

Your Key to Discovering the *Natural Missouri*

September 2019, Volume 13, Issue 03



From
Our
President



We have all been busy with our many interesting projects, and the speakers at our meetings are always superb. Summer is winding down, and soon Fall colors will burst. That also means that fall projects and events will be happening.

The schedule for our annual tri-chapter field day in October is coming together with even more interesting sessions. And the very next day we have a honeysuckle hack scheduled at the Fallen Oak trail at Busch Wildlife.

I have begun to collect seeds from my native garden at home and plan to collect from the Main Street garden as well, because Phil Rahn will have a seeding day in the field at Hays/Matson Hill this Fall. If you

have never seeded before, it is an interesting process and rewarding when you see the results the following year.

Our upcoming election in November will bring us a new vice president and secretary. Thank you to Rob and Jane for your diligence the last two years.

Before we know it, it will be time for our annual Christmas party. Confluence chapter knows how to throw a party, and we have some great cooks among us.

I always look forward to these events and projects and feel grateful to be a part of a chapter of master naturalists that does such important work.

*We are all stewards
of our environment.*

Martha

Martha Hessler
President, Confluence Chapter

Missouri Master Naturalist
2019 Certification Pin



Blanding's Turtle
Emydoidea blandingii



A partnership of the [Missouri Department of Conservation](#) and [University of Missouri Extension](#)
To engage Missourians in the stewardship of our state's natural resources through science-based education
and volunteer community service.

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Awards and Recognitions



Our own Master Naturalist Cliff Parmer was awarded the prestigious Missouri Stream Team Ambassador Award for Volunteer Water Quality Monitoring to honor his concerted efforts to collect, submit, and share high quality data to

the Stream Team Program.

The 2018 award was presented at the 23rd Annual Watershed Celebration at Meramec State Park in Sullivan on July 27, 2019.

This award recognizes Cliff's passion and continued activities related to the Stream Team Program goals of education, stewardship, and advocacy. His enthusiasm for protecting Missouri streams is an inspiration to others.



Cliff Parmer
Stream Team Leader

Cliff, we salute you!

July Awards



Annual awards: Leslie Limberg, Alberta McGilligan, Carmen Santos, Bob Lee, Connie Campbell, Gail Gagnon, Kathy Murray, Martha Hessler, Pam Walsh, and Deb Grupe.



250 hour Dragonfly award to Jean Harmon



500 hour pewter award to Don Moyer

August Awards



Steve Baldwin received the Master Naturalist award.



Lee Phillion, Scott Barnes, Steve Mc Carthy, Don Moyer, Deborah Moulton, Alison Robbins, Elaine Browning, Sandy Oldfield, Beth Zona, and Terri Sallee received the annual award.



Sue Stevens and Beth Zona received the Bronze award for 250 hours of service.

The Nice Things We Do ...

MN Stephen McCarthy"

Faust Park is the site of a summer concert series hosted by the Chesterfield Chamber of Commerce. In recent years all of the trash generated has gone into landfill, with no provision for recycling. Steve and Jane McCarthy frequently attend the concerts, and wanted to initiate recycling there.

The initial contact with the Chamber of Commerce indicated some interest in recycling, but that they had neither the staff time nor funding to get it started. Jane had the idea to contact Jean Ponzi, the "recycling guru" at the Missouri Botanical Garden. Jean suggested contacting the Ian Ashcraft, an environmental specialist with the St. Louis County Public

Health Department.

Ian had recycling stands and bags available for use at St. Louis County public events on a first come, first served basis. Steve and Jane initially borrowed 5 recycling stands, wanting to start small and gradually increase recycling capacity. The recycling units folded up and were easy to transport and set up. By the end of the concert season, Steve and Jane were able to set up 15 of the units in about 20 minutes before the concert on Tuesday. Only plastic, glass and aluminum bottles were to be recycled, and deposits into the recycling bags were restricted by the lids, which contained 3 large, round holes.



On Wednesday morning, various Confluence members gathered at Faust Park to collect the recycling, including Steve, Jane (on days she wasn't working),

Bob Siemer, Lee Phillion and Terri Sallee. With the permission of the park supervisor, the recycling was taken to a single-stream recycling dumpster in Faust Park. The whole process on Wednesday mornings required less than an hour.

It was noteworthy that very little non-recyclable material was present in the bags on Wednesday morning, possibly due to the easy-to-read verbiage on the recycling unit lids, and also the 3 round holes in the lids, which may have discouraged contaminants such as used paper plates. Steve estimates that about 400 lb were collected during the 8 concerts that weren't rained out.





Wild Bird Rehab

MN Leslie Limberg



This year's Missouri River race ended at the Blanchette Landing in St Charles. Several vendors attended, but not as many as previous years.

The Great Rivers Chapter had their usual booth of educational Stream Team tables.

Our own Confluence Chapter's booth supported **Wild Bird Rehab**. We brought our bird nest collection and Raven puppet, both of which we use at Towne Park for school kids. Jean, Sue, Connie, and Leslie recruited 11 new potential volunteers for the bird hospital and a few cash donations.

Soooo many interested kids! The public was so surprised and few had ever heard of Wild Bird Rehab. **(So far this year they have cared for over 1200 birds!).**



Hérons
Photo by
MN Jean
Harmon



Night
Hawk
Photo By
Jane
Porter

Contact Sue Stevens, karen-suestevens@gmail.com, for more information.

Amphibian Monitoring

Leslie Limberg
Steve Teson

August monitoring showed that the masses of Salamander larvae from July had migrated out of the vernal pools. Only a few were left. (see the larvae in picture with external gills) (Gills are reabsorbed shortly before leaving the pool)



Hundreds of Dragonfly larvae were particularly prevalent in Pond 2. The best surprise

is the addition of 2 St Charles County rangers to our team—Abigail & Ashley. They are thrilled to trek through Black berries, tall grasses, mushrooms, Copperhead & forested switch backs



to see the remarkable life in a Central Missouri pond.

July's surprise was a baby Turkey Vulture in the top of Daniel Boone Hays' hand-hewn barn. Walking through sacred & mesmerizing history!

Plenty of frogs in all pools—Leopard & Green

Two pools had salamander larvae w/ gills, the Duckweed pool closest to the barn & the pool mid hill we call Walnut Grove.

Most extraordinarily sensational was the Walnut Grove Pool—GOBS of Salamanders w/ gills. They were in every netting. We lost count at 10 & figured there were at least twice that number deeper in the pool.

Woohoo... It was a glorious day for Steve & Leslie... We spooked a Turkey Vulture in the barn. We then heard scampering up above the ceiling. Steve climbed the ladder and spotted a juvenile Turkey Vulture up there. Awesome day for a naturalist.

The large egg mass is probably bullfrog. The young salamanders

are unidentified at this time. The bowl contains a young bullfrog and tadpole. Leslie getting it done and catching critters.

Such a life...





Blue Birds Project



Unbelievable...
Can you count them all?
17 Bluebird/Tree Swallow boxes built
in 3 hours. Master Naturalists can sure
get the job done!



Master Naturalists in Action

HOW TALL DO YOU WANT YOUR RAGWEED?

MN Frank Dvorak, who is really,
really tall (6'1"). Frank belongs to
the Hannibal, MO, Mississippi Hills
MN Chapter.

By Elaine Browning
O'Fallon Public Works—Cleaning
the Rain Garden Project



A Soil Safari In Search of Menfro!

Members of 3 Master Naturalists
chapters gathered on Saturday, August 3
at Ozark Land Trust's Schulze Nature Pre-
serve in Washington, MO, for a Soil Safa-
ri! Missouri is well known by naturalists
for its abundance of soil types, and edu-
cation workshops like these point to the
rich diversity in our region's soils.

One expected but interesting
find of the day was Menfro, a type of soil
common in the Missouri River Hills and is
the state soil of Missouri. Participants first
learned the characteristics of Menfro soils
and the natural events that led to its for-
mation. Then the group headed down the
trail to take their own samples and see
how the soils at the Schulze Preserve
compare.

The morning was filled with dis-
cussion about land management, plant
communities, agriculture, and gardening
which all play a part in healthy soils and
lands. The day finished up with infor-
mation on how folks can learn more
about the soils in their area.

Thanks to everyone that came
out and to Soil Scientist Ross Braun for
spreading the word on the importance of
healthy soils in our landscape. Join us for
our next workshop at Schulze or at our
other preserves!

Our members participating were
Gary Schneider, Paul Crombie and Ken
Benson.



*We are a diverse, enthusi-
astic, adventuresome and down to
earth chapter!*

Fruits of the love and labor tended to our Quail Ridge Prairie Demo
Garden. Here is the part of the team...



Prairie Blazing Star





Monarch Madness

CANCELLED
(Due to construction conflicts.)

PLANT GERMPLASM PRESERVING DIVERSITY INSURING OUR FUTURE



If it were a museum, chances are it would be better known. But the U.S. National Plant Germplasm System (NPGS) is a vital network of genebanks where plants from around the world are curated, propagated, analyzed, and distributed for scientific use.

Most of the 511,000 samples, or accessions, of seeds, tissues, and whole plants are not on public display. They are kept at more than 20 Agricultural Research Service genebanks, many of which receive additional support from universities and state agricultural experiment stations.

The materials are available to researchers and educators globally, and as one of the most extensive collections of crop diversity in the world, NPGS plays an integral role in maintaining the U.S. and world supply of food, fiber, and other economic crops.

"Plant Germplasm: Preserving Diversity, Insuring Our Future" was published in the January 2010 issue of Agricultural Research magazine.

Learn more at:

<https://agresearchmag.ars.usda.gov/2010/jan/plant/>

Photo by Peggy Greb, USDA/ARS Copyright free, public domain image

TALL THISTLE

Cirsium altissimum

MN Paul Crombie:
"A plant only a truly demented Master Pollinator Steward could love. Last year this patch was covered in Monarchs."



Cirsium altissimum is a North American species of plants in the thistle tribe within the sunflower family. Common name is **tall thistle** or **roadside thistle**. The species is native to the eastern and Central United States, with a range extending from Massachusetts west to North Dakota and south to Texas and the Florida Panhandle.

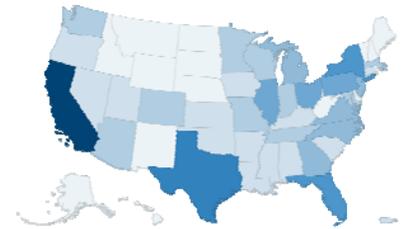
Cirsium altissimum is, as the name implies, a tall herb, sometimes reaching as much as 400 cm (160 inches or 13 1/3 feet). It is a biennial or perennial, blooming only once before dying. Leaves are toothed or shallowly lobed, with fine spines along the edge. Sometimes there is only one flower head but more often more, with pink or purple (rarely white) disc florets but no ray florets. The species grows in prairies, open woodlands, and disturbed sites.

Check out an interactive map that shows you **endangered and rare animals in every state**

(National Geographic)

In the U.S., 719 animal species are listed as federally endangered or threatened. Every state is home to endangered species—some well-known, some obscure. All are vital to their ecosystems.

https://www.nationalgeographic.com/animals/2019/07/endangered-species-in-every-US-state-interactive-map/?cmpid=org=ngp::mc=crm-email::src=ngp::cmp=editorial::add=Animals_20190822&rid=795C4E00BD01D604879C6388F54F7D03



You will find something more outdoors than in books. Flowers and rocks will teach you what walls & libraries cannot.

Turn your passion to the garden and your senses absorb another story.

—MN Leslie Limberg
Confluence Chapter





From Our Members



Alberta's Garden
MN Alberta McGilligan



MN Lee
Phillion

Venus Looking Glass
At Hays
MN Leslie Limberg



O'Fallon Project Rain Garden
MN Frank Dvorak



MN Allison
Volk



Wind damage at the
O'Fallon Project site. For-
tunately only minor dam-
age at the Rain Garden.
MN Elaine Browning



Quail Ridge
Prairie
MN Elaine
Browning





Showdown!

are easy to use in the laboratory, have a short life cycle and are easy to manipulate.

Symptoms and Diagnosis

Milkweed bugs are more of a nuisance than a threat to milkweed plants. They feed on the seeds by piercing the seed pod and can be found in all stages of growth on the plants in mid to late summer.

Integrated Pest Management Strategies

1. Live with the damage. Milkweed bugs do little damage and are only present for a short period of time. Just living with the insects may be the most prudent thing to do.
2. Sanitation. Remove leaf litter and spent stalks in the fall to eliminate overwintering sites.
3. Use insecticidal soap. For quick control of an infestation insecticidal soaps are very effective and safe. Good coverage of the insects with the spray is necessary for it to be effective.
4. Use chemical insecticides. If necessary, use chemical insecticides as a last resort. Use caution when selecting insecticides as some may be harmful to beneficial insects.

Organic Strategies

Strategies 1 and 2 are strictly organic approaches. For an organic approach to Strategy 3, consult the Organic Materials Review Institute (OMRI™) for appropriate insecticidal soap products.



Pollinator garden at Ferris Park in Ballwin, MO
By MN Dave Lemoine

Milkweed Bug

The large milkweed bug, *Oncopeltus fasciatus*, is colored orange-red and black. It has a long proboscis and is a piercing sucking insect. It feeds on the seeds, leaves and stems of milkweed (*Asclepias*). It is found in small groups on milkweed often on the stems, leaves and on the seed pods. The bodies of milkweed bugs contain toxic compounds derived from the sap which they suck from milkweed. Milkweed bugs are true bugs (Hemiptera). They are used as research insects because they

The small milkweed bug, *Lygaeus kalmii* is similar to its larger cousin in look and habit. The small, or common, milkweed bug reaches only 10 to 12 millimeters in length. It shares the orange and black color scheme of the large milkweed bug, but its marking is different. The orange or red bands on the dorsal side form a bold X marking, although the center of the X isn't complete. The small milkweed bug also has a dull red spot on its head.

Adult small milkweed bugs feed on milkweed seeds and may take nectar from milkweed flowers. Some observers report that this species may scavenge or prey on other insects when milkweed seeds are scarce.



National Agricultural Library

<https://nal.usda.gov>

The library continues to expand digital access to their historical collection of printed agricultural monographs, reports, pamphlets, brochures, and other media. They have digitized over 7.5 million images from 160,000 publications. These materials are featured in several digital exhibits and web sites. They add digital and digitized content on a daily basis.

You may be interested in the USDA Pomological Collection, which includes paintings like the one above. Explore this collection and many more in their National Agricultural Library Digital Collections (NALDC): <https://naldc-legacy.nal.usda.gov/naldc/home.xhtml>. (You can even test-drive the new NALDC beta web site: <https://naldc.nal.usda.gov/>)

The library is also leading the way in providing access to publicly-available, USDA-funded scientific research data through the Ag Data Commons platform <https://data.nal.usda.gov/>. Ag Data Commons brings together and describes a wide variety of datasets relevant to agricultural research and related domains.

What kinds of things are you interested in seeing from the Library? Drop them a line at AqRef@ars.usda.gov

Bees only feast on nectar and pollen, right?

Wrong. Turns out, Nature's famously busy insect isn't strictly vegan, after all.

A team of Agricultural Research Service (ARS) and university scientists has shown that bee larvae (brood) have a taste for "microbial meat."

ARS entomologist Shawn Steffan and his colleagues at the University of Wisconsin, Cornell University, and Hokkaido University in Japan coined the term to describe an important ingredient in the brood's pollen provisions—namely, the protein of beneficial bacteria and fungi.

The microbes are naturally occurring in the pollen and feed and multiply within it. In the process, they increase the pollen's nutritional value to brood by enriching it with amino acids—the building blocks of protein—that flowering plants alone may not always provide.

"Bees actually require the non-plant proteins of these pollen-borne symbionts to complete their growth and development—which makes them omnivores," explained Steffan, with the ARS Vegetable Crops Research Unit in Madison, Wisconsin.

In fact, the team observed an appetite for microbial meat among brood that spanned 14 species distributed across all major families of social and solitary bees—Melittidae, Apidae and Megachilidae among them.

The microbes don't just serve themselves up as critical sources of amino acids, though. They also secrete enzymes that help break down and age raw pollen into a more nutritious and digestible form known as "beebread." Nurse bees may recognize this benefit and encourage the microbes' growth in pollen fed to brood, note the researchers in their paper. This microbial mix-mash may also check the growth of harmful bacteria or fungi that can ruin beebread

or sicken the hive.

For their study, the researchers used isotope- and gas chromatography-based methods to calculate the ratio of nitrogen in two types of amino acids (glutamic acid and phenylalanine) in the tissues of adult bees and in beebread. The team chose the method because of its accuracy in determining an organism's trophic position—where it stands on the proverbial food web of life based on the flow of nutrients and energy from producers to consumers of these resources.



Newly hatched blue mason bee larvae feeding on pollen provisions within a hollow reed. Photo Credit: Shawn Steffan

In this case, the team's isotope analysis showed that bee brood's consumption of both plant and microbial proteins warranted raising the insect's trophic status from that of a strict herbivore to an omnivore.

More broadly, the findings underscore the need to examine what effects fungicide use on flowering crops can have on the microbial make up of pollen fed to brood and, in turn, their development.

The Agricultural Research Service (ARS) is the U.S. Department of Agriculture's chief scientific in-house research agency. ARS focuses on solutions to agricultural problems affecting America. Each dollar invested in agricultural research results in \$20 of economic impact.





Raising Monarch Butterflies In Captivity Could Hurt More Than It Helps

The plight of monarch butterflies—the extraordinary transcontinental journeys made on fluttering wings and across multiple generations, the sudden collapse of their populations—has inspired public concern unprecedented for an insect.

Across much of North America, citizen scientists track monarch sightings; gardeners and schoolchildren plant the milkweeds they need to reproduce. Sometimes they nurture eggs and even adult butterflies purchased from companies that breed monarchs in captivity.

New research suggests, however, that these captive-raised butterflies and their progeny may have lost the ability to migrate. They may even disrupt wild migrations. More re-

search is necessary to know for sure, but the results, published in the *Proceedings of the National Academy of Sciences*, offer a potentially important note of caution.

From an article at Anthropocene Magazine,

Source: Tenger-Trolander et al. **“Contemporary loss of migration in monarch butterflies.”** *Proceedings of the National Academy of Sciences*, 2019.

by Brandon Keim Jul 10, 2019

Read the article at:

http://www.anthropocenemagazine.org/2019/07/captive-monarch-migration/?utm_source=Anthropocene&utm_campaign=5340881172- Anthropocene+science+to+AM&utm_medium=email&utm_term=0_ececeea89a-5340881172-294260381



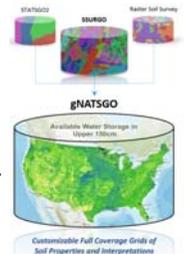
New gNATSGO Soils Database Now Available

New release of the first version of a new USDA-NRCS Soil & Plant Science Division (SPSD) soils database called the gridded National Soil Survey Geographic Database (gNATSGO).

This product was designed and built by a team of SPSP staff in spring of 2019. It is the first SPSP composite database that provides complete coverage of the best available gridded soils information for all areas of the United States and Island Territories. It was created

by combining data from the Soil Survey Geographic Database (SSURGO), State Soil Geographic Database (STATSGO2), and Raster Soil Survey (RSS) databases into a single seamless ESRI file geodatabase. The [gNATSGO webpage](#) provides more information about the product.

gNATSGO is available on the direct download page of the Geospatial Gateway at: <https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/geo/?cid=nrcseprd1464625>



Frontier Middle School Outdoor Classroom

The National Junior Honor Society (NJHS) at Frontier Middle School (FMS) decided that their outdoor classroom needed a face lift. The gardens were full of noxious weeds—including bush honeysuckle, their bird houses and bird feeder were in disrepair, and they wanted a place to conduct classes outdoors. Catrina Kaiser, their advisor, suggested they write up plans and she would ask the administration if NJHS could be in charge of repairing the outdoor classroom.

Miss Kaiser contacted her parents, MNs Jeanice & Jerry Kaiser for help.



Jeanice & Jerry stratified and planted several types of seeds in space borrowed from the USDA Plant Materials Center in Elsberry. They cleaned out the brush and treated the bush honeysuckle. Gary Schneider, one of the Confluence MMN members,

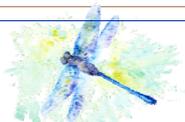
tilled up the plots. Under the direction of Jeanice and Jerry Kaiser, NJHS students and their advisor planted many plugs of purple coneflower, grey-headed coneflower, blue indigo, prairie blazing star, blue lobelia, wild bergamot, Butterfly weed, fox-glove beards tongue, and river oats in the prepared areas.



The Kaisers have been out several times adding plants from the Confluence Chapter and weeding. They are hoping to set up a day to mulch the gardens. The plants are still small and the competition needs to be reduced.



Thank You!



This has been our best growing season ever in the nine years at our Quail Ridge garden. All plants are lush & happy... no bug problems this year... just some deer browsing the coneflowers & rabbits gnawing the bushes and Poppy Mallow. And no need for hoses! Thanks to volunteers, Elaine Browning, Jane Porter, Beth Zona, Frank, Dvorak, Leslie Limberg, Carmen Santos, Ann Finklang, and Scott Barnes for another year down on our knees in the weeds.

O'Fallon Team—Frank Dvorak, Beth Zona, and Elaine Browning for managing this project while Carmen was out of circulation. You are the BEST!

Accolades go to Steve McCarthy, who faithfully organizes a bike ride each month for the Confluence chapter. Not only is it good exercise, there is won-

derful camaraderie and snack and drink time available. Steve, also went above and beyond, by riding his bike to the bluebird trail at Spring Bend and rode around and trimmed grass under each bluebird box.

Deb Moulton, for bringing such great speakers for our AT.

Tom Holt—for his attention to detail in coordinating the Monarch Madness festival for 5 months

Elaine Browning for her gentle demeanor, empathy and dedication to our chapter

Steve Teson for his commitment to amphibians & reptiles and sharing with our chapter.

Alison Robbins for managing money & receipts, coordinating holiday parties, managing Bluebird boxes, and inscribing our clothes

Steve & Jane McCarthy for their vision & foresight to save recyclables from landfills & oceans



*In Loving Memory of
Nicholas Patrick Dziuba
1983-2019*

Forever in our hearts ...



Our Leadership

- President—Martha Hessler
- Vice President—Rob Merriman
- Secretary—Jane Porter
- Treasurer—Alison Robbins
- Advanced Training—Deborah Moulton
- Volunteer Coordinator—Alberta McGilligan
- Membership Services—Tom Holt
- Communications—Leslie Limberg
- Web Site—Rick Gray
- Photography—Dave Lemoine
- Newsletter—Carmen Santos, Peg Meyer, Leslie Limberg and Elaine Browning

Advisors

- MDC, Colleen Scott, Colleen.Scott@mdc.mo.gov
- UMO Extension, Justin Keay, justin.keay@Missouri.edu

Project Leaders:

- Confluence Chapter Stream Team #3612—Cliff Parmer
- Babler State Park—Alberta McGilligan and Bob Coffing
- Lewis & Clark Boathouse and Nature Center—Leslie Limberg
- Quail Ridge Prairie Demo and Rain Garden—Carmen Santos
- Bluebird Monitoring—Connie Campbell and Leslie Limberg
- Nature Explore Classroom Education—Connie Campbell
- O'Fallon Public Works Project—Carmen Santos
- Monarchs & Pollinators Network—Bob Lee
- Birding Club—Gail Gagnon
- Capstone Broemmelsiek Park Prairie Seeding—Phil Rahn
- Main Street Garden

Martha Hessler and Tom Nagle

- Wild Bird Rehabilitation Sue Stevens
- Daniel Boone Hays—Bob Coffing
- Matson Hill Park—Bob Coffing
- Cuivre River and Don Robinson State Park—Bob Coffing
- Outdoor Classroom, Wentzville, MO—Jeanice and Jerry Kaiser
- Past Presidents—Scott Barnes, Connie McCormack, Jerry Lindhorst, Leslie Limberg, Cliff Parmer, Alberta McGilligan

The Confluence Chapter was founded in 2005 as the fifth Master Naturalist chapter in Missouri.

The chapter was formed by twenty-four individuals from St. Charles County, St. Louis County, and St. Louis City after completing the Missouri Master Naturalist™ training program. We share a common interest in nature and in volunteering to help protect, preserve and restore Missouri's natural heritage. Most of our members live in the region west of the Missouri-Mississippi Confluence and from both north and south of the Missouri River.

We operate according to the bylaws and operating handbook of the Missouri Master Naturalist Program developed by the Missouri Department of Conservation and University of Missouri Extension. Visit us at <http://www.mmnconfluence.org/>