | |
|---|---|
| CEN | 76.6˚F |
| PIK | 75.8˚F |
| WIN | 76.2˚F |

ALL NUMBERS IN THIS SIDEBAR ARE AVERAGES FROM 2025 RESEARCH

# big chapman

Big Chapman Lake is one of several lakes in Kosciusko County that is home to a special kind of salamander: mudpuppies! These unique critters are a bio-indicator species. Mudpuppies can only live in lakes with low levels of pollution. Lakes that are home to mudpuppies are on the right track!

**BCH**

| | |
|---|---|
| Surface area | 504 acres |
| Max. depth | 39 ft |
| Avg. depth | 12.5 ft |
| Watershed | 4,500 acres |

## MICROCYSTIN

Big Chapman typically has above-average microcystin levels compared to other lakes. The average microcystin concentration in 2024 was 1.2 ppb, and reached a maximum of 1.8 ppb. This year, microcystin levels returned to levels observed in 2023. The average microcystin concentration in 2025 was 0.3 ppb.

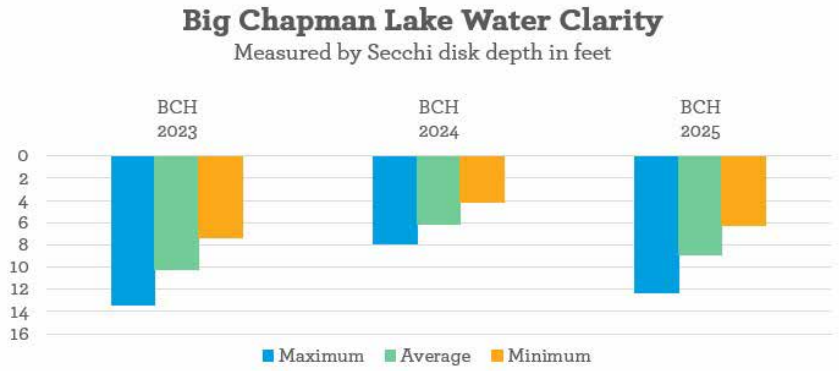
Summer Microcystin Concentrations

| Sampling Location | | 2023 | 2024 | 2025 |
|---|---|---|---|---|
| Big Chapman | max. | 0.5 | 1.8 | 0.6 |
| | avg. | 0.3 | 1.2 | 0.3 |

*Measured in parts per billion (ppb)*
*nd - no toxin detected*

## WATER CLARITY

After a substantial decrease in water clarity from 2023 to 2024 (10.2 ft to 6.1 ft), clarity in Big Chapman rebounded in 2025 with an average Secchi depth of 8.9 ft, a nearly 3-ft increase. This increase could be attributed to the five extra weeks of sampling conducted this summer. Those extra samples were collected before and after our normal 10-week sampling window and could capture times when the water is naturally clearer. This could impact comparisons from previous years to this summer. However, we are not seeing many other lakes with such noticeable increases in water clarity in 2025.




## MUDPUPPIES

There is a common myth about mudpuppies — some believe they make a barking noise when out of the water. Some say they can make squeaking noises when distressed, others say it is all hogwash.

Learn more about mudpuppies and other lake-related science topics on our website: *lakes.grace.edu/field-notes*.

### LIMIT of FISH HABITAT

BCH 18.8’

### WATER CLARITY

BCH 8.9’

### AVERAGE TEMPERATURE

BCH 77.1˚F

ALL NUMBERS IN THIS SIDEBAR ARE AVERAGES FROM 2025 RESEARCH

# beaver dam & yellow creek & silver

Unlike many of the other lakes in Beneath the Surface, the water that leaves Beaver Dam and Yellow Creek lakes flows north. Eventually, the water joins the Tippecanoe River, one of the top ten rivers in the United States. The Tippecanoe River is home to many endangered native mussel species.

**BEA**

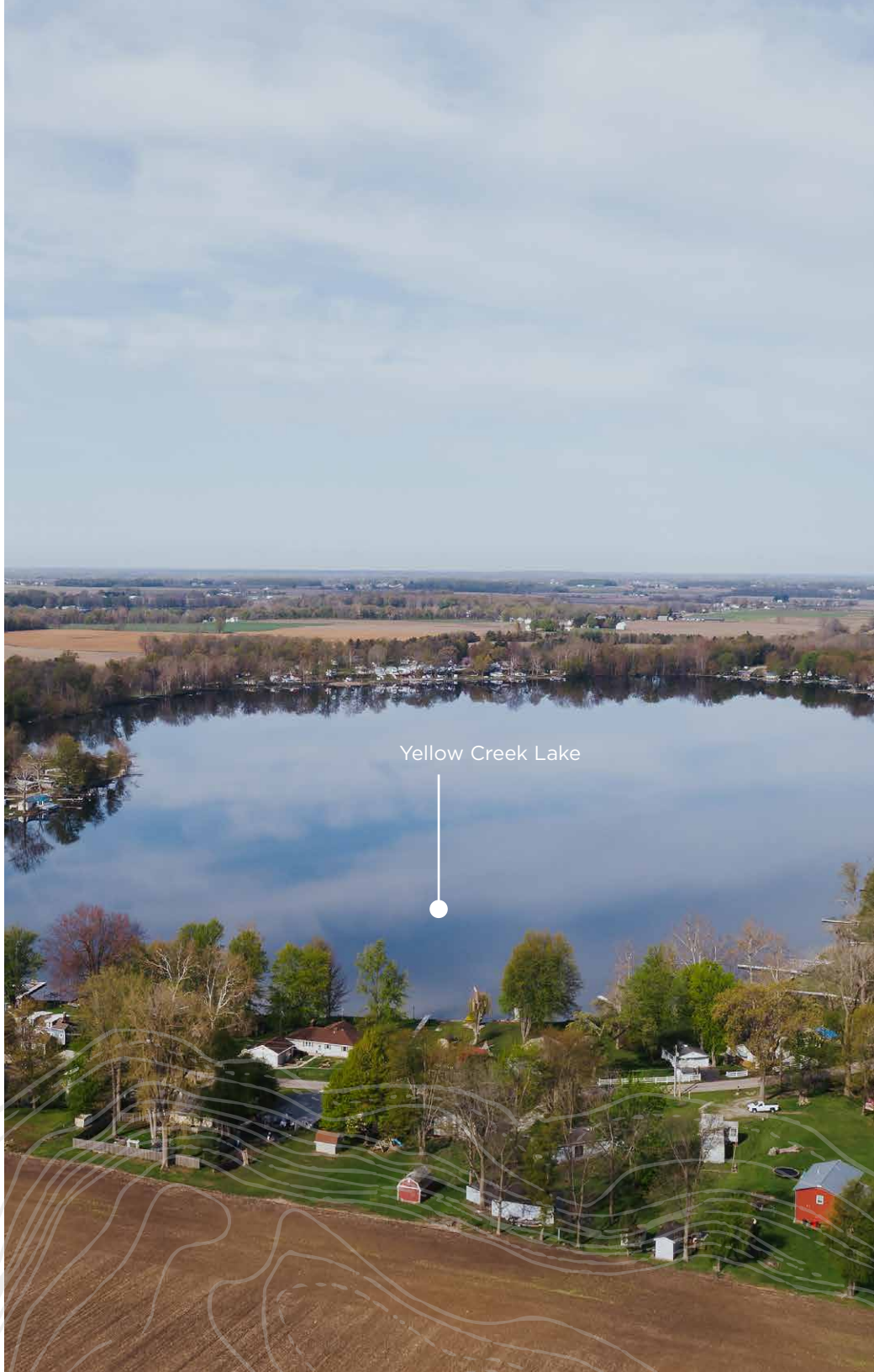
| | |
|---|---|
| Surface area | 155 acres |
| Max. depth | 61 ft |
| Avg. depth | 15.6 ft |
| Watershed | 1,266 acres |

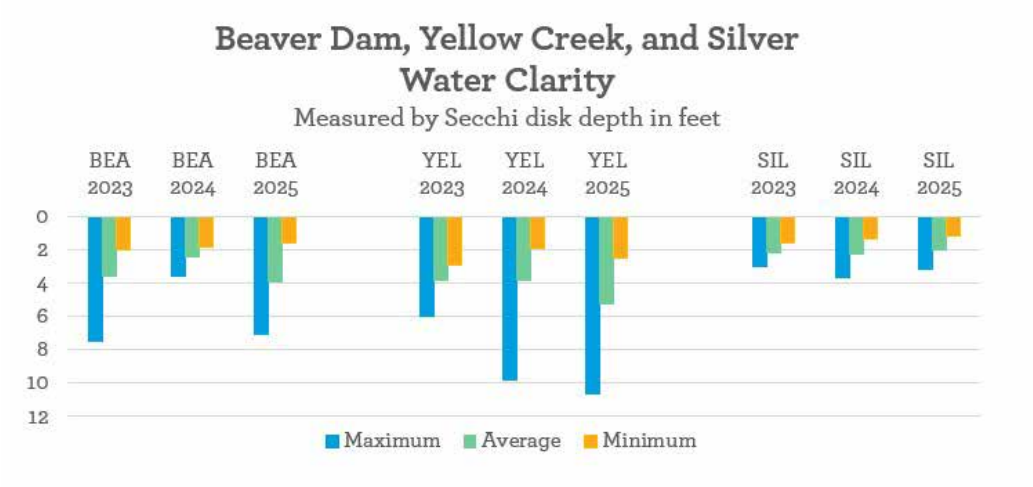
**SIL**

| | |
|---|---|
| Surface area | 102 acres |
| Max. depth | 31 ft |
| Avg. depth | 15 ft |
| Watershed | 3,300 acres |

**YEL**

| | |
|---|---|
| Surface area | 155 acres |
| Max. depth | 67 ft |
| Avg. depth | 31.6 |
| Watershed | 2,160 acres |






## WATER CLARITY

Silver Lake continues to be the most turbid (cloudy) lake that we sample. Over the past three years, Secchi depths have consistently averaged around 2 ft, and clarity only varied by 0.2 ft. The average water clarity this summer was 2.0 ft compared to 2.1 ft and 2.2 ft in 2023 and 2024, respectively. Clarity in Beaver Dam Lake increased by approximately 1.5 ft from last year, averaging 3.9 ft in 2025. This was similar to 2023 (3.5 ft). Secchi depths at Yellow Creek also increased this year compared to previous years. In 2023 and 2024, water clarity at Yellow Creek averaged 3.8 ft compared to 5.2 ft this summer.

Summer Microcystin Concentrations

| Sampling Location | | 2023 | 2024 | 2025 |
|---|---|---|---|---|
| Beaver Dam Open Water | max. | nd | 2.5 | 0.9 |
| | avg. | nd | 1.2 | 0.3 |
| Silver Open Water | max. | 2.2 | 2.4 | 4.6 |
| | avg. | 1.1 | 1.5 | 1.3 |
| Yellow Creek Open Water | max. | 0.2 | 0.2 | 0.9 |
| | avg. | 0.1 | 0.1 | 0.3 |

*Measured in parts per billion (ppb)*
*nd - no toxin detected*

## MICROCYSTIN

Despite the improvement in water clarity in Yellow Creek, microcystin levels increased substantially in 2025 compared to the previous two years. The lake averaged 0.1 ppb in 2023 and 2024 and also had maximum microcystin values of only 0.2 ppb both years. In 2025, the average was 0.3 ppb, and the maximum observation was 0.9 ppb. Beaver Dam microcystin concentrations mirrored those of Yellow Creek, with an average of 0.3 ppb and a maximum of 0.9 ppb. These measurements are a substantial improvement from 2024. Silver Lake experienced a third year in a row of high blue-green algae toxins. The average microcystin concentration this year (1.3 ppb) was slightly lower than in 2024 (1.5 ppb). The maximum value recorded this year was 4.6 ppb. The maximum values in 2024 were 2.4 ppb and 2.2 ppb in 2023.

### LIMIT of FISH HABITAT

| | |
|---|---|
| BEA | 12.0’ |
| SIL | 8.3’ |
| YEL | 15.3’ |

### WATER CLARITY

| | |
|---|---|
| BEA | 3.9’ |
| SIL | 2.0’ |
| YEL | 5.2’ |

### AVERAGE TEMPERATURE

| | |
|---|---|
| BEA | 70.1˚F |
| SIL | 77.6˚F |
| YEL | 77.3˚F |

ALL NUMBERS IN THIS SIDEBAR ARE AVERAGES FROM 2025 RESEARCH

# LAKE VEGETATION: PULL IT OR LEAVE IT?

Ask anyone: Weeds are one of the most frustrating parts about motoring out to the lake from your pier or navigating shallow areas! They get caught in engines and props, creating a yucky mess and delaying enjoyment of the water.

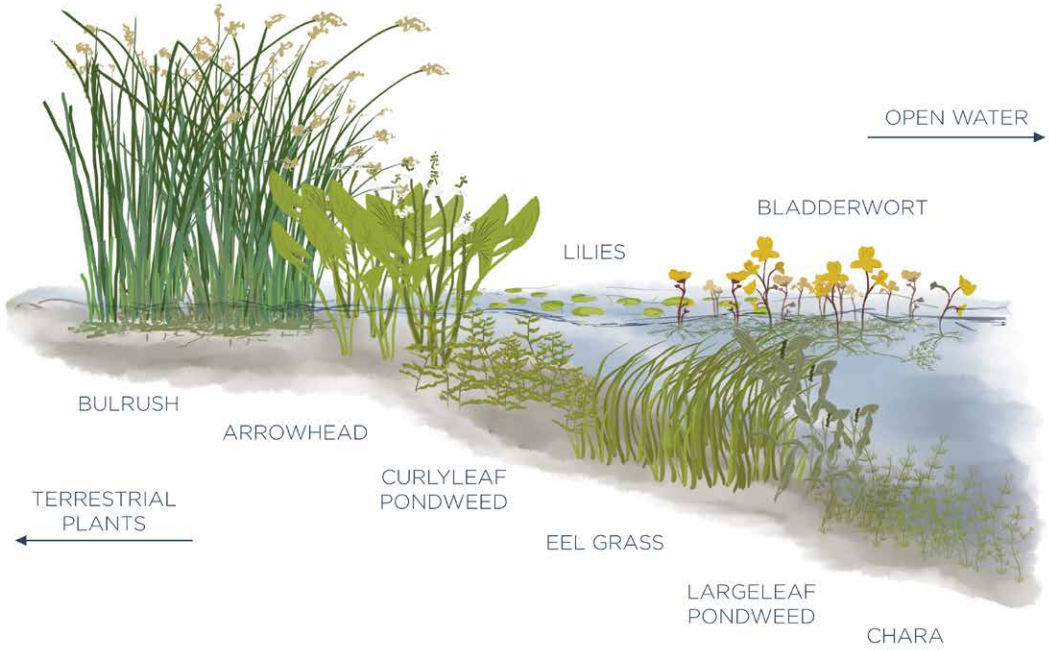
For all their negative qualities, aquatic plants are doing a service for the lake. When they grow in appropriate amounts, plants like coontail or American pondweed are habitat-builders, pollution-filterers, and dissolved oxygen-producers.

Plants that grow along the shoreline are the high-rise apartments of our lakes. They house small fish, turtles, and crayfish, as well as micro and macro invertebrates. You may also spot the nests of ducks and birds.

As the plants take in sunlight and carbon dioxide, they release dissolved oxygen into the water, which is essential for fish and other aquatic organisms. The plants' roots anchor sediment and prevent the shoreline from eroding. They absorb pollutants (like fertilizer) washed in by rain and filter them out before they can reach the rest of the lake and cause algae to grow.

There can be too much of a good thing. Excess plants can limit recreation. The solution does not always need to involve spraying herbicide to kill all the weeds along the shoreline. In some cases, large applications of herbicide will do their job too well: It kills the plants, and the sudden increase in nutrients allows algae to flourish. The decay of these plants all at once can also decrease oxygen levels in the lake, which is harmful to fish.

One alternative to consider is mechanical harvesting – a sort of lawn mower for your lake! The Lilly Center is exploring this kind of solution through Lake $R_X$, a plan for healthy lakes. Turn to **page 34** to learn more!




*Right: A healthy shoreline is a diverse community of many different plants that reduce erosion and wave action, provide animal habitat, and trap nutrients before they enter the lake.*

# BEST PRACTICES TO TRY AT HOME

Having the information is one thing; how can you act on what you have learned? The answer will look a little different for every lake. At the Lilly Center, we make sure every research project we do has a local application. Consider joining your lake association (page 16) to share in the efforts happening on your shoreline.

## DON'T PUT YARD WASTE IN YOUR LAKE

**Collect your leaves, branches, and grass clippings for removal according to your local guidelines. Also, be sure not to sweep them into the street and cause them to clog storm drains. As the leaves decompose, they release extra nutrients that algae and plants can use to flourish.**

## USE LESS FERTILIZER ON YOUR LAWN

**Specifically, try to use phosphorus-free fertilizer (look for a 0 as the middle number on the bag). When fertilizer gets washed into a lake, it acts as a stimulant for plants and algae and can even lead to harmful algae blooms. Look back at pages 6-7 to see current phosphorus levels.**

## PRACTICE MINDFUL BOATING

**Boating with the health of your lake in mind keeps nutrients trapped in the lake floor, reducing the chances of harmful algae blooms. Here's the bottom line: look for at least 10 feet of water depth before creating a wake.**

Do you learn best with hands-on education? Lilly Center events are a great way to learn about best management practices by rubbing shoulders with other like-minded individuals. Visit the Lilly Center's Facebook page (**@centerforlakes**) or ***lakes.grace.edu/events*** to view our events on our community event calendar so you can experience your lake in a new way!

# LILLY CENTER PROJECTS

These current and ongoing research projects are part of the Lilly Center's mission to help you make informed decisions for your lake's future. You can read blog posts and studies about each of these and other research projects on our website: **lakes.grace.edu.**

*ABOVE: A high-resolution microscope image of a harmless filamentous (stringy) green algae.*

## Lake $R_x$

Through Lake $R_x$, the Lilly Center offers a compelling vision to make Kosciusko County's lakes clean, healthy, safe, and beautiful. By allocating more resources toward activating solutions, we can move the needle in lake health. These solutions include projects on land, in the water, and in our community. By collaborating with our partners, we can ensure that our lakes have safe levels of *E. coli* and lake toxins, and that families can recreate worry-free. Learn more at *lakes.grace.edu/LakeRx*.

## BLUE-GREEN ALGAE RESEARCH

The elevated microcystin toxin levels this summer are a reminder of why the Lilly Center exists: to make Kosciusko County's lakes & streams clean, healthy, safe, and beautiful. Yearly toxin testing, algae research, and nutrient budgets build a picture of what goes on beneath the surface of our lakes. Our goal? To predict and eventually be able to prevent toxic blooms and keep our community and pets safe. Visit the Lilly Center's Expert Blue-Green algae guide at *lakes.grace.edu/research/blue-green-algae*.

## STUDENT SUPPORT

The educational programs and scientific research run by the Lilly Center would not be possible without the 40+ interns who join the team every year. These students come from various backgrounds and work together with one purpose: to make our lakes clean, healthy, safe, and beautiful. By investing in current college students for the duration of their college careers, we can launch future environmental professionals into our region.

Some careers include:

- environmental consulting
- environmental law
- conservation districts
- state environmental agencies

and much more! Learn more about Lilly Center interns at *lakes.grace.edu*.

## Sign up for our monthly e-newsletter

Get curated environmental news and local lake research delivered to your inbox. Scan the QR code or follow the link to sign up.

***lakes.grace.edu/get-involved***

## Listen to the Lake Doctor Podcast

The **Lake Doctor Podcast** is your leading podcast for locally sourced science & news. Listen wherever you get your podcasts.

## Make an investment

It takes a team to make research, education, and collaborative efforts possible. Use the QR code to see giving options, or go to ***lakes.grace.edu/give.***

## Visit Clearly Kosciusko

What better way to support your community than to join a community-wide brand? Register your business or organization for free!

***clearlykc.com***

LILLY CENTER FOR
LAKES
& STREAMS

GRACE
COLLEGE

## OUR MISSION & VISION

The Lilly Center for Lakes & Streams conducts research, provides resources, engages and educates residents, and collaborates with local organizations to make the lakes and streams of Kosciusko County clean, healthy, safe, and beautiful.

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