



Kemp's Point

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News from the University of Wisconsin-Madison's Kemp Natural Resources Station

A Bird In the Hand...

By Karla Ortman, UW-Madison Kemp Station

It is said that a bird in the hand is worth two in the bush, and for Pairsa Belamaric, this is certainly true. As we drove along the forest road, on our way to check traps for ruffed grouse, one flew and another ran across the road ahead of the truck. Pairsa said this was a good sign -- the grouse were moving despite the cold, windy day and she was optimistic that at least one of the 10 traps would contain a bird.

Pairsa is a UW-Madison PhD student studying how winter conditions influence the historic and future demography and population dynamics of ruffed grouse populations inhabiting forests of Wisconsin. Her research will help inform wildlife managers with the Wisconsin Department of Natural Resources on issues related to ruffed grouse. I was along for the evening trap check, which occurs daily, about one hour before sunset (traps are also checked each morning). Pairsa and her field tech, Ellen, have been working to trap and collar grouse since late September. Currently they have 10 traps deployed in an area of the Northern Highland State Forest where grouse drumming surveys have been conducted in the past.

My first question about the trapping was, "how does one trap a grouse?" Turns out you cannot just go buy a grouse trap! Instead, the traps are home made from chicken wire -- a long low fence of chicken wire with a "capture pen" on each end. The concept is that the bird is walking through the forest and runs into the wire fence, turns and continues to walk alongside it, eventually finding itself at the end where a "funnel" of chicken wire leads the bird into the "capture pen." The bird can get in,

but not back out, at least in theory. They have had an escapee or two! The length of the fencing between the two "pens" varies, from about 15-30 feet, and is dependent on terrain and vegetation, including trees.

My next question was, "what happens when you trap a bird?" Each captured bird is processed quickly to reduce stress during handling. It is weighed; its bill and tarsus

bone (the part of a bird's leg between the backward "knee" and "ankle") are measured, a central tail feather is collected, and photos of the tail fan and wing are taken. The bird receives a leg band and a collar equipped with a radio that emits a VHF (Very High Frequency) signal, and an accelerometer. The radio signal allows the bird to be located. For the first week after a bird is collared, radio signals are checked during the morning field visit, and then every other day thereafter. The accelerometer stores data related to the bird's activity.



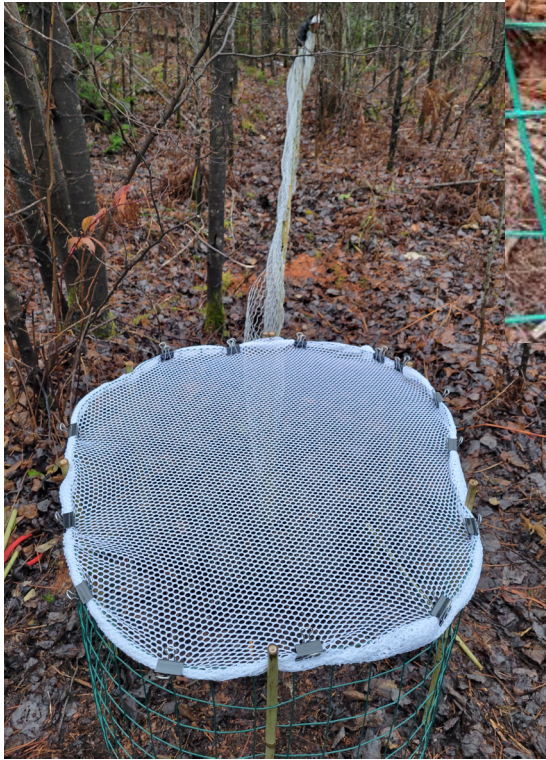
Pairsa Belamaric prepares to release a newly collared ruffed grouse. (Photo by Sam Lau)

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Bird (Continued from Page 1)

Then came the curiosity questions, many of which I am sure you are having about now. How long does the collar stay on the bird? Do you have to trap the bird again? Does the collar bother the bird? What are you going to do with the bird activity data? Fortunately, Pairsa has answers!

The collars are very light weight (only 16 grams), and are designed



Left: A homemade grouse trap showing the low fence between two "capture pens." (Photo by Sam Lau) Above: A trapped grouse. (Photo by Pairsa Belamaric) Right: Field technician, Ellen Peterson, carefully places the collar on a grouse. (Photo by Sam Lau)

so they do not interfere with normal grouse behavior. Birds are watched carefully upon release to see that they behave normally for a grouse, which means quickly flying away. If a bird doesn't fly off and remains nearby on the ground it is recaptured and the collar removed.

One of the most interesting things I learned is that ruffed grouse are not very long-lived birds. According to the Ruffed Grouse Society, about 50% of the birds hatched in a year will have died by August. Of those surviving to mid-September, only about 45% of them will live to breed in the spring. Not the best odds if you are a grouse!

When considering collar retrieval, the reality is that some of the collars will be retrieved from birds that have died. If the bird does not move

for four or more hours, the radio on its collar will emit a double-paced signal that can be followed until the collar is found. By checking radio signals every 48 hours, the mortality site is less disturbed and is more likely to provide information about what happened to the bird. Some birds will need to be recaptured in order to retrieve the collars, and the data they carry.

The data collected by the accelerometer will provide a "picture" of the bird's activity while it was collared.



Pairsa is able to process these data by coding in a statistical program to produce a graphical illustration of the birds' activity over time. Then she will analyze the activity with respect to winter weather data.

Pairsa has a second study site at the Sandhill State Wildlife Area, so has been repeating the process there, with the trapping, collaring and monitoring. Monitoring will continue over the winter and into spring, when the males start their territorial drumming display. At the time of my field visit, Pairsa had 12 birds "on air," or collared, on the state forest. She would like to have at least 15, but as winter nears, trapping success drops off.

And now for the final question -- "was there a bird in a trap?" As my luck would have it, there was not. But at least I got to see the two birds in the bush! 🐿



Kemp Profile: Sarah Slayton

Hometown: Los Angeles, California

Educational background: I graduated from Washington University in St. Louis in May 2020 with B.S. in Biology, and I am pursuing a career in wildlife biology and conservation.

What project did you work on this summer: I was a field intern working for the Loon Project.

What is the purpose of this project?: When Dr. Walter Piper started the Loon Project almost 30 years ago, he was primarily interested in studying Common Loon territoriality, habitat choice, and breeding behavior in Oneida County, Wisconsin. Over the years his research questions have expanded as the dataset has grown, but one of the most significant changes happened in 2019 when he discovered that the loon population in Wisconsin was declining. Now, he is also investigating potential reasons for that decline such as decreasing water clarity. In 2021, he also started banding loons in Minnesota to start studying them as a comparison population and explore that population's stability.

How is this project funded?: The project is primarily funded through the National Loon Center located in Crosslake, Minnesota.

Describe a typical day of field work: Typically, I would wake up between 4:00-4:30 am to get ready for work. We had to be on our first lake of the day by 5:00 am, so I had to quickly become a very early riser. Every day, each intern would complete one "circuit" comprised of visiting five lakes that were in close proximity to one another. When I'd get to a lake, I'd start by transporting my canoe from my car to the put-in and then set out in search of the pair of loons that lived there. Early in the season our first goal was to locate the pair's nest, log its GPS location, and hopefully determine how many eggs they were sitting on. Once I located the pair, I would start the clock on my hour of behavioral observations. Over the course of the hour, I would follow the birds around (from a respectful distance) and try to get a good look at their colored leg bands to identify which pair member was which, and also discover if there

had been a territory turnover between lake visits. I would also write down what they were doing every 5 minutes, and most importantly take careful notes if an intruding loon from another territory showed up on the lake. Collecting good data related to territorial invasions was our top priority. Later in the season, after the chicks hatched, we also collected data on parental behavior and estimated each chick's size so we could keep track of which chicks in the study region would be large enough to be banded during our banding season in late July. After an hour, we could head back to our cars and get ready to do it all over again at our next lake!

Fieldwork completely flipped during banding season. Dr. Piper (at right in photo below, banding a



bird held by intern Chris) came back to Wisconsin from his office in California and we all lived on a quasi-nocturnal schedule working from 9 pm to 5 am. Each night we would visit lakes that had chicks large enough to be banded, take a small team out on a motorboat, and capture the chicks and any adults we could, and

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Kemp Profile (Continued from Page 3)

take them back to shore to be banded. For each bird we captured we measured their weights and collected a tiny smear of blood, and for adults we would also take a redundant feather for hormonal and mercury analysis. For chicks and unbanded birds, we would also give them a unique combination of 4 colored leg bands that would allow us to identify them in future seasons. We worked as quickly as possible to get the birds reunited and back out onto the water. In just a few minutes were able to collect an enormous amount of data that will be used to assess the health of the population and help loons for years to come.

What challenges did you face working on this project:

The weather! It was an unusually windy summer, so we spent a lot of time searching for and following loons in our canoes while also fighting strong winds. We also had to develop strategies for collecting data on our paper data sheets while it was fully raining, which took a little bit of time and a lot of patience. We stayed off the water if winds were extreme or there was a chance of thunderstorms, but otherwise we braved the elements to make sure we didn't lose any data on our pairs. Finding birds could also be a huge challenge! Territorial pairs rarely both leave their lake at the same time during the breeding season but finding two individual birds on large lakes could take hours. There was no better feeling than putting-in at a lake and seeing the birds from the boat landing!

What have you enjoyed most working on this project?:

My favorite part of the season had to be banding. It was a blast to be out on the lakes in the middle of the night, and incredibly cool to work



directly with the birds I had been watching all summer. The chicks are absolutely adorable. Although getting up at 4 am was not always a ton of fun, it meant getting to watch the sunrise from the water almost every morning which is hard to beat. There were definitely moments

when I was just hanging out with a tame set of birds on a beautiful summer day and I couldn't believe this was my job! I also got incredibly lucky with the other interns I worked with and loved going on post-work adventure with them throughout the Northwoods.



Sarah (far right) and her fellow interns, left to right, Molly, Claudia and Chris, hold recently banded loon chicks.

Sew Great!

Thank you Daughters of Demeter for your time and talents! Mary Jane & Vern Gettlinger, Judy Stevenson, Sally Leong, Jan Martin, Linda Harvey, Darlene Olson, Martha Maxwell, and Virgene & Dick Vathauer visited Kemp Station in October to sew new curtains for the Cabin. After several long days, with some fun mixed in, the cabin has never looked better!



Conferences at Kemp Station -- Who Knew?

By Scott Bowe, UW-Madison Kemp Natural Resources Station

Kemp Station supports many research projects each year, projects like NEON, golden-winged warbler survival, and walleye recruitment, to name a few. The station is also host to undergraduate courses taught by UW System schools including Forestry Camp, Wildlife Camp, Vegetation of Wisconsin, and Mammalogy. Many of you are familiar with outreach programs at Kemp Station including Insect Fest, Mushroom Fest, Shiitake Mushroom Log Workshop, and more. All of these examples fit into Kemp Station's mission -- *Dedicated to research, instruction, and outreach concerning the management, conservation, and the sustainable use of northern Wisconsin's natural resources.*

But I suspect most of you do not know about the conferences hosted at Kemp Station. Conferences fit into our mission by bringing practitioners, teachers, and researchers together to share ideas about *the management, conservation, and the sustainable use of northern Wisconsin's natural resources.* One example is Science in the Northwoods where researchers come together to give short 3-minute presentations on their project. It is like speed dating for researchers – you learn a lot in a short time and find collaborators for future projects. Another conference example is when a department or division of the Wisconsin Department of Natural Resources Station holds an annual meeting with resource managers attending from different areas of the state. Finally, a third example occurred earlier this month, the Great Lakes Kiln Drying Association's (GLKDA) fall conference. This is an association of lumber drying practitioners from across the Midwest. Let's look at the GLKDA conference and share some details.

You might be asking, "What is kiln drying anyway?" Simply, any sawn lumber (hardwoods such as oak, maple, and basswood or softwoods such as pine, spruce, and fir) must be dried before it can be used for interior applications such as flooring, millwork, or dimension lumber. A typical commercial lumber kiln can hold 40,000+ board feet of lumber with a value of \$80,000 or more. With that much value in one place, kiln operators are trained to limit drying defects to produce a quality product. GLKDA also sponsors an annual four-day training workshop

where drying science is taught to kiln operators, sales staff, managers, and people new to the industry.



This plywood press is used to compress the wood veneers with intense pressure and heat. The heat cures the adhesive and plywood blank is produced after a few minutes of press time.

A typical two-day GLKDA conference consists of a day of industry tours followed by a second day of applied research presentations. We departed Kemp Station at 6:30 AM on Thursday. Our first stop was Bessemer Plywood Corporation in Bessemer Michigan. Bessemer Plywood produces specialty plywood from aspen, red pine, and spruce. I am always fascinated at veneer and plywood mills. The logs are soaked in hot water to soften the wood and then turned on a lathe where they are unrolled like a roll of paper towel. These long sections of veneer are dried in a continuous oven in a matter of minutes. Then they are cut to size and defected where certain defects are punched out and plugged. Next, glue is applied to the veneer and the veneer sheets are arranged alternating the grain perpendicular to the previous sheet. The veneer stack is fed into a press where the veneers

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Conferences *(Continued from Page 5)*

are pressed together with pressure and heat. When the plywood blanks come out of the press, they are trimmed to size, inspected, and ready for shipping to the customer. The drying process at Bessemer Plywood is much different than drying lumber. During the conference, one tour is included to showcase part of the forest industry that GLKDA members do not get to see on a typical workday.

We were fortunate to have two students from North-central Technical College's Wood Technology Program attend the conference. Janie and Brooke commented that they learned about the various plywood machine centers in class but seeing these machines in-person and running made the whole process make sense.

The group then headed back across the border into Wisconsin for the second stop, Snowbelt Hardwoods, Inc. in Hurley, Wisconsin. Snowbelt Hardwoods produces several products including kiln dried hardwood lumber. Their kiln operator, Mark, gave a fantastic tour of their dry kilns and wood fired boilers that generate steam to heat the kilns. Conference attendees peppered Mark with questions. This is the primary reason for GLKDA's existence -- kiln operators helping other kiln operators with their years of experience, problem solving skills, and applied solutions. Mark then took the group through their wood pellet plant. Here wood residues are pelletized into wood fuel pellets. Wood pellets can be used for home heating and are very popular for pellet smoking grills. The last stop at Snowbelt was their sawmill, a modern and optimized mill. Snowbelt uses computer scanning technology to optimize the value of lumber sawn from logs to best utilize the forest resource.

The afternoon woods tour was cancelled due to heavy rain, so the participants returned to Kemp Station and enjoyed extra time networking.

On Friday morning, the meeting kicked off at 8:30 AM with a presentation by Dr. Mike Wiemann. Mike is a Wood Technologist at the USDA Forest Products Laboratory. Mike spoke about kiln drying of tropical woods in Costa Rica. The same wood science that we know in Wisconsin applied to tropical species in Central America.

Kevin Funk with Kendrick Forest Products and Jim Higgins with SII Dry Kilns presented on Steaming Walnut for Quality. SII produced new walnut steaming chambers for Kendrick Forest Products that are far more energy efficient than their old steamers. Walnut that is not steamed has white sapwood and brown/purple heartwood. After steaming, walnut has a uniform chocolate brown color. Equipment and technology presentations are important to showcase new technology to the forest industry.

Finally, Collin Buntrock of the Wisconsin DNR Wood Products Team spoke about the "Drying Work Currently in the Kiln" or more specifically, an overview of the current research the WDNR team and UW-Madison have ongoing.

I have had the opportunity to serve on the board of directors of GLKDA for the past two years. What I appreciate about this group is its practical nature. As I mentioned before, kiln operators helping other kiln operators with their years of experience, problem solving skills, and applied solutions. This sounds a lot like the Wisconsin Idea and the reason we host conferences at Kemp Station. 🍄

Early 2023 Learning Opportunities

Wildlife Mini-Symposium

Saturday, February 4, 8 am - Noon

UW-Madison graduate and post-doc students will present 15 minute talks about student research projects on a variety of wildlife related topics.

Oak wilt: understanding and avoiding this increasing threat to the Northwoods

Friday, April 21, 7:00 pm

Presented by Dr. Glen Stanosz, UW-Madison emeritus professor of tree and forest health.

Additional information will be available at kemp.wisc.edu/outreach.



2022 Outreach Memories

Shiitake Log Workshop - Wisconsin Insect Fest - Plant ID Workshop - Fungi Fest



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Northern maidenhair fern (*Adiantum pedatum*)

Ferns are a common feature of the forest at Kemp Station, with a variety of species found growing along trail and road edges. One of the prettiest is the northern maidenhair fern. Several clumps grow in the area just north of the Office/Lab building along the main station road. The words “dainty,” “fine,” and “delicate” perfectly describe the appearance of this plant. This unique appearance can be attributed to its architecture. Ready for a bit of fern anatomy? The frond is the whole fern leaf, which is made up of the stalk (“stem”) and blade (“leafy part”). Maidenhair fronds can be up to two feet high. Within the blade the “stem” is referred to as the axis or rachis. On the maidenhair, the stalk divides into two axes from which up to 9 leaflets, which in botany are known as pinnae, branch off in a characteristic curved or semi-circle shape. Each leaflet is lined with many subleaflets or pinnules, each of which are lobed. If a pinnule is fertile, there will be spore beneath the upper edge of the lobe, which appears to have been bent backwards (see single subleaflet in illustration above). The black/purplish axis of the fern is in stark contrast with the green leaflets, adding to the ferns beauty. The scientific name, *Adiantum pedatum*, translates to unwettable for *Adiantum* and footlike for *pedatum*. The description “unwettable” describes the fronds ability to shed rainwater and “footlike” refers to the shape of each pinnule. Some botanists attribute the common name to the numerous hair-like, wiry rootlets found on the rhizome, the underground stem of the fern that sends out roots and enables it to spread. This fern has been recorded in all Wisconsin counties, so watch for it in any deciduous forest.

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