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Missouri
Master Naturalist™



Master Naturalist Training Class 2021 CAPSTONE PROJECT SEEDING A PRAIRIE

By Ann Humphreys



It was a hot August evening. I sat in the Administration Building classroom at Hannibal LaGrange University for the orientation meeting of the 2021 Mississippi Hills Chapter Missouri Master Naturalist training course.

I scanned the room for familiar faces.

There were none. I was sitting in a room full of strangers.

Fast forward to the first weekend in December.

After spending three months together once, twice, and sometimes three times a week, the twenty newbies and the chapter members who planned, coordinated, & facilitated the classes, field trips, and hands-on learning experiences had become a group of friends.

When we discussed a Capstone Project, I raised my hand. I had come to the Master Naturalist training program with a project in my hip pocket.

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.

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And on Facebook [@MississippiHills](https://www.facebook.com/MississippiHills)

Capstone: Continued

In the spring of 2020, the *Missouri Conservationist* magazine had a feature article about a prairie planted on private land and the birds and pollinators it was attracting. The photographs were beautiful. This seemed like an excellent possibility for the old pasture in front of my childhood home, on the farm I had inherited from my parents where the pasture already had an impressive stand of milkweed.

The preceding fall I had the great good fortune of driving up the lane to the farmhouse and being engulfed in a blizzard of Monarch butterflies! They had already found my pasture and I wondered how I could make it an even better food source and habitat for them and other pollinators.

The article in the *Missouri Conservationist* said to call your Missouri Department of Conservation District Office for information. I did. A few weeks later, Jamie Ebbesmeyer, an MDC Private Land Conservationist, was walking around the pasture with me. And a few weeks after that I had a proposed plan and written instructions for six planting areas: two for pollinator plantings, two for native grasses, and two for trees. I decided to start with a .8 acre hillside near the county road, adjoined by a wooded area on one side and wetlands on another, and on the opposite side of the pond from the farmhouse and surrounding lawn. Jamie's plan gave me several options for eradicating the mono-typical fescue on the hillside, and I decided to do chemical eradication. By now it was early June 2020, and the plan called for an earlier spring application of chemicals. I decided to be patient. I waited until the recommended time in the spring of 2021 to begin.

An article in the July 2021 *Hannibal Magazine* caught my attention. An orientation meeting for Missouri Master Naturalist training was going to be held at HLG in early August. I knew Master Naturalists. The husband of one of my good friends from high school was active in the Arkansas Master Naturalist program. Their annual Christmas letters described their hiking and canoeing trips to natural areas, trail establishment and maintenance work, and the

native plants they had added to their property. In the fall of 2020, I had taken the Master Pollinator Stewardship Program offered by University of Missouri Extension in Adair County. Meeting twice a week for six weeks (once by Zoom and once in-person for field trips), the classes focused on insects and their habitats. Several of my classmates were Master Naturalists in the Kirksville area. They stood out because they already knew a lot about insects and their habitats. More than that, they had a breadth of knowledge about plants and animals and ecosystems, as well as resources like apps, websites, and native plant nurseries. Several field trips involved visits to their suburban Kirksville homes. Their properties looked different from their neighbors: more trees, more varieties of trees, trees planted together in groups, and swaths of wildflowers, all of which decreased the size of their formal lawns. The number and variety of birds, bees, and butterflies was incredible! I wanted to know what they knew and do what they had done. Our final outdoor class was held at the MDC Regional Office in Kirksville. There, at last, I saw what my farm could become. I had the same basic elements of a pond, wetland, woodlands, and lawn.

When I read the article about Master Naturalist training in Hannibal, a tingle of excitement ran up my spine.

When I attended the orientation meeting at HLG and saw the proposed class and field trip schedule I knew I had found my tribe.

We would be going on a field trip led by Jamie Ebbesmeyer, and another one led by Sam Lord, Missouri Department of Natural Resources State Parks Ecologist, to learn about prairie restoration.

This was exactly what I had been looking for, what I wanted to learn, and what I wanted to do.

Capstone: Continued



The first Saturday in December was a bright chilly day. Eleven of the twenty newly minted Master Naturalist Interns who completed the training course, along with the Mississippi Hills Chapter members who had been with us every step of the way and guests including several kids and grandkids, had gathered at my farm to help me complete the last step for the .8 acre hillside pollinator planting project. This was our class graduation Capstone Project, an opportunity to put our training into action through a volunteer service project that we led and executed. I had done the chemical eradication at the prescribed time in the spring and the second eradication in late November. I had purchased a seed mix from Heartland Seed of Missouri, a woman-owned business in Eolia, Missouri, which met the specifications in Jamie Ebbesmeyer's Job Sheet for Seeding.

The mix contained two grasses and twenty-nine species of forbs. (When I first heard the word, "forbs" I thought Forbes, the business magazine. I learned that forbs mean herbaceous blooming plants other than grasses. Think— wildflowers.) Bob Kendrick generously contributed additional seed from Heartland, a mix of even greater variety: three grasses and fifty species of forbs. Taken together the total seed cost was in the \$500 range. We happily mixed the bags of native grasses and forbs into a tub of cat litter, filled our containers, lined up, then walked together across the hillside, broadcasting as we went. We returned to the tub and refilled our containers, lined up again at a right angle to our original line, for more walking and broadcasting.



Our job completed, we did what all good friends do, we settled in to eat together and visit.

I wish the wildflowers and grasses would come up next spring, but realistically, it will take years for the seeds to send down roots and send up blooms.

I am a patient person. Year by year, with the help of my friends, I will plant the other areas of trees, wildflowers, and grasses in Jamie's plan for my farm. And I will help my friends with their own and Chapter projects. Working together, project by project, year by year, we will make a difference.

"He who plants trees loves others beside himself." Tom Fuller Thomas



Photo taken by Randy Hills

Ah, it was a beautiful day—
with bright blue, clear sunny skies, high pressure,
mid-60's, and light wind.
A great day for a burn!

This was my first time to attend an old field burn in preparation for a prairie restoration project, and I didn't yet realize how much I had to learn. Our chapter's work on the Hannibal Regional Airport Prairie project such as procuring commitment from the landowners, review of the 4 ½ acre site, site prep using chemical burns, establishing the fire break and attaining permission to do the burn as needed had been progressing over the last year. This project, one of eight of our prairie restorations in 2021, was being done under the guidance of Bob Kendrick, Denny Foss, and Mack Ellis. Today was a **big day** in moving the project forward.

Our chapter members gathered on December 2nd at Hannibal Regional Airport at 12:30pm. When I got there, the airport's terminal parking lot was full. We had a great turn-out with approximately 30 people in attendance, including reps from the Hannibal Fire Department. The prior week, a local news source had published a piece in their newspaper welcoming the work to be done at the airport. A quote from Andy Dorian, Hannibal's director of city services, "What is really neat is that we are using the terminal now for nature education classes," he said, "we will be able to utilize that (terminal) and

Light it and Fight it!

By Anne Coleman

—*With special thanks to Mack Ellis and Dennis Foss*

the outdoor space. It is going to be another cool feature." (*Courier-Post, Danny Henley, Nov 22, 2021*)

Our Burn Boss was Mack Ellis, a recent 2021 Master Naturalist graduate, who has over 30 years of experience in controlled burns working with MDC.

He began with a brief, but informative explanation of the terminology used, work to be done, review of the tools we would be using and steps we would take to accomplish the burn. One of the most vital items was the importance of the Burn Boss and how all critical communication would flow through him. Other important roles were assigned to crew leaders—Crew A for the Back fire line and Crew B for the Head fire line.

Our Burn Boss explained the burn plan and instruments in the weather kit that are used to take measurements such as windspeed, wind direction and humidity which help to determine whether we should continue with the planned burn or reschedule for safety reasons. He explained the aspects of a burn—prescription and safety with much emphasis on the safety aspect. One fact that Mack shared that made an impression on me was the importance of the fire break and that preparation of the break was 95% of the work with the actual burn only 5% of the work.

We were divided into two crews, and carrying the Broom rakes, Fire Snuffer, and Backpack blowers for suppression we followed our crew leader to the proper area to begin the burn and work the fire—"Light it and Fight it!!"—was the rallying cry for the day. And start it we did using the drip lighter filled with the proper ratio of gasoline (25%) and diesel (75%). The fire spread was aided by those people working the rakes using a technique of loaded the fire rake and bouncing it along the designated fire line inside the fire break. Behind the primary lighters, there were primary, secondary suppressors and mop-up to control the spread, maintain the fire break and snuff out any remaining embers.

Light It and Fight It- Continued

I took turns with other members working a broom rake on the head firing crew. Man, that fire was hot and you really had to safely stay ahead of it. I appreciated the opportunity to work alongside more experienced chapter members—new member Al Davis showed us how to bounce and drag the rake in a way that was quick and effective. All of us had one eye on Mack who was on the tractor and moving along the fire line to direct us to our next steps and areas to watch for needed suppression. The light wind made the burn go quickly and I believe we were done within an hour of starting the fire.

Standing back from the fire line, I was in awe of watching the front and back fires come together and flare up before dying down to complete the burn. I guess I've always enjoyed a good bonfire, but this was an accomplishment that will have amazing long-term benefits, and I felt great to be a part of it. I learned a lot, but I know we were successful because of the experience of our leaders and their knowledgeable guidance. I definitely want to learn more, and I am looking forward to attending the future Prescribed Burn Workshop with Jamie Ebbesmeyer. But I have to say that the hands-on experience I gained with this burn cannot be beat and puts me in a great place to be able to dig into the details of planning and executing successful future burns.

Additional Resources:

"Planning and Conducting a Prescribed Burn in Missouri" by the Missouri Department of Conservation

<https://mdc.mo.gov/magazines/conservationist/2011-02/prescribed-fire-management-tool>

"Prescribed Burning Conservation Practice Information Sheet (IS-MO338)" by NRCS

https://efotg.sc.egov.usda.gov/references/public/MO/PrescribedBurn_InfoSheet_4_08.pdf

"MISSOURI DEPARTMENT OF CONSERVATION PRESCRIBED BURN PLAN" by MDC

<https://assets.kalkomey.com/hunter/pdfs/missouriburn/mdc-prescribed-burn-plan.pdf>

Prescribed burn timing guidelines for selected objectives--

- Stimulate cool-season grass--Feb & March
- Set back cool-season grass--April & May
- Seedbed prep for inter-seeding legumes or forbs into WSG stands--Dec, Jan, Feb, March
- Thicken poor stands of Native grass--April & May
- Control woody invasion--May, June, July, August & September
- Stimulate Native Forbs--Aug, Sept, Oct, Nov & Dec
- Set back Native Grass dominance--June, July, Aug, & Sept

--Contributed by Mack Ellis

PRESCRIBED BURN WORKSHOP

Prescribed burns are an important aspect in establishing new prairies by removing established invasive species and other unwanted plant matter. However; uncontrolled burns can cause serious human injury and destruction to the surrounding environment. Education is vital to a successful burn with planned results.

Jamie Ebbesmeyer, Dept. of Conservation Private Land Manager, has offered a two part workshop in conjunction with Brett Gholson and his FFA class. The first part is online and must be completed prior to attending the skills session at Mark Twain High School in Center, MO. on January 29, 2022.

OUR PRAIRIES

Seven Prairies Per Year For Seven Years

Our chapter met its first goal of establishing seven prairies per year for seven years in 2020. During 2021, we exceeded that goal by establishing eight new prairies. These eight prairies are comprised of slightly over twenty acres on both public and private lands. Municipal City, Corps, and State Park properties now have prairies and plans for Dept. of Conservation 4.5 acres will be included in 2022 goal. Of the eight 2021 prairie projects as many as 30 plus people worked on projects from less than an acre to 10 acres. The chart below depicts the location, number of people involved, acres and the current status of our 2021 projects.



Location of Prairie	People Involved	Acreage	Current Status (12/21)
Hwy 107 & U	24	10 acres	Cleared of invasives. ready to be burned and seeded
Hannibal Airport	36	4 acres	Burns and seeding completed
Humphreys	24	Less than 1 acre	Pre-prepared Capstone Project seeded
Miller	5	5 acre parcel ½ acre parcel	Burned and ready for seeding
Gander	3	1.2 acre	Pre-prepared MHMN seeded
Indian Creek	4	.75 acres	Corp prepped MHMN seeded
Gibson	10	1 acre	Burned and seeded
Golian	4 FFA 30 +	1 acre	Burned once To be seeded by MT FFA

Homegrown National Park is a grassroots call-to-action to restore biodiversity and ecosystem function by planting native plants and creating new ecological networks. Their motto is “we can do this one backyard at a time.” This project maps land whose owners have committed to plant natives and remove invasives. Please add your native garden or in-progress prairie restoration to the map by visiting their website:

[HOMEGROWN NATIONAL PARK™](https://www.homegrownnationalpark.org/)



Counting Blessings with the Christmas Bird Count

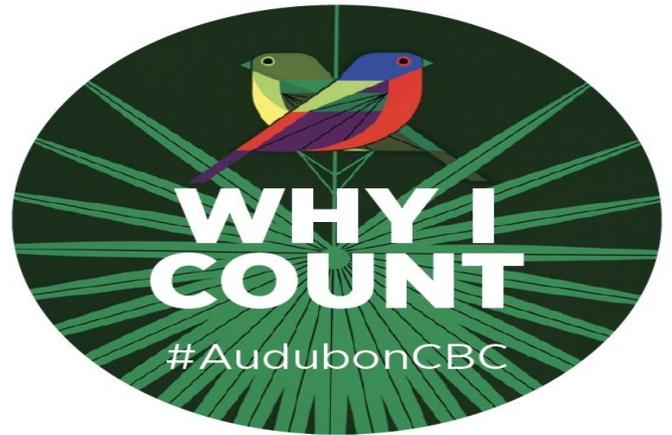
BY CAROLYN TROWER

Having grown up in rural Ralls County I was pretty sure I knew about the birds in our area. I'd seen countless blue jays, cardinals, and finches in the trees around the yard. I'd watched hawks soar over the pastures and heard the owl's call near dusk. And lately I've spotted bald eagles flying near the blacktops or scavenging in a harvested field. But it wasn't until I took the Missouri Naturalist course with the Mississippi Hills group that I realized my "sightings" were just the beginning. Suddenly the woods and fields surrounding my little town were teeming with many more birds than I ever envisioned. Birds I never knew about. Now I wanted to learn about every bird Sarah Kendrick introduced us to in our last session of the class.

An opportunity to expand my knowledge and whet my curiosity came with the December 18 Christmas Bird Count. The Audubon Society coordinates this year's 122nd annual event between December 14, 2021, and January 5, 2022. An estimated 80,000 volunteers across the United States and over 20 countries in the Western Hemisphere participate each year. Volunteers count every bird sighted or heard within their circle during a 24-hour period.

We can thank Frank M. Chapman, ornithologist, and officer in the just-emerging Audubon Society, for the Christmas Bird Count. On Christmas Day in 1900 Chapman suggested a new holiday tradition to replace the Christmas "Side Hunt." Before the turn of the century, hunters would choose sides and go out into the fields and those who brought in the "biggest pile of feathered (and furred) quarry won."

Conservation efforts were beginning to gain public acceptance and Chapman's proposal of a "Christmas Bird Census" and the dedication of the first 27 birders led to today's Christmas Bird Count that has been so beneficial to ornithologists around the world.



George Wisdom, president of the Mississippi Hills chapter, organized the local Bird Count and sixteen members met at Frank Russell Recreation Area. The day had dawned chilly with a brisk wind rising and fading throughout the morning. Equipped with a map of our area and a checklist of birds we set out in pairs, individually, or in my case one novice and two experienced Naturalists. Our circle was centered over the Mark Twain Lake and covered woods, fields, wetlands, and the lake shore. As a group we covered 7.95 miles on foot, mostly along the waterways, and 355 miles by car.

The data Wisdom submitted to the Audubon Society showed that the Mississippi Hills Circle counted 2,650 birds representing 45 species. The largest number of common birds to the area were cardinals, blue jays, black-eyed juncos, mourning doves, and crows. The circle also had herring gull. A bald eagle sighting was noted as well as several hawks numerous sightings for Canada Goose, ring-billed gull, and owls.

According to the Audubon Society's website "The data goes to a national database managed by the Audubon Society that provides a long-term view of the history and trends in bird populations and movements. It is used to periodically update population trends by area or subset and is made available to the public on Audubon's website www.audubon.org."



Audubon

CHRISTMAS BIRD COUNT



This collected data provides information to one of only two large existing pools of information that helps ornithologists and conservation biologists determine the action needed to protect birds and their habitats. Spending part of the morning and afternoon looking for and listening for birds gave me a renewed enthusiasm for Missouri's feathered friends. Now when I watch for birds at the feeder, I notice how the cardinal uses his tail like a rudder to keep his balance on the tree branch. And a few feet away from his bright plumage, I see the tufted titmouse hidden on the gray tree branch. I've read an article on the best feed for winter feeders and have placed a new feeding platform in the croft of the big Maple in the back yard. My new-found delight in birding also gifted me a pair of binoculars for Christmas.

EAGLE DAYS

By Theresa Casey

On Saturday and Sunday, January 29 and 30, from 10 am – 3 pm, Mississippi Hills Master Naturalists will assist the city of Clarksville host Clarksville Eagle Days. This is the third year that our organization has participated in this nature event that draws thousands to observe and celebrate the majestic American Bald Eagle. Spotting scopes will be set up on the riverfront below Lock and Dam #24 for ease of observing the eagles' nests and feeding in the open waters of the Mississippi River. This location offers some of the best viewing of eagles in the state. Representatives from MHMN and Army Corp of Engineers will be on hand to assist with the scopes.



Additional Eagle Days activities will be held at the Apple Shed located on Hwy 79. Children's activities sponsored by MHMN, natural history displays, and hourly live eagle shows by the Wild Bird Sanctuary will be available to the public at no charge. MHMN sponsors the children's' activities which includes animal print stamping, making eagle puppets and eagle masks.

Food and drinks will be available for our volunteers to enjoy. The weather is usually cold so please dress warmly to enjoy this annual event. I will be sending out an email soon requesting volunteers for this event that celebrates our national symbol. In the past we have carpooled starting at 8 am at MDC with stops along 61 for pickups. Please contact me at theresa_casey@hotmail.com or 573-406-8475 for any questions.

"I will argue that every scrap of biological diversity is priceless, to be learned and cherished, and never to be surrendered without a struggle." — E.O. Wilson (6-10-1929 — 12-26-2021)

Wilson was known as the Father of Biodiversity and for being the authority on Ants



WORDS OF WISDOM

From our MHMN President, George Wisdom

The Mississippi Hills Master Naturalist Chapter is now completing its fourth year. The chapter began in 2018 with a group of very enthusiastic outdoorsmen who wanted to do more for nature. They found a great opportunity to help fill that need by joining the Missouri Master Naturalist program. I have found my association with the Master Naturalist Program to be very rewarding and uplifting. The program has provided many opportunities to learn more about nature and conservation as well as the opportunity to serve others about the great outdoors.

The chapter has just completed its third training class. I want to take this opportunity to welcome our new naturalists to the Mississippi Hills Master Naturalist Chapter. I hope you find as much as I have the rewards of learning more and being in the outdoors. There is great fulfillment in teaching and serving others about the importance of preserving our environment.

Thank you for becoming a Missouri Master Naturalist and I hope you have as much fun as I have had in learning and being in the outdoors with others who have the same love and passion of the outdoors.

George W. Wisdom, President

On November 23, 2021 over thirty people gathered to be part of the graduation ceremony for twenty new Missouri Master Naturalists and to welcome them to the Mississippi Hills chapter as interns. It was an inspirational evening as we listened to the AHA moments of each graduate as they shared their stories of why they undertook the training and what stood out for them over the last twelve weeks. Many of us have already had the pleasure of working along side them and we look forward to having them join us in our mission to provide education, outreach and service dedicated to the beneficial management of natural resources and natural areas within our communities. **Welcome Graduates!**

Andrew Cooper	Richard Tumbleson	Randy Hills
Deborah Daniels	Beth Whelan	Sylvia Spencer
Dena Ellis	Doris Kurz	Abigail Tumbleson
Mack Ellis	Bridgett Cooper	Stephanie Whaley
Molly Herrington	Al Davis	Pamela Whiston
Ann Humphreys	John Ellis	Lynn Gibson
Carolyn Trower	Kathy Griffin	

Mississippi Hills Master Naturalists would also like to welcome our first transfer member, Dennis Honkomp, who will be joining us from the Great Rivers chapter. Some of you met Dennis at our November meeting.

Welcome Dennis!

Plans are underway for the next training class to be held in May, June, and July of 2022. Keep an eye out for like minded people in your circle of friends who would be interested in joining in our endeavors.

ADVISOROR'S CORNER

Dutch Oven Cooking



Missouri Department
of Conservation

by Kathi Moore



Cooking outdoors in Dutch ovens has always been one of my favorite ways to enjoy nature. Starting the charcoal, the smell of delicious food, and huddling around a fire with great people, are all what makes the activity great. I love to try new recipes and I love to take old kitchen-ready recipes and convert them to Dutch oven delights.

My new favorite recipe is for Pumpkin Pie Cake. A friend was telling me how simple it is. Just make pumpkin pie filling and dump a yellow cake mix on top... with a half-pound of butter! I was hooked. So, I tried it out with my co-workers. Of course, it was a big hit.

So, as we welcome in the new year, I am going to encourage everyone to get outside this year. Make a New Year's resolution to try something new. A new activity, a new recipe, a new trail, AND invite someone new to come with you! Sharing our passion for the outdoors is how we keep growing the love and appreciate for nature.

Finally, here's the recipe for Pumpkin Pie Cake, enjoy!

Pumpkin Pie Cake

- 1 large can pumpkin pie filling
- 2 eggs
- 1 can evaporated milk - I use 1 cup of Almond milk
- Pumpkin pie spice to taste
- Yellow cake mix (or Spice cake mix) – I use a gluten free cake mix
- 2 sticks of butter

Mix up pumpkin pie filling, eggs, milk. Pour into a lined Dutch oven. Top with cake mix. Add slices of butter on top. Bake at 350 for 30 to 40 minutes until golden on top.

Happy New Year!

Kathi

Cooking outdoors in Dutch ovens has always been one of my favorite ways to enjoy nature.





MEET THERESA CASEY

By Bella Erakko



Idyllic childhoods seem rare in today's stressed world, but they are perfect birthing grounds for future naturalists. Theresa Casey grew up on the edge of a small town of 500 people in southern Indiana. Expected to stay outdoors during the day, she biked to coal mining sites—stripping pits—searching the big hills for plant and shell fossils, climbed trees, camped out with Girl Scouts, and joined 4H. She could identify the trees she climbed (or admired) by the age of ten.

Theresa garnered a degree in Food Science and Biology from Purdue and met Barry, her to-be husband, at her first job with PET, Inc. in Michigan. "We had a bunch of kids—four in five years—so I was busy with that. Now they are all in their thirties." But once they were in school, she took up substitute teaching, and quickly decided teaching science—taking kids outdoors—would be a lot more fun. Once credentialed, she taught for 12 years. Her classes sketched wildflowers, collected insects, became ForestKeepers (assessing the health of trees and turning that data into the MDC), did Stream Team water quality projects, and basically became citizen scientists. Rewarded for her enthusiasm, she became Missouri Conservation Teacher of the Year in 2004 and Environmental Educator of the Year in 2005. In fact, her students always entered the statewide Envirothon Competition, scoring high every year.

Today, retired, she and Barry live south of Hannibal on 22 acres, about a third of it wooded with oak, hickory, and the infected-and-dying ash. Barry yearned for good acreage for hunting. With a long-term goal of providing native foods to wildlife, every year they trek to Forrest Keeling Nursery to purchase trees and shrubs native to our area.

Not limiting their efforts to warm-blooded wildlife, in 2016, they embarked on a two-acre prairie project in coordination with MDC. Prairies take three years to mature. Theresa laughingly recites the formula:

"weep, creep, and leap." After painstakingly mowing, burning, spraying, and seeding ... nothing happens and you WEEP. The next year, you see a little CREEP—kind of baby prairie-hood. Finally, the seeds finally deeply rooted, LEAP out of the ground, vibrant with color.

She has noticed that early and late in the season, their prairie, when blossoms are predominantly white and yellow, attracts flies and stinging insects; the height of summer, the flowers, with a full rainbow of vibrancy, draw butterflies. One of Theresa's favorites is the blazing star. She delighted when she saw the first blossoms one year; today they explode throughout the two acres.

Once the prairie is established, MDC will reimburse the owners for incurred chemical and seed costs. A few years ago, they decided to mow a path through the prairie to allow visitors and friends a more intimate experience. A mistake. Prairies are for perennials; but annual black-eyed susans popped up. Though native, they are not prairie. Now they mow a path around the border.

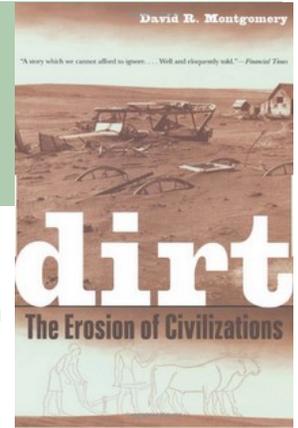
Theresa, like her blossoming prairie, took her idyllic childhood forward into a vibrant, thriving, nature-nurtured and nourishing adult passion. She became a teacher, a certified Environmental Educator, a Mississippi Hills Master Naturalist, and a mature citizen scientist of Missouri.



Reader's Review

By Toni Black-Blackman

"Dirt, The Erosion of Civilizations" by David R. Montgomery



The preface of this book immediately got my attention. Mr. Montgomery's explanation of how the fragile nature of the world's soils and our future will affect us all if mankind doesn't act soon.

The author gives many examples of civilizations in the past and how the use of their soils degraded their civilizations. For example, irrigation was a groundbreaking tool first used in Mesopotamia. The invention of the plow came next. Their downfall came because of the use of irrigation in their semi arid area, the ground became leached with salt and eventually crops failed. Salt had poisoned the farmland of Mesopotamia. This triggered an agricultural collapse between 1300 BC and 900 BC. with the starvation of their people.

On the river Nile, farming began around 5000 BC. The Nile provided the Egyptians with a natural flood every year. Egyptian agriculture used this natural flooding to their advantage. They were very productive for thousands of years until people began working out of sync with the river. Aggressive irrigation was begun and that led to salt buildup in the soil, just like in Mesopotamia.

Egypt and Mesopotamia are just a couple of examples the author gives to explain how powerful civilizations have exploited their precious resource of soil. This resulted in agricultural collapse and starvation of their people.

David R. Montgomery concludes with how nations should protect their soils for a sustainable future. As Master Naturalists we have been taught the importance of our soil and this book clearly shows the bad consequences of soil exploitation.



GOING ON AN ANTLER SHED HUNT by Bob Kendrick

Smiles will be ear to ear on February 12 for youth when they find their own set of deer antlers to keep at the **10th Annual Ben Sapp Memorial Antler Shed Hunt for Youth** held at the M.W. Boudreaux Visitor Center at Mark Twain Lake. After acquiring their treasure, the youth will visit stations held both inside and outside completing various activities such as building an eagle's nest. Each youth will also go home with a free t shirt. Beginning 8 a.m. until 4 p.m. each half hour a new group of 20 youth, accompanied by their parents, grandparents, or guardian, will begin an "Easter Egg" type hunt for deer antlers. Lunch will be served from 11a.m. to 1 p.m. Masks must be worn inside the Boudreaux Center and total enrollment is limited to 70% (around 150 youth). Registration is required and can be done by calling the local Corps of Engineers Office @573-735-4097.

This is a joint venture between Mark Twain State Park, Corps of Engineers, Monroe County Chapter of Whitetails Unlimited and the Mississippi Hills Master Naturalists. This is an opportunity to acquire Master Naturalist hours. Kathi Moore has trunks of activities you may display or new ideas are welcome. Call Bob Kendrick at 573-248-7361 if you are interested in helping with this interesting and worthwhile project.

Spotlight on Species

Grass Pink



Grass Pink
Calopogon tuberosus

Orchid Family
(Orchidaceae)

Missouri Master Naturalist 2022 Certification Pin

Description

Grass pink genus name is derived from the Greek word for “beautiful beard,” and the species name is Latin for “tuberous”. The unbranched stem grows to 27 inches tall. A single grass-like leaf occurs near the base of the central stem. There are usually one to two short sheaths just above the corm. The leaf is usually much shorter than the inflorescence. The structure of the flower for this orchid is highly unusual because its lip is located at the top rather than the bottom, causing the flower to appear upside down (even though it is right side up).

Bloom

The blooming period occurs from June to early July, lasting about 3-4 weeks. The slender stem ends in a loose spike-like raceme of 3-10 showy flowers that range from 1-2 1/2 inches across. Flowers are rose-pink to orchid with deeper colored veining in the sepals and petals and gold and white beards on their tips. The sepals and petals spread outward exposing the anther column, which is the same color. The sepals are sharply pointed, the two lateral ones are sickle-shaped and the lower one is lance-shaped. The two lateral petals are also sickle-shaped though not as sharply pointed as the sepals. The flowers bloom sequentially from bottom to top of the floral spike and are sweetly fragrant. They give way to fat, green pods packed with thousands of seeds maturing in late summer.

Habitat and Distribution

This delicate orchid occurs in fens (calcareous wet meadows) and occasionally in moist open woods. Its population is scattered in counties of the Lower Ozark and St. Francois Mountain sections of the Ozark Natural Division in the southeastern portion of Missouri. A similar species, *Calopogon oklahomensis* is found in Tallgrass prairie remnants in the Osage Plains and Springfield Plateau regions at Taberville and Diamond Grove Prairies

Status—Both the grass pink, also commonly called swamp pink, and *C oklahomensis*, are listed as species of conservation concern.

Faunal Associations

Bumblebees and other large, long-tongued bees are the primary pollinators of the flowers. Halictid bees, flies, butterflies, skippers, and beetles also visit the flowers occasionally, but they are unlikely to be effective at cross-pollination. Neither nectar nor accessible pollen are available to such flower-visiting insects. Instead, they are lured by deception to land on the showy flowers. They are often attracted to the colorful pseudo-stamens on the lips of the flower. If the visiting insect has sufficient weight, the hinged lip of the flower collapses onto its exposed reproductive column, attaching pollinia to the back of the insect. When the same insect visits the next flower, the same process can deposit the pollinia, enabling cross-pollination to occur.

PINS GIVEN FOR RECERTIFICATION

To *retain* the title of Certified Missouri Master Naturalist during each year, volunteers must :

1. complete a minimum of eight hours of approved advanced training
2. provide a minimum of 40 hours of approved volunteer service per calendar year

When a volunteer completes an additional eight hours of approved advanced training and 40 hours of volunteer service in the same year they received their initial certification they are considered recertified and will receive that current year's recertification pin.

Every year that volunteers successfully recertify, they receive a specially designed pin. These limited edition pins are designed by a MDC artist. They depict Missouri flora and fauna. Volunteers who are active but unable to recertify in a given year are still considered Master Naturalists, but they won't be considered certified or receive the limited edition pin for that year. Once a Master Naturalist has completed their initial certification they have the opportunity to recertify every year.

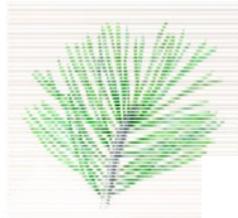
2021 RE-CERTIFIED MEMBERS



*Joan Black	Donna Black-Blackman	*Toni Black-Blackman
Barry Casey	Theresa Casey	Kent Cheek
*Keith Cline	Anne Coleman	*Dianne Couch
*Ken Daniels	*Bella Erakko	Dennis Foss
Janet Golian	*Matthew Harris	Quintin Heaton
Bob Kendrick	Vanessa Laatsch	*Kris Marie
Alan Miller	Brenda Nuernberger	Gale Rublee
Kristy Trevathan	*Mark Weatherford	*Phil Whelan
*Lisa Wiese	George Wisdom	

* Members receiving their 2021 re-certifications since our last newsletter. **Congratulations!**

Past years limited edition pins.



RECERTIFICATION PINS

Spadefoot Toad - 2006

Dogwood Blossom - 2007

Great Blue Heron- 2008

Crayfish – 2009

Bobcat – 2010

shortleaf Pine – 2011

Regal Fritillary – 2012

Orange throat Darter – 2013

Black Bear – 2014

Prothonotary Warbler 2015

Collared Lizard – 2016

Bumble Bee – 2017

Mead's Milkweed – 2018

Blanding's Turtle – 2019

Northern Long-eared Bat – 2020

Western Meadowlark – 2021

FOLLOW THE



LEADERS



MISSISSIPPI HILLS MASTER NATURALIST CHAPTER Officers and Executive Board for 2022

2022 CHAPTER BOARD MEMBERS

President – George Wisdom
Vice President – Kristy Trevathan
Secretary – Bella Erakko
Treasurer – Theresa Casey

Board Members at Large

Bob Kendrick
Keith Cline
Vanessa Laatsch
Gale Rublee
Brenda (Weiss) Nuernberger
Matthew Harris

Committee Chairs

- ◇ Volunteer Service Projects – Gale Rublee
- ◇ Advanced Training - Kristy Trevathan
- ◇ Hospitality - Vanessa Laatsch
- ◇ Website/Timekeeper - Anne Coleman
- ◇ Stream Team - Brenda (Weiss) Nuernberger
- ◇ Prairie Projects - Bob Kendrick
- ◇ Initial (Core) Training – Matthew Harris, Bob Kendrick
- ◇ Publications & Communications – Open



Kathi Moore - MO Dept. Of Conservation

Chapter Advisors



Daniel Mallory - MO University Extension

A special Congratulations to
Vanessa Laatsch who achieved her
Bronze Milestone for 250 volunteer hours
on December 14, 2021!

BY THE NUMBERS

(rounded to nearest whole hour as of December 31, 2021)

2021

SERVICE PROJECTS

Volunteer Service Projects Total Hours = 2,862

ADVANCED TRAINING

Advanced Training Total Hours = 559

Important

A quick reminder that our membership dues for 2022 are pending. **Dues are \$20** Please make your check out to Marion County Extension and send or give your check to Theresa Casey.

Also everyone needs to sign the **Volunteer Code of Conduct** for 2022. This is a very easy process and can be signed electronically. Please click on the link below to sign the volunteer code of conduct on-line form. For assistance please contact George Wisdom.

https://missouri.qualtrics.com/jfe/form/SV_3XcCMH9n9Og9M6F



OUR ENVIRONMENTAL HEROES

A hero is someone we look up to... a role model... a person who makes a difference.

Tack on environmental in front and look closely at our Missouri Master Naturalist Mission Statement. It states that when we become a member of MMN we are : “dedicated to the beneficial management of natural resources and natural areas within their communities for the state of Missouri.” We have signed up to make a difference in our communities managing our natural resources & natural areas. That makes us heroes for our environments. Thank goodness we are not the first heroes who have used their various skills and resources to make a positive difference in their environments.

Kathi Moore challenged the 2021 training class to look at the list of 140 candidates listed below, write and share what people had done to inspire them to leave their passive, comfortable existence and become active learners, movers and shakers to improve their own environments. Those papers were thoughtful and motivating.

Please consider sharing what you wrote for the class or putting pen to paper for an upcoming newsletter column.

Abbey, Edward
Adler, Margot
Agassiz, Jean Louis
Andrews, Roy Chapman
Audubon, John James
Austin, Mary
Bailey, Liberty Hyde
Baker, Richard St. Barbe
Bartram, John & William
Baylor, Byrd
Beard, Daniel B.
Bennett, Hugh Hammond
Berg, Peter
Bigelow, Maurice A.
Blanchan, Neltje
Bookchin, Murray
Boyden, Arthur
Brower, David
Burbank, Luther
Burgess, Thornton
Burroughs, John
Carrighar, Sally
Carson, Rachel
Carver, George Washington
Cather, Willa
Chapman, Frank
Commoner, Barry
Comstock, Anna Botsford
Cousteau, Jacques-Yves
Daly, Mary
Darling, Jay Norward (Ding)
Darwin, Charles
de Chardin, Teilhard
Delora, Vine, Jr.
Douglas, Marjory Stoneman

Dubos, Rene Jules
Ehrlich, Paul
Eifert, Virginia
Eiseley, Loren
Elk, Black
Emerson, Ralph Waldo
Fabre, Jean Henri
Fazal, Anwar
Foreman, Dave
Fuller, Buckminster
Fuller, Margaret
Galdikas, Birute
George, Chief Dan
Gibbs, Lois
Gnau, “Harrison”
Goodall, Jane
Gordon, Eva L.
Gray, Elizabeth Dodson
Griffin, Susan
Gyatso, Tenzin
Hardin, Garrett
Harris, Dale
Harris, William T.
Hays, John
Hodge, Clifton F.
Howard, Sir Albert
Jackman, Wilbur S.
Kelly, Petra
King, Thomas Starr
King, Ynestra
Krutch, Joseph Wood
LaBastille, Anne
LaChapelle, Dolores
Larson, Gary

Leopold, Aldo
Linnaeus, Carl
London, Jack
Long, William J.
Lopez, Barry
Marcum, Cathy Sneed
Marsh, George Perkins
Marshall, Bob
Mason, Bill
Mather, Stephen T.
McCloskey, Alice
McGaa, Ed (Eagle Man)
McHarg, Ian
Mendes, Chico
Merchant, Carolyn
Mikulski, Barbara
Mills, Enos A.
Miner, Jack
Momaday, N. Scott
Muir, John
Murie, Margaret
Murie, Olaus
Naess, Arne
Nash, Roderick
Nelson, Gaylord
Olmsted, Frederick Law
Olson, Sigurd
Osborn, Fairfield
Palmer, E. Lawrence
Payne, Frank O.
Petzoldt, Paul
Pinchot, Gifford
Powell, John Wesley
Rich, Louise Dickinson

Roberts, Charles G. D.
Rodale, Jerome Irving
Roosevelt, Franklin D.
Roosevelt, Theodore
Roszak, Theodore
Russell, Helen Ross
Schumacher, E. F.
Scott, Charles
Seattle, Chief
Seton, Ernest Thompson
Sharp, Dallas Lore
Sheldon, Edward A.
Snyder, Gary
Spencer, John W.
Standing Bear, Luther
Storm, Hyemeyohsts
Straight, H. H.
Suzuki, David
Teale, Edwin Way
Thoreau, Henry David
Udall, Stewart
Unsoeld, Jolene
Van Hise, Charles
Vinal, William
Vogt, William
Von Humboldt, Alexander
Wallace, Alfred Russel
Walton, Izaak
Ward (Jackson), Barbara
Warren, Karen
Watts, May Theilgaard
Werikhe, Michael
White, Gilbert
Whitman, Walt

This list is evolving. Let us know who you think should be added.

UPCOMING EVENTS

Great Backyard Bird Count

If you enjoyed the Christmas Bird Count, please join the GBBC on **February 18–21, 2022**, “when the world comes together for the love of birds.” This is a Citizen Science activity you can do on your own or with others. New to the Great Backyard Bird Count or to using eBird? Explore the “How to Participate” on options for entering your bird lists.

<https://www.birdcount.org/>

“Each submitted checklist becomes a glowing light on our bird sightings map. Share Your Birds with Us.”

The Great Backyard Bird Count uses eBird, one of the world’s largest nature databases. It stores more than 100 million bird sightings contributed each year and is used by professionals for science and conservation. Contribute your counts on eBird to participate.



Advanced Training Speakers at our Chapter Meetings in January-March 2022

JANUARY—Dr. Vayu Gokhale with the International Dark Sky Association will talk about the effects of light pollution and ways we can diminish it. Dr. Gokhale is also training the trainers for the “International Dark Sky Place” certification program which starts in March (see opportunity to join that effort below).

FEBRUARY — The Mark Twain Lake Corps of Engineers is receiving a major grant for the environmental trail at Frank Russell Recreation Area. They are inviting our organization to be actively involved in a portion of this project. The new trail will be a walking, bicycle, non-motorized trail that is 8.2 miles in length. A PowerPoint presentation will be given at the Boudreaux Center for the AT portion of our chapter meeting on February 22, 2022 at 6:00pm explaining the grant and our invitation to participate in this project. Please plan on attending this meeting. It will be a multi-faceted opportunity.

In addition to MTL Corps of Engineers, Alex Bross, Public Land Forester, will discuss how to plant tree seedlings and the Seedling Planting project happening in March on Ranacker Conservation Area. Alex has requested a team of MMNs to help plant several hundred seedlings in March at Ranacker.

MARCH—Amy Meier, Stream Team Coordinator Biologist MDC, will provide a comprehensive Overview of Watersheds & Stream Habitats.

International Dark-Sky Places Program Master Naturalist Advance Training & Volunteer Service Opportunity

Starting last year Master Naturalist volunteers were offered the opportunity to work with the Missouri Chapter of the International Dark-Sky Association (IDA) on their initiative to certify parks and communities as an “International Dark Sky Place”. Master Naturalist volunteers assist by becoming trainers for the certification program. Trainers provide park and community educators/officials with the training they need to be certified as a Dark-Sky Place. To become a trainer, you must complete these two (free) virtual training sessions:

Session 1 – Wednesday, **March 16**, 6 - 7:30 pm: The International Dark Sky Program and the Science of Light Pollution, Dr. Vayu Gokhale, Truman State University

Session 2 – Wednesday, **March 30**, 6 – 7:30 pm: The Impact of Light Pollution on Nature, Dr. Brett Seymore, Washington University

To register go to <https://www.darksmissouri.org/idsp/dark-sky-training> Be sure to identify your self as a Master Naturalist and include your chapter name.



Volunteer Opportunity Calendar for January, February & March 2022

Event Date	Event Time	Event Title
1/20/2022	05:00 pm - 06:30 pm	Program Support :: Executive Board :: Leadership/Mentor Call
1/25/2022	07:00 pm - 08:00 pm	Program Support :: Chapter Meeting :: (01) January
1/29/2022	08:00 am - 04:00 pm	Parks / Conservation Areas :: Clarksville Eagle Days
1/30/2022	08:00 am - 04:00 pm	Parks / Conservation Areas :: Clarksville Eagle Days
2/5/2022	10:00 am - 02:00 pm	Chapter Education & Interpretation Projects :: Deliver Educational/ Interpretative Program :: CHART--Teen Health Fair
2/12/2022	08:00 am - 04:00 pm	Parks / Conservation Areas :: Mark Twain Lake :: Boudreaux Visitor Center :: Shed Hunt
2/13/2022	01:00 pm - 02:00 pm	Parks / Conservation Areas :: Hannibal Parks :: Hannibal Parks & Rec Interpretive Programs :: Winter Wonderland Playtime
2/18/2022	06:00 am - 04:00 pm	Citizen Science :: Great Backyard Bird Count
2/19/2022	06:00 am - 04:00 pm	Citizen Science :: Great Backyard Bird Count
2/20/2022	06:00 am - 04:00 pm	Citizen Science :: Great Backyard Bird Count
2/21/2022	06:00 am - 04:00 pm	Citizen Science :: Great Backyard Bird Count
2/22/2022	07:00 pm - 08:00 pm	Program Support :: Chapter Meeting :: (02) February
3/8/2022	06:00 pm - 07:00 pm	Program Support :: Executive Board :: Board Meeting
3/22/2022	07:00 pm - 08:00 pm	Program Support :: Chapter Meeting :: (03) March

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

Watch for emails and check the Website calendar often as New Opportunities are added all the time.

Special note on recording time spent doing the *on-line* portion of the Prescribed Burning for Missouri Land Managers Course

There is a single Advanced Training entry on January 16, 2022 that should be used to record the hours you spend doing the on-line training for the Prescribed Burning workshop. Use this entry to record the **TOTAL** number of hours spent doing the web training regardless of the day or days that you spent doing the Units online. The time for the in-person workshop should be recorded on January 29, 2022. If you cannot accurately record the total number of hours you spent, please let Anne Coleman know and she will adjust.

Advanced Training Calendar for January, February & March 2022



Watch for new training that is added on the website.

If you find additional training not on the calendar, please send to Kristy and Anne so that it can be added.

If you aren't sure whether the new training qualifies please ask!

THANKS!!

Event Date	Event Time	Event Title
1/15/2022	10:00 am - 11:00 am	MDC: Trees: Virtual Program: Winter Tree ID
1/16/2022	08:00 am - 12 noon	MDC--Cumulative online portion of Prescribed Burning for Missouri Landowners
1/18/2022	01:00 pm - 01:30 pm	MDC: Trees: Missouri Evergreens (Virtual)
1/19/2022	12 noon - 01:00 pm	MDC: Birds: Creature Feature: Eagles (Virtual)
1/19/2022	10:00 am - 10:45 am	MDC: Discover Nature: Naturalist Notes Virtual Series: Not Yet Extinct
1/19/2022	04:00 pm - 05:00 pm	MDC: Discover Nature: Winter Backyard Birds and How to Attract Them!
1/19/2022	01:00 pm - 02:00 pm	MDC: Trees: Endangered Species: The Ozark Chinquapin (VIRTUAL)
1/19/2022	04:00 pm - 05:00 pm	MPF Grow Native! Webinar: Woodland & Forest Health for Landowners in the Lower Midwest
1/20/2022	12 noon - 01:00 pm	MDC: Wildlife: Wildlife Myth-Busters
1/21/2022	09:00 am - 10:00 am	OSU-Tending Nature: Native Plants and Every Gardener's Role in Fostering Biodiversity
1/25/2022	06:00 pm - 07:00 pm	Chapter Meeting--Dr. Vayu Gokhale
1/27/2022	04:00 pm - 05:00 pm	MDC: Discover Nature: Wildcats of Missouri
1/28/2022	07:00 pm - 09:00 pm	MDC: Birds: An Evening with Raptors
1/28/2022	09:00 am - 10:00 am	OSU-Tending Nature: Native Plants and Every Gardener's Role in Fostering Biodiversity
1/28/2022	08:30 am - 04:30 pm	Ralls County SWCD: 4th Annual NEMO Soil Health Workshop
1/29/2022	10:00 am - 11:00 am	MDC- Native Plants: Winter Beauty - Virtual
1/29/2022	09:00 am - 12 noon	MDC- Prescribed Burn Workshop: Skills Session
1/31/2022	02:00 pm - 03:00 pm	MDC-Birds: VIRTUAL: Homemade Suet Bird Feeders

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 George or Kristy. If you aren't sure, please ask! Someone will be happy to help you get signed up.



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 March 31, 2022.

Advanced Training Calendar for January, February & March 2022 Continued

Event Date	Event Time	Event Title
2/2/2022	12 noon - 01:00 pm	MDC-Mammals: Creature Feature: Groundhog Day (Virtual)
2/4/2022	09:00 am - 10:00 am	OSU-Tending Nature: Native Plants and Every Gardener's Role in Fostering Biodiversity
2/10/2022	10:00 am - 11:00 am	MDC-Native Plants: Diggin' Deep: Roses are Red What About Natives? (Virtual)
2/11/2022	09:00 am - 10:00 am	OSU-Tending Nature: Native Plants and Every Gardener's Role in Fostering Biodiversity
2/15/2022	01:00 pm - 01:30 pm	MDC-Amphibians: Secretive Salamanders (Virtual)
2/15/2022	06:30 pm - 07:30 pm	MDC-Trees: Sap to Syrup - Virtual
2/16/2022	06:30 pm - 08:00 pm	Complete Monarch Essentials
2/16/2022	02:00 pm - 02:45 pm	MDC-Discover Nature: VIRTUAL: Owl Pellet Dissection
2/19/2022	10:00 am - 10:45 am	MDC-Native Plants: Planning Your Garden Virtual Program
2/22/2022	06:00 pm - 07:15 pm	Chapter Meeting--MTL Corps of Engineers and Alex Bross
2/23/2022	06:30 pm - 08:00 pm	Complete Monarch Essentials
2/25/2022	12 noon - 01:30 pm	MDC-Native Plants: Introduction to Native Landscape Design -Virtual
3/2/2022	06:30 pm - 08:00 pm	Complete Monarch Essentials
3/9/2022	06:30 pm - 08:00 pm	Complete Monarch Essentials
3/16/2022	06:30 pm - 08:00 pm	Complete Monarch Essentials
3/16/2022	06:00 pm - 07:30 pm	International Dark-Sky Places Program -- Session 1
3/22/2022	06:00 pm - 07:00 pm	Chapter Meeting--Amy Meier
3/23/2022	06:30 pm - 08:00 pm	Complete Monarch Essentials
3/23/2022	06:30 pm - 09:30 pm	MDC-Pond Management Workshop: Pond Management Workshop
3/30/2022	06:30 pm - 08:00 pm	Complete Monarch Essentials
3/30/2022	06:00 pm - 07:30 pm	International Dark-Sky Places Program -- Session 2

Now is a great time to enter your hours!

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

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

THANK YOU!