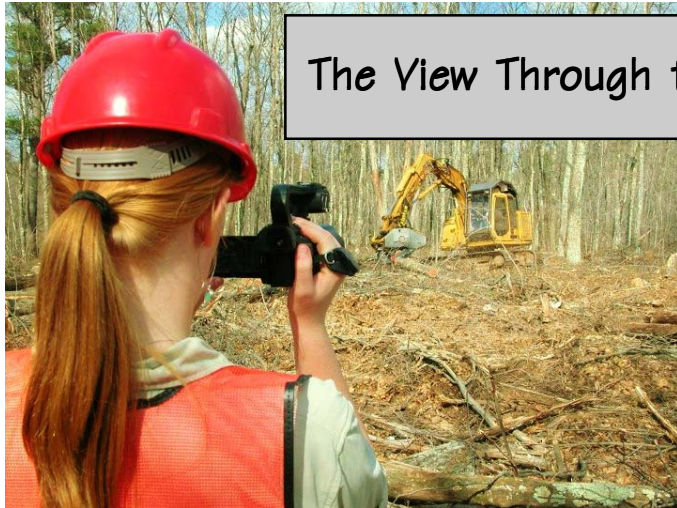




Kemp's Point

Volume 13, Number 2, Fall 2012

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



The View Through the Lens

By Kelsey Egelhoff, UW-Madison

Each morning I woke to loons on the lake and a pair of eagles roosting nearby. Not only is the Kemp Natural Resources Station a beautiful place to be, but the research and activities happening are unique and important. As a student of UW-Madison's Department of Forest and Wildlife Ecology, I felt honored to spend my time at Kemp Station.

My internship this summer was to create short educational videos related to sustainable forestry and the research happening at Kemp Station. These videos will be used in classes to supplement lectures, as well as online for outreach to the community. Although I am a Forest Science major, my love of art and creativity has always been a large part of my life. This internship allowed me to use both skills to create something to educate others.

Although there was a large learning curve on the technical details of making a video, I now feel I could teach it to almost anyone. My process of creating a video started with planning: who to interview and what kind of background footage to include. While filming, I had to keep in mind my frame, expo-

sure, and content. Then, after taking the footage and talking to the experts, I put all the footage into video editing software. While editing, I often tweaked the picture quality, the length of different clips, the order of the video clips, and moved or separated audio and visual clips. Then, post-production, I added text and any other outside images. Once the video was complete, I prepared the videos to be used on YouTube and on disc, for classes.

Throughout the entire process, I met so many different interesting people. I also got to tag along with groups at Kemp Station doing research out in the field, such as small mammal trapping to survey tick populations in the area and loon banding with the BOW (Becoming an Outdoor Woman) Program. I even got to hold a loon chick! Not only did I catch a glimpse of research at Kemp, but I also got to speak with many professionals in the forest industry. I toured several forest industry mills, including Action Floor Systems in Mercer, WI, Kretz Lumber, a hardwood sawmill in Antigo, WI, and Zelazoski Wood Products in Antigo, WI.



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Whistle While You Work

by Tom Steele

Kemp Station is a great place to work. Take today for example: My morning walk to work included trees aflame with brilliant color, a fisher scurrying across the road in front of me and a pair of soaring eagles screeching at a third who was sitting atop a white pine perch. I joke with folks that I have the best rush-hour commute of anyone I know, and it's true.

But what really makes Kemp Station great is the people. I am incredibly fortunate to work with a talented and hardworking staff in Gary, Karla and Lynne. No matter what the challenge, they rise to meet it. They do so competently, efficiently and with a smile.

And then there are all the users who come to work at Kemp Station—scientists, students, instructors, outreach participants, landowners and conference goers. A quick estimate suggests Kemp Station will support more than 7,000 user-days of activity this year. That's a lot of activity and the scope of that activity is incredible, from birds to trees to mushrooms to soils to lakes to climate to how we, as society, interact with the natural world around us. It's fair to say that if it occurs beneath our feet, over



our heads, or anywhere in between, we probably have a researcher studying it or an eager student learning about it.

Despite this incredible diversity in use and users, there is one common thread. Everyone likes being at Kemp. It doesn't matter if it is a first-time student on a field trip or a researcher returning to collect long-term data, they both enjoy their time at Kemp. They want to be here. And from a completely personal point-of-view, it's a joy to work at a place where people want to be.

Best wishes for a grand autumn and wonderful winter. We will be in touch again next spring. And should your travels bring you near Kemp Station, please stop in to say hello. 🍂



The addition to the Kemp's new Pavilion is coming along nicely. Our talented staff carpenter, Gary Kellner, has duplicated the building's design in the extension which will be used to store tables and chairs, as well as serve as a utility space for electrical service and equipment storage. Next is to extend the roof in the same design.

The View... (Cont'd from Page 1)

Some of the videos I have created include:

- An Intro to Lifecycle Analysis
- Forest Products of Wisconsin
- A Tour of a Wisconsin Sawmill: Kretz Lumber
- The Basics of Lumber Grading
- Logging Techniques
- Research at Kemp Station

I encourage you to visit the You Tube channels for the Kemp Natural Resources Station and for UW-Madison Forestry to view my videos:

Kemp: www.youtube.com/user/kempnrs

Forestry:

www.youtube.com/user/UWMadisonForestry



Oh! A Toad and an Opossum

By Karla Ortman

Throughout the summer, our resident toad population can be monitored by the number and size of the feces left on the walkway between the house and garage. This summer there was at least one good-sized toad hanging around. Sometimes we will see a toad out hunting after dark, or on a cloudy day.

I know these are toads because they are warty and dry, and have short legs and chubby bodies. Toads make short hops or walk, unlike their frog cousins who leap long distances with their long legs and narrower bodies.

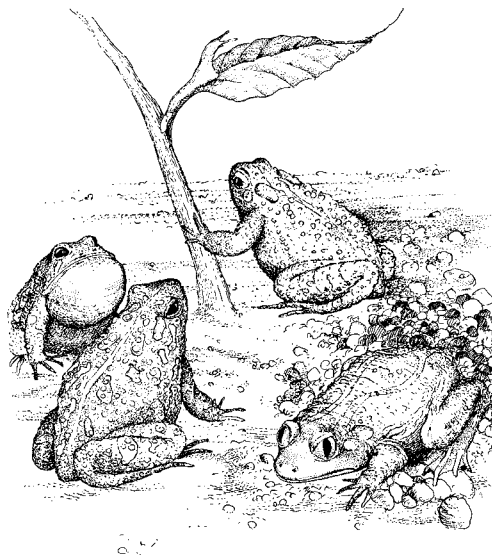
There is just one species of toad that lives in Wisconsin. The eastern American toad (*Bufo americanus*) varies in size and color, but whether they are big or small, brown, red, or green-grey, they are all the same. Anything else that looks similar is a frog and there are nine different frogs in our state.

Toads spend most of their time on land while frogs are more often in the water. Both lay eggs in the water – toads deposit chains of eggs while frogs deposit clusters of eggs. Tadpoles hatch from the eggs of each, but once the toad tadpole has developed into a “toadlet,” the little animal leaves the pond and does its living on land, returning to the water only to mate in the spring.

Toads will be found in the forest, in meadows and in gardens. They are great critters to have in your

garden because they eat a lot of insects, grubs, spiders and worms. When the toad poops first started showing up on our walkway, I wasn't sure who they belonged to. Upon further investigation, which involved a bit of dissection, I determined the source was a toad. The fecal material was primarily composed of beetle parts – hard shells, legs, antennae.

It won't be long before our toads will burrow into the soil for the



winter. They must burrow beneath the frost line for their winter “sleep.” If the frost line happens to extend deeper, the toad will respond by burrowing down further to escape the freeze. When spring rains thaw the ground, the toads emerge and travel to nearby ponds to begin the mating process. Listen for toads trilling for a mate in the spring!

This summer, for the first time in more than 12 years living in northern Wisconsin, I saw an opossum that had been killed by a car. In southern Wisconsin, road-killed opossum are quite common. The opossum is primarily a nocturnal animal and waddles along slowly, making travel across highways and roads especially dangerous. This sighting got me wondering more about its status in the state and about the animal itself.

According to Jackson's “Mammals of Wisconsin” the opossum has lived in southern Wisconsin since 1850. Jackson's book was published in 1961 and notes some northern dispersal of the animal in the 1920's likely linked to the expansion of roadways to the north. Long's “Wild Mammals of Wisconsin” documents specimens of the opossum found in more northern reaches of the state and the UP in the 1990's and 2000's. So the opossum can be found statewide, however they are still relatively new to the north woods.

Opossums do not do well with freezing temperatures. Their tail is hairless and their fur is less adapted for cold weather. They can suffer frostbite on their tail and ears, or may simply freeze to death. During winter they often den up and remain there during especially cold stretches, but they do not drop their body temperature to the degree that other hibernating animals do.

I have a faint childhood memory of my dad chasing an opossum out of the garage with a broom. I

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Opossum... (Cont'd from Page 3)

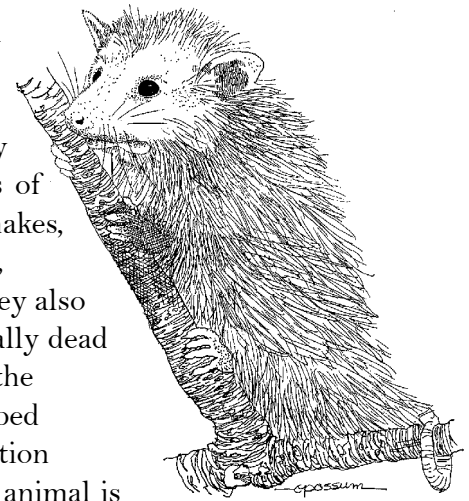
think it hissed at him and I remember thinking opossums were fierce beasts, much like a lion or tiger. Years later, an opossum would occasionally show up at my childhood home and eat from an elevated tray feeder by the garage where we would put stale bread and crackers, or whatever other goodies we thought the squirrels and birds might enjoy. I quickly realized the opossum was far from fierce and was actually a little bit cute! My mom refers to any opossum who visits as "Opie" – and the raccoons are known as "Ricky." No need to wonder where my appreciation for critters was learned!

The opossum is North America's only marsupial. Marsupials give birth to undeveloped young who continue their development in their mother's pouch while nursing. Most mammals have developed a complex placenta which protects the embryos from the mother's immune system, however marsupials are non-placental, thus the early birth and pouch. The kangaroo is probably the most well-known animal of this kind. But no kangaroos in Wisconsin....at least not yet!

The life of an opossum baby is both fascinating and dangerous. The young are born about 10 days after mating, and are about the size of a dime. This tiny creature crawls in a swimming motion through the mother's hair to reach the pouch where it then must locate and latch onto a teat in order to survive. The mother opossum helps this process by licking the hair on her belly to mark a path for her young. Litter size on average is 8-9, but could be as high as 20. If there are more babies than the mother has teats, roughly 13, the excess young will perish. On the other hand, in a small litter where only one baby successfully latches on, milk production will not occur and it too will perish.

Babies nurse for about 2 months and remain latched to the same teat which has swollen to help maintain the connection. Eyes open between 55-70 days and when they are big enough, the babies crawl from the pouch to ride on mother's back. They are weaned at about 3 months of age and fending for themselves by 5 months when they measure roughly 8 inches, nose to rump.

As omnivores, opossums eat a wide variety of foods – many types of insects, grubs, mice, snakes, eggs, birds, fruit, seeds, worms and berries. They also feed on carrion, especially dead rabbits. By their fans, the opossum has been dubbed "Nature's Little Sanitation Engineer" because the animal is a fan of cockroaches and other harmful pests like rodents, and also enjoys rotting fruit. It was interesting to find that there are two formal groups that educate and support the opossum — the National Opossum Society and the Opossum Society of the United States.



Opossums may be best known for two things – hanging from their tail and playing dead. The opossum's tail is scaly and prehensile, meaning it is adapted to grasp or hold onto things, especially by wrapping around. The tail is often used to gather leaves for a den, curling its tail around clumps of leaves for transport. And the tail is used when the animal climbs about in trees, for stability. However, they do NOT hang from their tail, at least not on purpose. Their body weight would not allow them to stay in this position for long, so at most, a baby opossum might for a brief moment successfully hang by its tail.

The act of "playing dead" is also a bit of a misconception. The opossum is not pretending when it goes into this position. This is, in fact, a hard-wired defense mechanism that protects the animal from predators. Warren Shedd in "Owls Aren't Wise & Bats Aren't Blind" writes,

When a possum is threatened, it's likely to first show its teeth and hiss almost like an angry cat. If that fails to frighten the would-be predator, the possum may run away or climb a tree. As a last resort, however, the creature falls into a sort of catatonic state, body limp and eyes wide open. This is not a conscious act of pretending, but is really a

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At the Water's Edge

By Linda Graham, Professor of Botany, UW-Madison

At summer's end, visitors to Kemp Station may notice leaves of woodland trees and shrubs start to turn and juicy fruits ripen, but most will likely not notice another annual change, this one occurring in Tomahawk Lake.

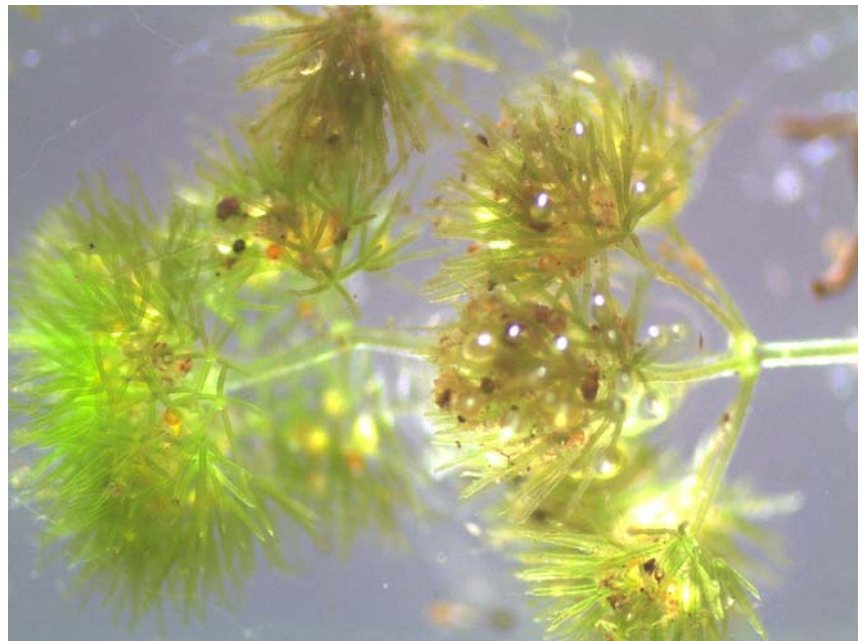
Late each summer, a beautiful green algal lawn appears on the lake bottom in shallow, near shore waters. Like grass, these algae attach to the sandy bottom with root-like structures that hold them securely in place, despite strong waves. If you detach some of these algae and take a closer look, you will see a stem-like structure about as long as your little finger, bearing many lovely but minuscule "leaf-like" branches in fluffy tufts. Because the tufts remind some people of a nicely-groomed poodle, they jokingly call these growths "poodle algae."

More formally, the poodle algae are *Nitella tenuissima*, a species that is very closely related to land plants. Experts think that a green alga, similar in some ways to *N. tenuissima*, that lived nearly a billion years ago was the ancestor of all the terrestrial plants we depend on today. The poodle algae don't grow just anywhere; only favored places like the Kemp shoreline are favorable "kennels."

The poodle algae do no harm to lake inhabitants; in fact, they serve as habitat for many microscopic animals, who see these algae as their forest home. In addition, the large surface of the poodle algae harbor bacteria, which probably help the algae grow by providing vitamins, and in return likely receive food from the algal host in the form of organic secretions.

I, along with some of my lab members, study the poodle algae and close relatives that also occur in Tomahawk Lake. We use the Kemp algae to learn what biological associations and genetic changes were necessary for the evolution of the first plants. In addition, the work helps us to understand how bacterial associates affect the growth of algae and plants today, much as the Human Microbiome Project has revealed that we harbor thousands of bacterial species, many of which are known to be necessary for maintenance of human health.

So, if you notice the late summer poodle algae in Tomahawk Lake, you'll know that the green growths are not harmful, but actually a treasured source of biological information. The poodle algae will continue to appear each year in the lake unless it becomes polluted by the addition of fertilizers and harmful chemicals. This is just one of many reasons why we must take good care of our natural waters. 🐾



The top part of a poodle alga, Nitella tenuissima, viewed with a stereomicroscope. The small, round orange structures are the "flowers" of the algae; they have the function of reproduction. In the fall, hard-walled seed-like structures will form and wait patiently in the sediments for the warm waters of summer. Then they will germinate and grow into new poodle algae.



Kemp Profile: Jacob Richter



Hometown: Brillion, WI

Educational background and current area of study:

I received my B. S. from the University of Wisconsin-Stevens Point, double majoring in Fisheries/Water Resources and Biology. Prior to attending college, I served 8 years in the United States Navy as an Aviation Ordnanceman and Navy Instructor. I am currently a graduate student with the Wisconsin Cooperative Fishery Research Unit and the College of Natural Resources at the University of Wisconsin-Stevens Point.

Your 2012 field crew:

I had a great group of volunteers helping me this summer, Zeb Woiak, a fellow graduate student and three undergraduates from UW-Stevens Point: Hanna Meyer, Zach Beard, and Zach Kleemann.

What question does your field research answer?

The overarching goal of this research is to evaluate the roles of population dynamics (i.e., how mortality, growth, and recruitment interact to affect abundance), genetics, and habitat have on the recruitment status and viability of Wisconsin's walleye populations. Specifically, my part of the project is to answer the question; What role does spawning habitat availability have on walleye recruitment? To try and answer this question, I am identifying the quality and quantity of suitable walleye spawning habitat in 15 northern WI lakes with different walleye recruitment types (e.g., natural recruitment, equal mix of natural reproduction and stocking, or mainly stocking with some natural recruitment).

How is your research/project funded?

My research is funded by the Wisconsin Department of Natural Resources and the Sport Fish Restoration Act.

Describe a typical day of field work:

My average day begins with a cup or two of strong coffee. Arriving at the lake by 8 am, we have a goal of completing as many transect measurements out of 100 around the entire lake shoreline as we can. We load the boat up with our sampling equipment,

lunches, and plenty of water. At each transect location, I anchor the boat near shore and jump into the sometimes surprisingly cold

water, to collect the habitat data. At each sample point (four per transect), habitat features such as distance to shoreline, water depth, percent bottom substrate composition, substrate embeddedness, presence of wood debris and macrophytes are recorded. This process is continued until lunch time, were a sandwich and caffeine break replenishes me for the afternoon run. We call it quits for the day around 6-7 pm and head back to Kemp. The last day on each lake is spent slowly motoring around the entire lake shoreline and recording side scan sonar images and counting the number of docks. Occasionally during the day, I stop and chat with landowners and fisherman asking about my research. While my work isn't very physically demanding, I'm usually exhausted after a day spent on the water.

What is the biggest challenge you've faced working on this project?

Thankfully, I haven't encountered any big challenges so far. There were times when I would forget a piece of equipment that would halt progress for a short time while we motored back to the landing to retrieve it. Or perhaps, the time when I accidentally knocked some gear overboard and had to jump in after it (and yes I did recover it). I think the most fun challenge was training my volunteers how to back a trailer!

What have you enjoyed most about working on this project?

Without a doubt, it's being able to spend my days outdoors and on the water. I am truly passionate about fisheries science and I am extremely thankful for being able to work in a job field that I love. My hope is that what is learned from my research will be applied to protect, promote, and improve fisheries resources.



Opossum... (Cont'd from Page 4)

genetically programmed reflex action. Sometimes the defensive adaptation works, and a predator loses interest in a victim that appears to be dead. Even after the threat is gone, though, the possum may remain in its comatose state for hours!

The last opossum factoid I will share is that the animal has an opposable thumb on its hind feet. The opposable thumb is one of the greatest adaptations among animals. Humans and primates are the only other animals with opposable thumbs. Who knew that hissing animal my dad chased out of the garage many years ago had something so in common with the little girl who glorified it into a ferocious beast!

Look at those 'shrooms! Students & Mycological Club Members Team up for Fun Foray

On September 22, the UW-Madison Plant Pathology graduate students had our annual gathering at Kemp Station, and joined the Northstate Mycological Club for our annual foray in the forest at Kemp. We all had a wonderful time traipsing through the woods with fellow students and knowledgeable members of the club on one of the year's first crisp Autumn days. After about an hour of mushroom hunting, we all returned to the lodge with our exciting finds, and had a great time showing off and identifying the diverse number of species found in the woods that day. This annual foray with the Club is something we Plant Pathology graduate students truly look forward to each Fall as we head up North to enjoy the natural beauty of Kemp Station, and we hope to carry on this new tradition for years to come!

-- Lindsey Wells, UW-Madison Plant Pathology Graduate Student



Members of Northstate Mycological Club joined UW Plant Pathology students on what has become our annual mushroom foray. After brief introductions, members and students dispersed to locate and gather fungi in Kemp's unique woodlands. In spite of dry conditions, more than thirty-six mushroom species were brought in for examination and discussion. These varied from large, woody polypores and impressive clusters of the fungus commonly called Bear's Head Tooth, to groups of small puffballs and delicate, colorful, capped fungi. Emphasis was given to the role of these varied mushrooms in the forest environment. Our collection provided representative species of parasitic fungi, beneficial mycorrhizal species and decomposing fungi.

All enjoyed the camaraderie and enthusiasm that seem to characterize folks who put their attention to the challenge of a good mushroom hunt.

-- Cora Mollen, Northstate Mycological Club



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Carolina locust (*Dissoteira carolina*)

In the latter part of summer, while walking our dogs along the roadside, we would kick up grasshopper-like critters. They would fly some distance ahead, displaying dark wings edged with a yellowish band. Clicking noises would often accompany their movement. I contacted UW Extension Entomologist Phil Pelitterri for an identification and learned I was seeing the Carolina locust, which is a type of grasshopper. A person would be hard pressed to spot one of these animals on the sandy shoulder of the road, as they blend in so well with their tannish-grey solid coloration. But because they take flight, landing several feet away, they are hard to miss. It is this very mechanism that helps protect the insect from predators. A predator sees the locust in flight, but as soon as it lands, it is as though it has disappeared -- the search image cannot be found. All locusts can be destructive, but the Carolina locust is less destructive than others, feeding on leaves and grasses. The female

deposits a clutch of 50-100 eggs deep in dry soil. The young emerge as nymphs, a small, incomplete version of the adult, which shed skin about 8 times before becoming a full grown adult.



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*Karla Ortman, Editor
Kemp Natural Resources Station
9161 Kemp Road
Woodruff, WI 54568
(715) 358-5667
kemp@cals.wisc.edu*

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Kemp Natural Resources Station
9161 Kemp Road
Woodruff, WI 54568