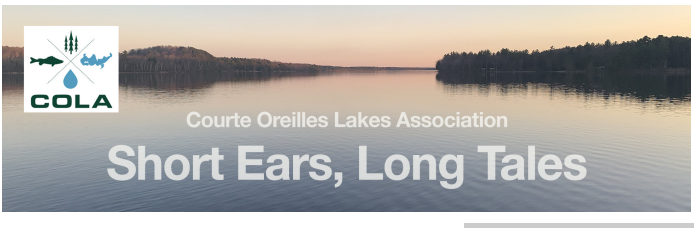


Turtle Camp!

By Allison Slavick

Turtle Camp is a field component of Reinke Lab, led by Dr. Beth Reinke of Northeastern Illinois University in Chicago. The Turtle Team collects painted turtles in Musky Bay. (all photos by Allison Slavick)

When I arrived at Turtle Camp at 9:00 AM, I had the feeling that I had already missed out on something important and fun. The campers were sitting in a circle with Dr. Beth Reinke, an assistant professor of biology from Northeastern Illinois University (NEIU). Dr. Reinke ran through the day's activities. In addition to turtle collection, there would be nesting surveys, a grocery run, and "a visit from Aunt Becky, who will talk about wilderness first aid." This last item brought a cheer from the group. Individual assignments – for turtle processing, dinner prep, updating Instagram (@ReinkeLab), and an evening lecture – were written on a nearby whiteboard.

Tucked into a grassy private parcel of land with towering trees on Musky Bay, at the south end of Lac Courte Oreilles, Turtle Camp is a field component of Reinke Lab, Beth's home base at NEIU from which she studies turtle evolution and physiology. Each year, she brings together a multidisciplinary team of aspiring and professional scientists. Fundamental to the two-week session is research on the painted turtle population in Musky Bay by her undergraduate and graduate students. Most days, all Camp attendees, regardless of their academic discipline, launch kayaks in the Bay from which they use dip nets to collect as many turtles as possible. With an estimated painted turtle population of 3,000 in Musky Bay alone, there was a lot to be done.

But first, each person talked about their popsicle and poopsicle from the day before: the popsicle was the best thing that happened and the poopsicle was, well, something that was not so great. The highlights: Sara Crow caught her first turtle in the kayak. Sara is Beth's graduate student, and her research project looks at the trade-off between painted turtle egg size and the number of eggs laid.

Sara Crow's graduate research looks at the trade off between egg size and the number of eggs laid.

Alma Schrage was happy to have caught three turtles and lamented finding a road-killed turtle, which brought a group-wide nod of understanding. Alma is an entomologist who studies bumblebees and seeks to understand effective monitoring of bee populations; she's finishing her master's degree at University of Illinois-Urbana Champaign. Among others in the group, Alma's lecture about her research was mentioned as popsicle of the day.

For Beth, a highlight was seeing some data on the board. It's a tribute to her personality and intelligence that this bunch of brainy, inquisitive, and light-hearted scholars are attracted to the Reinke Lab. It's not all turtles, all the time, even when it is. Beth also collaborates with others to explore the connection between art and science. This year's Camp included Katelyn Patton, an artist in an MFA program in studio art at the University of Illinois-Chicago. In addition to Alma, the entomologist, there was Ally Davidge, a wildlife biologist working on her master's (University of Colorado-Denver). She's investigating how Cooper's Hawks adapt to urban areas. Caroline Byrne is back at camp this year, continuing her research on the social behavior of turtles.

With kayaks loaded into the back of a pick-up, we drove a short distance to our launch site. Dip nets at hand, we dispersed along a protected, lushly vegetated section of shoreline to collect as many painted turtles as possible. Instructed to "watch for their emerging little heads, and then scoop them up," I pulled in one right away with an assist from Sara. I floated low to the water among the colorful lily pads noting the abundance of large frogs. Dragonflies, butterflies, and chattering red wing blackbirds completed the scene.

This did work!

An hour and a half later, I had three turtles scrambling in the bottom of the kayak. In all, we collected 51 painted turtles: 10 males, 11 juveniles, and 30 females. When I asked Beth about the predominance of females, she had an easy answer. "Some days and spots are more male- or female-biased. The population is about 1:1 and we end up catching about that by the end of the season, just not always on particular days."

On shore, we transferred turtles from kayaks into large bins. Back at the camp, the turtles were deftly sorted by size into smaller, individual bins in the pole barn that serves as Turtle Camp headquarters. Everyone got to work. Beth checked for the presence of a microchip that would identify a previous capture, and she chipped those that weren't (about 1,000 turtles in Musky Bay have microchips). She took a blood sample; the plasma would be analyzed for its bacterial killing capacity and total antioxidants. The red blood cells would be sent to a colleague at Michigan State University, who will use them in a genetic study.

Turtles were sorted into individual bins prior to data collection.

Caroline weighed each turtle and determined if it was male or female. Was the turtle gravid? When she was unsure, she passed it to Beth's expert hands. "She's not gravid, but she has a lot of fatty tissue in there, so she probably laid her eggs in the last couple days." Caroline measured the carapace, the tail, and noted if leeches were present. She photographed each turtle on its back in a "studio" of fabric with a camera mounted overhead. Data were called out to Sara, set up at a computer at the end of the worktable, which she entered in a spreadsheet. Asked how to determine females from males, Beth held up a male. "See how it's more oval, with a longer tail and claws?"

Meanwhile, Kim Rice, an undergraduate in the Reinke Lab, swabbed the cloaca of each turtle. She'll grow microbes from the swabs in petri dishes back at NEIU. She's seeking answers to these questions: Are there differences in microbe diversity between gravid females and females that have just laid their eggs? Are there beneficial microbes that are passed from a mother to her offspring? Male turtles serve as the control. In collaboration with a scientist at Wabash College, Kim also collects data for an animal behaviorist. She taps on each turtle's nose with a rubber spatula. Does the turtle bite, hiss, withdraw or open its mouth?

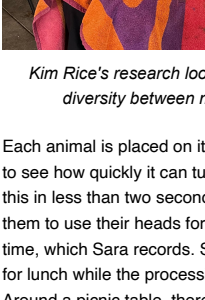
Kim Rice's research looks at differences in microbe diversity between male and female turtles.

Each animal is placed on its back and allowed one minute to see how quickly it can turn itself over. Some turtles did this in less than two seconds, and it was common for them to use their heads for leverage. Kim announces the time, which Sara records. Some of the researchers break for lunch while the processing and energy continue. Around a picnic table, there's a discussion of hierarchies in science and gender issues. In another area of the pole barn, Katelyn is macerating plants over a hotplate and testing for natural inks and dyes.

Off duty from turtle processing was Alma, who poked her head into the barn to announce that bumblebees are visiting the vetch along the driveway. Everyone moves outside, where Alma poineds out tricolor, brown-belted and two-spotted bees, including a queen.

Beth is an Associate Professor now, having acquired tenure. She recently received one of the high honors of science as a biologist – funding for her research from the National Science Foundation. The award will allow her to continue for three years with the work she began with her PhD research: turtle mark and recapture, with investigations into coloration, pattern, and physiology.

Once the processing was complete, the turtles were kindly returned to their home across the Bay. My visit to Turtle Camp was all too brief but immensely impressive. I'm already thinking of ways that I can contribute in a more meaningful way next year, beyond being an advocate for the work of these shining stars of LCO: the campers and the turtles.



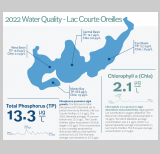
Allison Slavick enjoys watching turtles in Crystal Lake.

Contact Allison at allison.slavick@gmail.com

Issue #61 August 1, 2023

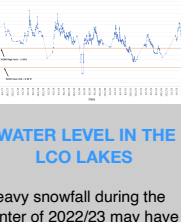
A UNANIMOUS DECISION!

After seven years of persistent effort by COLA, the site specific criterion of 10 µg/L for phosphorus was unanimously approved by DNR's Natural Resources Board at its June 28, 2023 hearing. Many thanks to Alf Sivertson, Brian Bisonette, and Mike Persson for appearing on the lake's behalf at the hearing. Thanks also to Kristi Minnihan, DNR's Water Quality Standards Specialist – Bureau of Water Quality, and all the DNR science that provided the justification for lowering the phosphorus standard from 15 µg/L to 10 µg/L. (more)



LCO's WATER QUALITY 2022

The complete 2022 LCO water-quality assessment based upon Wisconsin's Consolidated Assessment and Listing Methodology (WisCALM) protocol is available here.



AIS AT YOUR DOCK

If you see Eurasian watermilfoil (EWM) alongside your boat dock, it is recommended that you remove it by hand pulling it. EWM that is beside your dock, will spread very fast with your boat propeller causing fragments. Fragments cause new plants. It is not easy work pulling it. You must try to remove the roots and get the floaters. See here for more tips.

HOW TO DISTINGUISH NATIVE FROM INVASIVE WATERMILFOIL AND PONDWEED

Please help COLA map areas with invasive Eurasian watermilfoil and curly-leaf pondweed. These invasive species are often misidentified and confused with native species of milfoil and pondweed that are common in the LCO lakes, so please use this guide before contacting COLA. If you find invasive species and even remotely suspect that they are not recorded on current COLA maps, then please report your observations by using COLA's Observation Forms or send COLA an email.

Property owners are encouraged to manually remove AIS from areas close to their shore. But it is essential to distinguish native from invasive species and not remove the former.

Here's more information on manual pulling. Also check Section NR 109.06 of the Wisconsin Administrative Code.

WATER LEVEL IN THE LCO LAKES

Heavy snowfall during the winter of 2022/23 may have countered the effects of the moderate drought over the last several years. The water level was quite high in late March/early May, but it fell rapidly until recently. For a graph of the level at the Thoroughfare bridge, click here.

THE DEVIL'S ELEMENT
by Dan Egan

Phosphorus has played a critical role in some of the most lethal substances on earth: firebombs, rat poison, nerve gas. But it's also the key component of one of the most vital: fertilizer, which has sustained life for billions of people. In this major work of explanatory science and environmental journalism, Pulitzer Prize finalist Dan Egan investigates the past, present, and future of what has been called "the oil of our time."

RIPPLE EFFECTS
by Ted Rulseh

Ted Rulseh writes the newspaper column "The Lake Where You Live" and is active in lake-advocacy organizations, including the Wisconsin Citizen Lake Monitoring Network. The editor and publisher of several books on the Great Lakes region, he is the author of A Lakeside Companion. He lives in the lake-rich region of north central Wisconsin. (more)

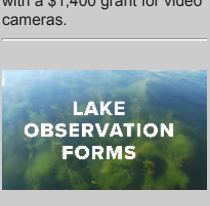
2023 NATURAL HISTORY FIELD TRIPS

The Extension Program at the Lac Courte Oreilles Ojibwe University is once again sponsoring natural history field trips led by Mike Heim. The upcoming August trip:

Wednesday August 16th: Slough Gundy from 10:00 a.m. until approximately 5:00 p.m. More information here.

I-LIDS ON THE LOOKOUT

The Internet Landing Installed Device Sensor (I-LIDS) will be operational in 2023 at the DNR landing in Chicago Bay to monitor boats and trailers for aquatic invasive plants. The Clean Boat/Clean Water boat launch inspections are funded, in part, with a $4,000 WDNR grant, along with a $1,400 grant for video cameras.



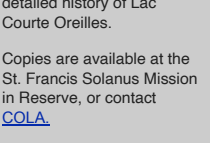
SEE ANYTHING WEIRD?

If you observe green water, algal mats on the surface or floating or dying fish or anything out of the ordinary, please take pictures and report this using COLA's observation forms immediately! COLA will alert the WDNR, the LCO Tribe, collect water samples, etc.

TALES OF LAC COURTE OREILLES

This book, edited by Tom and Sue Burgess, together with COLA's history committee, provides a detailed history of Lac Courte Oreilles.

Copies are available at the St. Francis Solanus Mission in Reserve, or contact COLA.



LCO NEEDS YOUR HELP

COLA is a ***volunteer organization.*** That means essential jobs don't get done unless someone steps up to help out. Contact communications@cola-wi.org if interested or you need more information.

Short Ears, Long Tales

ARCHIVED ISSUES OF SHORT EARS

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Please consider a tax-deductible donation today!

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Questions, comments or suggestions for future articles may be sent to communications@cola-wi.org

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COLA Mission: 1) to protect, preserve and enhance the quality of Lac Courte Oreilles and Little Lac Courte Oreilles, their shorelands and surrounding areas, while respecting the interests of property owners and the rights of the general public; and 2) to consider, study, survey and respond to issues deemed relevant by COLA's membership.

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