

Madison-Monroe-St Clair Unit

Under the Canopy

For Master Gardeners and Master Naturalists



January
2016



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Thanks for a Great Year

Thank you to all the volunteers for making 2015 a memorable year! Volunteer and education hours have increased. The Unit also hosted a successful State Master Gardener Conference with a track for Master Naturalists. The office is looking forward to a fun and exciting 2016!



Reporting 2016 Hours

The office is starting the process to roll over the Volunteer Time Tracking Website for the 2016 year. We will begin the process on January 18. The roll over takes approximately a week. We will notify you when the new calendar is available. Thank you for your patience while we work through this process.

Welcome Master Gardener Class

Training for the 2016 MG class began January 5. We have 15 trainees who are busy hitting the books during the next few months. Be sure to introduce yourself to the new faces around the Extension Office.

New Certified Volunteers

Congratulations to the Interns who have worked hard and completed their initial 60 volunteer hours. Welcome **Master Naturalist, Mary Nygard and Master Gardener, George Kutterer**. Name badges can be picked up from the office at your convenience.

Unit Master Naturalist Potluck

Join fellow MN volunteers on **January 26 at 6 pm** at the Collinsville office for a potluck and fellowship. The Extension Office will provide a pasta dish. Please bring a side item or dessert to share. RSVP to Sarah by January 25.

Speaker's Bureau Info Needed

The office gets numerous requests throughout the year for guest speakers. I am putting together a formal list of titles and descriptions that will be posted to the Unit website so the requesters will know what topics are currently available from our volunteers. Please email me at ruth1@illinois.edu information about your presentation so it can be added to the website.



State Master Gardener Coordinator Update

Monica David retired as the State Master Gardener Coordinator in December. She provided leadership to the program for 16 years. We thank her for her support and encouragement through the years. Sandy Mason, Extension Educator in the Champaign-Ford-Iroquois-Vermillion Unit, is the Interim State Coordinator. The University will do a search for a new staff person. Stay tuned for more info.

Happy New Year, Sarah

Fundraising Events

Check out these upcoming events and support the University of Illinois Extension. These events are sponsored by St. Clair County Extension and Education Foundation. Call 618-939-3434 for more information about these events.

- Schnuck's eScrip Community Card-
Pick up a card from the Extension Office. Register the card. Present your card when you checkout, and Schnuck's will donate a percentage back to Foundation.
- Eckert's-- February 24 at the Belleville Store
Make a purchase at the Restaurant, Country Store, or Garden Center and 15% of your purchase will be donated to Foundation. **Offer is only valid at the Belleville Location.** Present the attached flyer, or mention St. Clair County Extension and Education Foundation to the staff at Eckert's.
- Taste of the Area—April 1 from 5-8 pm at The Regency Conference Center, O'Fallon
Sample food and drink from area restaurants. Tickets are \$25.
- 4-H Trivia Night—April 2 starting at 7 pm at Scheve Park, Mascoutah
Gather your friends and test your knowledge. \$12 per person. Up to 8 people per table.

“Birdie, It's Cold Outside”

How Birds Survive Winter

By: Elizabeth Frisbie, Master Naturalist

Although they may appear small and defenseless hopping across the deep snow under your feeders on a blustery winter day, birds have many adaptations and behaviors that allow the majority of them to survive even very cold winters.

As temperatures drop in late autumn, most birds in our region grow extra feathers during the late fall molt. These extra feathers give them thicker insulation, an added protection against winter winds and cold temperatures. In areas with very bitter winters, birds have been observed to grow extra feathers to a depth of ½”.



Many birds change their feeding habits, **gorging** themselves throughout the fall and winter, to build up fat reserves. This extra fatty layer provides both insulation as well as surplus energy during cold weather. Some birds, such as the Tufted titmouse (*Baeolophus bicolor*), will eat snow on a regular basis should water not be available. When winter arrives, several species of birds will **forage together**. For instance although most often seen in individual mated pairs during spring and summer, come winter, Northern Cardinal (*Cardinalis cardinalis*) will flock together to look for food. In our region, White-breasted nuthatch (*Sitta carolinensis*), Downy woodpeckers (*Picoides pubescens*), Tufted titmouse and Chickadees (Black-capped: *Peocile atricapilla* & Carolina: *Poecile carolinensis*) are often observed foraging together in mixed species flocks when it is cold outside. Researchers believe other bird species forage with Chickadee because Chickadee call out to one another when they locate food, thus making it easier for other types birds to find something to eat.



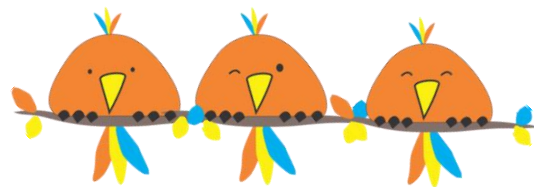
During autumn, several species of seed and nut-eating birds **cache**, or hide, food for later use. During the fall birds such as the Chickadee, Nuthatch, and Tufted titmouse may be observed placing seeds and nuts into crevices, under loose tree bark, and in small holes. If you have Tufted titmice at your feeder, watch for them to shell sunflower seeds one at a time, and then hide the kernel within 130' of the feeder. Typically (46% of the time), Titmice cache under loose tree bark.

When winter arrives, most birds engage in specific cold-defense behaviors in order to keep warm. For instance, you may notice birds puffing themselves into what look like little balls of feathers, similar to the “angry bluebird” on Grandma’s sweatshirt. This behavior is known as **fluffing**. Through fluffing, birds create air pockets between their feathers, adding additional insulation. Some birds also engage in **tucking**, standing on one leg or crouching to cover both legs, as a means to stay warm. During the daylight hours, **sunning** behaviors may be observed. During sunning, birds turn their backs to the Sun, thereby taking advantage of the solar heat by exposing the largest surface of their body to the Sun’s rays. The careful observer may also note that while sunning, birds may raise their feathers slightly, which allows the Sun to more efficiently heat their skin and feathers. Birds may also fan (spread) their tails and/or drop their wings in order to expose more feather surface to the Sun’s warmth. As the sun sets, many small birds gather in large flocks, roosting together during the night for warmth in shrubbery or trees. In our region both Chickadees and Titmice display this **group roosting** behavior.

Finally, many birds are physically well equipped for temperature control. Specialized scales that minimize heat loss cover birds’ legs and feet. Interestingly, birds are able to control the temperature of their feet and legs separately from their body and head temperature. Scientists believe birds further reduce heat loss by constricting the flow of blood to their extremities. When confronted with extreme cold, a behavior known as **shivering** allows birds to keep warm. Specifically, birds will shiver in order to raise their metabolic rate, thereby generating more body heat. Shivering throughout the night frequently results in dramatic weight loss for the bird. Thus, after a cold night, many birds will be observed gorging on food the following morning, regaining their body weight and increasing fat reserves to supply both insulation and energy for future shivering.

In addition to shivering, birds also engage in **torpor**, a state of reduced metabolism, allowing their body temperature to be lowered to survive very cold nights. Torpor is also called **regulated hypothermia**. This state results in birds requiring fewer calories in order to maintain proper heat and body temperature. Black-capped chickadees have well-studied patterns of regulated hypothermia, which they engage in on cold winter nights. Chickadees are able to lower their normal daytime body temperature (108^oF) by 12-15^oF. Researchers estimate that this drop in body temperature allows a Chickadee to conserve approximately 25% of its usual hourly caloric expenditure. Cornell biologist Susan Smith’s 25 year study of the Black-capped chickadee also revealed that the lower the temperature, the more energy conserved by the bird.

References: Audubon; birdnote.org; Cornell Lab of Ornithology; NWF, Wild Birds Unlimited



What’s Going on Out There?

Naturalist Phenology Report for Mid-December, 2015– Mid-January, 2016

By: Bill Klunk and Elizabeth Frisbie, Master Naturalists

As promised last month, we are going to diverge from the regular report again, this time focusing on the definition of phenology, providing a little history and exploring the many uses for phenological information. As you might guess, the word “phenology” comes from the Greek words “phaino” (to appear or show) and “logos” (to study). The definition of “phenology” in our context is the study of naturally occurring seasonal events and their influences. Another definition is simply nature’s calendar of events. In a biotic sense, the actual events studied are called “phenophases.” The most commonly tracked phenophases are the dates of specific animal behaviors such as reproduction, migration, and hibernation. We also look at phenophases of plants to see when they might set buds, expand leaves, open blossoms and drop their fruit and/or leaves. Phenophases are often influenced or triggered by both biological and physical events.

In the abiotic sense of phenology, the amount of rainfall, humidity, wind, average/high/low temperatures, first/last frost, and other factors influence or otherwise naturally affect plants and animals. Discovering these seemingly unrelated influences is where phenology really becomes fun. Did you know that some birds are known to navigate during their nighttime migration using star constellations per research performed in the late 1950's by German ornithologists, Franz and Eleanore Sauer? Here's another one: the sex of many turtle species is determined by the environment (mainly average temperature) after fertilization, which is called temperature-dependent sex determination (TSD). These and a million other phenological events and dependencies stir a little curiosity in all of us.

Phenology is often easy to observe and sometimes practical for application; hence, it is considered one of the oldest sciences. The Chinese have documented phenological events of plants and animals for a decade shy of 3,000 years to date. The Japanese have documented Cherry blossom trees (*Prunus spp.*) for 1,200 or more years. In Europe during the 1700s Swedish botanist Carolus Linnaeus, who invented our present taxonomy system of binomial nomenclature, was noted for his comprehensive phenological records. British landowner Robert Marsham is credited for his lifelong phenological efforts and the systematic approach of recording phenophases. He lived throughout most of the 1700s, and several generations of his family carried on his work for 160 years after his death. Marsham is widely considered to be the father of modern phenology. In the United States, Henry David Thoreau of Concord, MA and Aldo Leopold of Baraboo, WI are significant naturalists and phenologists from the mid-1800s and mid-1900s, respectively. Obviously, these phenological records can be of significant importance for many things.

In the United States, the early settlers from Europe learned an important use for phenology from the Native Americans. Since the northern states have a much shorter growing season, the planting of corn at the correct time for successful germination through full maturity is key to a successful crop. The Wampanoag people planted their corn when a nearby oak tree had leaves the size of a mouse's ear. The Iroquois followed a similar guideline, planting their corn seed when the Dogwood or the Serviceberry leaves were the size of a squirrel's ear. It is unknown how long it took to develop these planting methodologies, but they have been time-tested and proven through science. Phenology can also be used for other reasons in agriculture and horticulture.

After twenty years of research, Donald A. Orton, an instructor at the College of DuPage, developed a system and wrote a book for the control of 64 common plant pests and 38 plant diseases. His book is titled Coincide: The Orton System of Pest and Disease Management. Pest and disease symptoms are often hard to predict and then observe. In addition, vulnerability windows for control can also be very short. A list of 54 potential indicator plants in various phenophases called Synchronous Phenological Indicators (SPI) is provided. These coincidental phenological occurrences can then be used to indicate a time to observe and control a specific pest or disease on a crop or valuable species. An example is the control of Bagworms (*Thyridopteryx ephemeraeformis*) on any host plant. The bagworm's larval stage is the most vulnerable time for control, and this timeframe coincidentally occurs when either the Japanese Tree Lilac (*Syringa reticulata*) or the Catalpa (*Catalpa speciosa*) are in full bloom. Another example is the control of crabgrass in a lawn with an application of pre-emergent herbicide when the Forsythia shrub (*Forsythia spp.*) is in bloom. Using the Orton System can reduce the amount of herbicides and insecticides used, which is good for non-target species and, ultimately, the planet.

A technology called Remote Sensing Phenology, which involves using satellites to observe the Earth, can help see certain phenophases on a very large scale. Just the seasonal green-up of a region is objective and telling when observed over time. Not only can one region or area be reviewed, but an entire state, country, continent, or hemisphere can be observed at one time with satellite phenological data. The large footprint of satellite imagery also allows for observation of things that cannot be possibly seen from the ground, such as state-wide crop conditions, drought severity across multiple states, spread of invasive species into remote regions, climate changes, and seasonal shifts.

We hope you have enjoyed our two-part divergence from the regular phenology report. Next month we will return to our regular report on what's happening out there for your reading enjoyment.

References: IDNR; Orton, Donald A., Coincide, 2006; The Phenology Handbook; USGS.

Continuing Education Programs

Green House Tour

January 16 at 6 pm at The Nature Institute, Godfrey

Join Patti Brown for a tour of the green house. Bring gloves, questions on seed stratification and seeds you wish to share. The group will do some soil blending and set some seed. The Green House is on Levis Lane (do not turn onto S. Levis Lane). Continue on Levis to the first driveway on the left. Park by the brown garage; the green house is behind. The event is sponsored by the Southwest Illinois Wild Ones Chapter.

Herb Day

January 23 from 8 am-5:30 pm in Urbana

The one day event is at the Wyndham Garden Inn and Conference Center in Urbana. Registration is \$70 and includes lunch buffet.

Vendors are also available. On-line registration is available at

<https://web.extension.illinois.edu/registration/?registrationid=13392>. Attendees may register through January 15. Space is limited. Registrations will be allotted on a first come, first served basis, so reserve now. Contact Linda Harvey at (217) 244-1693 or lh Harvey@illinois.edu with questions.



Pruning Workshop

January 23 from 9-11 am at The Nature Institute, Godfrey

Join Master Naturalist Kenneth Wheat and learn how to make the right cuts. The workshop includes a presentation on selecting tools and the best practices. Then head out to practice in the Arboretum. Bring pruning equipment, pictures of specimens you need help with, gloves, and dress for the weather.



Winter Tree ID

January 23 from 1-3 pm at the Nature Institute, Godfrey

Join Patti Brown as she shares tips to help de-mystify tree I.D. and emphasizes observation of bark, branches, form, twigs, leaf scars, and buds. Bring tree books, samples from home you want identified, camera, journal for notes, and dress for the weather.

Fogelpole Cave Biology and Geography

January 23 from 1-3 pm at the Waterloo Office

Steve Taylor, Illinois Natural History Survey and University of Illinois – Urbana, and Clifftop's lead science advisor for the Paul Wightman Subterranean Nature Preserve, and Aaron Addison, Washington University, will offer this presentation including a discussion of ongoing research on the Fogelpole Cave system. Cave-dwelling and cave-dependent wildlife includes rare species, some found nowhere else on earth. The entire system is being re-mapped, using modern technologies that will allow GIS layering. The seminar is sponsored by Clifftop.

First Detector Invasive Pests

January 28 from 9 am-3 pm at the Waterloo Office

Get the latest information on invading pests. New topics for 2016 include Jumping Worms, Boxwood Blight, and Insect Invaders that Threaten Our Forests.

Flyer/Registration available at <http://web.extension.illinois.edu/mms>

Dragonflies

February 6 from 1-3 pm at the Waterloo Office

Master Naturalists and Clifftop members Joe and Pat Roti Roti share their passion for dragonflies. Their well-illustrated presentation includes discussion on dragonfly types in our area, their natural history, identification tips, and enhancing habitat for these fascinating insects. Joe and Pat also are conducting dragonfly surveys at the Paul Wightman Subterranean Nature Preserve and will share findings from the 2015 surveys. The seminar is sponsored by Clifftop.



Willoughby Heritage Farm Presentations

Show your support of our local Master Gardeners and attend one of their presentations!

Make Your Own Maple Syrup January 16 at 1 pm

You will have the opportunity to place a tap in a maple tree and set up the collection system. Later, when we have collected enough sap, we will have sessions to boil down the sap to syrup. Everything which you will need to make your own syrup will be demonstrated. A limited number of starter kits will be available for purchase. Since maple sap starts running early and winter weather cannot be predicted far in advance, rescheduling of events may be necessary. Presented by William Klopfenstein and Kevin Perry.

Beginning Beekeeping February 6 at 10 am

Want to know what's all of the buzz with beekeeping? This class will show you how to get started with this fascinating and useful hobby. The class will cover the type of equipment which is needed and some sources, as well as some of the different kinds of honeybees which are available. Some of the problems encountered by beekeepers will be discussed, as well as where to learn more. Presented by William Klopfenstein.

Garden Planning 101 February 13 at 10 am

You've been dying to grow your own produce, but have struggled to get your garden off the ground. Whether you need insight on which veggies to grow - and when - or what medium to grow them in, this class is for you. Come and learn the basics of container, bed and in-ground gardening while getting an overview of the best veggies to grow in our area. Presented by Erica Siddle.

Owl Prow

February 20 from 6-8 pm at White Rock Land and Water Reserve

Bundle up for a hoot as Clifftop once again listen and watch for nocturnal raptors. Owls are calling out territorial claims and beginning their annual mating and nesting season. Please join us for this enjoyable — despite bracing weather — outdoor evening field trip. The fieldtrip is sponsored by Clifftop.



Four Season Webinars

Both offices will host these sessions at 1:30 pm. Master Gardeners and Master Naturalists receive free black and white handouts. Color handouts are \$5. Register by calling the office one week before the program. Recordings of the presentations will also be posted to YouTube.

- February 23--How to Kill a Tree: What NOT to Do
- March 8--Unique Terrariums
- March 22--Naughty, Nasty, and Annoying Plants

OR Participate in the webinars from home. Register for the online program at go.illinois.edu/4seasons_webinars

- How to Kill a Tree: What NOT to Do February 23 @ 1:30 pm or February 25 @ 6:30 pm
- Unique Terrariums March 8 @ 1:30 pm or March 10 @ 6:30 pm
- Naughty, Nasty, and Annoying Plants March 22 @ 1:30 pm or March 24 @ 6:30 pm

Native by Design: Landscapes Beyond Beauty Seminar

February 26 from 8:30 am-noon at the Lewis and Clark Community College, Nelson Center, Edwardsville

Learn more about native plants and the role they play in our landscape. The Keynote address will be given by Doug Tallamy. The program also includes a panel discussion to learn key concepts and methods for integrating natives into your landscape. Finally, enjoy a presentation on sound stewardship practices from various speakers. Registration is \$30. To learn more or register, visit <http://grownative.org/events/feb-26-native-by-design-landscapes-beyond-beauty>

Gateway Green Industry

March 1-2 at the Gateway Convention Center

NEW FORMAT: Lower Registration Fee! Lunch on your own!

Topics include Bonsai, Xeriscaping, Topping Off Your Topsoil, Native Trees from the Heartland, and Edible Landscapes. Brochure/Registration at <http://web.extension.illinois.edu/mms/> Discounts available for MG and MN.

Weekend Gardener

March 5 at the Shrine of Our Lady of the Snows

Attend four sessions on a variety of outdoor topics. Classes include Peonies, Conifers, Waterfall Instillation, Landscape Design Q and A, and Purple Martins. Fee is \$40 which includes lunch and flash drive with handouts from the other presentations. Gather your gardening friends and register before the classes fill up.

<http://web.extension.illinois.edu/mms/>



World Daffodil Convention

April 6-10, St. Louis

Participate in tours and presentations focusing on daffodils. Program details and registration is available at <http://stldaffodilclub.org/wdc2016/index.html>

Check out the Unit Webpage for the most up to date info!!!!

<http://web.extension.illinois.edu/mms>



Welcome to My Jungle

By: Elizabeth Wahle, Extension Educator



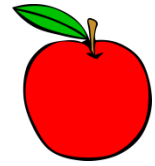
Narcissus 'Avalanche' (8 W-Y) emerged on January 4th, 2016

While taking down outdoor holiday decorations recently, I noticed daffodils popping up throughout the Jungle. My first thought was “that’s not good” before moving on to selfish aggravation that my daffodil display would most likely be less than spectacular this spring due to probable freeze injury to early exposed leaves...what with so much winter still to come. Clearly the daffodils had met their chilling requirement and with continued mild weather were able to start growth. Then I started wondering how many chilling hours the Jungle had actually logged so far and whether other species were waiting with baited breath to break bud at the next warm spell too. Using nearby *wunderground* weather station data through www.getchill.net, I determined the Jungle had accumulated approximately 759 chilling hours from November 1st - January 1st. What does this all mean?


Normally, with the onset of fall weather, deciduous fruits and nuts have stopped actively growing and have begun to drop their leaves in preparation for a long winter rest. This rest period, termed endodormancy, is necessary to winter survival for not only fruits and nuts, but for many trees, shrubs and bulbs. Endodormancy is a type of dormancy where the buds are dormant because of an internal plant inhibitor system that prevents growth even under ideal external growing conditions. Once a plant has entered endodormancy, it will not grow again until it has received enough cold to overcome the dormancy. However, the best temperature for chilling is not the extreme cold. Effective chilling temperatures to terminate dormancy are generally between 32 to 45°F (it is generally agreed), and approximate hours of chilling required to break dormancy will vary according to species and cultivar. For the most part, trees adapted to Illinois growing conditions rarely have difficulty attaining the proper chilling hours necessary to break endodormancy. When the chilling requirement has been met, rest (endodormancy) ends, and the plant is ready to grow, regardless of time of year. The continued dormancy of the plant then depends on another form of dormancy called quiescence or ecodormancy. With this type of dormancy, buds are dormant as a result of external conditions unfavorable to growth, i.e., as long as the temperature is cold, the plant will not grow. For this reason, late winter thaws and warm early spring weather in Illinois can be especially disastrous to fruit growers. Early warm weather can overcome ecodormancy, allowing premature growth that can be damaged by subsequent cold and frosts. When purchasing fruit plants, particularly peaches, it is important to avoid low-chill requirement cultivars that have been selected for Mediterranean and sub-tropical climates. Chilling requirement for these cultivars are met very quickly in the Midwest, making them all the more susceptible to early bud break and frost/freeze injury.

In general, the earlier a plant blooms, the more probable it is to suffer some amount of frost damage. A general rating of sensitivity to winter cold and spring frost is as follows: apricots and sweet cherries>peaches, nectarines, and Japanese-type plums>pears and sour cherries>European-type plums and apples. Luckily, fruit trees produce an overabundance of fruiting buds which insures against quite a bit of frost damage and other mishaps. Apples, for example, have a fruit set range of 2-8%. That means 92-98% of the flowers are extra!

Plant Type	Approximate Hours of Chilling Required to Break Dormancy (<45°F)
Apple	800 to 1750
Apricot	300 to 1000
Blackberry	350 to 600
Blueberry (highbush)	800 to 1250
Cherry (sweet)	500 to 1450
Currant	800 to 1650
Gooseberry	800 to 1650
Grape	50 to 400 (adequate growth) 400 to 1650 (better and faster growth)
Pear	600 to 1500
Pecan	650 to 1550
Peach	375 to 1200
Plum (Japanese)	600 to 1600
Raspberry	800 to 1700
Sour cherry	600 to 1500
Strawberry	50 to 300
Walnut	400 to 1550



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