

Madison-Monroe-St Clair Unit

Below the Canopy

For Master Gardeners and Master Naturalists



February
2023



Monroe County Office
901 Illinois Avenue
P.O. Box 117
Waterloo, IL 62298
(618) 939-3434
FAX (618) 939-7708

Madison/St. Clair
County Office
1606 Eastport Plaza
Suite 100
Collinsville, IL 62234
(618) 344-4230
FAX (618) 344-5602

Staff:
Laquitsha Bejoile-Hayes
County Director
lb3@illinois.edu

Nathan Johanning
Extension Educator,
Commercial Agriculture
njohann@illinois.edu

Elizabeth Wahle
Extension Educator,
Commercial Agriculture
wahle@illinois.edu

Sarah Ruth
Program Coordinator
ruth1@illinois.edu

Nicole Hellon
Office Support Associate

Mary Kay Rahn
Office Support Associate

Teri Scott
Office Support Assistant

Reporting Website Update

Thank you to everyone who has participated in a GivePulse training to learn more about the new reporting website. There will be future learning lessons soon. Resources for the GivePulse website are available [here](#). The website includes a recording of the site demonstration from January, videos on claiming accounts and adding impact, and a FAQ section. Volunteers may begin entering their impact for 2023 at illinois.givepulse.com. We will not be creating registration events on the site. The main goal at this stage is to become familiar with how to enter hours. Staff appreciates your patience during this transition. We are learning more about the system along with of you.

New Certified Volunteers

Congratulations to all of the volunteers who finished their internship in 2022.

Master Gardeners

Bob Carter, Alene Hill, Lisa Hoppe, Theresa Jarden, Barbara Klein, Patty Kress, Ed Morrissey, Janet Pauling, Cheryl Ransick, and Kathi Weilbacher

Master Naturalists

Kim Atkins, Pam Belmonte, Brenda Gray, Bruce Guthrie, Greg Kimutis, David Laslie, and Susan Murray

Annual Agreements

The office will mail the annual agreement forms by the end of February. Please return them in a timely manner so we can update your volunteer files.

In 2023, the Certified Master Gardener minimum volunteer hours is decreasing to 20 hours per year. Master Gardener Interns also have to complete 40 volunteer hours to complete that level. The office will be reviewing each intern's volunteer totals and we will notify you if you have completed your Master Gardener internship with these new guidelines by January 31. We know many of you will continue to far exceed that 20 hour minimum. Master Naturalist volunteer requirements are not changing in 2023.

MG and MN Apparel

The website to order apparel is now open for volunteers!! There are shirts, jackets, and other items too. The MG and MN logo does not come on all of the options. There are still some marketing challenges with the logo. Check the website often for new merchandise. The vendor hinted that they were looking at adding kneeling pads in 2023. Shop at go.illinois.edu/ExtensionMerch. Create an account and have the items shipped to your home.

Naturalist Phenology for February 2023

Bill Klunk and Elizabeth Frisbie, Master Naturalists

During this month, be on the lookout for:

- ⇒ Feb 7th-21st: The zodiacal light is visible now in our region to those away from city light pollution. This whitish wedge-shaped glow is caused by sunlight reflected by fine dust grains along the plane of the solar system. Look for the zodiacal light in the western sky about half hour after the end of evening twilight.
- ⇒ Red-winged blackbirds (*Agelaius phoeniceus*) return to our area (Male scouts arrive around the 14th followed later by females.)



Continuing Education Programs

WEBINARS

Master Naturalist Continuing Education Series The Environmental Archaeology of Ancient Illinois February 15 from 6 to 7 p.m.

Have you ever wondered what Illinois was like before it was transformed by agriculture and industry? And how did 500 generations of Indigenous peoples both live in and help to shape the character of Illinoisan landscapes and ecosystems? Environmental Archaeologist Dr. Michael Aiuvalasit from the Illinois State Archaeological Survey will present an overview of the latest research on ancient people and places of Illinois. Registration is available at: <https://go.illinois.edu/MNarchaeology>

Virtual Weekend Gardener March 4 from 9 to 11 a.m.

Join us at 9 a.m. for “Everlasting Flowers” with Chris Lueking as she shares techniques to create dried blooms. Then at 10 a.m. Nathan Johanning will discuss “Making the Most of Your Soil Amendments.” Register for one or both of the sessions [here](#).

IN PERSON or WEBINAR

Four Season Webinar Series

Register to participate online [here](#).

The program is also available at both offices. Call or email ruth1@illinois.edu to reserve a spot.

- February 28 at 1:30 p.m.—Success with Indoor Plants
- March 7 at 1:30 p.m.—Basics of Home Composting

IN PERSON

Weekend Gardener

February 25 from 9 a.m. to noon at Madison County Farm Bureau, Edwardsville

Topics include “Even Natives Can Misbehave” with Elizabeth Wahle, “Designing Containers with Tropicals and Annuals” with Sandy Richter, and “Native Garden Design” with Susie Van de Riet, St. Louis Native Plants, LLC. Space is limited. Register [here](#).

Gateway Green Conference

March 8 at Gateway Convention Center, Collinsville

The program has been reformatted to include programs focused on building sustainable landscapes, conservation stewardship, and tree care. Discount available for MGs and MNs. Register [here](#).

Grow Native! Native By Design: Community Conservation

March 10 from 7:30 a.m. to noon at LCCC, Edwardsville

Ronda Burnett, community conservation planner with the Missouri Department of Conservation and chair of the Grow Native! Committee, will be the keynote speaker, presenting how community conservation planning practices can increase the benefits of nature in cities as well as decrease the negative impacts of human communities on the natural world. The keynote talk will set the stage for plenary speakers Sarah McGibany, Debbie Newman, Joann Fricke, Sarah Burton, and Eric Wright, who will share their experiences in protecting natural communities and establishing native landscapes around the southwestern Illinois region. Registration, including breakfast: \$30/person, \$25 for MPF members and Grow Native! professional members, \$15 for students with a valid student ID. Read more and register [here](#).

Color of Spring

March 18 from 8:30 a.m. to noon at the Waterloo office

The program includes 2 keynote presentations and 2 breakout sessions. Topics include “Gardening for Good”, “Companion Planting 101”, and “Nature Remedy.” Space is limited. Register [here](#).

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

<https://extension.illinois.edu/mms>

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University of Illinois Extension provides equal opportunities in programs and employment.

If you need a reasonable accommodation to participate in the program, please contact the Madison-Monroe-St. Clair Unit.
Early requests are strongly encouraged to allow sufficient time for meeting your access needs.

Wondering While Wandering
Naturalist Ponderings for February 2023
Elizabeth Frisbie, Master Naturalist



Yesterday I spotted some fresh Eastern (or Common) mole (*Scalopus aquaticus*) tunneling activity which made me wonder: Don't they hibernate? What is that critter doing awake? Is this because of the warmer temperatures?

Notably, many researchers state that little is certain about any Mole species' lives since most of their time (99%) is spent underground out of scientists' view. In fact, they are among the world's least-studied animals. The actual population size of Eastern mole in North America is unknown and their natural lifespan in the wild is merely an estimation of 2-6 years (based on knowledge that in captivity they live an average of 36 months). Because of their life in darkness, Mole eyes are tiny. However, contrary to popular belief, they are not blind. They are thought to be colorblind and nearsighted and yet their eyes are exceptionally good at detecting light. Their sense of touch (largely processed via their snout and long digits) is highly developed to balance out their poor eyesight. For instance, the Eastern mole's nose features thousands of microscopic bumps which are actually tiny sensory (tactile) structures known as Eimer's organs that assist in detecting both the scent and movement of prey. Eastern moles are believed to be solitary animals for most of the year and will defend their tunnels from other Moles by making guttural warning squeaks, snorting and grating their teeth. The home range of male Eastern moles is 2.7 acres while a female's home range is only 7/10th of an acre. Although very little is known about their mating habits, it is thought that during this time of year, male Eastern moles begin searching for females in neighboring tunnels. In our region their mating season is listed as February – March, followed by a 45-day gestational period concluding with a litter of 2 to 5 pups being born between mid-April and June. Born blind and naked, the pups grow quickly and leave the natal nest and forage independently at four weeks of age.



The bodies of Eastern moles are well-adapted for a subterranean existence spent excavating soil. They can survive in their low-oxygen underground environment due to a unique type of hemoglobin in their blood. This carries more oxygen and binds differently to carbon dioxide, allowing Eastern moles to tolerate much higher levels of carbon dioxide and lower levels of oxygen than other mammals. They are also able to rebreathe and reuse their own exhaled air without any ill effects! They lack external ears (since that structure could fill with dirt) and their cylindrical bodies move efficiently through tunnels quickly dug with broad, shovel-like front feet powered by strong shoulder muscles. Moles have polydactyl forepaws, possessing an extra thumb on each forelimb that further aids in efficient digging. When digging, Eastern moles appear to "swim" through the soil. Eastern mole fur is yet another adaptation for tunneling. Their fur is incredibly dense and sticks straight up. Thus, their fur offers no resistance when pushed either backward or forward. Because their fur does not lay flat and pointing toward the tail as most mammalian fur does, when Eastern moles back up through a tunnel, soil does not become trapped in their coats. Notably, they can move backwards nearly as fast as forward.



Moles are amazing excavators! Typically, Eastern moles can hollow out a 160-foot (53 yards) burrow in just one night. (The human equivalent would be digging a half-mile tunnel in the same amount of time.) Their average digging speed is 15 -18 feet per hour. When digging at top speed, Eastern moles may displace 540 times their own body weight in soil in a day. Although Eastern moles are active at all hours, their peak activity occurs around dawn and dusk. Thus, most classify them as crepuscular (although some research indicates peak activity is 4:00 -7:00 am). It is believed Moles are very active for approximately 6 ½ hours and then rest for 3 hours. Eastern mole tunnels are 2" in diameter, can be as long as 1 kilometer and are part of (CONTINUED Pg 4)

complex and expansive systems composed of tunnels and special rooms (including larders for food storage, sleeping dens and birthing chambers, the latter of which are lined with leaves). Moles excavate two types of burrows: shallow and deep. Those close to the surface are termed temporary burrows and are used to both search for and trap food, as Common earthworms (*Lumbricus terrestris*) often fall into the tunnel. Deeper tunnels (permanent burrows) are located 12 to 24" below the surface and are usually about 2" in diameter. The Eastern mole's living quarters, including sleeping rooms, nurseries and larders are found here. During winter months, Moles use their deeper tunnels for hunting as well. These deeper tunnels result in discarded excess soil being pushed up and out through vertical tunnels and collected in molehills, which are also called "push-ups" by some. These hills have an average diameter of less than 12" and are 5-8" deep. Any opening is plugged shut with soil. Generally, Moles dig deeper tunnels when the soil is moist, thus the sudden appearance of molehills after a heavy rain or snow melt-off. These hills led to the expression "don't make a mountain out of a molehill" referencing not exaggerating problems, which was first mentioned in English Tudor times (1485 to 1603). Since their deeper tunnels are generally below the frost line, Eastern moles do not hibernate. It is believed they remain active throughout winter but generally travel in their deeper tunnels where the soil is warmer, thus we do not see much evidence of them when our weather is cold. However, on warmer winter days (especially after several in a row) Eastern mole begin tunneling closer to the surface hunting for Earthworms. Our current warm spell thus explains the recent appearance of fresh shallow (hunting) tunnel activity in many of our region's lawns and fields.

When it comes to their main prey, Eastern moles are considered highly specialized food preparers. Living underground, apparently Moles do not desire to eat any soil, including that ingested by their primary food source, Earthworms. Thus, once a Mole has caught an Earthworm, it grabs it with its front feet and then squeezes the Worm along its length to remove external debris and push out any dirt in the Earthworm's gut (similar to our squeezing out toothpaste from a tube). Should an Eastern mole capture more Earthworms than it can eat, the Mole incapacitates the worm by biting its head, thereby injecting the Worm with a paralysis-causing toxin found in Mole saliva, which prevents the Worm from crawling away. Incapacitated Worms are then carried to a larder storeroom and lightly packed in dirt to keep them "fresh" and still alive until they are eaten. Moles are known to plan ahead for potential food scarcity. Researchers have found storerooms full of hundreds of captured Earthworms placed there by a single Mole. As many as 470 worms have been discovered in a single larder chamber. Additionally, gut content studies determined Eastern mole **do** ingest some vegetable matter as well as fungi, making them technically omnivores (although some sources still classify Moles incorrectly as insectivores).

Last, some of my friends and family were not as excited as I was to see Eastern mole activity believing these creatures eat their flower bulbs. For the record, at this time, scientists state Eastern moles do NOT eat bulbs or flower roots. The garden killing culprits in our area are likely Shrews and Voles. Although their tunnels may make our lawns uneven, actually Eastern moles are listed as ecologically desirable in both the wild and in the lawn and garden spaces they share with us. Their extensive tunneling aerates and turns the soil, which allows both air and rainwater to penetrate more deeply. Additionally, their status as important predators of invertebrates means potential harmful insects are consumed before they can damage our plants. Moles can harvest more than 140 Grubs, Worms, larvae (including that of Japanese beetles) and Cutworms daily since they eat 50-100% their body weight every 24 hours. A single Eastern mole consumes 50 pounds of Earthworms, Grubs and Beetle larvae annually. Thus, most ecologists recommend we Humans at least tolerate Eastern moles as they ensure healthy soils.

References: Animalia; Attendborough, D. [The Life of Mammals](#); Bradford, A. and McKelvie, C.: "Moles: Habitat, habits and conservation" on [Livescience.com](#) (3/02/2022); Georgia Department of Natural Resources; Missouri Department of Conservation; National Geographic; National Wildlife Federation; Oklahoma Department of Wildlife Conservation; Shein, N.: "Vole vs. Mole: How to Tell Which Pest is Tunneling Through Your Yard and Garden" on [www.bobvila.com/articles/vole-vs-mole/](#) (3/22/21); [www.wildlifeillinois.org](#)

Welcome to My Jungle

Dr. Elizabeth Wahle, Extension Educator

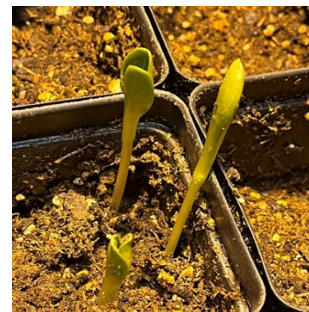


Left: An otherwise healthy cherry tree targeted for removal for safety reasons. Center and right: Tree leaning at such an angle, primary anchor roots are being pulled from the soil.

This is the time of year I prefer to take down any trees that have died or become a hazard in the garden. I say “prefer” because sometimes you don’t have the luxury of waiting...I experienced this last year when a large tree lodged over as a result of heavy rains and saturated soil conditions. The main reason I like to wait for winter, if possible, is most of the landscape around the base of the trees is dormant and is less likely to be damaged by falling limbs or foot traffic. The other reason is there are no leaves on the tree, making cuts more visible, plus the limbs are a whole lot easier to handle.

Two years ago, I noticed my standard sweet cherry tree was leaning out over a retaining wall, and we decided to remove some large limbs on the north side to alleviate some of the weight and hopefully stop the leaning. Unfortunately, our efforts weren’t successful, and the leaning has increased to the point the roots are being pulled to the surface and the tree is losing its anchorage. It’s hard to lose a tree that is otherwise healthy, but safety concerns demand its removal.

Once the tree is gone, what was once a shady area will now be a sunny area and I have already decided to plant artichokes until I come up with a more permanent plan. I have never found an artichoke cultivar that is reliably winter hardy (USDA Zone 7-10), so I am using an early maturing cultivar like ‘Tavor’ (84 days) and treating them like annuals. So far, I have them seeded and up with the aid of a heating mat. I just need to time their transplanting to avoid a freeze event, while still exposing the plants to at least 10 days of temperatures around 45-50°F in order to induce budding.



‘Tavor’ artichoke seedlings need exposure to 45-50° temperatures for ten days to induce budding.

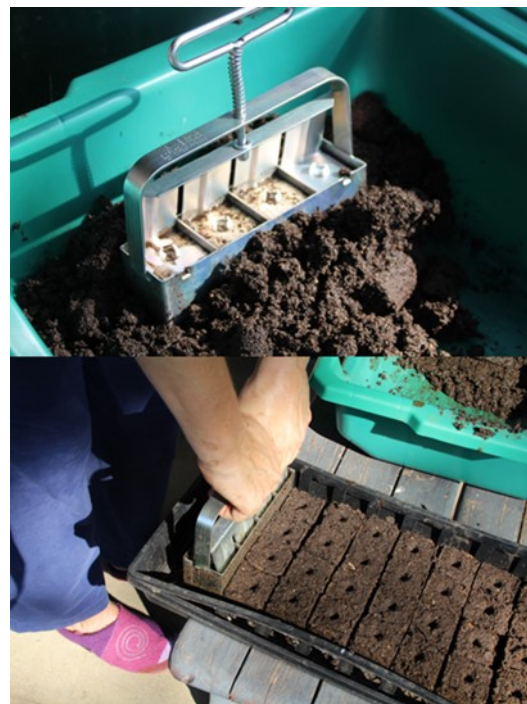
As seen in the picture above, I sometimes reuse plastic containers I have on hand to grow transplants, but more often than not I use soil blocks for larger seeding projects rather than buying new plug trays. A soil block is exactly what the name implies, soil that has been compressed into a cube using an ejection mold and used as both the container and growing media for starting seeds. Because there is no plastic enclosing the soil, roots naturally air-prune, creating a more fibrous root system. I learned about soil blocking through reading Eliot Coleman’s ‘The New Organic Grower.’ I have occasionally substituted items in the basic recipe, but the one thing that the blocking mix requires is the partially decomposed plant fibers from the peat and compost to maintain the block’s (CONTINUED Pg 6)



The basic soil blocking recipe includes compost and garden soil, perlite, peat moss and amendments for plant nutrition and pH maintenance. Coarse sand can be substitute in part or whole for perlite..

structural strength, otherwise the block would fall apart when watered or handled. I tend to use organic fertilizers, but a slow-release fertilizer could be substituted, and though heavier, coarse sand can be substituted for perlite. When I make the mix, I make enough to fill a large 50-gallon trash can.

I would recommend starting with a block ejection mold that makes four 2" x 2" x 2" soil blocks with a standard dibbled depression for holding the seed...you can purchase long dibbles to accommodate larger seed or cuttings. From there, you can continue to build on the system to fit your needs. For example, what if you don't need big blocks taking up so much space early on? In this situation, you could purchase a smaller blocker that produces 20 mini blocks ($\frac{3}{4}$ " x $\frac{3}{4}$ " x $\frac{3}{4}$ "") to start seed. Once the transplant needs more space, go back to your larger soil blocker, and replace the standard or long dibbles with larger square dibbles which happen to be the same size as the mini blocks. Your mini block transplant will fit perfectly in the square depression in the larger block now and have more room to grow. If the transplant needs even more space, move that block into the next size up! To get started, check out YouTube for a video of Eliot Coleman demonstrating soil blocking.



*Top: Block ejection mold, that when filled creates four 2" x 2" x 2" soil blocks.
Bottom: Ejecting soil blocks in a web tray and ready for seeding*

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901 Illinois Ave.
P.O. Box 117
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