Spring 2026

UPSTREAM

News from Itasca Biological Station and Laboratories

Students from University of Minnesota Crookston working at Itasca Station.

Photo: Phil Baird

Restoration connection

For over 25 years, students from the University of Minnesota Crookston Natural Resources Club have visited Itasca for conservation work, forging lasting connections.

On a beautiful fall day just steps away from the headwaters of the Mississippi River, young pines are getting a little TLC. This is because across Itasca State Park, pines are dying and not coming back.

Minnesota Department of Natural Resources (DNR) staff have long worried about the future of pines in the park, and restoration efforts are underway. The University of Minnesota Crookston Natural Resources (NatR) Club is a reliable partner for the Schoolcraft Pine Restoration Project and decided to recently adopt the stand of trees at the headwaters.

Regular visitors since the early 1980s, the NatR club has a long-standing relationship with both the park and Itasca Biological Station and Laboratories (IBSL). Each year, NatR club members stay at IBSL, leveraging the station as a base to conduct research and work on restoration projects both in the park and in the nearby Chippewa National Forest, where the club has planted more than 200,000 trees over the past 45 years. Some students return to take field biology courses or work in the park. Visits to IBSL are always a memorable and enriching experience for students.

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Director Jonathan Schilling

Greetings from Itasca!

I hope this note from the North finds you well. As I write this in late March, the snow piles are softening and bare ground is showing. Lake ice is still 66 centimeters thick — plenty to support a pickup truck, as long as you can make it across the shore melt. Winter was long, and I had quite a journey through it. But the pine needle beds on the south-facing slopes are here to rewarm the body and soul.

For Itasca Station, this time of year is also about transition, from event *planning* to event *doing*. We have 47 buildings to pull out of winterization after ice out but before students arrive on May 17. Coordinators who planned dates over winter are now blitzing the ibsl@umn.edu email. Our field biology session enrollments are approaching those of the Nature of Life program, creating a 10-week marathon of undergraduate student activity. This sequence will end with a late-July visit from the Board of Regents and University President! Then will come grad orientations, Science of Craft courses, artists, etc. It is a lot to plan.

We are also planning for research growth in terms of numbers of permits, research fellowships, course-based undergraduate research experiences (CUREs) and early career researchers. Itasca was built on the strength of synergy between education and research. Hands-on science experiences are our superpower. As we strategically plan to foster our strengths at the University, it is important to highlight research, including student-led research, as a strength at Itasca.

Enjoy reading *Upstream*, and thank you all for supporting Itasca! –Jonathan

Field biology instructor Joe Whittaker circles back

The Itasca Biological Station has had a significant impact on my career and life. Like a boomerang, I keep coming back.

In 1989, I graduated from a small school in Indiana and had no idea where to go next. I spotted a flyer for the station, and after graduation, packed up my car and headed to Itasca State Park. I dove into classes, taking Dr. Don Christian's Field Mammalogy course, two photography courses, a telemetry class and Dr. John Tester's Vertebrate Ecology course. In Field Mammalogy, I learned about voles and pocket gophers and became fascinated by their potential interactions. In Vertebrate Ecology, we conducted independent projects, and I collaborated on a project focused on voles and gophers. That project resulted in a publication and my master's thesis.

Fast forward to 2004. I taught at a small college in Kentucky at the time when I got a call asking if I would be interested in teaching Field Mammalogy. Again, I packed up and drove to Itasca State Park and have been coming back to teach ever since. I loved getting to teach mammalogy in the same lab and field sites that helped develop my love of mammals and field work. I also got to be there when the class transitioned to the new Biome Center. The class, students, colleagues and my experiences at Itasca are a highlight of my career.

The Itasca Biological Station instilled my love of field biology and teaching. Professionally and personally, I keeping circling back.
–Joe Whittaker


Dr. Joe Whittaker in the field at Itasca with students.

Layers of time at Elk Lake

Decades of discovery and the enduring role of place-based science.

In the December 7, 1984 issue of the journal *Science*, Walter E. Dean and colleagues published an Itasca-based study that revealed climate history for the past 10,400 years. Using a technique called 'piston coring,' Dean and J. Platt Bradbury (both from U.S. Geological Survey; USGS), along with Roger Y. Anderson (University of New Mexico), Cathy Barnosky (Carnegie Museum of Natural History) and Itasca staff extracted (vertically) two 20-meter 'long cores' from sediments in the deepest spot on Elk Lake (29.6 meters). The team then froze and and sliced these tubes of sediment, layer by layer, from the top (recent) to the bottom (ancient), using pollen and other biogeochemical signatures in annual layers, known as 'varves,' to reconstruct vegetation and climate history.

Elk Lake cores were smooth, continuous, highly-resolved and old, dating back to when the glaciers receded nearly 11,000 years ago. This made the deep hole in Elk special — conditions were just right for accumulating sediment, including wind-borne materials, into varves. This revealed, among other things, a drier climate from 8,500 to 4,000 years ago when Elk was a shallower lake surrounded by prairie. The *Science* paper sparked a flurry of coring work on Elk, and in 1993, the USGS published a book of 20 contributed papers entitled "Elk Lake, Minnesota: Evidence for Rapid Climate Change in the North-Central United States" (eds. Bradbury & Dean).

Photo from "Elk Lake, Minnesota: Evidence for Rapid Climate Change in the North-Central United States," eds. Bradbury & Dean, 1993.

A historical photo of coring on Elk Lake.

Coring studies on Elk Lake continue today, with scientists from the University of Minnesota Duluth and USGS seeking to reconstruct the paleohydrology of the Upper Mississippi River basin using precision freeze-coring to preserve delicate surface sediments and allow the highest-resolution perspective on recent environmental changes. By examining the geologic record of floods, droughts and hydrology, researchers are linking past environmental changes to potential future climate impacts.

This has been the story of many efforts at Itasca and at other remote field stations, where scientists from around the world invest time and energy in some unique aspect of a place. These scientists collaborate at a location, and their work influences science, policy and management. The scientists may scatter, but the station remains a constant, connecting past and ongoing research, supporting current efforts and ensuring continuity. It is hard but necessary work for a field station running 'place-based research' to protect and preserve these efforts and voices. –Jonathan Schilling and Emily Schilling

Photo: William Daniels

University of Minnesota Duluth and USGS researchers using precision freeze-coring to preserve delicate surface sediments collected from Elk Lake.

Upstream Spring 2026

CONTRIBUTING EDITOR Emily Schilling

CONTRIBUTORS Emily Schilling, Jonathan Schilling, Victoria Simons, Joe Whittaker, Claire Wilson

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Staff spotlight: Rick Caduff

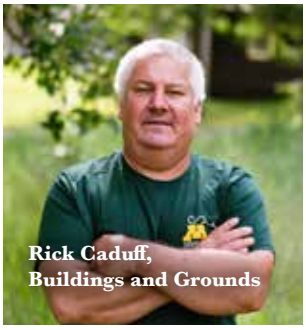
Rick Caduff has been a Buildings and Grounds team member at the station since 2023. From mowing and plowing the 50-acre campus to supporting custodial, maintenance and carpentry work across our 64 buildings, Rick plays a key role in keeping the station running smoothly year-round. He shares some of his favorite things about working at the station.

Can you share a little bit about your background? What inspired you to get a job working at Itasca Station, and how long have you been working there?

I was an auto technician for 23 years, and then was in retail for about 10 years. I'm very good with my hands. I'm good at fixing things. I built my own home from the ground up — framing, plumbing, electrical, finishing. Met my boss Eric from working at Rock Creek store. He let me know of the job opening. I knew it was the right move for me. I have been working here going on four years now. I'm very happy here and enjoy the work and the people at the station.

What is one of your favorite memories from your time at Itasca?

Lunch time with other staff and station users at the Dining Hall is always a wonderful time. The food is very good and the conversations are even better.



Rick Caduff, Buildings and Grounds

What has been your favorite project to work on at the station?

The remodel of Cabin 51 last year was a great experience. Lots of different tasks involved from start to finish. Also the winter before the 51 project we made conference tables for building 43. Very much enjoyed working in the woodshop. The satisfaction of the finished tables was something I won't forget.

What's your favorite thing about the station?

There are always projects and work to be done, but it is the people I meet and friendships made that are most important.

What's your favorite thing to do when you're not at work?

I enjoy relaxing at home. Fishing, in both summer and winter, snowmobiling, driving down the many trails in the woods and sitting by the fire enjoying the sunsets. I am also busy with projects around the house.

Station facilities improvements

From EV stations to new curtains, the station gets a refresh.

As always, winter was a busy season focused on finishing off building projects that are not possible during the station's peak field season. Our donor-funded Station Improvements Fund enabled our facilities staff to refurbish two of our smaller faculty cabins — 5 and 6 — with refinished flooring and walls, and updated kitchens and bathrooms. Giving a "refresh" to buildings that date back to the 1950s makes a huge difference in both functionality and aesthetics. The team also replaced flooring in the entrance and bedrooms of Cabin 2 and are working on a large-scale upgrade for window coverings across campus. We are moving away from plastic blinds in favor of more durable (and aesthetic!) handmade curtains, sewn by station staff. Our EV charger project, funded by a grant from the Minnesota Pollution Control Agency in collaboration with the UMN Sustainability Office, is now complete. We've installed nine new chargers across campus, each mounted on custom handhewn posts from downed trees at the station — an Itasca spin on what you'd find in a typical parking lot setup!

EV chargers installed at the station.

Public science seminar at Itasca.

We Are Water at Itasca

Explore the science, history, story, culture and relationships of water in Minnesota.

This summer, Itasca Station and Itasca State Park will co-host We Are Water Minnesota. This interdisciplinary, statewide initiative, led by the Minnesota Humanities Center and Minnesota Pollution Control Agency, features a traveling exhibit designed to engage communities in conversations about the vital role of water in Minnesota. In addition to hosting the exhibit, the station and the park will offer a series of water-focused events inviting the public to participate in programming that engages the community around local water issues in the Mississippi Headwaters region.

We Are Water Exhibit: The We Are Water exhibit will be located in the Lakeside Museum at Itasca State Park. In addition to the core traveling exhibit, the installation will include Itasca-specific panels that explore water topics specific to the Mississippi Headwaters region. A satellite installation at the Itasca Biological Station will be open to visitors during the station's scheduled public events. Dates: June 18 to August 10

Waterwise Science Talks: This public seminar series explores the science of water, from local lakes and wetlands to global watersheds. Researchers will offer insights into ecology, conservation and the natural world while connecting the community to hands-on research and fostering a deeper appreciation for water's value and preservation. Check the website below for date announcements.

Water Encounters: Join us for a series of hands-on, participatory programs featuring interactive activities, demonstrations and outdoor experiences. These events explore water-related topics through nature-based learning, citizen science and engaging public activities.

Wellness By the Water: Water sustains all life — including our mental well-being. Join us for a Saturday morning series of water-themed wellness events, including yoga by the lake, sound bathing, water coloring and nature journaling. –Emily Schilling

For a full schedule of events, visit **z.umn.edu/WeAreWater**.

ORGANISM SPOTLIGHT

Io Moth

Commonly known as the Io Moth, *Automeris io* is a member of the family Saturniidae — the wild silk moths. Males (pictured here) are a bright yellow color, while females are typically tan and brown colored. Though not shown in this photo, both sexes have large blue eyespots on their hindwings to dissuade predators. As they grow, the caterpillars of these moths turn from dull brown to bright green with a red and white stripe. Look out for these caterpillars — they have small spines that can sting or burn you when touched! –Victoria Simons

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Emily Schilling, IBSL's associate director, is proud of the long-standing connection between UMN Crookston and the station. "Bringing students from across the University system — not only within the College of Biological Sciences or the University of Minnesota-Twin Cities campus — helps strengthen connections throughout the broader University community," says Schilling. "This relationship aligns with the station's mission and scales up to reflect the broader goals of the College and University as a whole."

Feet first, hands together

Before students dive into the work, DNR staff orient them to the site and the restoration objectives. The Schoolcraft Pine Restoration Project aims to give young jack, red and white pines a fighting chance to make it past a critical milestone — out of reach from hungry deer. With this in mind, students construct and install cages around saplings and bud cap the terminal, or leading, bud of seedlings. They also prune lower branches of white pine saplings to reduce the infection risk of White Pine Blister Rust, another threat to their health.

NatR Club students experience fieldwork in courses, but working with DNR staff on restoration projects is a career-enabling experience. Laura Bell, the lab services coordinator at UMN Crookston and a NatR Club advisor, sees firsthand how the students grow from the professional exposure. "Students have already started groundtruthing their interest," she says. "But a couple of Itasca weekend trips each year provide a unique opportunity for them to work with agency professionals and gain skills they can list on a resume."

Meeting DNR professionals, who in some cases were in their same shoes, or boots, years earlier, gives students a tangible idea of what a career could look like in the field. The casual conversations students have with each other, DNR staff and club advisors lead to rich learning and connection.

Building lasting connections

The time that club members spend at IBSL and in the park is a great equalizer. NatR Club co-advisor and Associate Professor Emeritus Phil Baird initiated annual trips to the station and continues to join the group on working trips to Itasca. He sees firsthand how important it is to get students off campus to develop new friendships and deepen hands-on learning in a novel setting.

Conversations around a campfire and around the station are a critical and unique part of the weekends. The NatR Club will be back again next year. And the next year. Baird expects students will return long after they graduate. "Former students have reached out to me years later for the locations of the stands the Club helped to restore in the park or exactly where we planted 'their' trees on the Chippewa National Forest," says Baird. "They want to show their kids the trees they planted and cared for." –Claire Wilson

> **"Bringing students from across the University system ... helps strengthen connections throughout the broader University community."**

University of Minnesota Crookston Natural Resources Club members working in the field and sitting around the campfire at Itasca.

Groomed cross-country skiing trail at Itasca (left), station installations at the Minnesota Landscape Arboretum Winter Lights (top right), and Spring Flower Show (bottom right).

Interested in supporting IBSL? Learn more at z.umn.edu/supportIBSL.

ITASCA BIOLOGICAL STATION
AND LABORATORIES

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SUMMER 2026 COURSES

Science of Craft is back!

Join us this summer for Science of Craft, a series of immersive courses exploring the intersection of science, nature and hands-on practice in Minnesota's Northwoods. Enhance your skills in a living laboratory alongside scientists who are both experts in their field and talented craftspeople. Open to the public!

Courses include:

- Writing the Wild: A Minnesota-Inspired Poetry and Prose Workshop
- Drawn to Nature: Observing and Documenting Itasca State Park
- The Science of Fly Fishing

Reserve your spot: z.umn.edu/ItascaCraft