



# Kemp's Point

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

## Utilizing the Outdoor Classroom

by Paul Engevold, Adjunct Science Faculty

On February 26-28, Milwaukee Institute of Art and Design's Limnology class embarked upon a special field trip experience to investigate the lakes of northern Wisconsin. It is a unique learning opportunity for students who rarely get a chance to leave the urban environment of Milwaukee. MIAD students are curious about nature and many of them have not been exposed to any sort of rigorous science courses in high school, and they want to learn. This helps us to more fully achieve a shared institutional goal of fostering "individual discovery and potential" in every student. I personally have thoroughly enjoyed many field trips to Kemp Station as an undergraduate and now it is my duty to pass the experience along to my students, getting them out of the classroom and immersed in the beauty of the natural world. I became a biologist to get wet and muddy, not just to sit in a classroom and listen to lectures.



*Students were a bit anxious about the loud cracking and rumbling noises under their feet so Paul explained the process of ice formation, strain and pressure relief. Photo by Zachary Seib, Photography major.*

The main goal of the Limnology course at MIAD is to directly investigate how lakes can vary in their chemical, physical and biological characteristics. The course takes a hands-on approach of teaching sci-

ence at MIAD. Instead of students being passive learners, we prefer to let the students investigate for themselves and become involved in learning about aquatic ecosystems and their inhabitants. The Kemp

*Zachary Seib, Photography major, works at identifying zooplankton. Whoever identified the most animals correctly, and the quickest, was exempt from after dinner dish duty.*



Station trip allows the students to compare and contrast more pristine environments to the highly urbanized aquatic habitats that the class has previously been studying in Milwaukee.

The first morning at Kemp, students were greeted by Dr. Craig Sandgren, Associate Professor of Plankton Ecology and Phycology for the Biological Sciences Department at UW-Milwaukee. He provided the students with a lecture entitled "A Primer of Food Webs in Lake Management," discussing trophic cascade theory and the use of biomanipulation as a means for lake management.

Next, the group was sent out onto Tomahawk Lake to drill holes in the ice, a new experience for most of them. Teams divided up, one deep site and one shallow site, and then sampled water for chemical and biological components. Chemical components include analyzing the temperature, pH, nutrient content (silica, phosphorus and nitrogen) and oxygen levels at various depths in both shallow and deep water. Students also employed net-tows to collect

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## Changing and Changed

By Tom Steele

Everyone who has been to Kemp recognizes it as a special place. The history, the classic log buildings, the rare old-growth forest, the pristine shoreline, the plants and animals—they all contribute to a social phenomenon geographers call “a sense of place.” And Kemp has it.

I believe it is Kemp’s unique “sense of place” that immediately touches people. Tens of thousands of people have passed through the station over the last half-century—researchers creating new environmental knowledge, students experiencing ecological concepts and principles first-hand, and outreach participants learning about the natural world around them. It is through these interactions that Kemp changes lives.

But it isn’t just a one-way street. Kemp too, is changed by people. I was reminded of this fact one wintry Sunday back in February. I had been invited to Madison by the Daughters of Demeter to talk about Kemp Station’s rich history. The Daughters of Demeter is a campus organization of women who share an interest in agriculture and natural resources. A few members were aware Kemp was in need of a new refrigerator to replace the 40-year-old relic in the kitchen & dining hall. So following my presentation, the Daughters of Demeter made a generous donation to Kemp that was matched by Linda Harvey in memory of her late husband Gordon, a UW-Madison professor who loved the station.

This act of kindness is not unique at Kemp. Hundreds of people have kindly supported the station over the years. In fact, Kemp Station owes its existence to the vision and philanthropy of Susan Small and Sally Greenleaf.

So in addition to the station’s history, buildings and setting, add “people” to the list of things that make Kemp special. Indeed, Kemp Station would not be the thriving research and teaching center it is today were it not for all the remarkable people who make Kemp special. Thank you.



*Linda Harvey (left) and Carrie Aberle (right) present Tom Steele with checks for the purchase of a new commercial refrigerator for Kemp Station’s Kitchen & Dining Hall. Photo courtesy of JMAR Foto-Werks.*



### Old Building-New Life

The old carport at Kemp Station is getting a face lift and will soon serve as a

Welcome Center and Educational Pavilion. Kemp carpenter, Gary Kellner, has been diligently working on the Pavilion since the fall. So far rafters were repaired; the roof was shingled; and the exterior was painted. Improvements continue inside too where Gary has added knotty pine paneling and additional lighting. Funding from an Instructional Lab Modernization Grant enabled Kemp to purchase a projection screen and projectors for use in the building. The Pavilion will be utilized by field classes studying at Kemp Station, and will be available for Kemp outreach sessions. Future plans include the addition of a permanent display featuring Kemp Station’s history, and the Pavilion will serve as the starting point for Kemp’s Nature Trail where visitors can pick up a trail guide and get oriented to the property.





## Like a Moth to a Flame

By Karla Ortman

When we first moved to our home near Rhinelander, we used the big mercury vapor light above the garage. It has a photo eye, so the light was on whenever it was dark. During the day, we would find moths hanging out on the garage, waiting for darkness to return so they could go about their moth business. I was reminded of this recently when I came upon an article about moths. The article prompted me to dig out photos I took of moths that summer of 2000. With help from Phil Pellitteri at UW Madison's Insect Diagnostic Lab, I was able to identify the moths and was quite surprised by what we had.



The Polyphemus Moth (*Antheraea polyphemus*) is a member of the silk moth family, Saturniidae. It gets its name from the Greek myth of the Cyclops Polyphemus referring to the big eye-spots on its large, 6-inch wings.



The One-eyed Sphinx or Cerisy's Sphinx, above, (*Smerinthus cerisyi*)

and the Modest Sphinx, below, (*Pachysphinx modesta*), belong to the family Sphingidae, and are commonly known as "sphinx" moths. Sphinx moths are so



named because as caterpillars, they rest in a position that looks like the Sphinx. You may be familiar with other members of this family, the "hawk" or "hummingbird" moths, which are sometimes mistaken for hummingbirds, as they fly like them and feed on flower nectar.

These three moths are all similar in that they have reduced or no mouth parts and thus do not feed as adults. They also live a very short time—only about a week. The adults focus exclusively on reproduction. Unmated females emit pheromones so the males can locate them and mate. To distinguish between the male and the female, examine the antennae—the male's is very bushy and detects pheromones the females emit.

Considering how short lived the adults are, and what a great meal one makes for a bat, I feel fortunate to have seen these moths. Like butterflies, moths have a

four-stage life cycle: egg – larva – pupa – adult. In our area, just one generation is bred each year; in the south, some species produce two generations in one season. In northern Wisconsin, the adults emerge from cocoons sometime between May and July, depending on the species. Eggs are deposited on specific host plants so that when the larvae hatch in less than two weeks, they immediately begin feasting and growing, the caterpillar stage lasting about 3-4 weeks.

The caterpillar is biologically triggered to enter the pupal stage when its level of juvenile hormone is low. This occurs after multiple skin sheds. Moths create cocoons of silk to protect themselves while in the pupal stage. Some cocoons are built on plants, perhaps with leaves rolled around them. Others are built below the soil or amongst leaf litter. This is where the pupa stays over winter until it emerges in the spring.

There are day-flying moths. Because we typically don't associate moths with daytime activity, we might see a moth but think it is a butterfly. There are some basic characteristics that distinguish a moth from a butterfly:

Wing position: most moth wings are angled like an A-frame roof, while butterflies hold their wings out to the side or folded together over their bodies.

Antennae: moth antennae are threadlike, narrowed at the tip, or feathered, while butterfly antennae are thin with clubs at the tips.

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## Like a Moth... (Cont'd from Page 3)

**Body:** moth bodies tend to be stout and hairy, designed to conserve heat on cool nights, while butterfly bodies are slender and smooth; they are able to absorb solar radiation.

It just so happened that I had this photo of a Virginia Ctenucha Moth in with my other moth photos.



You'll notice that it is crawling on the surface of a flower. It is a day-flyer and common in Wisconsin. The body is hairy and the antennae are thin

and narrow at the tip. You can see some great close-up photos of this moth and caterpillars at:

[http://www.aprairiehaven.com/?page\\_id=7757](http://www.aprairiehaven.com/?page_id=7757)

If you want to observe the night-flying moths, there are ways to attract them without lighting up the night or running up your electrical bill. It turns out that leaving lights on all night can disrupt the normal behaviors of moths and other night-flying insects. There are different theories as to why moths are drawn to lights in the first place. The most current theory is that a moth actually becomes trapped by the light, in a state of sensory overload. It is thought that moths see dark areas adjacent to or in the center of a light source which they try to fly towards. But as they fly towards the dark spot, their perspective changes, so they change directions toward the new dark spot they see, and so on, which ends up keeping them near the bright light.

Different species are drawn to different wavelengths of light, so you can experiment with different types of light bulbs to see what you attract. Try your porch light, and then a mercury vapor bulb and then a black light to see if they draw in different kinds of moths.

Another way to attract moths is with bait. Many types of moths are pollinators, so they are drawn by scent. Moth bait can be made with overripe bananas, a few spoonfuls of brown sugar and half a can of beer. Combine the ingredients and allow it to ferment at room temperature for 1-2 days. You can

store leftovers in the refrigerator for up to a week. Use a new paintbrush to spread the thick bait on to a square foot of tree trunk. Applying the bait to multiple trees will increase your chance of attracting moths. During the day, you may find butterflies on the bait. Keep in mind that this bait could attract a black bear to your yard, so be cautious if you go out at night to check for moths! Another way to attract moths by scent is to plant flowers that attract moths. Four o'clocks and night-blooming nicotianas are recommended because they bloom through the night and are fragrant.

There is so much in our natural world to enjoy and marvel at, and now you know that moths are worthy of some attention. This summer when you're in your gardens or out for a walk, see if you can find a day-flying moth, or see how many different types of moths you can attract after dark either with lights or bait. You might just be surprised at what you discover!

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## More on Wasps

In the last issue of Kemp's Point, I wrote about the incredible paper wasp nest built last year on our gazebo's overhang. I didn't think I could be more amazed these small creatures, but I am! In the January eCALS Newsletter, distributed by the College of Agricultural and Life Sciences to faculty and staff, there was a story about wasp drumming: "While feeding their colony's larvae, a paper wasp queen and other dominant females periodically beat their antennae in a rhythmic pattern against the nest chambers, a behavior known as antennal drumming." UW-Madison researchers have discovered that the drumming results in the production of worker wasps rather than males or queens. Drumming frequency is greatest early in the season and during peak "work" time, and then completely stops by the end of the season when just males and queens are produced. The article quotes Robert Jeanne, a professor emeritus of entomology: "This is the first case we know of a mechanical vibratory signal that an animal has evolved to modulate the development of members of its own species." Read the full article and watch/listen to a video clip of a wasp drumming at <http://www.kemp.wisc.edu/users/links.html>, click "Insects" and then "Wasp drumming behavior." 🐝





# Spring at Kemp



Clockwise, from top: Gary Kellner collects sap to make Kemp Gold; Jyme Lake in ice; Gary Kellner takes advantage of a nice spring day to clear the nature trail of leaves and debris; a landscape project resumes between the Kitchen/Dining Hall and Lodge; along the shore of Tomahawk Lake, spring meets winter; boats hang above the ice in the Boathouse.





# 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](mailto:kemp@cals.wisc.edu). All sessions are free of charge. The complete schedule is available at [www.kemp.wisc.edu](http://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.

**Thursday, May 19, 9:00 am – 2:00 pm**

## **Experience EcoTrek**

EcoTrek is an annual event for 7th graders at the Minocqua-Hazelhurst-Lake Tomahawk Elementary School. Small groups of students move from one learning station to the next along the Kemp nature trail. This year, UW-Madison students from the Wildlife Ecology Field Camp will teach students about Invasive Species, Big Mammals—Bear, Deer & Wolves, Cats of all Kinds, Fish & Fishing, Reptiles & Amphibians, Birds, and Outdoor Recreation. A limited number of participants will be allowed to join these student groups on their trek around the nature trail. This is an excellent opportunity for anyone seeking an introduction to these topics! Participants are asked to bring a bag lunch and beverage. Rain date: 5-20

## **Experience Wildlife Field Camp**

Join UW-Madison students for a taste of Wildlife Ecology Field Camp! Affectionately known as “Summer Camp,” students spend two weeks at Kemp Station for an intensive study of wildlife ecology. This year you are invited to participate in some of their learning experiences. Enrollment is limited. Participants should dress appropriately for activity and weather.

Wednesday, May 18, 7:00 pm

## **Northwoods Wildlife Conservation**

Fireside visit with Ron Eckstein, retired WDNR Wildlife Biologist.

Monday, May 23, 8:00 – 10:00 pm

## **Bat Field Experience**

Bat ecology, research techniques, capture, handling, marking, and acoustic surveys with WDNR bat ecologist, David Redell.

Wednesday, May 25, 9:00 am – Noon

## **Fishery Management**

Fisheries management, fish surveys, fyke net use and fish identification, with WDNR fish biologists.

Wednesday, May 25, 1:00 – 3:00 pm

## **Wildlife Damage Management**

Field demonstrations by USDA wildlife services. Bear, deer, beaver, and wolf management.

Wednesday, May 25, 7:00 pm

## **Tribal Culture & Natural Resources Management**

Fireside visit with Jonathan Gilbert, Wildlife Section Leader for the Great Lakes Indian Fish & Wildlife Commission.

Friday, May 27, 7:00 pm

## **Exploring Loon Behavior**

*Session Leader: Jay Mager, Assistant Professor, Biological Sciences, Ohio Northern University*

Jay Mager will give a presentation that describes some of the life history characteristics of the Common Loons that breed on many of the lakes in northern Wisconsin, and discuss the mechanisms by which loons select and defend breeding territories, focusing on the role that the territorial 'yodel' call given by male loons in territory acquisition and defense.

Monday, June 20, 7:00 pm

Tuesday, June 21, 7:00 pm (session repeated)

## **Oak Wilt: Coming to an Oak Tree Near You!**

*Session Leader: Glen Stanosz Professor, Plant Pathology, University of Wisconsin-Madison*

The confirmation of oak wilt in Oneida County in 2010 revealed yet another threat to the health of Wisconsin's northwoods. This tree disease is often lethal, especially to our northern red oaks, and is known to be caused by fungus that is probably not native to our state. Though naturally spread by beetles and through root grafts, the oak wilt pathogen often exploits human activity leading to wounds on trees, from tree pruning in residential settings, to logging in forests. Decades of study have led to guidelines that can greatly reduce occurrence of oak wilt, and minimize damage where it occurs. Professor Stanosz will review the history and biology of the disease, and principles and practices involved in oak wilt management.

*(Continued on next page)*



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

### Research in Landscape Conservation

Join us for a look into the research being done in the Studio for Landscape Conservation through UW-Madison's Nelson Institute for Environmental Studies and the College of Agricultural & Life Sciences. Dr. Janet Silbernagel and her Masters and PhD students will present studies into the ecology and conservation of landscapes and regions in a changing global environment.

Wednesday, June 29, 7:00 pm:

#### Sandhill Cranes & Powerlines

*Session Leader: Kim Ness, Master's Student, Conservation Biology and Sustainable Development*

Understanding the collision risk with power lines for sandhill cranes in rural Wisconsin's wetland-agricultural communities.

#### Spatial Literacy & Stewardship for the St. Louis River Estuary

*Session Leader: Janet Silbernagel, Associate Professor, Landscape Architecture*

This year a joint Minnesota and Wisconsin Sea Grant project was launched to assess at-risk aquatic habitats in the St. Louis River watershed and estuary and to contribute to spatial literacy and stewardship. The project compliments the recent October 2010 designation of the Lake Superior National Estuarine Research Reserve, and is intended to inform future monitoring, restoration, and remediation. Our work connects aquatic science research on human-based stressor gradients in the watershed with spatially explicit vignettes of local resource issues and place-based games around those local issues to enhance spatial awareness and stewardship of the estuary.

Thursday, June 30, 7:00 pm:

#### Forest Scenarios

*Session Leaders: Jessica Price, Doctoral Student, Environment & Resources and Kristi Nixon, Master's Student, Conservation Biology and Sustainable Development*

An evaluation of the conservation effectiveness of various land management regimes under changing climate and demand for woody biomass informed by local and regional expert knowledge.

#### Community Food Production

*Session Leaders: Vince Smith, Doctoral Student, Environment & Resources and Robbie Green, Master's Student, Landscape Architecture*

An examination of the social and environmental site

attributes of community gardens in Madison, Wisconsin and understanding the current and potential role of urban agriculture as a food source and as a tool to address community food security.

Tuesday, August 9, 7:00 pm

#### Tips to Enjoy Your Wild Harvest

*Session Leader: Scott Craven, UW Extension Wildlife Specialist*

Scott Craven will provide an overview of cooking wild game -- how to take the harvested bird or mammal from field to table. Learn the steps involved in proper field dressing, storage and preparation and how the nutritional value of wild game compares to domestic meat. Scott will share some of his favorite cookbooks and recipes and tips on how to produce a good meal from your harvest.

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## Outdoor Classroom....(Cont'd from page 1)

the flora (suspended algae) and fauna (animal component or zooplankton) for later identification and enumeration. After they were thoroughly frozen, we headed back to the Mead Residence Hall for some coffee and lunch.

The afternoon saw students performing nutrient analyses and identifying phytoplankton and zooplankton. MIAD students always seem to readily grasp identification concepts and really enjoy trying to be the first one to correctly identify an organism. Back at MIAD the next week, the groups were responsible for sharing their data, knowledge and insight with the rest of the class in a series of oral and visual presentations, with the goal of a comprehensive understanding of lake ecosystems. 🍷



*Dakota Whitehouse, Integrated Studio Arts Major, attended the field trip as a student enrolled in Paul's Introduction to Biology course. Drilling holes through 30-inches of ice was a new experience for him. Dakota made the trip, along with his partner Monica Miller, Sculpture Major, to get samples for their Research Project. Projects are self-directed, semester long endeavors required for the course, though students get to choose a topic that interests them. Dakota*

*and Monica are working on "Testing the quality for life in bodies of freshwater in the state of Wisconsin".*



## River Otter (*Lontra canadensis*)

We were hit with a winter storm March 22 & 23, resulting in over a foot of new snow. The morning after the storm, the dogs and I came upon a spot where a river otter had crossed the road. The path left in the snow was concave, like a shallow trough. Where the otter left the road, there was a narrower trough in the snowbank, made by his or her tail. I couldn't help but think what fun it must be to be an otter after a big snow, bounding and sliding through the woods on it's belly! Where the snow on the road had not been disturbed by cars, I saw the webbed tracks made by the animal. River otters in Wisconsin live primarily in the northern half of the state, and are usually seen near water, since their diet is made up primarily of aquatic foods, like fish and crayfish. When you hike the nature trail at Kemp, you may see otter scat along the lake shore, a territory marking technique. An otter needs about 3 square miles of territory for foraging. Otters give birth to 2-4 pups in April or May, after a year-long pregnancy. The pups are weaned at 8-10 weeks and then learn to swim. Surprisingly, not all young take naturally to the water. The young otters set out to establish new territory after about a year. Otters communicate with sounds -- chirps, grunts, screams and snorts. Source: <http://www.dnr.state.wi.us/eek/critter/mammal/riverotter.htm>



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