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WHY IS THERE FOAM IN THE RIVER?

This foam is a natural process that results from plant decomposition!

As plants decompose, they release natural oils, nutrients, and dissolved organic carbon (DOC). This organic matter is carried by rainwater to a lake or stream where it mixes on the surface. DOC is a surfactant, and similarly to soap, it reduces water tension. This reduction of surface tension facilitates the formation of tinv air bubbles in organically enriched water. Foam often has a brown tint caused by tannin- a compound that gives trees their color.

Although foam production is a natural process, in some cases, it can be a result of pollution. Many man-made substances with bubble-forming properties can end up in our waterways.

Learn more about how we are securing the downstream future of your lakes & streams at lakes.grace.edu.

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Cover: Volvox, an example of green algae, as seen under a microscope at 100x magnification.

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MICRO WORLDS

Taking a look at the incredible underwater world of microganisms

Technology allows our algae team to peer into the unseen world hiding in our lakes. There are amazing and interesting creatures to photograph, document and admire. These are two microorganisms you can find in Kosciusko County lakes.

Daphnia ("Water Flea")

Daphnia is a common macroinvertebrate. They are called "Water Flea" because of the way they move; they use the large spiky limbs to quickly dart around in the water.

Daphnia eat algae and other small single-celled organisms. They use their limbs to push water through their body to filter out and eat the algae. Daphnia are a common **zooplankton**, and are fun to watch swim through the microscope!

Volvox

Volvox, a species of green algae, live in large, coordinated colonies that appear completely spherical (pictured on the cover of this publication). Each sphere is one colony, and each colony has smaller spheres inside. All of the green dots on the outside are the individual volvox cells. The smaller spheres on the inside are small developing colonies. Once the small daughter colonies are mature, the parent colony ruptures and releases the new volvox into the world

Volvox look like something out of a sci-fi novel, yet they are content, living simple, photosynthetic lives. •

Learn more about what goes on beneath the surface of your lake on our website: lakes.grace.edu.

> NOTE THE GREEN ALGAE IN ITS GUT!

STUDENT TO PRO

A student's commitment to community.

The first things you notice about Ryan Workman are the artistic set of tattoos that cover his arms and his confident, positive demeanor. Spend a little time with him, and he will also reveal a passion for the connection between **water** and **community** driven by his intentional career path.

This summer, Workman celebrates one year as an environmental scientist at Stantec Consulting Services, Inc., a community-minded consulting firm. Previously, he spent six years working for the City of Warsaw Stormwater Utility. However, his love for the environment started as a young child in Auburn, Indiana.

Workman credits his friends who lived on Sylvan Lake in Noble County for stoking a love for lakes as a teenager through tubing, swimming, and kayaking. His perspective **evolved and deepened** once he enrolled at Grace College and dove headfirst into the environmental science program led by Dr. Nate Bosch. He spent one summer working at the Lilly Center!

"During his brief but fruitful time at the Lilly Center, Ryan exceeded our expectations," recalls Dr. Bosch. "His work collecting data and communication skills were first-rate, and I eventually asked him to look into special projects. Ryan researched the potential for increased E. coli in our lakes during specific events and studied the effects of toxic chemicals historically released near lakes."

Thanks to Workman's diligence and responsibility

in the community, he transitioned to the City of Warsaw as the MS4 Coordinator after graduation. He oversaw stormwater and utility management, program development, and water quality.

He points to two projects he is particularly proud of. The first is the Beyer Farm Trail enhancement project that incorporated terraced seating and restored a prairie ecosystem. The other is the shoreline restoration initiative. This project stabilized over 4,600 linear feet of shoreline along Center Lake and Pike Lake.

In conversation with Workman, there is at one of the Lilly Center's Critter Encounters this summer!

Over 40 young environmental professionals like Workman sharpened their skills and deepened their knowledge at the Lilly

Each business l've worked for is community oriented.

Ryan Workman

a consistent theme: community engagement through water quality.

"Each business I've worked for is community-oriented," Workman said. "I'm proud to be affiliated with companies that are focused on making a positive impact on the environment, especially through Stantec and Stantec in the Community."

Stantec in the Community (SITC) empowers employees like Workman to connect with issues that matter to their community. We thank Workman for volunteering Center last year. And, like Workman, many choose to stay in northern Indiana to serve the natural world they learned to love as children.

Student fellowships allow college students to gain real-world experience and receive competitive wages. You can look **downstream** and support the future of your lakes and streams by investing in students today.

Learn more about the Lilly Center's studentempowered research and give to student fellowships at lakes.grace.edu.



Ensure your lake legacy.

Join the Lilly Center Legacy Society by making a gift through several estate options with tax advantages. Talk to Dr. Nate Bosch about how you can join the Founders Circle and become part of an initial group of 20 members today:

574.372.5282 | boschns@grace.edu

CURRENT EVENTS AT THE LILLY CENTER







Family Safety Day

September 16, 11:00 a.m. - 3:00 p.m. Location: Central Park, Warsaw

Free entry!

Join the Lilly Center and the Warsaw-Wayne Fire Territory and learn how to stay safe on your lake! The day includes hands-on activities and ecotours of Center Lake every 15 minutes.

No registration required

Expedition: Tree ID Hike

October 7, 1:00 p.m. - 2:30 p.m. Location: WACF Education Center

Free admission!

Join Heather Harwood and Dr. Nate Bosch for a tree ID hike. By learning to identify the natural world, you will gain a deeper appreciation of the world around you!

Register: treehike23.eventbrite.com

Women's Gardening Workshop

November 4, 10:00 a.m. - 11:30 a.m. Location: Lilly Center for Lakes & Streams

Free admission!

This beginner-focused workshop will prep you for the spring and provide tips and tricks for gardening and composting.

Register: womengardening1-23.eventbrite.com

MEET JED HARVEY

As a life-long learner, Jed enjoys the outdoors as much as the indoors. He frequently takes deep dives into topics like the world of microorganisms, or the inner workings of quantum physics. Jed is a 2019 Grace College graduate and a former member of the Lilly Center student research team. He worked at Element Labs in Fort Wayne but decided to return to the Lilly Center as a full-time staff member in 2021. Among other tasks, Jed guides the field research team and monitors quality control processes for Lilly Center lab work and data.

Thanks for all you do, Jed! •



