



Healthy Lakes, Thriving Communities.

LAKE R_x: A Prescription for Healthy Lakes



LILLY CENTER FOR
**LAKES
& STREAMS**

GRACE
COLLEGE



Imagine a future where your lake is healthy, the beaches are open, and you can swim worry-free.

Your community is thriving, and your quality of life improves. Such a future is possible.

Lake Rx: A Prescription for Healthy Lakes is a plan by the Lilly Center for Lakes & Streams to achieve that future.

Since 2007, the Lilly Center has created innovative educational programs and conducted applied research on local lakes. The research reveals the issue: an **overabundance of nutrients**, like phosphorus and nitrogen.

These nutrients feed harmful blue-green algae, encourage weed growth, and even contribute to unsafe *E. coli* levels. If left unattended, these visible and invisible threats can have a **negative impact** on the economy, recreation, and human health.

\$400 MILLION IMPACT

Research also shows that local lakes contribute more than \$400 million annually to Kosciusko County's economy.

Healthy lakes increase business, tourism, employee retention, home values, and **quality of life**.

Lake Rx is a holistic approach to lake health.

Backed by 20 years of research, the Lilly Center will create **custom prescriptions** for individual lakes. Solutions on land, in the water, and in the community will speed up your lake's return to health, making your community a better place to **live, work, and play**.

Lake health projects fall into three categories:

SOLUTIONS ON LAND:

Agricultural Best Practices, Wetland Revitalization

SOLUTIONS IN THE WATER:

Blue-green Algae Research, Ecosystem Rebalancing, Weed Management

SOLUTIONS IN THE COMMUNITY:

Water Literacy, Responsible Boating, Native Shorelines

A Shared Vision for Thriving Lake Communities

HOLISTIC SOLUTIONS FOR LONG-TERM LAKE HEALTH

Land that drains into a particular body of water is its **watershed**. Everyone lives in a watershed — and our actions have an impact on lake health. Caring for lakes, land, and the community benefits people, businesses, and the environment.

Components of a healthy lake community:

- Sustainable agriculture
- Responsible lake recreation
- Balanced aquatic ecosystems
- Revitalized wetlands
- Unimpaired streams
- Hands-on K-12 education
- Proactive landowners
- Invested lakefront residents
- Healthy businesses



Solutions in Lake Rx




SOLUTIONS ON LAND

-  Agricultural Best Practices
-  Optimizing Wetlands

SOLUTIONS IN THE WATER

-  Blue-Green Algae Research
-  Ecosystem Rebalancing
-  Weed Management

SOLUTIONS IN THE COMMUNITY

-  Water Literacy
-  Responsible Boating
-  Native Shorelines

Explore the solutions on the next page!

LAKE R_x SOLUTIONS

Solutions on Land:



Agricultural Best Practices:

Farmers are key partners to the health of the lake thanks to their large influence on a lake's watershed. In Kosciusko County, over 80% of the land surrounding local lakes is agricultural. By identifying the agricultural practices with the best "bang for buck," the Lilly Center and its partners will encourage implementation of proven best management practices (BMPs) that are beneficial to the farmer and to the lakes.

The Lilly Center's director, Dr. Nate Bosch, serves on the science assessment committee as part of the Indiana Department of Agriculture. Dr. Bosch, alongside researchers from IU, Notre Dame, and Purdue, is working to quantify the impact of BMPs and create a recommended approach.



Optimizing Wetlands:

Indiana was once home to thousands of acres of wetlands. Today, only 15% of the original wetlands remain. Kosciusko and Noble County have over 6% of the existing wetland acres. Wetlands are important ecosystems that are often found next to lakes and streams and act as "kidneys," filtering pollutants out of the water before that water reaches a local waterbody.

The Lilly Center is assembling a group of wetland engineers, consultants, and scientists to assist in assessing current wetlands and identifying wetlands with the most potential for filtration and lake impact. Studies conducted in Ohio at Grand Lake St. Mary's show a significant reduction in blue-green algae toxins as a result of constructed wetlands near stream inflows around the lake.



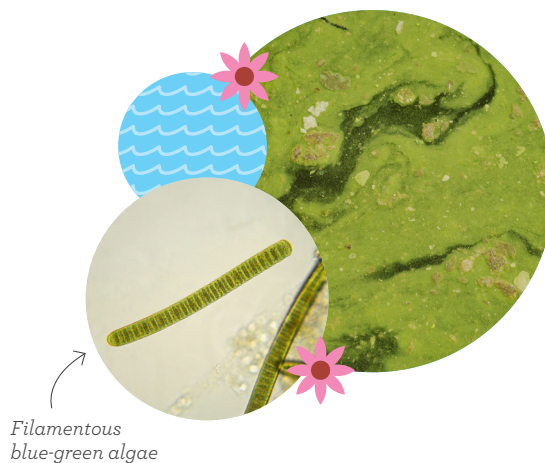
Solutions in the Water:



Blue-Green Algae Research:

Over the last 15 years, the Lilly Center has conducted research on blue-green algae on 12 all-sport lakes (since 2012) and added more lakes in 2015 and 2023 for a total of 16 lakes. At each lake, the Lilly Center's research team conducts toxin analysis and collects algae data that is analyzed in the Lilly Center's lab.

Lake R_x will spur this effort for greater impact by increasing the analytical capabilities to find trends and connections between algae populations and the toxins produced. Through this research, the Lilly Center will look to predict and eventually prevent harmful algae blooms, making recreation safe for people and their pets.



Filamentous blue-green algae





Zebra mussels



Ecosystem Rebalancing:

Invasive species such as zebra mussels pose a threat to a lake's ecology by outcompeting native mussel species. But they also pose a human health threat thanks to their diet. Zebra mussels choose to feed on non harmful species of green algae and filter out harmful blue-green algae species, unnaturally skewing a lake's ecosystem to contain far more blue-green algae than other species. Up to 85% of the algae species in Kosciusko County's lakes are made up of blue-green algae.

The Lilly Center will partner with the Indiana Department of Natural Resources (IDNR) to explore options that would reduce the populations of zebra mussels and restore a balanced lake ecosystem.



Weed Management:

Aquatic plants, scientifically known as aquatic macrophytes, are a natural component of a lake's ecosystem. Aquatic plants serve the lake by providing habitat for aquatic creatures, holding soil in place, and consuming nutrients in the water (and making them unavailable for consumption by algae). Too many aquatic plants can impede boat recreation and swimming, making the lake inaccessible for the community.

Mechanical harvesting, common in Michigan, Wisconsin, and Minnesota, is an alternative to chemical-based solutions. Harvesting aquatic plants from a lake completely removes nutrients that otherwise would be available to algae during a plant's lifecycle. Harvested plant material can be composted or offered to farmers as a free form of fertilizer.

Mechanical harvester



Solutions in the Community:



Water Literacy:

Educating the next generation of water-literate citizens starts today. The Lilly Center makes over 10,000 K-12 student connections annually thanks to a suite of programs that include in-house and destination programming. In addition to the quantity, the Lilly Center's programs also excel in their quality. In 2025, the Lilly Center's education programs received the Governor's Award for Excellence in Environmental Outreach and Education for the second time.

Not only do the programs and lessons meet state standards to support teachers, but they are also innovative and hands-on. K-12 students learn about their local lakes through Lake in the Library, Classroom Lake Experience, Lake Adventure Day, and indoor and outdoor field trips. Community education events geared toward adults help folks change behavior today.

The Lilly Center employs over 45 college interns from Grace College each school year. Almost 200 students have built their resumes at the Lilly Center; about 80% of these college interns pursue environmental professions in Northern Indiana after graduation.





Responsible Boating:

A research study by the Lilly Center found that boating in at least 10 feet of water when creating a wake minimizes the impact on the lake bottom, leaving nutrients undisturbed and unavailable for aquatic plants and algae to use as food. Ongoing research suggests that boating at least 500 feet from shore reduces negative impacts on shorelines. Concerted marketing and education efforts to increase awareness around responsible boating and partnerships with marinas, manufacturers, and lake associations can change behavior in measurable ways and change lake culture.



Native Shorelines:

Caring for one's own property is a tangible way anyone can have an impact on the quality of a lake, regardless of whether that property is on the shore of a lake or within the watershed. Community events, awareness campaigns, and cost-sharing can encourage property owners to install native plant buffers to help retain soil and nutrients rather than allowing them to enter the lake. Additional best practices include composting, proper disposal of yard waste, and using phosphorus-free fertilizer. Campaigns to change behavior now can invigorate support for water quality as the community understands the value a lake provides.

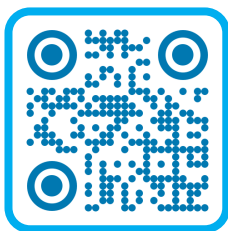


Blazing star

Partners and Stakeholders

Lake Rx projects include partnerships with stakeholders who **share a vision** for healthy lakes. Partners include lake associations, environmental nonprofits, local government, and state and federal agencies.

The Lilly Center can offer lake-specific expertise, research and analytical capabilities, staff time, and funding to help Lake Rx projects move forward. Guiding principles for early projects include measurability, visibility, and impact.



Learn more today!

Lake Rx is in its early stages and will continue to evolve and grow in the future. The Lilly Center is confident that our lakes will become cleaner faster and our communities will thrive as a result. Learn more about Lake Rx and consider how you might support local lake communities by visiting lakes.grace.edu/LakeRx or scanning the QR code.