



College of Letters & Science  
UNIVERSITY OF WISCONSIN-MADISON



# LIMNOLOGY NEWS

News for Alumni and Friends of the Center for Limnology

Fall 2021

## Helping Chart Wisconsin's Freshwater Future

Read more on page 3



The Limnos II heads out on Lake Mendota. Photo: Adam Hinterthuer

4 Non-Stop Limnology  
with NTL-LTER

6 Good Climate News -  
No Really!

10 Falling for Freshwater  
Science at Trout Lake





*Photo: Jeff Miller*



As I write this column, staff and students at Hasler Lab are gathering for a time-honored tradition that, at least for me, marks the passage of time – the removal of our pier. Every year, crews of volunteers wrestle it into and out of Lake Mendota but, as the years go by, the faces and names change. This year we were poignantly reminded of this by an unprecedented number of staff retirements: Pam Fashingbauer, Carol Jenkins-Espinosa, Marilyn Larsen, and Pam Montz. These folks

have many decades of collective experience and have been integral parts of the CFL community, and we wish them the best as they move on to the next chapters in their lives. They are also invited to come back and help us with the pier anytime!

Of course saying farewell to familiar faces also means welcoming new ones. This year, we have recruited exceptional new talent to the CFL (page 5): John Burmaster (Financial Specialist), Monet Hutchins (Assistant Director), and Amber Mrnak (Trout Lake Station Coordinator). To them we extend the warmest welcome!

This year CFL leadership embarked on a strategic planning process. What are our values? Our mission? Our vision? And building on that, what actions will help realize them?

This process has led to a powerful ‘ah-ha moment’ for me. In the past, I’ve viewed our organizational focus as ‘aquatic ecosystems’. This seems rather obvious - we work to understand the world’s aquatic ecosystems, and to inspire their stewardship. But the work we do, and the way we make a difference in the world, is fundamentally about people – training the next generation of leaders, engaging the public, and sharing knowledge. This ‘people focus’ runs through this newsletter – launching new undergraduate classes, providing research opportunities for undergraduates, collaborating with the Wisconsin Department of Natural Resources, and developing partnerships through the Freshwater Collaboration of Wisconsin. We’ve also gone to great lengths during the last year to revamp spaces in the Hasler lab to be more inviting and to foster interaction (page 9).

In closing, I simply want to thank another group of people integral to the success of the CFL - the many generous alumni, friends, and donors who have supported us during the past year. Your support is the reason we are able to do what we do – to invest in people, and to provide new insights into aquatic ecosystems. One of the best parts of this job is to hear from friends and alumni of the CFL, so please don’t hesitate to drop me a note and an update.

**Jake Vander Zanden**

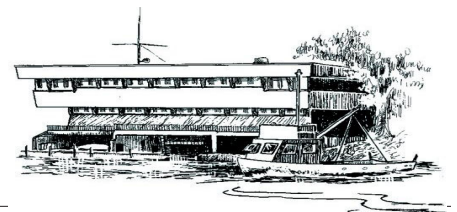
Wayland Noland Distinguished Chair  
Director, Center for Limnology  
University of Wisconsin-Madison



**Center for Limnology**  
University of Wisconsin-Madison

Hasler Laboratory of Limnology  
680 N. Park Street  
Madison, WI 53706

Trout Lake Station  
3110 Trout Lake Station Dr.  
Boulder Junction, WI 54512



Limnology News



# The Future Looks Fresh: New Collaboration Will Boost Wisconsin Water Research, Policy and Economy by Adam Hinterthuer

On a sunny afternoon in late September, a group of undergraduate students boarded Limnos II, the CFL pontoon boat (see cover), for a field trip on Lake Mendota with CFL director, Jake Vander Zanden. Onboard, they learned about the formation of Wisconsin's lakes, tried their hand at using limnological tools like Secchi disks and zooplankton nets, and developed a better understanding of the many challenges facing our state's abundant freshwater resources.

But these students weren't part of the usual fall semester Zoology 316 class. They weren't headed out for the annual field trip that's part of the longest running limnology class in the world.

This small group was made up entirely of freshmen taking part in a brand new first-year interest group course called "Freshwater: Past, Present, and Future." And, as part of the program, the 16 participants would spend their first



Jake Vander Zanden helps students in their first-ever "Freshwater 101" course take a water sample during a fall field trip.

*Photo: Adam Hinterthuer*

semester on campus all taking the same set of three science-based courses organized around this freshwater theme.

One of those classes is what led to the students being out on the lake with Vander Zanden. It was, he says, the first introduction to freshwater or "Freshwater 101" course being taught in the UW System as part of a state-wide initiative called the [Freshwater Collaborative of Wisconsin \(FCW\)](#).

Bounded by two Great Lakes and the Mississippi River - with 15,000 or so inland lakes and 44,000 miles of rivers and streams in between - Wisconsin is an ideal place to study freshwater ecosystems.

However, freshwater education and research across the state has too often been an independent pursuit. While, for example, a scientist at the University of Wisconsin Milwaukee and UW-Superior might both be studying similar phenomena on large lakes, there's just so much water research going on in the state, that they may not be aware of each other's work. There simply hasn't been a lot of coordinated collaboration.

The FCW was created to fix that problem and, according to the collaborative's mission statement, "train the next generation of water researchers and problem solvers and to establish Wisconsin as a global leader in water-related science, technology and economic growth."

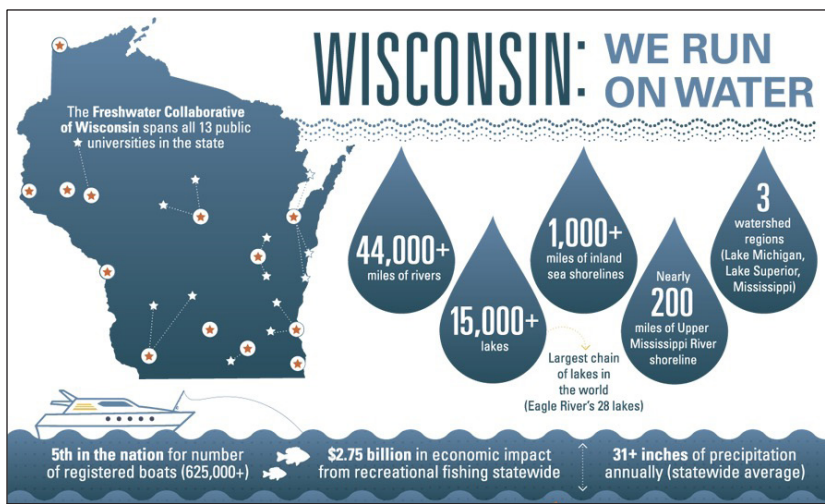
The project was initially funded by just over \$2 million from the UW-System and the Wisconsin Economic Development Corporation. And that early investment is already paying off, says FCW executive director, Marissa Jablonski.

"The initial support allowed us to begin creating truly hands-on field experiences for current and prospective UW students, providing them opportunities to go beyond their home campus and to learn about freshwater systems throughout our state," Jablonski says. "We've also started developing new curriculum, such as the Freshwater 101 that launched in fall, which will be incorporated into programs at many of the campuses."

Already, the FCW has fostered connections at campuses across the state and caught the eye of international scientists.



(Continued on Page 7)



An infographic created by the Freshwater Collaborative of Wisconsin underscores the importance of water to the state.  
Photo courtesy: Freshwater Collaborative of Wisconsin





NTL-LTER crews check on a set of gas monitoring equipment in a northern Wisconsin river.

Photo: Emily Stanley

## A Better Picture of Greenhouse Gas Emissions Thanks to Being “In the Right Place All the Time”

by Lori Balster



Emily Stanley

While researchers all over the globe have been studying greenhouse gases, there are still some areas in the field that have not received as much attention as they deserve.

[Emily Stanley](#), a professor at the Center for Limnology and principal investigator for the [North Temperate Lakes](#) Long Term Ecological Research (NTL-LTER) program, has spent a significant part of her career exploring a few of them.

“Clearly we have a problem with greenhouse gases. What people may not realize is that streams and lakes are hotspots of global methane and carbon dioxide. [Understanding greenhouse gas dynamics](#) in these systems is important because they are vents all over the world and they are not insignificant,” said Stanley.

The NTL-LTER program is one of 28 around the U.S. and beyond that form a rigorous research network of the world’s ecosystems through funding from the National Science Foundation. While research projects are often undertaken in

terms of two or three years, five if they are lucky, the NTL-LTER program has been collecting data since 1981 on eleven core lakes - four in southern Wisconsin and seven in northern Vilas County.

“We hope to be going another 40 years,” Stanley said. “We collect biological, chemical, and physical data. This data is influenced by human responses and actions as well...we can’t separate humans from the environment.”

Two significant effects humans have on streams and lakes are “turning them green” by creating conditions that encourage algal blooms and building dams. Both increase emissions of not just carbon dioxide, but also methane, the more ephemeral gas that often bubbles up to the surface of a lake.

“The bubbling, or ebullition, is hard to measure, but it is important because lots of methane leaves lakes that way,” said Stanley. “We will need about 10 to 20 years of that data to get some picture of the real processes and their impact.



We are building a global database on these types of processes in streams. The conventional view has been that there's not much methane in lakes and streams, but we already know with the data we have that that is not true."

In its forty year history, NTL-LTER has made some other interesting - sometimes surprising - observations.

"People have said of us, 'You were in the right place at the right time,' Stanley says. "I think we are in the right place all the time." She mentioned, as an example, their strategy of placing data gathering devices under ice, which led to their observation that lakes starts stratifying before ice appears in winter which, Stanley elaborates, is "not what the textbooks said."

Ultimately, the NTL-LTER has two main goals for its greenhouse gas dynamics research. It aims to build a dataset for use as a resource for the scientific community and generate a reliable global estimate of methane emissions from world streams and rivers. And it also hopes that studying aquatic gas dynamics will be a means of understanding overall processes of lakes and streams. "We want to use methane as a lens for viewing these ecosystems," Stanley says.

Stanley plans on not only continuing methane research and gaining more knowledge of how greenhouse gas processes function in lakes and streams, but also of continuing to add to the decades-long dataset that the NTL-LTER program has built.

"The incredible importance of having long term research can't be overstated," she says. "Understanding can only be gained over a long time scale. Too often, people think in terms of only one to three years. Being able to be in the right place all the time, as we have with NTL-LTER, makes it possible to actually get a grasp of real changes."

## New Faces at the CFL

by Adam Hinterthuer

The past year, longtime members of our CFL family, both at Hasler Lab and Trout Lake Station, moved on to greener pastures - or bluer waters.

Carol Jenkins-Espinosa, who had mastered the art of university purchasing as our financial specialist, decided to take a much-deserved break from number crunching. CFL assistant director, Marilyn Larsen, left Hasler Lab and headed north to Rhinelander to see what all the fuss was about. Trout Lake Station coordinator, Pam Fashingbauer, stayed up north, but retired to a different lake. Pam Montz handed the LTER researcher reins to Carol Warden so she could spend more time with her kayak and mountain bike.

In the wake of these changes, new people joined both labs to fill the void. John Burmaster has taken on the financial specialist role. Monet Hutchins is the CFL's new assistant director, based at Hasler Lab. And Amber Mrnak is Trout Lake Station's new coordinator and first-time-ever outreach coordinator. Here's more about the newest members of our team.



### JOHN BURMASTER

What's your favorite lake? *Gem Lake (family cabin lake in northern Wisconsin)*

How do you like to spend your time when you're on a lake? *Fishing*

What do you like doing when you *have* to be on land? *If I must be on land, I enjoy playing outside with my kids.*



### MONET HUTCHINS

What's your favorite lake? *Lake Michigan*

How do you like to spend your time when you're on a lake? *Swimming, sailing, kayaking, fishing...*

What do you like doing when you *have* to be on land? *Playing outside & biking with my daughter, working in our garden, cooking, reading.*



### AMBER MRNAK

What's your favorite lake? *Post Lake is one of my favorites - I grew up visiting Post Lake with my family.*

How do you like to spend your time when you're on a lake? *Musky fishing with my husband!*

What do you like doing when you *have* to be on land? *I enjoy gardening and sitting around a campfire.*





Yes, climate change is impacting our lakes and the ways we enjoy them, but the news isn't all bad.  
*Photo: Adam Hinterthuer*

## In Rare Dose of Good Climate News, Study Finds That Algae Blooms Aren't Getting Universally Worse

by Adam Hinterthuer



Grace Wilkinson

As Earth's average temperature rises, climate change impacts are being felt across the globe. Hurricanes and wildfires are bigger and more destructive. Extreme rain events are more common. Droughts last longer.

But, surprisingly, one big problem with a climate connection isn't getting universally worse. According to [a scientific study published online October 5th in \*Frontiers in Ecology and the Environment\*](#), there isn't a widespread upswing of harmful algae blooms in North American lakes.

The finding contradicts the common narrative that warmer temperatures and heavier rains are a no-fail recipe for making algae blooms worse across the landscape, says [Grace Wilkinson](#), lead author of the paper and an assistant professor at the Center for Limnology.

Wilkinson says that she, too, had assumed that harmful algae blooms were intensifying on a large scale due to climate change. But, when she and her research team began to look into it "we really couldn't find any analysis or citation that supported [it]. It was just a thing we all said."

But this "thing we all said" has major implications for our lakes. Previous research has tied harmful algal blooms to toxic waters, human health impacts, fish kills, reductions in shoreline property values and a slowing of waterfront recreation.

To test if perception reflected reality, Wilkinson and her team tracked down data on as many lakes as they could possibly find. And not just any data would do. In order to paint the full picture of algal bloom dynamics and trends in a lake, they needed to find robust datasets where frequent samples were taken over at least a decade. In the end, Wilkinson found what she calls "unicorn datasets" for 323 waterbodies thanks to long-term research programs run by state and federal agencies, as well as citizen science monitoring efforts on lakes across the country.

When they dug into these large-scale and long-term trends in harmful algae blooms, it turned out that things weren't as bad as believed. A little more than ten percent of her study lakes showed "significant bloom intensification," while sixteen percent actually showed decreasing frequency and severity of blooms. The vast majority of the 323 lakes showed no major trend in either direction.



“There are lakes right next door to each other and, in one, harmful algal blooms will be significantly increasing and getting worse and in the other [they] will be getting better,” Wilkinson says. Despite the fact that such lakes often share the same watersheds and the same regional climate patterns, the impact these factors have on harmful algal blooms “get filtered through the local characteristics of that specific lake,” she says.

Wilkinson is quick to clarify that these results shouldn’t minimize the impact harmful algal blooms can have. For many, many lakes “they are a very serious problem,” she says. “But algal blooms are not getting worse everywhere and if we can better understand what’s driving one lake getting worse while another one is getting better, that’s going to give us a lot more tools in our toolbox to better address this problem.”

While her study didn’t look specifically at the drivers behind each lake’s algal bloom trends, some interesting patterns did emerge. For example, in lakes that were already nutrient rich, a pattern of increasingly frequent and extreme rain events strongly correlated with algal bloom trends getting worse. If these same types of lakes were getting fewer extreme precipitation events, then their algal bloom problems were getting better.

Another interesting discovery Wilkinson made in her research was that efforts to meet water quality standards set by the Clean Water Act might be paying off for many lakes. She and her colleagues combed through local news media coverage and found that a “substantial number” of lakes that showed improving algal bloom trends had been the site of conservation and restoration efforts.



Samples like this gradient of concentrated water samples (from clear to bright green) taken from a variety of lakes in Iowa, helped generate the data used in the study.

*Photo: Grace Wilkinson*

“It turns out local newspapers are a great way to find out what’s going on in a community!” Wilkinson says.

While the impacts of precipitation and restoration will need further study, they point to the importance of better understanding the mechanisms driving harmful algal bloom trends.

“The key part of this is figuring out why it is getting worse in some places but not somewhere else,” Wilkinson says, “because that will help us be better stewards of these water bodies and not just have despair.”

(Continued from Page 3 FCW)



Jake Vander Zanden (3rd from left) and UW System colleagues at a Freshwater 101 curriculum planning meeting.

*Photo courtesy: Tracy Boyer*

For example, faculty and students at UW-La Crosse are teaming up with colleagues across the state at UW-Whitewater for a research project exploring how pesticides impact fish. Another collaboration has the CFL’s Trout Lake Station partnering with a team down south at UW-Platteville to better understand our native freshwater mussel populations.

“Funding from the Collaborative has really been instrumental in kickstarting new partnerships among faculty at the UW campuses. Not only does that enhance the research that was already taking place, but it increases the diversity of experiences and mentorship available to students,” Jablonski says.

That project, co-led by Trout Lake Station director, Gretchen Gerrish, has also resulted in the development of an exchange program with Murdoch University in Perth, Australia. The collaboration will send Wisconsin undergrads Down Under and allow Murdoch students to train here in the “Freshwater Mussel Capital of the World.”

It’s exciting to see freshwater serving as a foundation for “strengthening connections among the thirteen UW campus,” says Vander Zanden. “The CFL already has long-standing relationships with faculty at many UW System campuses and one goal is to strengthen those ties.”

Another goal, he says, is to increase Wisconsin student’s access to learning opportunities across the state. “UW-Madison offers outstanding undergraduate research opportunities and the FCW will hopefully allow us to extend these to students from other UW System schools,” he says.

Beyond these new scientific ventures, the FCW is working to set young scientists on freshwater career paths, as well as explore the economic potential of clean, available freshwater for industry and tourism.

All in all, the project is a big win for the state of Wisconsin, its freshwater resources and the future scientists, policymakers and engineers who will make sure that our inland waterways remain an integral part of our lives.



# Better Together: The WDNR and CFL's Strong Scientific Partnership

by Adam Hinterthuer

In the summer of 2021, Zach Feiner started a new job under less-than-ideal circumstances. Where he was used to being out on the water working with teams of researchers studying Wisconsin's fisheries, he was suddenly stuck working from home and trying to get up-to-speed on his new job via meetings over Zoom.



Zach Feiner

Luckily, his new gig was pretty familiar. In fact, in many ways, Zach barely missed a beat moving from his office in downtown Madison at the Wisconsin Department of Natural Resources (WDNR) into his new role at Hasler Lab for the CFL.

"Basically I moved all of my DNR research responsibilities to this position [at the CFL]," he says. "I do a lot of the exact same stuff here that I did at the DNR - priority research that the agency needs to have done to know how to manage fisheries."

While Zach's title is officially "assistant scientist," he also sees part of his role as being a "research liaison" between the WDNR and CFL who brings university and agency researchers together on projects.

"It's a pretty unique position when you think about it," he says.

While that may be true, collaboration between the WDNR and CFL is anything but unique - it's standard operating procedure.

The WDNR has a long history of supporting CFL research on everything from walleye populations to invasive species to blue green algae blooms. Funding from the WDNR has also supported people. For example, Susan Knight and Carol Warden at Trout Lake Station (TLS) have both worked in WDNR-funded positions "on station" in the past and new hire, Maddie Mathes, was brought on after Carol moved into Pam Montz's old position, currently filling some of the role in the invasive species group.

It's a relationship that makes perfect sense, according to WDNR fisheries research team leader, Greg Sass.

The WDNR has a long-list of high priority research needs to help inform science-based decisions for fisheries and water resources throughout the state, he says, but limited funding and a limited number of scientists make it hard to answer all of those questions.

"From a DNR fisheries and aquatic ecological research standpoint, it is only logical that we partner and collaborate with the expertise and bright minds present at the CFL and TLS," he says. "The partnership allows us to share facilities, equipment, supplies, staff, and students to conduct the best, most-relevant and cutting-edge scientific research possible."

Not only does this support build collaborations and communications between the two organizations, it also helps students elevate their own research and get experience working on projects directly relevant to fisheries management and policy - experience that can pay off down the road.

"I'm a direct testament to that investment," Sass says. "My masters degree research at the CFL/TLS was funded by WDNR."

New Hasler Lab facilities manager, Aaron Nolan, is also a testament to that connection. Aaron was a fish biologist, working primarily on studies of Wisconsin's iconic trout streams, for the WDNR for a decade before the lab and facilities manager job at Hasler Lab came to his attention.

Actually it was yet another WDNR/CFL connection that led him here - his old supervisor, former WDNR fisheries research supervisor, John Lyons, called Aaron and said "Hey, this job just opened up and I think you'd be perfect for it."

So, in early 2020, Aaron found himself down in the boat slip in Hasler Lab - the loneliest person at the CFL. Because of the pandemic, only "essential staff" were allowed in the building and Aaron was that essential staff member.

Now that the lab is full of staff and students again, he's excited to really get to work.

"I can be the lab manager and keep the building running, but also help students with their research needs and hopefully get to go do research myself," Aaron says. In other words, he can continue to strengthen the connections between the WDNR and CFL and use the expertise he gained in the field for the WDNR to teach new CFL students how to do things like set gill nets or any other "random research thing."



Aaron Nolan

It's this spirit of collaboration and knowledge sharing that also drew Zach Feiner to the CFL.

"For me," he says, "it's a 'whole is greater than the sum of its parts' kind of thing. The DNR has great biologists and enormous amounts of fisheries data and lots of questions that are really high priority for figuring out what's happening to fisheries in the state. But there's a limited capacity for what they can do by themselves. Tapping into collaborations with university partners like the CFL just exponentially improves our ability to answer those questions."



## Field Samples: Graduate Students and Postdoc



**Ellen Albright (Ph.D., Wilkinson)**

Ellen grew up in Cottage Grove, WI and received her BA in biology and geography from Macalester College. Summer undergrad research experience at TLS inspired her love of all things limnology. She began her PhD at Iowa State Univ with Grace Wilkinson in 2017 and moved with her lab to the CFL in 2021.

Ellen studies how the nutrient cycles of shallow lakes vary across space and time and how all this variation impacts ecosystem behavior. She is especially interested in phosphorus, lakebed sediments, and aquatic plant communities.

Ellen used to spend her time out on the water and in the lab, but these days you'll find her in front of her computer writing.



**Adrianna Gorsky (Ph.D., Dugan & Stanley)**

A Virginia native, Adrianna completed her BA in Environmental Science at the Univ of VA and worked for a few years at the Keck Lab at William & Mary before moving to Madison. She recently received her MS at the CFL. Her master's research was focused on methane and carbon dioxide dynamics during winter and spring ice melt at Trout Bog and South Sparkling Bog.

Transitioning to the Ph.D., she spent her summer focusing on water quality and methane production in urban ponds in Dane County. When she's not collecting gas samples, Adrianna enjoys anything outdoors from camping to fishing (a new Wisconsin hobby!) to embracing winter by cross country skiing and cross stitching.



**Friedrich Keppeler (Postdoc, Jensen)**

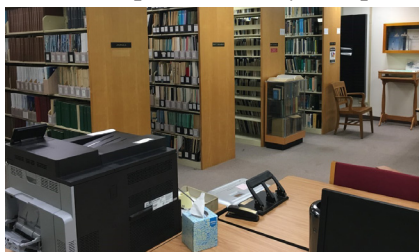
Friedrich was born and raised in Porto Alegre, Brazil; completed his BA in biology at UNISINOS (Brazil) and M.S. in Ecology at UFRGS (Brazil). He moved to the US in 2015 for his Ph.D. in Wildlife and Fisheries Science at Texas A&M University; then to Madison in 2020 for his postdoc.

Friedrich is a community ecologist working primarily with predator-prey interactions and community structure in aquatic ecosystems. Interests include the role of body size and other functional traits on food web structure, anthropogenic impacts and their effect on functional and phylogenetic diversity, and community assembly processes. He passes most of his days in front of a computer analyzing/interpreting data, although craves opportunities to go to the field.

---

## Not Just New Faces; Renovated Spaces

We've updated some old spaces to welcome faculty, staff and students back to Hasler Lab. Here are pictures of our new and improved library and postdoc office - pre- and post- renovations.





# For UW-Madison Undergrad, a Crash Course in Fish Fieldwork Leads to a Passion for Freshwater Science

by Cassie Gauthier



From left: Holly Embke, Kailee Berge and Olivia Nyffeler stand in front of their educational display at the Trout Lake Station Open House. *Photo: Cassie Gauthier*

When Kailee Berge arrived at Trout Lake Station this summer, she was nervous and a little overwhelmed about all of the new experiences. She grew up in the Milwaukee area and was pretty unfamiliar with the idea of spending free time out on lakes fishing or swimming or hiking around the shore.

But, new ways to spend her free time was just the beginning of her list of unfamiliar things. For Kailee, who had just completed her sophomore year at UW-Madison, it was her first experience with scientific field work, so everything about the job was brand new.

Kailee spent her summer working for what folks on station call the “Bass/Walleye Crew,” under the direction of [Holly Embke](#), a Center for Limnology Ph.D. student and lead researcher on a [project working to improve walleye fisheries](#), and Olivia Nyffeler, the project’s technician.

This was the crew’s fifth year working on a whole-lake experiment at McDermott Lake, where they are exploring whether removing bluegill, sunfish, crappie and bass – a group of fish known as centrarchids – from the lake, will help walleye populations increase.

There were a lot of things about fish Kailee didn’t know. “I had to learn how to hold fish, they are so squirmy,” Kailee says. “The first time I tried to measure a fish it felt like it took me ten minutes to get one still enough to do so.”

Kailee also initially struggled with some of their equipment. To empty the traps they use to catch fish, the trap had to be hauled into the boat and the crew member would then wiggle it around and tap on it until all of the fish come out of a single hole in the middle. “The first time I tried to pull a trap into the boat I felt like I was falling over. It was awkward to hold because it is big and pretty heavy,” Kailee says.

Beyond field work, Kailee also learned a lot about lake ecology. She learned the reason for removing centrarchid species of fish from the lake is because those species compete with walleye for the same food sources. Removing them may help walleye populations rebound because there will be more food for the walleye to eat.

“I love the idea of manipulating an entire lake ecosystem,” Kailee says. “In classes we always focus on observing what is already happening in an ecosystem and it is super cool to make observations on what happens while we are actively changing it in McDermott Lake.”

She loves the hands-on learning she got this summer about the way everything in a lake is connected and thinks it is really cool how this project has shown that changing just one thing about a lake really can change everything else within – and around – it as well.

“This summer has really taught me the importance of environmental research to the surrounding communities. I had not realized how important walleye were for the tourism, [the economy], and culture of the Northwoods and that environmental research can be just as important for people as it is for ecosystems,” she says.

Although Kailee felt awkward and uncomfortable trying to hold fish and pull up the fish traps for her first few weeks on the job, she now acts and talks like a veteran field researcher. She shouts out the names of fish confidently, measures them quickly, and throws traps almost effortlessly back into the water. And, when she is talking about research back on station, she explains it clearly, with a passion that shows how much she has learned and how much she has loved learning during her first summer at Trout Lake Station.

But the biggest lesson Kailee learned from her summer is that it won’t be her last doing work like this. She fell in love with freshwater research during her time “on station.” When it comes to wrangling and measuring fish, she’s just getting started.



## Photos From The Field

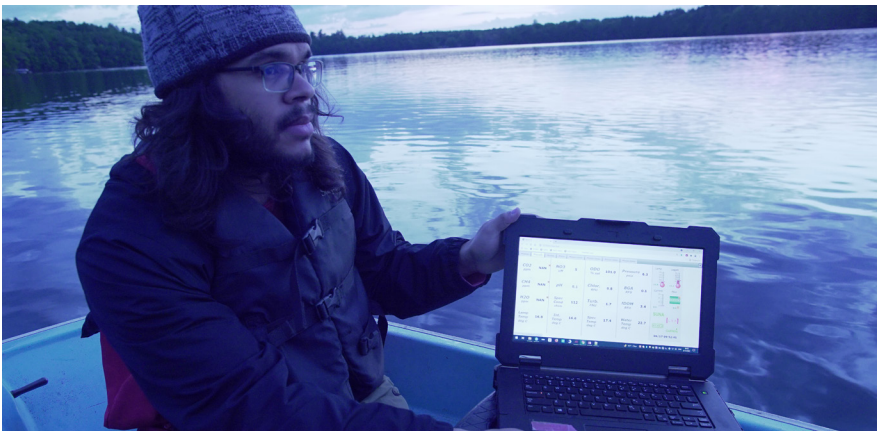
Every year, the CFL students, both at Hasler Lab and Trout Lake Station, get out on Wisconsin waters for all sorts of cool fieldwork. Here are some of our favorite pics from 2021.



UW-Madison undergrad, J Sturim gets ready to launch her canoe for a day of collecting data on northern Wisconsin waters. *Photo: Cassie Gauthier*



UW-Madison undergrads, Emma Donohue (back) and Kendi Aaron (front), spent the summer sampling water quality and greenhouse gas emissions from stormwater ponds around Dane County, Wisconsin. *Photo: Adrianna Gorsky*



Night falls on Sparkling Lake as UW-Madison undergrad Cory Vines holds a computer display of data he and CFL grad student, David Ortiz, are collecting with “FLAMc,” a CFL-built, real-time water monitoring system. *Photo: Cassie Gauthier*

**See all previous CFL Newsletters, Awards, Catching Up With Alumni, and CFL in the News at**

[CFL Newsletter webpage](#)

**PLEASE JOIN US!!**

[Watch the CFL Home webpage for upcoming events.](#)

[Science on Tap-Minocqua](#)

[CFL weekly Zoology 911 Wednesday noon seminar](#)

[Hasler Lab Open House  
June 24, 2022](#)

[Trout Lake Station Open House  
July 29, 2022](#)

**PLEASE JOIN US!!**

## THANK YOU FOR SUPPORTING THE CFL

The generosity of our supporters allows the Center for Limnology to continue to train the next generation of limnologists, generate new knowledge about inland waters, and share this knowledge with diverse audiences. Please consider making a gift to the Center for Limnology Endowment Fund.

**CFL Support webpage:**

<https://limnology.wisc.edu/support/>

or

**Contact Jake Vander Zanden at  
608-262-3014 or [mjvanderzand@wisc.edu](mailto:mjvanderzand@wisc.edu)**



Support  
[limnology.wisc.edu/support](http://limnology.wisc.edu/support)

Blog  
[blog.limnology.wisc.edu](http://blog.limnology.wisc.edu)

Twitter  
[twitter.com/wiscLimnology](https://twitter.com/wiscLimnology)  
[twitter.com/uwtroutlake](https://twitter.com/uwtroutlake)

Facebook  
[facebook.com/centerforlimnology](https://facebook.com/centerforlimnology)  
[facebook.com/troutlakestation](https://facebook.com/troutlakestation)

YouTube  
[youtube.com/user/WiscLimnology](https://youtube.com/user/WiscLimnology)  
[youtube.com/c/troutlakestation](https://youtube.com/c/troutlakestation)



Center for Limnology  
University of Wisconsin-Madison  
680 N. Park Street  
Madison, WI 53706-1413

Nonprofit  
Organization  
U.S. Postage

**PAID**

UMS



After going virtual in 2020, Trout Lake Station was able to host an in-person open house in 2021! With safety measures in place, we were able to host nearly 250 people on station to learn about limnology and the research being conducted this summer. Pictured here, Trout Lake Station associate scientist, Susan Knight, shows a family of visitors a freshwater bryozoan.