Kemp's Point

Volume 19, Number 1, Spring 2018

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

Reality Forestry

Spring break during college has a reputation for parties, sun and fun. But for ten UW-Madison forestry students, instead of toes in the sand, they found themselves knee deep in snow in the forests of northern Wisconsin.

A five-day field practicum based out of Kemp Station was the culmination of the 10-week Forest Operations class. The course was taught by Scott Bowe, UW-Madison Forestry Professor and UW-Extension Wood Products Specialist, and Steve Guthrie, retired professional forester with more than 40 years of industry experience. Funding was provided by the Gordon R. Connor Center for Excellence in Forestry at UW-Madison. This endowment was established by Mary Roddis Connor, who worked for seventy years to shape legislation and educate the public about sustained yield and multiple-use renewable forests, promoting the wise use of natural resources.

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Day 1: Timber Cruise Exercise: Students visited three timber stands on the Northern Highland-American Legion State Forest, each a different stand type -- pine, aspen and mixed hardwoods. At each stand, Guthrie (shown above with students) and Bowe provided instruction on the use of forestry tools, reviewed the parameters of the timber sale, and pointed out unique characteristics of the stand. Working in teams of two, students tallied and measured trees, recording results on a cruise sheet. Back at Kemp (center) they calculated total cords and total board feet for each stand.

Day 2: A return to the snowy forest for an exercise in marking hardwood trees. Guthrie lead the group to a private stand of timber he manages west of Kemp Station. After a discussion about the stand type and landowner objectives, students had the opportunity to bring all of their coursework and experience together and decide which trees should be harvested. Kyle (left) tries his hand at the paint marking technique as Guthrie looks on.

During the nine weeks before the field practicum, the UW-Madison students connected via video link with Bowe and Guthrie at Kemp Station for lectures and discussions. These covered the techniques, equipment, and methods foresters use to put forest management plans into practice. An emphasis was placed on sustainable management and extraction of timber products. In addition to the operational aspects of timber harvesting, students learned how foresters establish, monitor, and manage timber sales. This included topics of how to work with timber land owners; how to cruise the timber on the land; and management of the logistics of a sale, from harvesting, to road building and trucking.

Student exercises included reviewing actual ethics cases in forestry which taught the importance of being honest and fair to all parties involved in a timber sale – the land owner, the logger, the trucker and the mill. Another exercise required students to prepare a bid on a timber sale – how much they would pay a land owner for their timber. Armed with a forest inventory, wood values and a list of harvest and hauling costs, students prepared a bid that included their own profit expectations. A final exercise gave students the opportunity to get comfortable speaking with forestry professionals. Teams of two interviewed professionals in different areas of the industry about what they thought were the top 5-10 things important to a forestry student coming out of school today.

About half of the field portion of the course was dedicated to industry tours, teaching the important concepts all foresters must know. First, a healthy forest relies upon a healthy forest industry. If there were no markets to buy our forest raw materials, the vast majority of forestland owners could not afford to manage their forests. Second, foresters must understand how to merchandise the variety of raw materials from our forests to bring the highest value to the landowner. Finally, foresters must understand the scale of forestry on the landscape. How much pulpwood does it take to keep a pulp mill operating 24/7? How many logs does a sawmill need to keep sawing through the spring thaw? These questions and more were the focus during the industry tours.

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Day 3: Facility tours were a highlight of the week. Day 3 focused on the pulp and paper industries, with a facility tour at Louisiana Pacific in Tomahawk, and a visit to Packaging Corporation of America (PCA), also in Tomahawk.

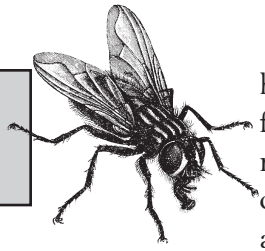
Day 4: This day won the "Best Day of Field Practicum" award with a visit to Kretz Lumber Company of Antigo . Above left, the students hear from Al Koeppel, Head Forester, about the process of scaling and grading saw logs and veneer logs.

Day 5: A course in Forest Operations would not be complete without a visit to a logging operation. Students watched as logger Lorry Krause used a Scorpion King Harvester to fell red pine on the Northern Highland American Legion State Forest (Above)

In between field exercises and tours, students spent time with professionals from both agency and industry, including a Wisconsin Department of Natural Resources forester and forest products specialist, and a consulting forestry from private industry who told them, when discussing the use of drones, that "... nothing can rival the senses of a well equipped forester in the woods."

Shoo Fly, Don't Bother Me

By Karla Ortman



In the fall, during one of those summery warm ups, a fly appeared in my office. It was just your ordinary housefly, *Musca domestica*. The fly liked to sit on my computer screen. About an inch from the top, right on the screen, so it wasn't really interfering with my work, but it was a bit distracting. When day three of the fly's companionship rolled around, I began to wonder how long a house fly typically lives.

If one can have fond memories related to houseflies, I suppose mine would be those at my grandparent's farm. There were always houseflies there. Some years they were "worse," or, I suppose, "more successful" than other years. They seemed to like hanging out on the house porch, as did we, so there was always a battle. Sometimes my sister and I would go on a fly killing spree, with a goal of reducing the porch population, but our efforts soon felt fruitless and we found some other trouble to get into. It was inevitable that some flies made their way indoors, and that did not sit well with my grandma. She was mighty handy with a fly swatter and there was power behind her swats! The unfortunate flies that went up against Gramma did not live long, but if successful in life, a housefly will live for two weeks or even a month. During their short, adult life, like many other insects, the mission in life is to eat and reproduce.

A female housefly, in her lifetime, can lay up to 500 eggs. These are usually in batches of 75-150 eggs at a time. They are deposited in organic matter that will be the food for the larvae that emerge from the eggs within just one day. This organic matter is often food waste, feces or carrion. Depending on moisture conditions, larval development takes between two weeks and a month, after which the larvae retreats to a dry, cool location and transforms into pupae. The pupal case of a housefly is small, 1.2 mm in length, and turns from yellow to black in color over time. After this period of metamorphosis, two to 20 days depending on temperature, the adult fly emerges. Interestingly, the fly is fully grown at this point – but some houseflies will be smaller than others, a reflection of their nourishment levels during the larval stage. After a mere 16 hours, adult males are sexually mature; with adult females following at 24 hours. It is normal for a female housefly to mate only once, while males mate multiple times. If all of the required conditions – temperature, moisture, adequate organic matter – are optimal, the life cycle of a housefly may be completed within just 7-10 days, which explains why there could be so many flies at my grandparent's farm!

> *There was an old lady who swallowed a fly;*
> *I don't know why she swallowed a fly - perhaps she'll die!*

If you are familiar with this children's story and song, you know that the fly was not to blame for the old lady's death – it was the horse, of course. But houseflies are known for carrying germs, which may cause sickness and even death. I saw one author refer to flies as "germs with legs." A 2017 study by Penn State's Eberly College of Science revealed that the legs and wings of the fly had the "highest microbial diversity in the fly body." The study examined flies collected from urban, rural and natural settings from three different continents. Would you be surprised to learn that the flies from the urban, densely human-populated settings carried the most pathogens?

The lifestyle of the house fly leads to this pathogen load. Not only do they deposit their eggs in rotting organic matter or fecal material, flies are also sloppy dinner guests. Their mouthparts are designed to "sponge up" a liquid diet only. To eat solid food, they must regurgitate saliva onto the solid food to liquefy it and then sponge it up with their proboscis. Also note that whenever a fly comes to rest, often on our food, it excretes and regurgitates.

> *God in His wisdom made the fly*
> *And then forgot to tell us why.*
> *– Ogden Nash, 1942*

Despite having a life style considered disgusting by most human accounts, even the housefly must fulfill some purpose. All species in an ecosystem have a role or purpose. One obvious role is as food for other creatures. Reptiles, birds and other insects feed on both the adult and larval version of the housefly. Another purpose that may be overlooked because we just don't think about it much is how the larvae, or maggots, fill an important role as scavengers,

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Reality *(Continued from Page 2)*

As for the students, they were grateful for the opportunity to learn from industry professionals, especially Guthrie, with his "great stories" about real life experiences. For another student, the course opened his mind to career opportunities on the forest product side that he had not considered before. Yet another pointed out the value of the course in the job search -- that without this course, he would not have the experiences or knowledge to point to when asked what he knew about the forest industry.

We thank these future foresters for giving up their spring break to learn about the industry side of forestry. They will be better equipped to sustainably manage our forests in the future.

Talk About Science

UW-Madison graduate and post-doc students from Tim VanDeelen's lab held a mini-symposium during their lab visit to Kemp Station. An engaged audience of 35 guests listed to 15 minute talks about student research projects. According to VanDeelen, "Having to do a research presentation in front of a group is an essential part of communicating science. If you cannot communicate your science effectively, it doesn't matter. We interact pretty frequently with wildlife professionals in the southern half of the state but not in the north. Coming to Kemp is an opportunity to do just that. I was gratified to see that our audience this year included both biologists and interested non-biologists." Topics included: Modeling sandhill crane demography and implications for hunting; Coyotes in California; Carnivores in the Apostle Islands; Deer and predation; Monitoring deer recruitment,; Camera trapping of tropical mammals in Malaysia; Wisconsin cave bats and white nose syndrome; Wolf monitoring in Wisconsin; Sage Grouse biology; Sharp-tail grouse biology; and CWD and elk.

Shoo Fly *(Continued from Page 3)*

breaking down waste and decaying organic matter. And one day, perhaps the housefly will help scientists discover more ways of preventing disease….after all, this creature can carry around over at least 100 human pathogens and not fall ill as a result of them!

Little Fly
Thy summer's play,
My thoughtless hand
Has brush'd away.

Am not I
A fly like thee?
Or art not thou
A man like me?

For I dance
And drink & sing;
Till some blind hand
Shall brush my wing.

If thought is life
And strength & breath;
And the want
Of thought is death;

Then am I
A happy fly,
If I live,
Or if I die.
-William Blake, 1794

A Perspective on the Thistle

By Pedro Muñoz

Not even a day had passed after arriving in the United States for the first time in my life when I was told of the damage invasive thistles were causing in local ecosystems here. I was visiting a park in Chicago at the time, and the notion was really unexpected, as I had always been taught that European species were weaker or worse adapted, and thus subject to invasion, never as potential invaders. Now I have developed a wider perspective than that, so it didn't surprise me to find invasive thistles at Kemp Station too.

The problem when trying to characterize thistles is that the name is actually applied to a great variety of genus, and even spans through several families, although most of them belong to the family *Asteraceae*. With such a heterogeneous group, it is not easy to pick up general characteristics, but many of them are adapted to Mediterranean climates, where people have been using them for centuries in different ways.

I would say the most interesting use was the *carding* of wool, which is the process of combing or brushing the wool after shearing and cleaning it, to make the fibers parallel so they can later be woven. Way back in the dark ages, one of the kingdoms that would eventually form Spain fostered the creation of one of the most powerful guilds in Europe called *La Mesta*, made up of wool cattle owners and shepherds.

And such a powerful influence they wielded, that the name that nowadays describes the operation spawned from the Spanish word for thistle, which is *cardo*, since the tool used was the "head" of a thistle called *Dipsacus fullonum* (common name is wild teasel).

Several species of thistle are edible too and even considered a delicacy in several European countries, such as the cardoon (*Cynara cardunculus*), closely related to the artichoke (which is also a thistle), and is common as a Christmas dinner, or the milk thistle or St. Mary's thistle (*Silybum marianum*), considered invasive in North America. Usually the stems are consumed, boiled until soft (which takes around 1.5 hours) with lemon to prevent oxidation, and served with some form of béchamel sauce, sometimes roasted until light brown (au gratin). The tenderest parts can be eaten raw in salads. The roots can also be consumed both ways. Most of the plant can be infused, having protective effects on the liver and gallbladder and improving their function against cirrhosis, hepatitis or poisoning from death cap mushroom. Thistles feature several other healthy perks, such as low calorie content and high amounts of potassium, calcium and diuretic properties, and are recommended for diabetics.

In addition to being directly eaten, these plants can also be used to produce other foods: several species considered weeds are widely used to obtain vegetable rennet for commercial cheese production, such as *Torta del casar*, greatly appreciated in Spain, or *Nisa* and *Serra da Estela* in Portugal. The roots of several species of thistles, especially *Eryngium campestre*, or field enrygo, nourish the popular King Trumpet Mushroom (*Pleurotus eryngii*), sold in markets all over the world, and the flowers are used to feed bees for obtaining luxurious honey products.

As for modern industrial uses, the seeds of some of thistle species yield a vegetable oil similar to that of sunflowers, usable for biodiesel fuel and bioplastics, and pharmaceutical compounds such as silibinin can also be extracted from some species.

Seeing the potential uses of thistle, one can reach the conclusion that in this case knowing your enemy may be the way to defeat it. If we were to find commercial value in the invasive thistles, perhaps they would be gathered to the point of disappearance!

Pedro Muñoz housed at Kemp Station while participating in the U.S. Forest Service International Forestry Fellows Program in 2017. Pedro was attending the University of Madrid.

DISCOVERY WALKS AT KEMP STATION

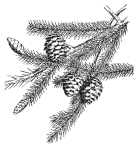
Kemp Station is home to numerous habitat types -- old-growth forest remnants, second-growth forests of hemlock, pine, and northern hardwoods, lake coves, bogs, a bog lake, ponds and over a mile of lakeshore. It is a wonderful place to go for a walk and discover the wonders of nature. We are pleased to offer "discovery walks" on the property, each lead by an expert in their field. These walks are open to all knowledge and interest levels. Dress appropriately for the weather, wear comfortable walking shoes for rough trails and possible wet conditions, and bring insect repellent. Meet at the Pavilion. ***Advance sign-up requested with Karla, 715-358-5667 or kortman@wisc.edu, but walk-ins are welcome!***

Discover the Birds of Kemp Station, led by David Drake, UW-Madison
Saturday, May 5, 7:00 am (Inclement weather date, May 6)
Note: Binoculars recommended.

Discover the Bog Plants of Kemp Station, led by Susan Knight, UW-Madison Trout Lake Station
Saturday, July 7, 10:00 am (Inclement weather date, July 8)
Note: Wear shoes that can get wet, or waterproof footwear to keep feet dry. Water may be over the ankle.

A Special Discovery Walk: The Historic Buildings of Kemp Station,
led by Gary Kellner, Retired Kemp Station Carpenter & Caretaker
Monday, July 16, 6:30 pm
Tour the historic buildings of Kemp Station. Built in the 1920s to 1940s, Gary Kellner was responsible for maintenance of the buildings for more than 20 years beginning in 1993. Enjoy his stories of each structure's history and discover some of the nooks and crannies too!

Discover the Insects of Kemp Station, led by P.J. Leish, UW-Madison
Friday, August 10, 2:00 pm



Discover the Trees of Kemp Station, led by Scott Bowe, UW-Madison
Monday, August 13, 6:30 pm

EVENING PRESENTATIONS

No registration required. Location: Connor Forestry Center

Research in the Northwoods: Bird Monitoring and Research in Wisconsin's Young Forests
Monday, June 11, 7:00 pm
Anna Buckardt is a Master's candidate at the University of Maine spending her third summer at Kemp Station. Join her for a look at her research which addresses the questions: How do birds respond to young forest management? Can landowners monitor wildlife on their properties through citizen science? and What do we know about the migration and wintering of a declining young forest warbler?

The Buzz on Wisconsin Mosquitoes
Monday, June 18, 7:00 pm
There are more than 60 species of mosquitoes in Wisconsin and a few can make life miserable. Mosquitoes are not just nuisances -- some species can transmit "bugs" that cause diseases like dog heartworm, West Nile or La Crosse encephalitis. Dr. Susan Paskewitz, Professor of Entomology at UW-Madison, will introduce some of the unique aspects of mosquito biology and provide an update on new species like the Asian tiger mosquito, which have recently appeared in the state. Learn about ways to control mosquitoes, with examples from community programs in Wisconsin and learn about the many ways individuals try to prevent mosquito bites and the evidence for what works and what doesn't.

The "All Things Fungi" Festival – August 24 & 25, 2018

This first time event will include lectures, a foray, discussions and demonstrations. Lectures begin Friday night and continue Saturday afternoon.Topics will include an introduction to fungi, an introduction to common mushrooms of northern Wisconsin, how to grow mushrooms at home, and the medicinal use of mushrooms. On Saturday morning, participants will collect from the forest of Kemp Station and discuss findings afterwards. Found edibles will become part of a short cooking demonstration. Persons of all interest levels are welcome – come for some or stay for all. Overnight lodging at Kemp Station is available on Friday and Saturday nights. For more information and a detailed schedule, visit www.kemp.wisc.edu/outreach/events. Location: Connor Forestry Center

HANDS ON LEARNING

Shiitake Mushroom Workshop
Saturday, June 9, 10:00 am & 1:00 pm

Join Drs. Glen Stanosz and Scott Bowe, UW-Madison, for an introduction to Shiitake mushroom cultivation. This hands-on demonstration will begin with a discussion of the life cycle of Shiitake mushrooms. We will demonstrate how hardwood logs are prepared, inoculated, and tended 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 have the skills to build your own mushroom garden. Chicken shiitake wild rice soup will be served at the end of the 10 am session and at the beginning of the 1 pm session. Advance registration required with Karla at 715-358-5667 or kortman@wisc.edu. Fee: $10 per person payable in advance; Registration limit, each session: 15; Location: Pavilion

Hands on Learning: Finding Your Way In the Woods
Saturday, August 18, 9:30 am

Leave the modern world behind and experience some "old school" tools and techniques for getting around in the woods. Join UW-Extension Natural Resources Educator, Bill Klase, for a review of navigation using the sun, stars and natural features in the woods along with the tried and true compass. You will also learn how to measure distance just by counting the number of steps you take. Appropriate for ages, 12 years and up. Advance registration required with Karla at 715-358-5667 or kortman@wisc.edu. Location: Connor Forestry Center

Kids & Family Programs

Fun In the Forest (Ages 5 to 11)
Tuesday, July 10, 10:00 am
Location: Pavilion

Join us for an exciting forest adventure to learn about the forests of Northern Wisconsin. Our trek will show us how forests change over time and how much we depend upon our forests for products that we use every day. We will end our trek with a stop on the Jyme Lake bog. Please wear old shoes or sturdy sandals since your feet will get wet on the bog. The hike distance will be about 1 mile. Parents and Grandparents are welcome to join in the fun. Register for this program on or after June 28 by calling the Minocqua Public Library at 715-356-4437.

Evening Family Campfire Storytime
Tuesday, July 26, 6:30 pm - 8:00 pm
Location: Lodge Fire Ring

Join us for an evening singalong around the campfire with popular local performer, David Dall. Enjoy roasting marshmallows and making s'mores, too. This program is open to all ages and does not require registration.

Kemp Natural Resources Station
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Find us on Facebook

Sugar Maple (*Acer saccharum*)

This spring the sugar maples at Kemp Station have been getting a lot of attention. You can probably guess that is because they are being tapped for their sap to make maple syrup. Who doesn't enjoy a pancake or waffle topped with pure maple syrup?! Sap may be collected from other maple species, and even other species of trees, but the sugar maple has the highest sap sugar content. The sugar maple is the state tree of Wisconsin. According to Wisconsin's Blue Book: "A favorite state tree was first selected by a vote of Wisconsin school children in 1893. The maple tree won, followed by oak, pine, and elm. Another vote was conducted in 1948 among school children by the Youth Centennial Committee. In that election, the sugar maple again received the most votes, followed by white pine and birch. The 1949 Legislature, in spite of efforts by white pine advocates, named the sugar maple the official state tree by enacting Chapter 218, Laws of 1949." The sugar maple is the most abundant tree species by volume in all of Wisconsin, boasting 2.8 billion cubic feet in live trees. In the hardwood lumber industry, sugar maple is called hard maple. It is hard and dense, equal to red oak in density. Hard maple has a diffuse porous cell structure, which means the cell diameters are relatively small, which produces a closed and subtle grain pattern. Hard maple has been popular for years in kitchen cabinet design and in solid strip wood flooring, especially sports flooring applications. And let's not forget that in the summer time, the sugar maple provides cool shade on a hot sunny day.

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