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RECLAIMING PRAIRIES

The Step By Step Process By Jamie Ebbesmeyer, MDC Private Lands Conservationist

Historically, much of northern Missouri was prairie. Climate conditions and natural forces such as fire influenced what grew and thrived, native warm season grasses and native forbs/wildflowers being the predominant species present. With settlement and the resultant conversion of fields for agricultural and industrial purposes, today there is very little prairie left. Grassland areas remain but often these are dominated by introduced cool season grass species such as fescue or smooth brome grass.

Recently there has been an increased interest in converting parts of northern Missouri back to native prairie species. This leads to the question of how to best accomplish this. The answer varies depending on the current condition of the area to be planted---existing grassland or existing crop-field. Regardless of the conditions, there are four steps to a successful prairie planting project---site preparation, seed procurement, seeding and post seeding management.

Site Preparation

If the area to be planted is an established non-native cool-season grass (fescue, smooth brome, or other cool-season grass), these will need to be eradicated. If not eradicated, they will directly compete for space, sunlight, and nutrients which are needed by the desirable native plants that are being planted. Eradication of existing vegetation can be accomplished through chemical, mechanical, or a combination of chemical and mechanical methods.

Chemical eradication is using herbicides to kill all vegetation or a particular type of vegetation. Glyphosate is a non-selective herbicide which kills all actively growing plant material to which it is exposed. This is a good choice for the total clean-up of an area that has no desirable plant species present. Clethodim is a selective herbicide that only

kills grass species. This is a good choice for eradication of grass in areas with existing desirable forbs/wildflowers which are being suppressed by undesirable grasses. Herbicides should be applied when the target vegetation is actively growing. For cool season grasses, this is in the spring and in the fall.

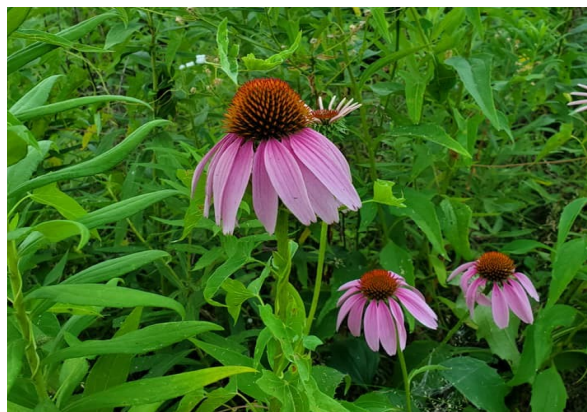


Photo by Theresa Casey

A minimum of two consecutive applications is recommended (spring and fall or fall and spring) to insure successful eradication. The labels of all chemical herbicide products being used should be read and followed.

Mechanical eradication is using tillage equipment (plow, disk, harrow) to disrupt a plants growth cycle and destroy its root system. Mechanical tillage can be used to level uneven ground and create a firm seedbed for seeding. Multiple passes may be necessary. Mechanical tillage is not ideal for all situations and can lead to unintended erosion. It may also bring up buried weed seed and encourage weed growth.

Combining the two methods mentioned above may be desirable or necessary in certain circumstances where grass species are well established and ground leveling is desirable.

If the area to be planted is existing cropland, little may be needed to do in preparation for seeding. If there is heavy weed growth, the ground is uneven or there is heavy crop residue, chemical or mechanical methods can be utilized as described above.

Seed Procurement

Acquiring seed for prairie projects can be accomplished through the purchase of seed from native seed dealers or through the harvesting of seed from existing prairie plantings.

Seed dealers can be found on the www.grownative.org website. Purchasing local ecotype seed is recommended to ensure the plant species are adapted to the local climate. Seed dealers can help you select grass and forb/wildflower species that will meet your objectives. Keep in mind that the more diverse the mix, more are the chances of your project being successful.

Harvesting seed from existing prairie plantings is another option, provided you have permission to do so. Taking seed from public property areas is likely not allowed, and if it is allowed, will usually require special permission from the land manager. Likewise, harvesting seed from private property requires

permission from the property owner. If seed is harvested, take care to make sure that the seed is mature and that once harvested, it is properly handled--air dried and stored in a cool area. The harvest of seed from different plant species may require multiple trips to the area.

Seeding

Seeding of prairie areas can be accomplished through broadcast seeding or the use of a specialized seed drill.

Broadcast seeding is throwing seed on top of the ground and allowing it to "melt" into the upper level of the seedbed where it can germinate and take root. Due to the small size of many of the prairie seeds, it is recommended that the seed be mixed with a carrier such as kitty litter, sawdust, pelletized lime, or rice hulls to increase the volume of material being broadcast. It is also recommended that the seed be double spread---once in one direction and then once again in a perpendicular direction to ensure even coverage. The key to broadcast seeding is getting good seed contact with the soil. To achieve this, light tillage or prescribed fire may need to be applied prior to seeding or rolling/harrowing may need to take place after. Dormant broadcast seeding (from 11/15-3/15) is recommended. Earlier seedings allow for more chances of scarification which weakens a seed's outer coat and helps with germination.

Using a specialized seed drill may be ideal for large areas. Equipment such as this can meter and evenly plant seed at set depths in the soil. As with broadcast seeding, due to the small size of many of the prairie seeds, it is recommended that the seed be mixed with a carrier such as sawdust or rice hulls to increase the volume of material being metered out by the drill. Calibration and proper depth setting is critical when using one of these drills. Seed should not be placed deeper than ¼ of an inch. A tractor is required if using a drill. Seed can be drilled during the dormant period (from 11/15-3/15) and during the spring period (3/16-5/15). Earlier seedings allow for more chances of scarification which weakens a seeds outer coat and helps with germination.

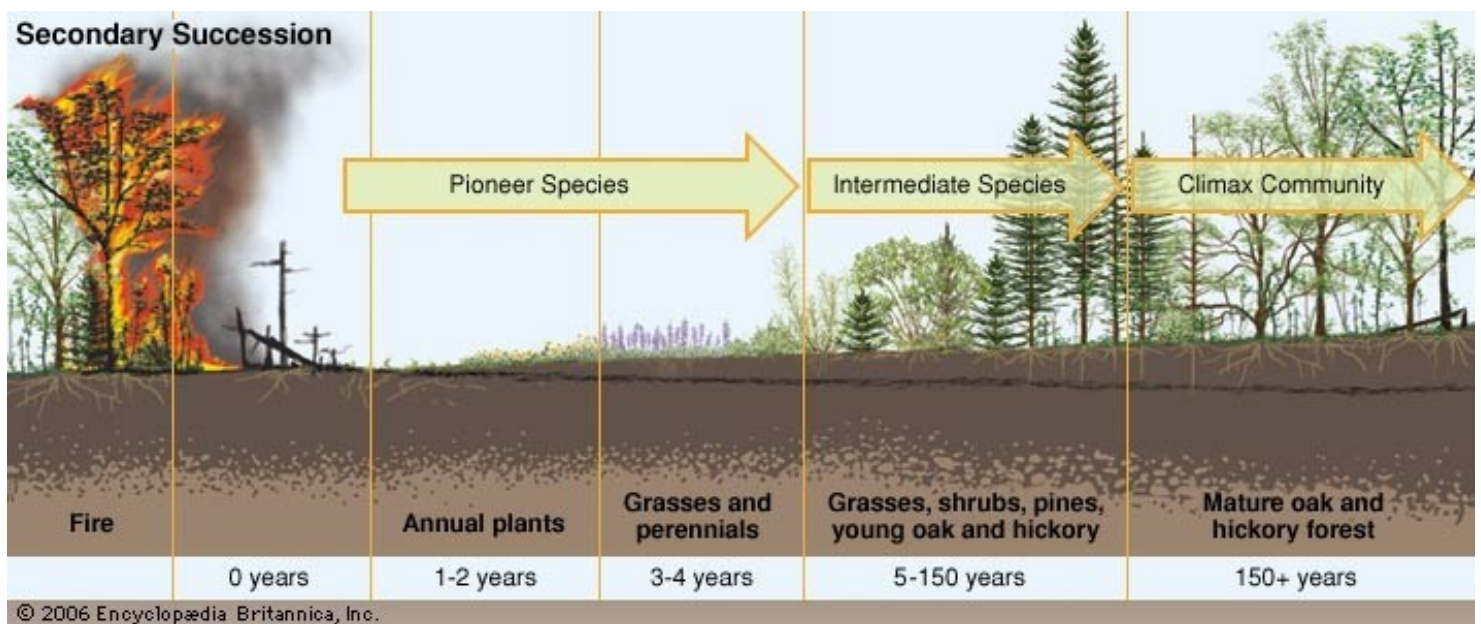
Post Seeding Management

It has been said that with a prairie planting you can expect to weep, creep and leap. Prairies take a long time to become established, often at least three years. The first year it is hard to see any results from all your hard work and effort. This is the weep. It is during this time that a lot of growth and development is taking place on a small scale with a large amount of effort going towards root growth and development. The second year, you think that maybe you can see some plant growth. This is the creep. More growth is taking place above ground and more species have germinated and are beginning to develop. The third year, you should really be able to see the results of your efforts with many plants and species actively growing. This is the leap.

During the three-year period of weep, leap, and creep, there are things which must be done to increase the odds of success for the project. During the first two growing seasons it is critical that sunlight be allowed to reach the soil surface where seeds are germinating and growing. If the sunlight is blocked by tall grasses and broadleaf plants, the small seedlings will die. To stop this from happening, it is recommended that vegetation not be allowed to grow tall enough to shade the soil. High mowing is encouraged with multiple cuttings at a height of 8-10 inches taking place throughout the growing season.

Once a prairie is established, it still needs to be managed to ensure diversity and longevity. Consideration of the use of prescribed fire is highly recommended. This is a natural way to reduce thatch, create bare ground and encourage the germination of seed. If using prescribed fire is not a viable option, light disking or a light herbicide application may be considered. These should be applied in such a way as to suppress dominant species and encourage diversity through the release of lesser species.

Following the above recommendations does not guarantee success of your project but does put the odds of it more in your favor. For specific recommendations about how to complete your prairie planting project, please contact your local Missouri Department of Conservation Private Land Conservationist or your local USDA NRCS office.



EAGLE DAYS A SUCCESS

By Carolyn Trower



On Saturday, January 28, there were 851 visitors for the annual

Eagle Days event at Clarksville.

Warmer temperatures welcomed many families to the indoor activities and each raptor presentation was packed.

As always, we enjoyed good food and camaraderie with fellow Master Naturalists, and we discussed a few ideas for next year.

Since the day was much colder, there were only 341 visitors on Sunday. The children's activity table used eagle bookmarks to replace the eagle masks that were used up on Saturday. One young man brought in the bookmark he had made last year and his mother said he used it every day.

Several members of the Mississippi Hills Master Naturalists manned the children's activities table. We were super busy with providing masks and postcards with animal stamps to the many children who stopped by the tables.

At a neighboring table a large stuffed eagle and a replica of an eagle's skull and talon drew a lot of attention. Lots of questions about eagles were answered and brochures were handed out. The children were especially curious, and members also had meaningful conversations with the adults in the family groups.

Eagles were fewer in number than in years past because the river was not frozen. There were 32 eagles sighted with scopes, and pelicans and gulls were also spotted, which allowed the viewers to observe several bird species in action.

Theresa Casey, coordinator of the Eagle Days activities, commented—

"I was very proud of all the Master Naturalists who staffed our booths, and the Clarksville mayor and event coordinator expressed their thanks for our involvement in Eagle Days. Both the mayor and event coordinator stated that our group's participation is what makes Eagle Days so successful."



We need your help to get the word out and fill this class up! Ask your family and friends to join in the fun!

New Master Naturalist Training Orientation

Tuesday, May 2 from 5:30 p.m. – 9:00 p.m. at the Hannibal-LaGrange University Burt Administration Building.

Registration deadline for classes is Tuesday, May 16, 2023

Classes begin June 2 – August 29 5:30-9:00 p.m.

Cost for the training is \$110. Register for the full training course by visiting

<https://extension.missouri.edu/events/missouri-master-naturalist-mississippi-hills-chapter-1678386278>

The Fungus Among Us

How many times have you heard that phrase? Although often humorously associated with mushroom hunting, fungus plays an important role in nature every day whether we see the fruiting portion---a mushroom—or not. With each step we take as we walk through our yards, fields, or woods, we are likely walking on top of a vast network of fungus that is intertwined with the roots of the trees and plants under our feet.

While we may be familiar with many types of mushrooms, it is the *mycelium* that is the vegetative part of any fungus. It consists of a mass of branching, threadlike hyphae, which are often found underground. Fungi are diverse, but generally can be placed into one of three functional groups:

Decomposers – this group is vital to our ecosystems for their role in the decomposition of plant material which contributes to the organic material in the soil as it releases carbon dioxide back into the atmosphere.

Pathogens or parasites – this group can cause death or impact growth when they take over root systems and cause major economic losses in agriculture each year. Conversely, many fungi can be helpful in controlling diseases such as fungi that parasitize disease-causing nematodes.

Mutualists – this group colonizes plant roots in a beneficial way. In exchange for sugar and carbon from the plant, the fungi help bring soil nutrients (phosphorus, nitrogen, micronutrients, and water) to the plant.

This third group of fungi is fascinating as the vast majority of plants on our planet – some 80% in a native setting– live within a mutualistic relationship between the mycelium of a fungus and the roots of a plant. In such a relationship, both the plants themselves and those parts of the roots that host the fungi, are said to be mycorrhizal.



Picture credit. Rainforest-alliance.org

Essentially, mycorrhizal fungi act like root extensions: their hyphae (the “roots” of the fungus) travel further out into the soil than the plant’s own roots, allowing the plant to obtain more minerals and water than the roots could have done on their own. Because the fungi mycelia are much finer and smaller in diameter than roots and root hairs, they vastly increase the surface area for absorption of water, phosphorus, amino acids, and nitrogen—almost like a second set of roots.

The fungi retain about 30% of the sugar that the host plant and trees generate through photosynthesis. The fungi are also provided with fixed carbon from the host, which triggers nitrogen uptake and transport by the fungi. The sugar fuels the fungi, which in turn facilitates water and nutrient uptake in the plant and collects phosphorus and other mineral nutrients into the mycelium which it then transfers for use by the plants and trees.

In more complex relationships, mycorrhizal fungi can connect individual plants forming a mycorrhizal network. Within a healthy forest this connection enables plants and trees to share water and nutrients through the mycelium. One example is saplings growing in a particularly shady area where there often is not enough sunlight reaching their leaves to perform adequate photosynthesis. For survival, the sapling relies on nutrients and sugar from older, taller trees that send the nutrients via the mycorrhizal network to the saplings.

In a study at England's University of Reading, the data indicated that Douglas-fir trees recognized the root tips of their relatives and favored them when sending carbon and nutrients through the fungal network. Outcomes from this and similar studies have drawn the conclusion that the trees are "communicating" through the mycorrhizal fungi.

Considered essential in the tree-fungi networks are hub trees (sometimes referred to as Mother Trees). Through the mycorrhizal network, these hub trees detect the ill health of their neighbors via chemicals which can signify an attack on an individual within the network. Not only can plants and trees use these signals to start producing natural insect repellants, they can also use them to start producing an attractant to bring in natural predators of the plant's pests.

In summary, mycorrhizal fungi benefits plants in many ways:

- Contributes to the decomposition of plant material
- Increases the efficiency of water and nutrient absorption of most plants
- Provides resistance to some plant pathogens and certain soil-borne diseases
- Seeks out phosphate and other nutrients and then brings them to plants
- Connects many plants together, allowing for nutrient exchange between plants
- Improves soil structure, so it's less compacted, with more spaces for air and water

So, when you take that stroll through the woods, take a moment to reflect on the many forms of life that exist around you—and especially under your feet. What a magnificent story the fungi might tell if we only knew their language. For yes, *the Fungus is Among Us*, and it plays a very important role in nature every day.

Sources:

"Mycorrhizae." *Biology Dictionary*, Biologydictionary.net, 18 May. 2017

"Underground Networking: The Amazing Connections Beneath Your Feet", by Britt Holewinski

"The living soil: Fungi." Ingham, E.R. (n.d.). December 27, 2017

The Missouri Master Naturalist program is a community-based natural resource education and volunteer service program for adults, sponsored by the Missouri Department of Conservation and the University of Missouri Extension.

Its purpose is to develop a corps of well-informed volunteers to provide education, outreach and service dedicated to the beneficial management of natural resources and natural areas within their communities for the state of Missouri.

The Mississippi Hills Master Naturalist Chapter is located in Hannibal, Missouri, and serves the surrounding counties.

We are involved in citizen science, community projects, nature interpretation, and community nature education.

FIND US ON THE WEB: <https://www.mississippihills.missourimasternaturalist.org/>

And on Facebook [@MississippiHills](#)



GROUP HIKES

By Matthew Harris



Randy Hills and I have enjoyed trail hiking for years and have ventured into as many of the local areas as possible. We have gotten very comfortable with finding a “green spot” on the map and stopping to explore. On the other side of the spectrum, I have met a number of nature lovers who have told me they are hesitant to hike down a trail, float down a river, or camp in the woods. These are people who did other adventurous things and enjoyed the outdoors in general, but their sense of self preservation and fear of the unknown kept them from participating in these nature activities that we have so frequently enjoyed. When Randy mentioned the idea of starting a regular group hike with the Master Naturalists, I immediately thought of a few of these past conversations and was on board.

We both saw a group hike as a way to enhance the relationships within the Master Naturalist group, a time to discuss other projects and ideas, and just a fun experience overall. As we continued to discuss, we saw potential for the Master Naturalists to share our love of nature with the broader community and invite the public to access these local areas alongside us and to have access to the collective knowledge of the Master Naturalist group. We also see potential to help with trail maintenance, identification of trail issues, trash pickup, etc.

On February 18th, twelve hikers completed the inaugural Mississippi Hills Master Naturalist group hike. Our group hiked about 2.5 miles of Lick Creek Trail, part of the Corps of Engineers trail system on the west side of Mark Twain Lake. Group members varied in experience and ability, however, all seemed to enjoy themselves and complete the hike successfully. It was an unseasonably warm Saturday morning and the bright green mosses and

lichens demanded hikers’ attention as they shined brightly through the otherwise relatively dull colored winter landscape. Group members chatted about their experiences hiking and being in nature, as well as sharing their individual knowledge about various aspects of the natural world.

As the first hike came to a close, group members discussed and decided upon the location of the next monthly hike, which took place on March 18th at Mark Twain State Park. The weather was not as gracious in March as it was in February. Our group of 11 hikers covered 3 miles, half of the hike overlooking Mark Twain Lake. I will only speak for myself when I say my teeth and skull were truly chilled by the 15 mile per hour wind coming off of the lake on a 16 degree morning. Despite the difficult conditions, or possibly because of our ability to overcome the adversity, the group again seemed to enjoy themselves and every member completed the full hike. This hike displayed gorgeous views of Mark Twain Lake, time to discuss and identify a variety of trees, and again we enjoyed the bright displays of green provided early in the year by mosses and lichens.

We look forward to continuing monthly hikes throughout the year. Monthly hikes will typically be the third Saturday of each month, however, the monthly hike in April will be on the fourth Saturday as we will be attending the already scheduled and much anticipated hikes in Steyermark Conservation Area on April 22nd. On May 20th, we will be hiking the Pirate Ridge Trail in Sodalis Nature Preserve.

We look forward to seeing you (and a friend) at our next hike!

Sharing Joy for a Winter's Day at the Shed Hunt

By Anne Coleman



Hemslely, daughter of Levi and Paige Camden, is proud of her birdhouse.

The 11th Annual Ben Sapp Memorial Shed Hunt for Youth was the place to be on a cold winter Saturday in February at the M.W. Boudreaux Memorial Visitor Center. This outdoor adventure for children and their families provided a much-needed break from the indoors and an opportunity to take in the beauty of nature at Mark Twain Lake as well as the warmth and activities at the Visitor's Center.

The event is dedicated in memory of Ben Sapp, who was previously an employee of the U.S. Army Corps of Engineers. He was involved in the organization of the event when he worked at Mark Twain State Park and then with the Corps of Engineers. Ben is said to have loved the event because it got kids and their families outdoors. The Master Naturalists share his appreciation for what a "dose of nature" can do for our wellbeing.

This year's Shed Hunt took place on February 25, 2023 from 8am to 3pm where approximately 187 kids were able to hunt for antler sheds donated by the community and placed along the Eagle Bluff Trail near the Visitor's center.

Also part of the outdoor activities was the Bluebird House Building Station where Master Naturalists assisted 102 youths build their very own bluebird house to take home. Information about placement and care of the houses along with bluebird facts were distributed to the families. Many people enjoyed the popcorn cooked on the open fire next to the Bluebird Station as they warmed up by the fire. The joy on the children's faces as they clutched their new bluebird houses along with the smell of the fire and the popcorn was a wonderful experience for everyone!

When the kids and their families needed a little warming up, they visited the many booths indoors and had lunch in the Visitor's Center. The Master Naturalist's booth provided fun facts and activities to share the love of eagles in Missouri with the youngsters. We also helped ensure everyone had a full tummy and plenty of beverages to round out the day's adventures.

The event is sponsored by U.S. Army Corps of Engineers at Mark Twain Lake in partnership with the Monroe City Whitetails Unlimited Chapter, the Mark Twain Lake Visitors and Educational Resource Center Committee, the Missouri Department of Conservation, Mark Twain State Park and the Mississippi Hills chapter of Master Naturalists. Thanks to the many partners that come together to make this happen.

Also, thanks to the nineteen Master Naturalists from the Mississippi Hills chapter who were on hand that Saturday or who assisted in preparing the material for the bluebird houses at Phil and Beth Whelan's workshop.

A special thanks to Hunter Golian who was an awesome assistant naturalist at the event!

OUR PRAIRIES

Seven Prairies Per Year For Seven Years



When you envision 156 acres being set on fire intentionally, the first response is, “Yikes!”

There was always an air of excitement in the air whenever “The 107 and U Burn” was discussed. Bob Kendrick held this “carrot” in front of participants of the January 2022 burn certification class taught by Jamie Ebbesmeyer. Jamie taught us the importance of examining weather conditions, the fuel available for the fire, the lay of the land, and the significance of the burn plan.

Seven Mississippi Hills Master Naturalists and nine state employees gathered on February 21 and began by going over the extensive burn plan. We gathered our tools of the trade: burn shirts borrowed from Jamie Ebbesmeyer, flappers, rakes, drip torches, and side by sides with water tanks. Kyle, from Wakonda State Park, was our burn boss and there were two captains for each team. Starting on the downwind side, the team members each had specific duties. They started a fire line 20 to 30 feet inside the perimeter so the draft would be drawn into the burn instead of going outside.

The Biggest Burn Yet “Hwy 107 and U Burn”

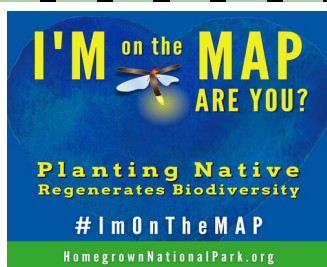
By Jan Golian

The area burned consisted of the old wood and fields that held plenty of invasives and big blue stem that provided fuel. It was exciting to see the old cedar trees go up in flames 60 to seventy feet and the heat could be felt from 250 yards away.

It was a beautiful day with the weather cooperating for a purposeful walk around the site. The wind did shift 180 degrees; however it was not a factor since the majority of the perimeter burn was complete. The burn was accomplished without any major problems.

The next week approximately ten MHMN members were able to throw the seed down on 9.09 acres on the north side of the burned area. The value of the seed was \$300 per acre and was provided by the library bank of seed gathered by several groups.

The next anticipated excitement for “The 107 and U” will be watching native plants grow and reclaiming another prairie.



At our March meeting our speaker, Scott Woodbury, talked about **Homegrown National Park®** and encouraged us to “get on the map”. The Homegrown National Park® is part of the largest cooperative conservation project to regenerate biodiversity ever attempted! They are a grass-roots call-to-action to regenerate biodiversity by planting and preserving native plants that support critical ecosystem services and removing invasive plants that do not.

For more information, visit their website at: <https://homegrownnationalpark.org/>

By Daniel Mallory

Benefits of Prescribed Fires for Wild Turkeys



In this column I am highlighting two articles that will hopefully shed some light on the benefits of prescribed fire, building on my last article “Helping the Wild Turkey”. Links are provided below to access the full articles.

Prescribed fire is an inexpensive, efficient way to create and maintain habitat. Without fire, the forest becomes dominated by midstory vegetation and shrubs, and the forest canopy closes. When the canopy closes and sunlight decreases, the forest floor vegetation also decreases. Animals depend on the grasses and forbs for survival and require the habitat that is only produced with the low intensity, frequent fires. Wild turkeys use a wide variety of habitats. Wild turkeys evolved with fire, and healthy populations can tolerate the loss of a few nests to fire or other factors. The most important thing to remember is without suitable habitat, population levels will not be as high as they otherwise would be or maintained at a level that sustains the population in the long-term.

Research demonstrates that growing season burns benefit habitat management and have minimal impact on turkey populations. Turkeys’ habitat needs change throughout the year. Recent research from the University of Georgia suggests that hens prefer nesting in areas that have been burned within the past two years with adequate cover to conceal nests from predators. After poults hatch, hens use weedy cover open at ground level to hide poults but still spot predators. The studies also showed hens used stands burned in the last two years as brood rearing habitat. UGA researchers conducted a study in southwest Georgia over two seasons and found prescribed fire maintains quality wildlife habitats. Predators, particularly raccoons, are the main cause of nest failure for wild turkeys. Without fire, hardwood cover increases and groundcover density decreases allowing predators to find nests easier. The benefits of growing season prescribed fire to wild turkey nesting and brood-rearing habitat outweigh the risks for the few nests that are lost due to habitat management activity, predation, or even weather-related events. Burning during late March and April — when shrubs and saplings start to bud — is much more effective at reducing brush and saplings and stimulating grass and flowering plant growth than winter burning. This timing also allows re-nesting if needed.

No doubt about it a wildfire can destroy property and threaten life, especially if it strikes in an overgrown or unmanaged forest. However, the careful use of prescribed fire can improve your land's health as well as protect life and property. A wildlife biologist may suggest a prescribed fire to clear overgrown areas and increase plant diversity. Prescribed fires are also a cheaper alternative to herbicides when removing invasive species such as fescue. A prescribed fire could be the right option for your land, but don't forget to “plan before you light it, so you won't have to fight it.”

Missouri's Prescribed Burning Act (RSMo Section 537.354) defines liability for prescribed burning.

Use the NRCS guidelines below to become familiar with the basics of conducting a safe, successful prescribed burn

- **Call your local private land conservationist for a list of prescribed-burn workshops near you.**
- **Don't attempt a prescribed burn without training and help.**
- **Call your local private land conservationist to learn more.**
- **Always notify your neighbors and local fire department before conducting a prescribed burn.**

Prepare a burn plan and stick to it. Call off the prescribed burn if the weather isn't right or it's expected to change during the burn.

NRCS link

<https://www.nrcs.usda.gov/sites/default/files/2022-09/Prescribed%20Burning%20and%20Wild%20Turkeys%20NRCS%20partners%20handout.pdf>

MDC link

<https://mdc.mo.gov/your-property/fire-management/prescribed-fire>



MEET Alan Miller

By Bella Erakko

Recognized by the Pike County Soil & Water Conservation District, Alan received Top Finalist in the Wildlife Habitat category. Written up in *The People's Tribune*, in addition to recognizing his work with invasives, he supports active deer management, no-till planting, and belongs to several National Wildlife groups.



Getting to Alan Miller's house takes Bob Kendrick, Kristy Trevathan, and me to the outskirts of Frankford. We turn on Route U, hitting the gravel on smaller and smaller roads till we see it: Alan's new home nestled on his 440 acres. "It takes," he admits when greeting us, "more than a day to walk the boundaries."

The house interior has the same spaciousness as the land surrounding it. The ceilings are high, the closets big, the living area open, the furnishings modest. And there's something to love about a no-clutter environment. It even lacks a TV, computer, and email address. Alan's interior space pretty much matches his outdoor vision. We stand on the deck overlooking Peno Creek, patches of prairie, wooded areas, and a dead coyote where Alan has focused his spotting scope.

One would think Alan grew up in a rural area but actually he lived in the outskirts of Detroit. Though today eaten up by subdivisions, then farmland surrounded his home. But he was also surrounded by three sisters, which might have fostered the father-son bond over fishing and hunting.

He lived a block away from water where he went fishing a few times a week. Once he met state age requirements (13 years) for hunting small game, he admits, "Small game hunting really gets you into it." He didn't get his first buck until his mid-30s. Why? Because so many hunters crowded Michigan state land. He remembers, "You'd be lucky to see a buck. It wasn't until I got my own property that I saw them regularly."

He led a varied work life in Detroit. Small fabrication shop. Chrysler (laid off after 10 months). Railroad (laid off after 10 months). Steel Mill. NOT laid off. He worked welding, pipe fitting, electrical power transmission, heating and cooling, and garnered associated degrees and certifications for everything ... including an Associate Degree in Nursing. Why nursing? "I like learning something new, and in our job, you worried about being laid off all the time."

Because his father came from Hannibal, the family often visited. From high school on, Alan knew he wanted to own land here. Finally in 1995 he found 40 acres that he liked and bought it. Two years later, his neighbor Paul who had 400 acres surrounding his 40 on three sides wanted to sell.



The minute Alan got word of it, he called Paul, negotiated, and bought the land. Paul stayed in his old house and Alan lived in his trailer on the property. Paul eventually passed away and Alan built his home on the same site.

When Alan purchased the land, he laments, "It looked like a golf course." Used for cattle, the land was overrun by fescue and invasive species when Alan began his reclamation project. Over time, his land restoration gospel message was this: "Get rid of fescue and invasive species.

"If you just do that, flowers will come up. Something will come up to benefit wildlife. Rabbits, quail, turkeys, little ones can move around." Practically speaking, he advises that the best time to kill fescue is when it's growing strongest: "Late April, it comes up taller. The burn really hurts it. Late fall works too."

Gazing from his balcony you can see stands of big bluestem. Prairie patches are everywhere. He did a burn in one area and the next year, it burst out with milkweed.

As Bob Kendrick puts it, "He's always there when you need him."

One could say that Alan restores land to its original expression. It's not so different from people who restore art, removing the grime of centuries, often working with something as small as q-tips. Considering the size of Alan's "canvas," even he admits, "I don't think I'll ever be done. I'll always be fighting invasives."

Of course, Alan would probably just buy another patch of land and start all over again. In the meantime, Alan relaxes by reading hunting and wildlife magazines, inviting friends over to play pool or foosball, or filling a bowl with popcorn and heading down to his trailer to watch old episodes of *Gunsmoke*.

A sixth century B.C. scholar Lao Tso would no doubt like Alan very much. He wrote pithy advice, which might be the end-game for Alan:

**Less and less is done
Until non-action is achieved
The world is ruled by
letting things take their course.
It cannot be ruled by interfering.**

GOVERNOR PARSON PROCLAIMS APRIL 2023, to be *NATIVE PLANT MONTH*

Governor Parson's proclamation is a good reason to celebrate as we plant more natives! The word on the importance of native plants is spreading. His proclamation reads, in part,

"WHEREAS, native plants are indigenous species that have evolved alongside native wildlife and occur naturally in a particular geographic region, ecosystem, and habitat; and
WHEREAS, native plants are essential for healthy, diverse, and sustainable ecosystems and are critical for cleaning air, filtering water, and stabilizing soils; and
WHEREAS, native plants are well-adapted to Missouri's soils, temperatures, precipitation, and environmental conditions, making them the best option for conserving and protecting our environment, and adapting to its changes; and
WHEREAS, native plants provide food including nectar, pollen, seeds, and foliage for native birds, caterpillars, butterflies, bees, and other wildlife in ways that non-native plants cannot; and
WHEREAS, Missouri is home to more than 2,000 native plant species which include large shade trees, shrubs, perennials, vines, grasses, and wildflowers; and
WHEREAS, it is important to encourage public awareness about the benefits of Missouri's native plants to pollinators and other wildlife, to the economy, and to the health and sustainability of Missouri's fragile ecosystems..."

Thank you Governor Parson, we couldn't agree more!

Spotlight on Species

American Burying Beetle

Scientific & Common Names

Nicrophorus americanus & giant carrion beetle

Description

The American burying beetle is a bright, shiny beetle with an orange- and-black pattern on its wing covers. To tell this species from other members of its genus (which look very similar), look for a distinctive reddish-orange mark on the shieldlike plate (pronotum) just behind the head (its similar-looking relatives have black pronota). There are orange marks on the face and antennae tips, as well. Like other burying beetles, the wing covers are wider in back than toward the front, and they are not long enough to cover the tip of the abdomen. In flight, they seem like bumblebees.

Because reintroduction efforts are under way, you may hopefully start to see this species in the wild. Meanwhile, you are much more likely to see other burying beetles, such as the tomentose burying beetle (*Nicrophorus tomentosus*). There are about 15 species in the genus *Nicrophorus* in North America.



Food

These beetles eat dead animals - mice, birds, or other creatures. Using organs located on the tips of their antennae, the beetles can smell dead animal carcasses from far away. They fly to the carrion, crawl beneath it, then dig the soil out from under it. The dead animal eventually is buried as soil piles up around it. After further preparation of the corpse, the adults lay eggs nearby. The adults remain, guarding their young, and feed them regurgitated carrion.

Human Connections

This beetle is of great interest to science. It is one of the few beetles in which both parents care attentively for the young. It is also useful to study its response to changing ecosystems. By competing with fly maggots for food, they can help reduce populations of annoying flies.

Habitat and Conservation

This species once lived in 35 states but declined as habitat changed and natural communities were disturbed. By 1923 they were dwindling, and when they were placed on the Federal Endangered Species List in 1989, they had disappeared from all but four states. Today the species remains in only a handful of states and had been extirpated from Missouri. In 2012, about 300 pairs of zoo-bred beetles were released at Wah'Kon-Tah Prairie in Cedar and St. Clair counties. Because of national conservation efforts and the success of partnership-driven efforts to restore this interesting beetle to native habitats, in 2020 the species' federal status was changed from "endangered" to "threatened".

Ecosystem Connections

These little scavengers perform a valuable if not glorious service to the natural community by burying dead animals and then consuming them. They help return nutrients to the soil and, by lessening possible contact with decaying animal tissues, reduce disease among the living. Their visual similarity to stinging insects (buzzing heavily like bumblebees in flight, plus the bright red-and-black coloration), no doubt help these harmless beetles to evade predators.

Source: *Missouri Department of Conservation*. The American Burying Beetle was chosen to be the Missouri Master Naturalist Certification pin for 2023.



"Pollinator Week is an annual celebration in support of pollinator health that was initiated and is managed by Pollinator Partnership. It is a time to raise awareness for pollinators and spread the word about what we can do to protect them. The great thing about Pollinator Week is that you can celebrate and get involved any way you like! Popular events include planting for pollinators, hosting garden tours, participating in online bee and butterfly ID workshops, and so much more."

For more information, visit their website at: <https://www.pollinator.org/pollinator-week>

There is still time to plan on taking some action to recognize our pollinators in June—even if it is just planting more natives or taking pictures in your native gardens and sharing them on Facebook!



“Mulberry Times”

From our MHMN President, Vanessa Laatsch

It’s amazing that humans, both native and immigrant, manage to survive on the plains of North Dakota. The spring rains puddle on the fields bringing swarms of mosquitoes. Grasses provide the only shelter for wildlife, except for the scrub bushes lining the river valleys. And the winters are so harsh, any small tree seedling that has the audacity to try to sprout during the summer is quickly destroyed by the frigid winters. If you’d like a tree in your yard, best to choose a tree that’s several years old and has developed some root depth that can survive the -50* temps that destroy young shoots. The few native plants that yield fruits are not sweet. Wild plums and choke cherry jelly are the only fruits or fruit products I know, from North Dakota. It might not sound exciting to you or me, but it’s a treasure, when that’s all there is. Choke cherry jelly, like lefse’, sparks regional pride, and is a valued part of North Dakota heritage.

Missouri, on the other hand, has a plethora of wild fruits to tantalize our taste buds. Black berries, pawpaws, (I’ve not actually seen one of those yet), raspberries, gooseberries, elderberries, dewberries, nuts of all kinds, and the list goes on. Imagine my delight when I discovered a large old mulberry tree right outside my kitchen window. It yielded profusely and I fought the raccoons for the produce. I eventually figured out how to pick the berries fairly quickly. I covered the ground with clean but older bed sheets, and beat the branches till the berries dropped. I baked pies, coffee cakes, made jams and froze berries. And I cried when a tornado destroyed the tree. I still have mulberries

not too far from the house, but they are in the shade, so the yield is small and I never beat the raccoons to the harvest.

I used to smile when Gale Rublee asked us for a nature moment. More often than not, my daily nature moment involved an altercation with a raccoon who lounged lazily, gluttoned on berries, in my mulberry tree.

I picked the mulberry photo above because mulberries are a bit messy, but they never seem to leave a stain on skin or fabric.

I recently discovered a new harvest option that’s probably familiar to you, but very new to me:

Hickory Bark, as in *Hickory Bark Syrup*.

I made Hickory Bark Tea last week and it made my house smell wonderful! I’m making more as I type this message, and it will turn into Hickory Bark Syrup. I made Maple Syrup as a child but this isn’t quite the same. Sugar must be added to the flavorful golden tea to create syrup.

What fun exploring the gifts of the forest!
I trust that springtime in our Missouri forests will bring you all a special blessing.

Happy Spring.
Vanessa



2023 BY THE NUMBERS

(rounded to nearest whole hour as of March 31, 2023)

VOLUNTEER SERVICE PROJECTS: Total Hours = 1237

ADVANCED TRAINING: Total Hours = 236

Congratulations on 2023 Recertifications!

- * Theresa Casey
- * Anne Coleman
- * Bob Kendrick
- * Kathy Griffin
- * Vanessa Laatsch
- * Alan Miller
- * Kent Cheek
- * Al Davis



Recognition for achieving Initial Certification!

* Randy Hills



Special Congratulations to—

- ◇ Dennis Foss For achieving his *Bronze Milestone* pin for 250 volunteer hours
- ◇ Alan Miller For achieving his *Pewter Milestone* pin for 500 volunteer hours

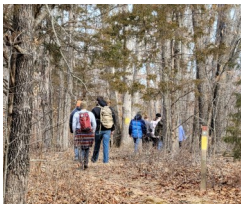
Missouri Master Naturalists at Work



Pike County Soil & Water Cover Crop & Invasive Species Workshop



Seeding at Hwy 107 and Hwy U Prairie Project



Nature Hikes on Lick Creek Trail and Buzzard Roost Trail



Burn at Miller Prairie



Burn at the Wisdom Prairie with Master Naturalists looking sharp in their new Burn Shirts PPE



Eagle Days 2023. Two days of cold fun and lots of happy children wearing Eagle Masks!



Building Bluebird Houses for the Shed Hunt in the Whelan Workshop



Shed Hunt for Youths at Mark Twain Lake Visitors Center



OUR ENVIRONMENTAL HEROES

By YOU!

Hello Master Naturalists!

We are looking for your Heroes! You may have written about your hero for Core Training or have recently been intrigued by someone's nature story.

We want to hear about your Heroes!

If you have a story to share, please send to Jan Golian.

We will leave you with this quote from Aldo Leopold which first appeared in his book, *A Sand County Almanac*. As a renowned steward of the earth, Leopold was concerned about the legacy he was leaving for his children, and his words expressed the concerns many of us share for our own. For some of us, this is the very reason we do the work that we do.

"I hope to leave them good health, an education, and possibly even a competence. But what are they going to do with these things if there be no more deer in the hills, and no more quail in the coverts? No more snipe whistling in the meadow, no more piping of widgeons and chattering of teal as darkness covers the marsh; no more whistling of swift wings when the morning star pales in the east? And when the dawn-wind stirs through the ancient cottonwoods, and the gray light steals down from the hills over the old river sliding softly past its wide brown sandbars—what if there be no more goose music?"



Kudos to the Hannibal Tree Board and the Master Naturalists that planted 92 trees on April 5, 2023, just in time for Missouri's Arbor Day celebrated on April 7th. The trees were provided by Forest Re-Leaf of Missouri.

There is still time to plant trees to celebrate **National Arbor Day on April 28, 2023.**

Good Native Tree choices:

- Oak Trees
- Willow Trees
- Birches
- Wild Cherry

HIGHLIGHT ON UPCOMING EVENTS

Watch for Emails and Check our Calendars for Updates and New Events

—Volunteer Opportunities—

◆ April 17-21, 2023 Earth Week Trash Cleanup Mark Twain Lake

Join the U.S. Army Corp of Engineers in the 2nd annual trash clean-up at Mark Twain Lake for the 2023 Earth Day. We are seeking volunteers to help assist with this event. Efforts will be focused on shoreline cleanup, Hunter/Fisherman parking lots, and recreational areas. Anyone interested in adopting a location(s) during the week should contact Aaron Eckelkamp at aaron.g.eckelkamp@usace.army.mil or call the project office at (573)-735-4097.

◆ April 22, 2023 Earth Day Cleanup , Hannibal MO 8-11am

Volunteers should meet anytime from 8 to 11am at the Y’Men’s Pavilion, 105 Hill St. The Earth Day Cleanup is sponsored by Hannibal Board of Public Works, Hannibal Parks & Recreation and Hannibal Area Chamber of Commerce. Gloves and trash bags will be provided by the Hannibal Board of Public Works.

◆ April 22, 2023 Second Inaugural Steyermark Woods Hikes —Birds and Blooms—Two Hikes

10-11am will focus on birds in the area and will be led by Dr. Coelho, Professor of Biology at Quincy University.

1-2pm will focus on wildflowers blooming in the area and will be led by Kristy Trevathan, Dena Ellis and Pam Whiston.

The hikes require pre-registration on the MDC Event site. The hikes can either be counted as **Volunteer** or **AT**.

<https://mdc-event-web.s3licensing.com/Event/EventDetails/190918>

<https://mdc-event-web.s3licensing.com/Event/EventDetails/190919>

◆ **April 28 , 2023 Mark Twain State Park 10:00 – 11:00am Day With First Grade Classes** Volunteers Needed! Contact Meg Garey for more information. Could use two naturalists for two first-grade classes of approximately 12 students each.

◆ **May 10, 2023 Mark Twain State Park 09:30 - 11:45am Day With Fourth Grade Classes** Volunteers Needed! Contact Meg Garey for more information . Could use three naturalists for three fourth-grade classes of approximately 15 or 16 students each.

◆ **May 18, 2023 Mark Twain State Park 09:30 - 11:45am Day With Second Grade Classes** Volunteers Needed! Contact Meg Garey for more information . Could use one naturalist for four second-grade classes of approximately 23 students each.

◆ **May 23, 2023 Mark Twain State Park 09:15 - 11:15am Day With First Grade Classes** Volunteers Needed! Contact Meg Garey for more information . Could use one naturalist for three first-grade classes of approximately 20 students each.

◆ **May 17, 2023 Oakwood Elementary Fishing Day at Huckleberry Park 9am-Noon** Volunteers Needed!
Contact Meg Garey for more information .

◆ June 2-4, 2023-- Hannibal Great Gardens Conference “Natives, Meadows & Prairies”

Tickets are **REQUIRED** due to limited seating: Purchase tickets at: www.tggc.org

Friday, June 2 at 7pm: Film and Discussion “Urban & Suburban Meadows...Bringing Meadows to Big and Small Spaces”

Saturday, June 3 at 9am-4pm: Conference sessions by native plant and prairie experts, and a native plant sale

Sunday, June 4 at 10am-4pm Drive-yourself tour of five native plant gardens and prairie projects. **VOLUNTEERS** may still be needed to answer questions at each of the native garden/prairie sites. Please contact Dennis Honkomp or Meg Garey if you haven’t signed up yet and would like to volunteer.



Volunteer Opportunity Calendar for April, May & June 2023

Event Date	Event Time	Event Title
4/19/2023	10:00 am - 12 noon	Chapter Education & Interpretation Projects :: Master Naturalist Led Group Hikes :: Steyermark prep (time TBD)
4/21/2023	08:00 am - 08:00 pm	Parks / Conservation Areas :: Mark Twain Lake :: Earth Week Trash Pickup
4/22/2023	09:30 am - 11:30 am	Chapter Education & Interpretation Projects :: Master Naturalist Led Group Hikes :: Steyermark Wood--Birds
4/22/2023	12:30 pm - 02:30 pm	Chapter Education & Interpretation Projects :: Master Naturalist Led Group Hikes :: Steyermark Wood--Wildflowers
4/22/2023	08:00 am - 11:00 am	Natural Resource Stewardship :: Hannibal Spring Clean-up :: Earth Day
4/25/2023	07:00 pm - 08:00 pm	Program Support :: Chapter Meeting :: (04) April
4/28/2023	10:00 am - 11:00 am	Parks / Conservation Areas :: Mark Twain State Park :: Day With First Grade Classes
5/9/2023	06:00 pm - 07:30 pm	Program Support :: Executive Board :: Board Meeting
5/10/2023	09:30 am - 11:45 am	Parks / Conservation Areas :: Mark Twain State Park :: Day With Fourth Grade Classes
5/12/2023	12 noon - 02:00 pm	Program Support :: Native Gardens Committee :: Committee Meeting :: Native Gardens Forest Keeling Field Trip (Time TBD)
5/17/2023	09:00 am - 12 noon	Parks / Conservation Areas :: Hannibal Parks :: Huckleberry Park :: Oakwood Elementary Fishing Day
5/18/2023	09:30 am - 11:45 am	Parks / Conservation Areas :: Mark Twain State Park :: Day With Second Grade Classes
5/20/2023	09:00 am - 12 noon	Chapter Education & Interpretation Projects :: Master Naturalist Led Group Hikes :: Sodalis Nature Preserve
5/23/2023	09:15 am - 11:15 am	Parks / Conservation Areas :: Mark Twain State Park :: Day With First Grade Classes
5/23/2023	07:00 pm - 08:00 pm	Program Support :: Chapter Meeting :: (05) May
5/26/2023	02:00 pm - 03:00 pm	Program Support :: Native Gardens Committee :: Committee Meeting :: Native Gardens BH&G Field Trip (Time TBD)
6/4/2023	09:00 am - 04:00 pm	Chapter Education & Interpretation Projects :: The Great Gardens Conference--Host Garden Tour Native Gardens
6/17/2023	09:00 am - 12 noon	Chapter Education & Interpretation Projects :: Master Naturalist Led Group Hikes :: TBD
6/27/2023	07:00 pm - 08:00 pm	Program Support :: Chapter Meeting :: (06) June :: Pot Luck Dinner

Monthly Meetings

Monthly Chapter

Meetings are held on the 4th Tuesday of every month

Bi-monthly Board

Meetings are held on the 2nd Tuesday of every other month

—Speakers at Meetings—

- ◆ April 25, 2023—**Heather Jones**—Biologist, Quails Forever
- ◆ May 23, 2023—**Field Trip to 3GFarm**
Meeting will be held at Robert & Wendy Hendrickson's 3GFarm. **More information and directions to come.**
- ◆ June 27, 2022-- **State of MDC with Danny Hartwig or Chad Smith**
Meeting at Frank Russell Area at Mark Twain Lake. Potluck Dinner—Bring Chairs, bug spray and sunscreen. **More information to come on signing up to help or bring food.**



Advanced Training Calendar for April, May & June 2023

Event Date	Event Time	Event Title
4/15/2023	03:30 pm - 04:30 pm	MDC: Birds: Naturalist Notes: Wild Warblers Virtual Program
4/18/2023	06:00 pm - 07:30 pm	MDC: Birds: MDC Science: Barn Owl Biology Virtual Program
4/18/2023	12 noon - 01:00 pm	MDC: Outdoor Cooking: Part 6: The Recipes Program!
4/19/2023	10:00 am - 12 noon	MDC: Steyermark walk-through (time TBD)
4/19/2023	06:00 pm - 09:00 pm	Medicinal Herb Class at Four Winds Farm
4/20/2023	12 noon - 01:00 pm	Deep Roots webinars - Native Plants at Noon
4/20/2023	06:00 pm - 07:30 pm	MDC: Hunting: Virtual - Learning to Hunt: Mushrooms
4/20/2023	12 noon - 01:00 pm	MDC: Native Plants:
4/20/2023	09:00 am - 12 noon	Medicinal Herb Class at Four Winds Farm
4/21/2023	07:00 pm - 08:00 pm	Missouri Department of Conservation Birds: Tips and Tricks for Shore-bird Identification
4/22/2023	10:00 am - 11:00 am	MDC: Birds: Spring Hike at Steyermark Wood
4/22/2023	01:00 pm - 02:00 pm	MDC: Spring Wildflower identification: Spring Hike at Steyermark Wood
4/22/2023	09:00 am - 11:30 am	MDC: Wild Edibles: Virtual - Learning to Hunt: Wild Edibles (Virtual)
4/25/2023	06:00 pm - 07:00 pm	Chapter Meeting--Heather Jones : Invasive Species and Control
4/25/2023	02:00 pm - 02:30 pm	MDC: Wildlife: Creature Feature: American Toad (Virtual)
4/26/2023	06:00 pm - 09:00 pm	Medicinal Herb Class at Four Winds Farm
4/26/2023	04:00 pm - 05:00 pm	MPF Webinar: Spring Into Action for Declining Birds
4/27/2023	12:30 pm - 01:30 pm	MDC: Discover Nature: Virtual: Birds and Blooms
4/27/2023	09:00 am - 12 noon	Medicinal Herb Class at Four Winds Farm
4/28/2023	07:00 pm - 08:00 pm	MDC: Trees: Arbor Day Activities
4/29/2023	01:30 pm - 02:30 pm	MDC: Discover Nature: Tree Talk

Watch for new training that is added on the website. If you find additional training not on the calendar, please send to Vanessa and Anne so that it can be added. If you aren't sure whether the new training qualifies please ask!
THANKS!!

Most training requires advanced registration. If you want to sign up for a training session, please use the appropriate link below.

FOR MDC: <https://mdc.mo.gov/events>

FOR MPF: <https://moprairie.org/events/>

For other advanced training, follow the instructions in the email sent by Vanessa. If you aren't sure, please ask! Someone will be happy to help you get signed up.



Advanced Training Calendar for April, May & June 2023 Continued

Event Date	Event Time	Event Title
5/3/2023	10:30 am - 12 noon	MDC: Insects: Virtual Hybrid- Butterfly Survey Training
5/3/2023	06:00 pm - 09:00 pm	Medicinal Herb Class at Four Winds Farm
5/4/2023	12 noon - 01:00 pm	Deep Roots webinars - Lunch and Learn
5/4/2023	09:00 am - 12 noon	Medicinal Herb Class at Four Winds Farm
5/10/2023	06:00 pm - 09:00 pm	Medicinal Herb Class at Four Winds Farm
5/10/2023	04:00 pm - 05:00 pm	MPF Webinar: Invasive Plant ID and Control Methods
5/11/2023	09:00 am - 12 noon	Medicinal Herb Class at Four Winds Farm
5/12/2023	10:00 am - 12 noon	Field Trip to Forrest Keeling Nursery TIME TBD
5/13/2023	10:30 am - 12 noon	Missouri Department of Conservation Wildflowers: Wonderful Wildflower ID (Virtual)
5/17/2023	12 noon - 01:00 pm	MDC: Native Plants: Native Plants with Famous Cousins (Virtual)
5/17/2023	06:00 pm - 09:00 pm	Medicinal Herb Class at Four Winds Farm
5/18/2023	12 noon - 01:00 pm	Deep Roots webinars - Native Plants at Noon
5/18/2023	09:00 am - 12 noon	Medicinal Herb Class at Four Winds Farm
5/23/2023	06:00 pm - 07:00 pm	Chapter Meeting--Robert n Wendy Hendrickson Prairie Tour
5/23/2023	02:00 pm - 03:00 pm	MDC: Wildlife: Creature Feature: Rough Greensnake (Virtual)
5/24/2023	01:00 pm - 02:00 pm	MDC: Reptiles: Snakes Alive! (Virtual)
5/26/2023	12 noon - 02:00 pm	Field Trip to the Better Homes and Garden Test Gardens TIME TBD
6/1/2023	12 noon - 01:00 pm	Deep Roots webinars - Lunch and Learn
6/2/2023	07:00 pm - 08:30 pm	The Great Gardens Conference--Urban & Suburban Meadows Film
6/3/2023	09:00 am - 10:00 am	MDC: Discover Nature: Composting 101 (Virtual)
6/3/2023	08:30 am - 05:30 pm	The Great Gardens Conference--Saturday Workshop
6/15/2023	12 noon - 01:00 pm	Deep Roots webinars - Native Plants at Noon
6/27/2023	06:00 pm - 07:00 pm	Chapter Meeting----MDC Update

We're searching for articles for our next newsletter.

What would you like to read about or to learn more about?

Have you read a good book lately?
Would you like to share an article?

Contact Janet Golian for more information, to share your ideas or to provide feedback for our newsletter.

The deadline for contributing to the next newsletter is June 30, 2023.

Now is a great time to enter your hours!

Please visit—<https://www.hills.missourimasternaturalist.org/>

Enter your hours for Advanced Training and Volunteer Service on our website or send your Hours to Anne Coleman. Please let her know if you need assistance.

THANK YOU!

