



College of Letters & Science
UNIVERSITY OF WISCONSIN-MADISON

Trout Lake Station News

News for Alumni and Friends of the Center for Limnology

Summer 2025



See what science we're up to this summer! *Photo: B. Richter*



Photo: Riley Steinbrenner, Undergraduate Outreach Intern, Summer 2017



As the Director of [Trout Lake Station](#), I am honored to lead a facility rooted in over a century of freshwater research, scientific training, and informing the sustainable stewardship of our lakes. Every year, this place brings together scientists, students, and community partners who share a common commitment: to understand and protect the lakes and watersheds of the Northwoods of Wisconsin and the world.

Today, that mission is more important than ever—and increasingly more difficult to sustain.

Like many research institutions across the country, we face growing uncertainty around federal funding. Budget constraints, shifting priorities, and delayed appropriations have created real challenges—not only for our long-term ecological studies, but for our ability to maintain staff, support graduate students, and to plan for the future with the stability that good science requires. These uncertainties are felt deeply at Trout Lake Station, where much of our work depends on competitive grants from agencies like the National Science Foundation, EPA, and USGS.

Yet, the mission of Trout Lake Station has never wavered.

We continue to serve as a hub for transformative field-based research on freshwater ecosystems—ranging from climate change impacts on water

quality to the resilience of aquatic food webs. Our long-term datasets, built over decades, are among the most valuable in the world for tracking changes in water chemistry, food web dynamics, and habitat invasions. These records are critical not only for scientists, but for policymakers and resource managers striving to make informed decisions in a time of rapid environmental change.

We also remain deeply committed to education and training. 2025 is shaping up to be a very busy summer, with dozens of undergraduate and graduate students gaining hands-on experience in ecological research. For many, this immersive experience is a turning point—a chance to connect with mentors, discover their passion for science, and understand the urgency of protecting freshwater resources. Trout Lake Station is where the next generation of limnologists, biologists, and environmental leaders gets its start.

To sustain this, we are exploring new partnerships, diversifying funding sources, and advocating for the value of public science. We are also deeply grateful for the growing network of supporters who recognize that protecting water—our most essential resource—is not optional. It's foundational.

As we look ahead, I remain optimistic. The work we do here at Trout Lake Station matters—now more than ever. With continued support and shared commitment, we will weather this difficult period and emerge stronger, guided by the values that have anchored us for one hundred years: curiosity, collaboration, and care for the natural world.

[Gretchen Gerrish](#), Director, Trout Lake Station
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Trout Lake Station News

Making More Room for Research – And Community by Adam Hinterthuer



TLS facilities technician, Jonathan Lytle is excited to start using his new space to repair boats and improve equipment on station.

Photo: A. Hinterthuer

In late April, as Trout Lake was still losing its winter coat of ice, a group gathered for our annual station spring cleaning. This year there was a lot more to do.

For starters, an entirely new building now sits on what used to be the station's main parking lot. Dubbed the Winter Instrumentation Limnology Laboratory, the new National Science Foundation funded space is equal parts garage, makerspace, and storage.

"Before this, we had to do everything in that little garage bay," says Jonathan Lytle, gesturing to the small garage that's been in use for decades but presented a number of challenges for getting work done. "It had horrible lighting and space constraints and there was no way to lift the boats [to work on them]." What's more, the space was not heated, which meant frozen fingers and delays working on equipment repairs and other projects over the winter.

Now, Lytle, says, "I'm excited. Even in the dead of winter, I can be in the shop here getting things done."

The new building features two garage bays and an overhead crane that allows Lytle to work on boats and outboard motors without having to outsource the work. The large makerspace will host school groups, buoy-building workshops, and other events. What's more, expansion in storage space means Trout Lake Station's old storage building is getting a major makeover.

Dubbed the House of Lords by students of E.A. Birge and Chancey Juday who used it as living quarters during summers back in the early 1900s, the space has been used for storage, housing creative tools developed by limnologists over the decades. Thanks to the spring cleaning crew, the entire space was cleared out to make room for its new, no less important use. It will become a place where staff, students, and visitors can gather and unwind and get rested for their next long day in the field.



The spring cleaning crew clears out the House of Lords as part of converting the building from a storage shed to a community space. *Photo by A. Hinterthuer*



The spring cleaning crew stands in the space that will soon feature tables, chairs, games as it becomes a place for community building. *Photo by A. Hinterthuer*

Station facilities technician Tom Swedberg had spent a full week pulling down deteriorated drywall and ceiling tiles and warped shelving in the House of Lords. It didn't inspire confidence at first, he says, but as staff and students helped him empty the entire building during spring cleaning, it began to make more sense.

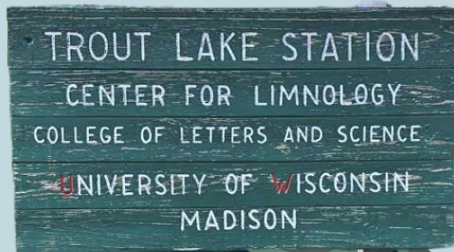
"I almost got discouraged and was wondering if we were wasting our time and if this could ever be usable space. But now I'm pleasantly surprised," he says, looking around the now-cleared shelves and room. "I think it's going to be really nice and work for our vision."

The plan is to start small by restoring the interior wood walls and fixing the electric. There will be seating and room for games and puzzles and a donated foosball table. Then this historic place can take on its new role of, quite literally, building community.



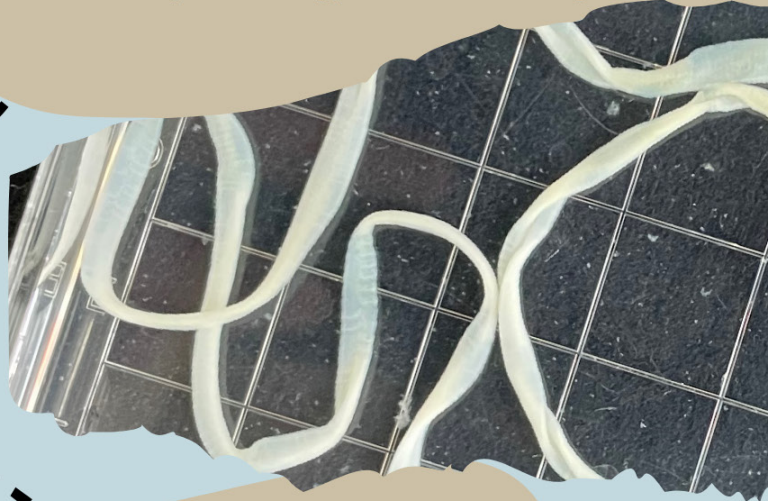
Summer Research Sampler

A look at some of the science we're doing this summer.



FISH PARASITES

Trout Lake Station researcher, Ray Allen, is leading a team that will collect donated fish tissues from local harvesters and use dissections, microscopy, and DNA sequencing to determine which, where, and when parasites appear in local fish species.



ECOTOXICOLOGY

Lab members of UW-Madison professor of forest and wildlife ecology, Jessica Hua, are working on the St. Louis Estuary near Superior, Wis. in collaboration with Tribal communities to understand how toxic substances impact the surrounding environment. They hope to find solutions that can benefit all beings - and the waters of Wisconsin, of course!



SHORELINE RESTORATION

Shoreline residential development can have negative impacts on the health of a lake, but we don't know what it takes to get some of that lake health back. Trout Lake Station scientist, Katie Hein hopes to change that. Her crew will be at Crystal Lake this summer as they assess how a decades' old shoreline restoration project has impacted life in the lake.



FORWARD-FACING SONAR

While it sounds like something on a submarine, anglers around Wisconsin use forward-facing sonar to find - and catch - more fish. But does it work? Studies show mixed results, so CFL scientists Olaf Jensen and Zach Feiner will be out on lakes this summer to see if folks fishing for smallmouth bass improve their odds with new tech.



BUOYS FOR THE PEOPLE

There's no better way to continually monitor a lake than a scientific buoy. Place it in the water and it collects data all day long. The problem is, buoys cost a lot! TLS researchers Noah Lottig and Paul Schramm hope to change this with workshops that will get inexpensive DIY buoys into the hands of scientists, boaters, lakefront homeowners and anyone else interested in our lakes.



New Study Aims to Understand Shoreline Restoration and Lake Health

by Adam Hinterthuer



Katie Hein will launch a new research project on shoreline restoration this summer. *Photo: K. Hein*

Every summer, droves of lake-loving tourists and Northwoods residents are drawn to the shores of Crystal Lake in Vilas County. This summer, Katie Hein, Trout Lake Station's Wisconsin Idea research scientist, will be joining them. But Hein won't be headed to the oval-shaped waterbody for its sandy beaches and clear water. She, and her crew of undergraduate summer field technicians, will be kicking off a study focused on the connections between land and lakes.

"We know that shoreline habitat destruction is bad for lakes," Hein explains. "What we don't have so much information on is on bringing shoreline habitat back."

Shoreline development can have a number of impacts on a lake. Among other things, it can increase erosion, which adds sediment to a lake and results in murkier waters. It can remove aquatic vegetation important for lake-dwelling insects, juvenile fish, and other important parts of the food web. Hein wants to understand how much shoreline restoration it takes to begin to see recovery from these impacts. And, thanks to some old conservation efforts, Crystal Lake is a great place to ask that question.

"Researchers at the Wisconsin Department of Natural Resources (WDNR) and Michigan Tech University did some big restoration projects [in the Northwoods] 10 to 15 years ago," Hein says. One of those projects was along a large piece of the Crystal Lake shoreline that was, essentially, a mowed clearing underneath a grove of mature pine trees.

The researchers, Hein says, began to restore natural vegetation and the understory on that section of the lake shore, and fenced the area off to keep deer from eating their plantings. More than a decade later, the area is now a thicket of grass, brush, trees, and other native plants. The broader plan involved restoration efforts on three other lakes in the area but, unfortunately, the program fell victim to dramatic budget cuts at the WDNR during the state's previous gubernatorial administration. And that meant there was no follow up on what the results of these restoration efforts were.

Now, Hein is excited to pick up where they left off and see if she can start piecing the puzzle back together.

"If you have a lake with a ton of developed shoreline and you just restore a little piece on one person's property, do you start to get something back, or is it not really enough to do anything?" she asks.

It's not a rhetorical question, either. The [WDNR has a "Healthy Lakes" grant program](#) that helps fund restoration projects on individual parcels of land but, the results can be "very piecemeal," Hein says. "Sometimes it's just one person volunteering to do it on their property on one lake."

It's important to get answers on the impacts of these restoration efforts, because scientists and resource managers can then set goals for the amount of shoreline that needs to be protected or restored to keep our lakes healthy. And these kinds of benchmarks, Hein says, go a long way to creating successful management plans.

"It's hard to keep momentum if you're not really aiming for anything," she says.

For this summer at least, the aim will be on building back the momentum that was lost, and starting to see if the old shoreline restoration efforts on Crystal Lake are paying off.



The shoreline of Crystal Lake. The right side of the photo shows the restoration project and resulting thicket of undergrowth. *Photo: S. Van Egeren, WDNR*

TLS Takes Home Friends of Science Education Award

by Madelyn Anderson

"If a tree falls in the forest, does it make a sound?" This rhetorical question was recently asked by Center for Limnology (CFL) research specialist, Joseph Noeske while reflecting on community engagement. "If you do all this research but nobody knows about it," he continued, "was it worth it?"

It's a good question and, in 2025, we learned that not only are we making a sound at the CFL – we're making an impact.



Trout Lake Station researcher, Carol Warden, was on hand to accept the WSST award.

This year, Trout Lake Station was presented the annual [Friends of Science Education Award by the Wisconsin Society of Science Teachers](#) (WSST). The award recognized the Station's outstanding long-term collaborations with local schools and community partnerships in Wisconsin's Northwoods. The achievement was recognized in early April during the annual WSST conference in Oshkosh, Wisconsin.

"[We're] just one small spot on the map, yet we're doing world-class research," said researcher Carol Warden while accepting the award. "And that is no small part because of these science teachers laying a foundation of learning for our students."

Nestled near Boulder Junction, Wisconsin, Trout Lake Station is known to locals for its annual [summer open house](#) where hundreds of neighbors, members of the surrounding community, and families on vacation can gather to identify fish, eat ice cream, and learn about current research with the station's limnologists. Trout Lake Station maintains its commitment to outreach throughout the year by hosting hands-on events alongside

organizations like Trees for Tomorrow, North Lakeland Discovery Center, Boy Scouts of America, local libraries, school groups, nature centers, and more.

This year, administrative assistant and outreach coordinator Amber Mrnak kept that momentum going for staff by organizing the first-ever Center for Limnology outreach retreat at the Station. "I've had this idea for a couple of years in hopes of making community engagement feel more approachable for everyone at the CFL", Mrnak said. "Outreach is essential for us to get out into the communities we're a part of so people can learn about their local waters, ask questions, and have fun."

Helen Schlimm, a research specialist and outreach coordinator at the CFL's [Hasler Lab](#) in Madison, says the retreat was a way to "take lessons and ideas from over the years to the finish line [and] I think we went above and beyond," Schlimm adds that she's now excited to see those efforts pay off with new materials for outreach events that will let staff and students continue to make some noise about the important work being done at the CFL.



Students and staff from both Trout Lake Station & Hasler Lab met for the first-ever outreach retreat. Standing from left: Helen Schlimm, Bobby Davis, Joe Noeske, Amber Mrnak. Kneeling from left: Katie Hein, Madelyn Anderson, Sophia Skoglund.

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WANT TO SUPPORT TROUT LAKE STATION?

Give to the Trout Lake Station Fund.
Donations to the fund will go directly to TLS to help improve our facilities and support our mission of freshwater research, undergraduate training, and public outreach.

Individual donors make a BIG difference by funding summer internships, innovative Northwoods research projects and more.

Please consider making a gift to Trout Lake Station.

CFL and TLS support webpage:
limnology.wisc.edu/support
or contact

Gretchen Gerrish at
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or
Jake Vander Zanden at
mjvanderzand@wisc.edu (608-262-3014)

Goodbye and Hello



Trout Lake Station bid a fond farewell this year to our incredible administrative assistant and outreach coordinator, Amber Mrnak. Amber headed off to Iowa, where she is getting back into teaching science, while her husband, Joe Mrnak (PhD, Vander Zanden 2024) starts research on the Mississippi River for the Iowa DNR.

We are also thrilled to welcome Carrie Kissman to station. Carrie joins us from St. Norbert's College in De Pere, WI, where she was an associate professor of biology and environmental science. Carrie is excited for her career shift and ready to make sure Trout Lake Station continues to run smoothly, helping researchers succeed in their projects, and jump into our community outreach efforts.

