Kemp's Point

Volume 13, Number 1, Spring 2012

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

Bats -- The True Arrival of Spring

By Steve Lasee, Biology Senior, UW-Stevens Point

One of my most memorable experiences with bats has to be a July night in 1998. It was almost midnight, the moon laminated the lake to the best of its ability, and my father, brothers, and I were sitting on the dock at a family friend's summer cottage, just watching the lake. I particularly remember watching fish pop up to feed on the bugs skirting surface when my eye caught something black dart above the water. I looked up to see what seemed like a battalion of little black jets locked in a dogfight over the lake.

Wisconsin's bats are all nocturnal mammals that hunt insects with echolocation. We have eight species of bats in Wisconsin: the hoary bat, silver-haired bat, red bat, big brown bat, little brown bat, eastern pipistrelle, northern myotis, and the endangered Indiana bat (which has only been documented in Wisconsin once). All of these species are found in a single taxonomic family; Vespertillionidae. The echolocation used by each species is unique and if recorded with the right instruments can actually be used to identify and differentiate one species of bat from the others.

There are 1,240 species of bats, 20% of all the mammal species on our planet and 70% are insectivores. Bats play an enormous role in pest control. This is especially true in Wisconsin where our little brown bat can consume 90 pounds of mosquitoes in a lifetime! That fact alone should be enough for you to respect these furry bug zappers. Our little bug munching buddies migrate or hibernate every year. Our Wisconsin bats fall into two general categories when it comes to roosting and hibernation: tree bats and cave bats. Red, silver-haired, and hoary bats are tree bats, and the rest are cave bats.

Hibernation is where our little buddies face their biggest obstacles. A disease known as White Nose Syndrome (WNS) has been afflicting many bats in recent years, primarily the cave bats. White Nose Syndrome is caused by a fungus that sets up shop in a bats soft mucus membranes like the nose (hence the name) and often wakes the bat up during hibernation. Waking up during hibernation can be very costly for our batty buddies and typically infected bats perish within a year of contracting the fungus. Even worse is that infected hibernating bats can pass the disease to their cave mates and can nearly wipe out an entire bat cave in a few years. Since the arrival of WNS in a cave in New York State in February, 2006, the disease has been gradually spreading west towards Wisconsin. This led the Wisconsin Department of Natural Resources to conduct the nation's largest acoustic survey of bats in 2010, and acoustic surveys continue through a coordinated effort between WDNR bat ecologists, private citizens, and state universities. The WDNR also maintains a number of permanent bat stations that continuously monitor bat activity. One of these is at the Kemp Natural Resources Station.

I am part of a research group at the University of Wisconsin – Stevens Point that has been

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Learning Life and Land Lessons

by Collin Buntrock, with photos by Kelsey Egelhoff

This past fall and winter, eight forest science undergraduates from UW-Madison gained hands-on training in forest management in northern Wisconsin. This experience was a component of an upperclassmen special problems course led by Professor Scott Bowe and Dr. Tom Steele. Students honed their skills by setting up a timber sale for a private landowner near Kemp Station.

While working with the landowner, we inventoried the property, prepared a management plan, and marked each stand for a thinning based on objectives established by the landowner. One of the most important things for many of us during the project was seeing the significance of developing and maintaining a social dimension in natural resources management. When it comes to carrying out management on private lands—or when dealing with the public—landowners (or the general public) need to have a role throughout the process. Dr. Steele explained it best when he described forest management as a triangle: to carry out particular management objectives, a strong, working bond must exist between foresters, landowners, and loggers. If one or more of the relationships becomes lost or muddled, the entire process is put into jeopardy and is at risk of not being carried out--this is a resource manager's worst nightmare.

We students feel that everyone did an outstanding job maintaining all parts of the "management triangle." The property will soon be entering its first phase of active management sometime within the next year, leaving behind a healthier, more beautiful forest than before we became involved. The students would like to thank Dr. Steele and Professor Bowe for all of their patience, insight, and valuable time they put into the project. Also, we would like express our deepest gratitude to the landowner who was eager to include the department of Forest & Wildlife Ecology in their management efforts.

Editor's Note: Collin Buntrock is a graduating senior and Kelsey Egelhoff a junior in the forestry program at UW-Madison.

Another Sluggish Summer?

By Karla Ortman

There have been signs already that this might be another sluggish summer. Last year, while out on my usual morning walks with the dogs, I often observed a lot of slugs on the road. Sometimes there were gangs of them, hanging out or feeding on a squashed worm or dragonfly. I didn't recall seeing so many slugs any other year. Perhaps it had to do with moisture, or temperature, or maybe it was just a good slug year. Regardless, it got me wondering about slugs since I don't know much about them, other than that they like gardens and beer.

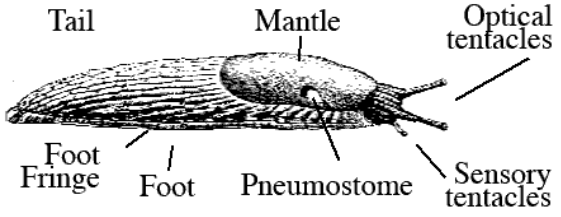
I carried a slug home with me so I could take a photo of it and get an ID on the beast. Unfortunately, the report from UW Entomologist, Phil Pelleterri, was less than earth shaking. He suspected it was a grey garden slug, but couldn't know for sure without examining an actual specimen. I didn't have the heart to ship a slug to Madison, so I decided to just learn more about slugs in general.

When most of us use the term "slug," we are referring to an air-breathing land variety. There are also slugs that live in water, both fresh and marine. A slug is like a snail without the shell. Slugs and snails both belong to the class Gastropoda and the phylum Mollusca, so they are related.

If you're a gardener or are particularly fond of your hostas, and you have successfully defeated deer and rabbit herbivory, slugs may be your nemesis. We have a large, fenced garden, so deer and rabbits do not concern us. However, for the last couple of years, my husband has been waging war against the slugs that are keen on his rhubarb plants. I think he is close to victory, but this year will be telling. Plant-eating slugs are the bane of gardeners. The slug's lower tentacles, or sensory tentacles, are used for tasting, smelling, and general navigation. This is how they find the seedlings and herbaceous plants to eat. Below and in between the sensory tentacles is the mouth, equipped with a radula, which is a tooth-covered rasp, used to grind up plant tissue.

Since they are such efficient plant eaters, it is fortunate slugs don't move very fast. You don't call a couch potato a slug for no reason. But slugs have a good excuse for moving slow – they have only one foot which comprises much of its body. The foot is actually a muscle that contracts in a wave-like motion, enabling the slug to creep along on its trail of slime.
A trail of slime — the slug's calling card! Why the slime? Well, if you had only one foot and lived as close to the ground as a slug does, you just might need some help getting around and staying safe. And that's what the slime, or mucus, does. When the slug crawls along, it secretes slimy mucus which helps it move better and protects it from sharp objects it may be crawling over. Slugs also use the trails they leave behind to find their way back to their tunnels, or other slugs of the same species will recognize the trail to find a mate. Slugs also produce body mucus which makes it hard to pick up or even distasteful, good defenses against predators.

Now that we know how slugs move, navigate and eat, we can better understand why slugs fall into the class Gastropoda. The word gastropod is derived from the Greek words for "stomach" and "foot," or "stomach-foot." This is a bit misleading because slugs don't crawl on their stomachs and they have a separate stomach and digestive system opposite from their foot. But to gardeners, slugs may as well be a giant stomach on a giant foot.



Regardless of their status as pest, it is hard to deny the fact that the slug is a unique

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Slugs... *(Cont'd from Page 3)*

creature. Slugs breathe through a pore located on their back. If you look carefully, you can see this breathing pore, or pneumostome, opening and closing. Slugs can also absorb oxygen directly from the atmosphere. Slugs don't see the world like we do; in fact, their optical tentacles, which are tipped with eye spots, are used mainly to sense light levels. Slugs would easily dry out and die in the sun, so they are most likely found out at night or on dark, damp days. Sunny days are spent under cover. If you meet up with a slug, gently touch the optical tentacles and it will retract them, a protective measure. Wait patiently and the eyestalks will slowly reemerge.

Even the life cycle of the slug is special, mainly because slugs are hermaphroditic, meaning each individual has both male and female reproductive organs. When a slug finds a mate, they exchange semen and then lay eggs in the ground or below leaves or sticks. Baby slugs are tiny versions of the adults. If winters are mild, and the slug is well protected, it can survive over winter, but most die at first frost. Eggs, however, are very resistant to cold and drying, so they will overwinter to hatch in the spring. For the grey garden slug specifically, its average lifespan is 9-13 months and the adult can lay 300-500 eggs during its lifespan.

Slugs are fascinating creatures and it appears I have only scratched the surface when it comes to their fascinating characteristics and habits. One last tidbit – each species of slug leaves a unique tooth mark wherever it was feeding. Wow! So the next time you meet up with a slug, tip your hat to its uniqueness and then maybe offer it a beer.

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Bats... *(Cont'd from Page 1)*

analyzing data on bat activity and migration from bat stations at Kemp NRS and the Schmeekle Reserve in Stevens Point. Again, a bat's call is unique to the species and can be reliably used to document a bats presence in space and time. We use bat detectors to record the bats and special computer software to analyze the bat calls. While our group of student researchers is getting pretty good at recognizing bats based on their acoustic signals, final species identification is done in Madison by WDNR bat ecologists.

While most Wisconsinites mark the beginning of spring with the arrival of birds and flowers, we look for the arrival of bats at Kemp NRS. The first to arrive are usually big brown bats. In both 2010 and 2011 the first big brown bats were recorded in mid-March, and were the only bats flying around Kemp during March. They were generally active between 7:30-10:30pm. During the month of April more bats begin arriving up at Kemp. The most frequently recorded bat during April is the red bat. In 2010 it arrived on April 15th at 11:00pm, and in 2011 on April 13th at 12:30am. Red bats are active later at night, recorded between 10:00pm and 4:30am. Silver-haired bats also arrive back at Kemp in April, but with some variation. In 2010 we did not record a Silver-haired bat until April 29th at 10:00pm, but in 2011 we recorded one on April 7th at 7:40pm. However, we did not record another one until April 24th at 8:15pm. In general, silver-haired bats are some of the first bats out at night to feed, and it's not uncommon to see them before the sun is completely down. The last bats to arrive in the spring are usually the Myotis bats — little brown bats and northern myotis bats. In 2010 they did not arrive back at Kemp until May, but in 2011 the first little brown bat was recorded on April 25th at 11:00pm.
In addition to providing spring arrival and fall departure dates for Kemp bats, the permanent bat detector at Kemp also provides an estimate of bat activity throughout the summer. This will prove invaluable as diseases like WNS impact bat populations around the country. Also, with the unseasonably warm spring this year, we are anxious to see how this affected bat arrivals at Kemp in 2012. Stay tuned!

Learning Opportunities at Kemp

Learn about Wisconsin's natural resources at Kemp Natural Resources Station, a University of Wisconsin research and teaching facility in Woodruff. To register for a session, contact Karla at (715) 358-5667 or kemp@cals.wisc.edu. All sessions are free of charge. The complete schedule is available at www.kemp.wisc.edu.

Sessions may be held in the Boathouse Classroom, the Fralish Library & Lounge at the Mead Residence Hall, or in the new outdoor Pavilion.

May 12 (Saturday) 9:00 am
Shiitake Mushrooms 101
Session Leader: Scott Bowe, UW-Madison

Join us for an introduction to Shiitake mushroom cultivation. Green thumb not required! This hands-on demonstration will begin with a discussion of the life cycle of Shiitake mushrooms. Did you know that Shiitake mushrooms grow on logs? We will demonstrate how hardwood logs are prepared, inoculated, and cared for to grow these delicious mushrooms. Come ready to work! Participants will be asked to form an assembly line to prepare and inoculate logs that can be taken home at the end of the session. You will have an opportunity to perform each step in the Shiitake process so you will have the skills to build your own mushroom garden. Mushroom samples will be served after the seminar to reward your efforts. Registration limit: 15

May 17 (Thursday) 6:00 pm
(Inclement weather date: May 20)
Flight of the Timberdoodle
Session Leader: Amber Roth, Michigan Tech University

Learn about one of our most unusual birds - the American Woodcock. Following the indoor presentation the group will make a trip off Station to observe displaying woodcock. Other birds active around sunset will likely be observed including thrushes, whip-poor-wills, nighthawks, and maybe owls. Site visit details: Personal vehicles will be driven caravan style to the field site. Please anticipate approximately 15 minutes for travel. Detailed maps and driving directions to the site will be provided before Station departure. Be sure to dress for the weather, remembering that temperatures drop after sunset. Wear outdoor shoes/boots to protect against muddy conditions. Please bring a flashlight, as it will be dark when we finish. You may leave for home directly from the site after the program.

June 9 (Saturday) 1:00 pm
Lichens!
Session Leader: Matthew Nelsen, University of Chicago and Field Museum

Join us for an introduction to the world of lichens, symbiotic associations between fungi and algae. Learn more about those bright splashes of color on rocks and trees, the "reindeer moss" along the side of the road, and the "old man's beard" hanging from trees. We'll begin indoors by looking at the biology and diversity of the lichen symbiosis, the roles lichens play in ecosystem functioning and how lichens are used to monitor air quality and forest health. Following this, we will move outdoors and will examine the lichen biota of the surrounding area. You will gain an appreciation for the abundance and diversity of these often overlooked associations! A hand lens is recommended.

June 19 (Tuesday) 7:30 pm
Bats & Roost Monitoring
Session Leader: Heather Kaarakka, Wisconsin DNR

Learn about bats and help count the bats that use the Kemp Boathouse as their roost. The evening will begin with an indoor presentation about bats — their biology and ecology. Wisconsin DNR Conservation Biologist, Heather Kaarakka, will then give an update about White Nose Syndrome and provide an overview of the roost monitoring project. Finally, after a brief training, participants will be invited to help count bats as they emerge from the Boathouse at dusk. This will require taking boats a short distance off shore, although counting may also be done from shore. Please dress appropriately for being outdoors in the evening.

June 23 (Saturday) 9:00 am
MIAD Field Experience Presentations
Session Leaders: Maurizio Murru & Paul Engevold, MIAD

Students from the Milwaukee Institute of Art & Design will spend a week at Kemp Station conducting short term research projects. Each student will investigate a specific ecological concept in both aquatic and forest systems. A unique learning opportunity, the students are forced to think critically, outside their art/design comfort

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Learning Opportunities....*(Cont'd from page 5)*

zone. Join us for the capstone of this intense field experience, where each student will present their research findings and conclusions. A question and answer session will follow each student presentation. Public participants are invited to join students for a complimentary lunch over the noon hour and presentations will resume following lunch. Registration limit: 20

June 25 (Monday) 7:00 pm
Migration and Foraging Patterns of Common Loons
Session Leader: Kevin Kenow, USGS

Common loons breeding in Minnesota, Wisconsin, and the Upper Peninsula of Michigan were equipped with satellite transmitters during summers 2010 and 2011 to provide information on movements and wintering ground affiliations. Join Research Biologist Kevin Kenow for an overview of what has been learned from this study of loon movement. Topics include the timing and patterns of loon migration, the importance of the Great Lakes as a fall stopover area, the botulism risk posed to loons in the Great Lakes, wintering ground affiliations, and loon foraging patterns.

July 10 (Tuesday) 7:00 pm
Wolf-Human Conflict in Wisconsin
Session Leader: Erik Olson, UW-Madison

Join us for an exploration of the relationship between wolves and humans in Wisconsin. Erik Olson, an Environment & Resources PhD Candidate with the Nelson Institute for Environmental Studies, will discuss various aspects of wolf-human conflict and review the wolf's historical, temporal and spatial patterns. Learn about the current research being done to predict risky areas for depredations, put risk into perspective and the human attitudes toward wolves.

July 15 (Sunday) 9:00 am
Vegetation of Wisconsin
Session Leader: Christine Anhalt, UW-Colleges

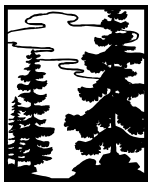
Join students from University of Wisconsin-Washington County for an introduction to Wisconsin's vegetation. You will have the opportunity explore the forest at Kemp Natural Resources Station. We will begin with a brief lecture on Wisconsin's plant communities. You will learn the use of plant ID tools and basic vegetation sampling techniques. Afterward, you will have the opportunity practice those techniques during a forest walk at Kemp. Registration limit: 10

July 24 (Tuesday) 4:30 pm
How To Capture & Share Nature's Beauty
Session Leader: Kelsey Egelhoff, UW-Madison

Social media is all the rage and what better way to share some of your outdoor sightings than through video. Join UW-Madison Forestry student, Kelsey Egelhoff, for a short demo on how to create your own video or slide show. Participants are encouraged to bring their digital cameras along on a short nature hike to capture some footage or images. Then learn simple video editing techniques and how to share your video or slide show on-line. Registration limit: 20

July 31 (Thursday) 7:00 pm
Batty about Bats!
Session Leader: Chris Yahnke, UW-Stevens Point

Join students from the University of Wisconsin – Stevens Point for an introduction to Wisconsin's bats. You will have the opportunity to look at museum specimens of the seven common species of bats found in the state and examine their skulls under a microscope. Then listen to their echolocation calls and learn how to interpret a sonogram. After the sun sets, we will take a walk and record bats using a bat detector. If time permits, these data will then be uploaded to a website as part of the WDNR's Citizen Monitoring Program. Registration Limit: 10



August 6 (Monday) 7:00 pm
Our Bountiful Forests
Session Leader: Kelsey Egelhoff, UW-Madison

Have you ever wondered what happens to that load of logs you see on the highway? Our forests produce a large variety of products we use every day. UW-Madison Forestry student, Kelsey Egelhoff, will present on this fascinating topic, explaining the path trees take from our forests to become products in our homes. Several short videos produced by Kelsey as part of her summer internship project will be featured.

August 16 (Thursday) 2:30 pm
Hidden Treasures in our Waters
Session Leader: Lisie Kitchel, Wisconsin DNR

Learn about one of Wisconsin's most diverse, yet hidden treasures--our 52 species of native mussels (clams), their fascinating life cycle (that requires a fish host), their amazing ways to attract fish, and their contributions to the history of Wisconsin, from food to buttons to pearls. You are guaranteed to come away with a greater appreciation of these unique animals and their beauty. Once

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Learning Opportunities....*(Cont'd from page 6)*

you get an eye for finding mussels it's very hard to quit! Please bring shoes for wading and clothes that can get wet. We will hunt for mussels, rain or shine, so please dress appropriately for the weather

August 18 (Saturday) 10:00 am
Talk-then-Walk: Fungi
Session Leader: Carrie Andrew, Northeastern Illinois University & The Field Museum, Chicago

Learn - or review - fungal ecology through a brief talk by Dr. Carrie Andrew, who will highlight the major fungal groups and their distinctions based on feeding habits and associations with other organisms in the natural world. Following this, join us on a stroll around Kemp Station in search of fruiting fungi. While we'll stay on the beaten path, please dress appropriately for outdoor weather. A camera and a hand lens may help you see 'the forest for the fungi.' Post-walk, we'll display our fungal collection and review identification characteristics.

Forget-Me-Not

For-CLIMATE Course: A Special Collaboration

Last fall, UW-Madison Associate Professor of Atmospheric and Oceanic Sciences, Ankur Desai, inaugurated the Forest and Climate Leaders in Menominee and the Environment (For-CLIMATE) course with the College of Menominee Nation. Students, teaching assistant and the faculty from a soils and water class at the 2-year tribal college spent two long weekends at Kemp Station and Desai's field sites learning about ecosystem and soil ecology and careers in global change science. Desai's graduate students, technicians and scientists from collaborator labs (including University of Illinois, Notre Dame, University of South Florida, and Department of Energy's Lawrence Livermore National Lab) demonstrated research techniques at Desai's eddy covariance flux tower sites. This field course is funded for the next four years as part of Desai's National Science Foundation award that is studying carbon dioxide and methane exchange across the region.

Ankur Desai (center) explains greenhouse gas profiling instrumentation to graduate student Gosia Golub (left) and UW Communications science writer Chris Barncard (right) at the WLEF tall tower site near Park Falls, WI

Course participants sampling soil carbon dioxide exchange at the Willow Creek mature hardwood flux tower site near Pike Lake with post-doctoral fellow Claire Phillips (lower left) of the Lawrence Livermore National Lab (Livermore, CA). Also pictured (from left to right): Leon Fowler (CMN), Sarah Paquette (CMN), Kenny Sanapaw (CMN), Gosia Golub (UW-Madison), Bryce Richter (UW Communications)

Forget-Me-Not (*Myosotis* L.)

According to the U.S. Department of Agriculture's PLANTS Database (plants.usda.gov), there are 12 species of Myosotis, better known as Forget-Me-Nots. This pretty little blue (or sometimes pink or white) perennial is popular with gardeners, which explains why these nonnative plants are found in forest sites throughout northern Wisconsin and Upper Michigan, nearly always associated with current or former home sites. One species being monitored as part of a long-term study of managed old-growth forest is *Myosotis sylvatica*. Researchers hope information they gather will help better understand the plants rate of spread and if it more readily spreads into certain kinds of understory vegetation. Despite its invasive tendencies, the plant's associated folklore is intriguing: A medieval German knight is said to have been picnicking on the bank of the Danube with his lady love. He descended the bank to the water's edge to gather some of the lovely blue flowers he saw there, but while he was near the water, tragedy struck. A "freshet" (flash flood) suddenly appeared and pulled the young man into the churning river. As he was literally swept away, he tossed the bouquet to his lady on the bank with the three now-famous words: "Forget me not!"
http://www.wildflowerinformation.org/wildflowerfolklore.asp

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This newsletter is also available as a PDF at the Kemp website, www.kemp.wisc.edu.

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