

Your Key to Discovering the *Natural Missouri*

November 2019, Volume 13, Issue 04



From
Our
President



Looking back on the year that is almost behind us, I am so grateful to be involved with such enthusiastic and like-minded people.

I have found that Confluence Chapter members have a great passion for our environment and all things living in it. It continues to amaze me the dedication that everyone in our chapter maintains. Our many projects run the gamut; and if there isn't something that one finds interesting, it is developed by one of our creative members.

We have added five new members to our chapter recently, and they have hit the ground running with our Tri-chapter Field Day and Honeysuckle Hack. Welcome to our Chapter!

There is still much to be done to make our planet a healthy place in which to live. I truly believe that together we can make a difference, and have fun along the way.

*We are all stewards
of our environment.*

Martha

Martha Hessler
President, Confluence Chapter



Missouri Master Naturalist
2019 Certification Pin
Blanding's Turtle
Emydoidea blandingii

Mother Nature

An ever present life-giving and nurturing spirit for all living things. This fall, she has been transformed from the loving invisible care-giver to a lovely, visible greeter and celebrity at the Main Street Garden. Composed of grasses and moss, and adorned with ivy, hydrangea, oats, Sweet Annie and other garden cuttings, she welcomes visitors to her native garden. These Main Street visitors show their appreciation by strolling through her garden and pausing to pose with her in a photo shoot.

Seven-foot design and construction by Master Gardener, Glenda Duffy, with assistance from Martha Hessler, Cindy Syberg, and Jill Zupec in the garden on Main Street adjacent to the Crow's Nest between Tompkins and Pike.

Stop by the garden to see how Master Naturalists and Master Gardeners created a quiet, native garden retreat.



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

October Awards

- ⌘ Jerry Lindhorst, Larry Markley, and Ken Benson all received the annual award.
- ⌘ Terri Sallee received the Master Naturalist certification award
- ⌘ Alberta McGilligan received the silver lifetime award for 2500 hours of volunteer service.



November Awards

- ⌘ Rob Merriman, Pat McCoy, Jean Harmon, Sue Stevens, Gary Wester, Jean Crinean, Debora Weaver, David Lemoine, Linda Leong, and Tara Wallace all received the Annual Award.

- ⌘ Jill and Mark Zupec have completed the requirements for Master Naturalist.
- ⌘ Rob Merriman received the Lifetime Award. Rob has volunteered 500 hours and received a pewter pin.
- ⌘ Larry Markley received the Lifetime Award. Larry has volunteered 1000 hours and received the gold pin.



- ⌘ Carmen Santos received the President's Volunteer Service Award (Bronze) for her volunteer contributions to the city of O'Fallon during 2019. In addition to the MN projects at O'Fallon, Carmen and her husband volunteer at the Police Department and the Adopt a Street Program. The award was presented by the O'Fallon Volunteer Services Office.



New Members Welcome!

We are excited to welcome four new members to our chapter.

We welcome Mary Kaiser, Mark Kaiser, JoAnn Shew and Tracy Bono.

Tracy Bono lives in Cottleville with her three animal children, three human children and husband. She is an adjunct professor at St. Charles Community College and Horticultural Therapist for Eldergrow. Her hobbies include hiking, gardening, baking, crocheting and disability advocacy. You know that next project you are working on? The one that needs help? You should call her. She's pretty cool... that Tracy chick. She needs the hours and she would be very grateful.



:)

Hello, my name is **Jo Ann Shew**. I'm a recently retired (April 2019) Advanced Practice Nurse (APRN). I'm a member of our Environmental Justice team at our church, Eliot Unitarian Chapel. I like the outdoors and believe in volunteerism. Our sons are both in the science field: Justin is the conservation program manager at the National Great Rivers Research and Education Center (Alton, IL); Trevor is a lab supervisor at Washington University School of Medicine (St. Louis, MO).



Initially I was interested in birds but after exposure to the numerous areas covered by the program, the range of interest has broadened, especially with native plants and pollinators. I am also interested in the area of climate change and anything that can protect our environment. Jean Harmon, a fellow MMN, introduced me to the Master Naturalist Program and I am grateful to her.

I am very impressed with the individuals in the program, from instructors, peers, and fellow interns.

(We hope to hear from Mary and Mark in the near future.)





Protecting the Environment

"We cannot solve the issue of climate change without restoring our forests globally."

"Forests and trees are not the only way to solve complex local and global issues. However trees may be the simplest solution."

Arbor Day Foundation

The Peruvian rain forest is one of the most biodiverse areas remaining in the entire world.

Through work with partner organizations such as Ecoterra, the Rain Forest Rescue program provides farmers in Peru with site-appropriate trees and technical information about sustainable and economically viable practices. The results transform degraded land into the kind of biodiversity that serves both farm families and the world's environment.

Cooperating farmers receive trees from a selection of 15 species that are grown in local nurseries and matched with specific soil conditions. Some trees provided reforestation and stabilization on erodible slopes. Others offer the opportunity to grow shade grown coffee. The latter provides canopy that not only results in high quality coffee, but also restores wildlife habitat, ensures pollination, reduces the needs for fertilizers that pollute water, and helps control weeds and crop pests.

In short, through the availability of trees to plant and technical assistance and education, short-term agriculture is being replaced with sustainable practices used on family farms.

Submitted by MN Beth Zona
From an Article from the Arbor Day Foundation



Frost Flowers

Frost flowers are formed when thin layers of ice are extruded from long-stemmed plants in autumn or early winter. The thin layers of ice are often formed into exquisite patterns that curl into "petals" that resemble flowers. Frost flower formations are also referred to as frost faces, ice castles, ice blossoms, or crystallofolia.



Types of frost flowers include needle ice, frost pillars or frost columns, extruded from pores in the soil, and ice ribbons, rabbit frost or rabbit ice, extruded from linear fissures in plant stems. While the term ice flower is also used as synonym to ice ribbons, it may be used to describe the unrelated phenomenon of window frost as well.

The formation of frost flowers is dependent on a freezing weather condition occurring when the ground is not already frozen. The sap in the stem of the plants

will expand (water expands when frozen), causing long, thin cracks to form along the length of the stem. Water is then drawn through these cracks via capillary action and freezes upon contact with the air. As more water is drawn through the cracks it pushes the thin ice layers further from the stem, causing a thin "petal" to form.

The petals of frost flowers are very delicate and will break when touched. They usually melt or sublimate when exposed to sunlight and are usually visible in the early morning or in shaded areas.

Examples of plants that often form frost flowers are white crownbeard (*Verbesina virginica*), commonly called frostweed, yellow ironweed (*Verbesina alternifolia*), and *Helianthemum canadense*. They have also been observed growing from fallen branches of conifers and contain enough hydraulic power to strip the bark off.



Photos by Martha Schermann from Litzsinger.

Submitted by MN Beth Zona.





Master Naturalists in Action

Stream Team October's monitoring activity on Femme Osage Creek.

Bush Conservation Area—Eighteen Master Naturalists and about 10 others used approx. 30 loppers, 12 handsaws, 20 spray bottles, and 2&1/2 gallons of Glyphosate for 4 hours and killed a football field and a half of old honeysuckle. We also removed honeysuckle from the bird viewing area and cleared honeysuckle from the bend before the Fallen Oak Trail. We will keep after the Fallen Oak Trail as years progress. A few photos from the day—Jo Ann Shew



Our new microscope!



Participants were: Jean Crinean (blue fleece), Tom Holt (red fleece), Mark Zupke (denim jacket), Paul Crombie (red hat) and our fearless leader Cliff (black suspenders).

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MN Tom Holt and Bob Lee presented an Exemplary School Garden Award to Progress South Elementary in the Ft. Zumwalt district. This is the third of three awards given out.



Honeysuckle Pipers.



An "Exemplary School Garden" plaque from the Missouri Pollinator Network was presented to Andrew's Academy at Lake St. Louis by Tom Holt. Andrews Academy is one of three schools in the metropolitan area that have



been recognized for their school gardens focused on attracting pollinators. The other schools are Chesterfield Elementary in St. Louis County and Progress Elementary in St. Charles County.

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Lake St Louis Farmers Market



Sandy Oldfield, Linda Leong, and Jean Harmon manning our information booth.

"Love them or loathe them, we humans cannot survive without insects."

Biologist Dave Goulson responds to mounting evidence that we are destroying "the heart of every food web" that sustains us.





Cats vs. Birds



In an article published in the October 2019 National Geographic Magazine, the author (Strycker) states that cats are killing billions of birds.

Strycker adds that, "domestic cats pounce on from one billion birds a year in the lower 48, six billion to 22 billion small mammals, and hundreds of millions of reptiles and amphibians."

Cats are introduced predators brought into an ecosystem where they prey on native animals but nothing preys on them—they are a serious source of mortality for birds and other native wildlife.

He cites a report from Bird International that ranks agriculture and logging as the top threats to birds, with introduced predators as a distant third.

He adds, "Worldwide, approximately half a billion cats populate six continents, and 118 of the world's 131 main island groups. To find a more successful invasive species, you'll need a mirror."

(Read the article by Noah Strycker in the October 2019 National Geographic Magazine)

Stray cats—1,768 million birds killed/year
Owned Cats—764 million
 Building strikes —624 million
 Cars—213 million
 Power Lines—55 million
 Other—7 million

Strycker has one very happy indoors cat



What Pollinators are in Your Garden?

There are many species of skipper butterflies. Above are two skipper butterflies on a zinnia flower. They are probably Common Mellana (*Quasimellana eulogius*) or Dun Skipper (*Euphytes vestris*).

Skippers are a family, the Hesperidae, of the Lepidoptera (moths and butterflies). Being diurnal, they are generally called butterflies. They were previously placed in a separate superfamily, Hesperioidea; however, the most recent taxonomy places the family in the superfamily Papilionoidea.

They are named for their quick, darting flight habits. Most have their antenna tips modified into narrow, hook-like projections. More than 3500 species of skippers are recognized, and they occur worldwide, but with the greatest diversity in the Neotropical regions of Central and South America.

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



The United States leads the global green economy.

The green economy employs 4% of working-age people in the United States and is worth \$1.3 trillion per year, according to a new analysis. That's 16% of the global green economy, the largest share of any single country.

Read More:

http://www.anthropocenemagazine.org/2019/10/the-united-states-leads-the-global-green-economy-for-now/?utm_source=Anthropocene&utm_campaign=3cc53ffe53-Anthropocene+science+to+AM&utm_medium=email&utm_term=0_ececcea89a-3cc53ffe53-294260381

Interesting resource for all bug geeks:

http://macroinvertebrates.org/?fbclid=IwAR2shmqa8F5-31tswBHJhkzz0K_7pbFHx3OIUtN2k1YlaXKTQkl0W-6IY





From Our Members



O'Fallon Public Works "Secret" Garden. Photos by MN Elaine Browning



BUZZZZ...
Photo by MN Frank Dvorak, Mississippi Hills Chapter



Heath Aster (white),
Sweet Coneflower (yellow)



New England Aster, Goldenrod

Photos by Elaine Browning



Spiderwort
Tradescantia
(O'Fallon Wildflowers Garden)

Tradescantia, named for John Tradescant, gardener to Charles I of England in the early 17th century. "Spiderwort" for the spider web-like hairs surrounding the filaments.

Once thought to be a cure for spider bites. Native Americans used the stems as pot-herbs. They also used the roots to make tea or treat various stomach, kidney, and female ailments.

The very young leaves of this plant are supposedly edible raw, but as the leaves get older, they must be cooked or they will be too tough to eat.

The leaves were also mashed and made into a poultice for insect bites and skin inflammations.



American Dagger Moth
Photo by MN Jane Porter.

Beware of hairy yellow caterpillars with black spikes. They are American dagger moths that have toxic properties when hairs are touched. One slight brush can send you to ER with significant hives, elevated blood pressure, facial flushing, and chills.





*United States Mint
Launched Frank Church
River of No Return
Wilderness Quarter*

The Frank Church-River of No Return, Idaho is a wilderness of steep, rugged mountains, deep canyons, and wild, whitewater rivers. The United States Congress designated the Frank Church-River of No Return Wilderness in 1980 and it now encompasses a total of 2,366,757 acres.

The Frank Church River of No Return Wilderness quarter is the 50th release in the United States Mint



America the Beautiful Quarters Program, a 12-year initiative that honors 56 national parks and other national sites authorized by

Public Law 110-456.

Each year until 2020, the public will see five new national sites depicted on the reverses (tails sides) of the America the Beautiful Quarters. A final coin will be released in 2021.

The United States Mint is issuing these quarters in the order in which the national sites were officially established .

<https://www.fs.usda.gov/detail/r4/news-events/?cid=FSEPRD678704>

Get them all:

America the beautiful Quarters Program:

<https://www.usmint.gov/learn/coin-and-medal-programs/america-the-beautiful-quarters>

Ozark National Scenic Riverways, MO Quarter



*In Nature, Halloween
Can Be Scary-Good*

Posted by Scott Elliott, Agricultural Research

At Halloween, people revel in ghosts, goblins, and things that go bump in the night. Not all are in books or movies, though. There are plenty of creepy critters doing downright scary things every day in your own backyard.

That's not necessarily a bad thing, since many of these "monsters" are actually good guys getting the bad guys out of town; it's just not always pleasant to watch.

Fire ants are common in subtropical Southeastern states and have shown up as far west as California. These stinging ants are not just painful pests; they're also a bane to agriculture, feeding on young plants and seeds, causing an estimated crop loss of \$750 million per year. There are many ways to control or eliminate fire ants, but nature provides one that is tailor made for the silver screen!

Enter the phorid fly, a natural predator of the fire ant. The fly swoops in on its target and deposits an egg into the ant. After hatching inside the ant, the maggot works its way into the ant's head, where it lives for a couple of weeks, feeding on bodily fluids. The maggot then releases chemicals that eat away at the ant's body until its head falls off. The maggot then stays in the severed head and feeds on brains until it reaches maturity and breaks out through the ant's mouth.

Like zombies? You will, if you don't like cockroaches. The jewel wasp injects a serum into its victim, which "zombifies" the roach into submitting to its will. The passive zombie roach allows the wasp to lead it by an antenna into a nest, which quickly becomes a nursery after the wasp lays its egg. As

with the phorid fly larvae, it feeds off its host until it reaches maturity.

Mummies also abound in gardens and fields, courtesy of a pair of wasps. These wasps (Aphidiinae braconid wasps – pictured – and Pteromalid chaclid wasps) also deposit an egg inside the body of their prey, this time an aphid. The wasp larvae grow inside the aphid, which soon becomes mummified in that it turns inflated, rigid, and off-color. After the larva becomes an adult wasp, it chews its way out, leaving the mummy husk behind.

"Husks are fun to collect and are routinely encountered in gardens," said Matt Buffington, a research scientist with the Agricultural Research Service's Systematic Entomology Laboratory, in Beltsville, Maryland. "In fact, if you have them, it's a good sign your aphid problems are being somewhat controlled."

Aphids are a scourge to crops and horticulture, where they suck on sap, which causes yellowing, stunting, distortion of plant parts, leaf mold, and, in cotton, poor fiber quality. Aphids can also transmit plant viruses.

Not to be outdone, some bees (*Trigona hypogea*) make an appearance as scavenger vampires. "Instead of providing their young with protein from pollen, vampire bees gather protein from carcasses on the forest floor," Buffington said. "Further, they have unique jaws for tearing into dead animal flesh and cutting it into pieces for transport and digestion."

There are plenty of other examples of insects that exemplify Halloween, but one of the spookiest icons is actually a mammal – the humble bat. If you can get past the vampire nature of some bats, you'll find that many species of bats are great friends of plants; they pollinate, spread seeds, and feed on pesky bugs.

So, on All Hallows' Eve, as you're greeting young ghosts and goblins doing their rounds of trick-or-treating, don't forget about those beneficial creepy critters in your own backyard.

<https://www.usda.gov/media/blog/2019/10/31/nature-halloween-can-be-scary-good>





WHEN TO LET A DEAD TREE LIE



When trees are damaged by insects or disease, there's often pressure to cut them down. It's argued that "salvaging" these trees is actually beneficial for forests—but evidence is mounting that it causes long-term ecological disruption.

The latest findings come from Białowieża Forest, a 550-square-mile woodland that straddles Poland and Belarus and is a last stronghold of the vast forest that once stretched from France to Russia. Long the protected domain of aristocracy, Białowieża escaped large-scale logging; it's one of the few places in Europe where natural cycles of wind, fire, and disease still shape a forest at landscape scales.

Only during the last century has logging taken place. A prime target is the dead trees that are present in far larger numbers than in commercially-managed forests, in particular trees afflicted by bark beetles. Salvage logging following outbreaks is presented by supporters as ecologically beneficial, but it "alters the potential for natural regeneration," says Anna Orczewska, an ecologist at the University of Silesia.

Orczewska is the lead author on a new study, published in the journal *Biodiversity and Conservation*, of what grows in the aftermath of sal-

vage logging in Białowieża. The forest is set on a new trajectory; "the human 'clean-up' attitude," writes Orczewska and colleagues, "inevitably leads to the homogenization of the forest."

The researchers looked at the so-called herb layer—low-growing grasses, ferns, and flowering plants—in sites where spruce and pine trees were killed by beetle outbreaks and either logged or left alone. Salvage logging in Białowieża, as in many places worldwide, involves clearcuts followed by removal of trees with heavy machinery and plantation-style re-planting.

Several years later, the herb layer in logged sites was dominated by disturbance specialists rarely found within the intact forest. The previous herb layer was largely destroyed by machinery or withered in the suddenly intense sunshine. Their seeds did not sprout.

When beetle-killed trees were left alone, though, the original herb layer regrew. Dead trees provided necessary shade; their fallen trunks and branches created pockets of protection from grazing.

In short, the regrowth that occurred after natural disturbance was dramatically different from that which occurred after human-driven disturbance. And whereas the former represent the first stages in a cycle that will eventually restore the original plant community, the latter represent something different. The new, disturbance-specialized assemblage may persist for decades. "In some cases, it seems that pre-disturbance herb layer assemblages never recover," write Orczewska's team.

They argue that salvage logging is actually worse than disease outbreaks for Białowieża's plant communities—a lesson that, though based in this study on the research in Białowieża, is broadly applicable elsewhere. Natural disturbances create

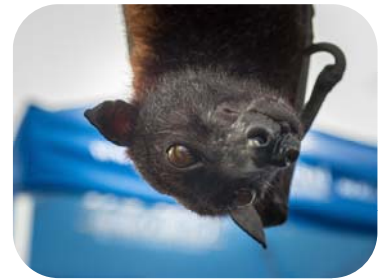
structurally and biologically complex forests.

"In the era of global warming we should eliminate salvage logging, at least in forests which still hold the potential for natural regeneration," Orczewska says. "Instead we continue cutting."

Source:

<http://www.anthropocenemagazine.org/2019/11/a-lesson-in-loving-dead-trees/>

Used by permission.



Bats serve a valuable role in pest control—especially in agriculture. In the U.S. alone, scientists estimate bats are worth more than \$3.7 billion a year in reduced crop damage & pesticide use

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A sample of the range of colors, shapes, sizes, and textures of cotton leaves, bolls, and seeds in the National Cotton Germplasm Collection. Colored cottons, such as the orange and tan ones on the left, are used to make dye-free clothing and are native to Central and South America.



The red-colored cotton boll, shown on the right, deters insect feeding. Sharply dissected leaves, such as those near the bottom, help keep the cotton canopy aerated and free of mold in humid climates. [Learn more](https://agresearchmag.ars.usda.gov/2010/jan/plant/) about ARS research: <https://agresearchmag.ars.usda.gov/2010/jan/plant/>





Reforestation Project

The Arbor Day Foundation is currently working with GreenTrees as well as other public and private partners to reforest areas of Arkansas, Mississippi, Louisiana, Kentucky, Illinois, Missouri, and Tennessee—primarily within the Mississippi River Valley.

This bottomland hardwood ecosystem is one of the most important critical wetland resources on the North America continent.

The Mississippi River Valley is a vital habitat for migratory birds and numerous plant and animal species. Forty percent of North America's waterfowl and 60% of all bird species migrate along the Mississippi River, although their population has dwindled from habitat loss.

The Mississippi River is a critical body of water in North America for commerce, climate, and energy. It is the largest river in the United States and the third-largest in the world. Its watershed is comprised of 33 states and two Canadian provinces. Each year over 505,000 metric tons of product valued at \$80–\$114 billion travels down the river.

Originally the area was covered with 25 million acres of forestland, but currently less than 5 million acres remain forested, which has dramatically affected the ecosystem. The loss of this precious resource has resulted in a decline of the wildlife as well as in the water quality that has since lead to an increasing dead zone in the Gulf of Mexico. This con-



version of forestland has also resulted in the loss of its natural flood control buffer.

The Arbor Day Foundation's carbon offset partner in the Mississippi River Valley forest restoration is GreenTrees — the leading carbon reforestation program in North America.

The unique partnership allows the two organizations to make a larger impact across the region.

The goal of this project is to create forests that landowners will permanently maintain due to financial incentives such as carbon credit sales, wood products, and recreational services as well as the ecological benefits of restoring wildlife habitat. The work will create a sustainable income stream that will ensure forest preservation and a continued commitment from farmers.

These planting efforts will directly improve water quality, as trees have the ability to filter out pollutants such as nitrogen and phosphorus. The forestland being restored will filter the water and help to decrease pollution levels in the river as well as in the Gulf of Mexico. In fact, the U.S. Geological Survey has estimated that 100,000 acres of farmland restored to its natural bottomland forest could filter 1,550,000 pounds of nitrogen and phosphorous out of runoff and groundwater before it reaches the Mississippi River each year.

The Arbor Day Foundation:

Now is the time.

The Time for trees.

Trees provide the very necessities of life itself. They clean our air, protect our drinking water, create healthy communities, and feed the human soul.

<https://www.arborday.org/carbon/project-mississippi-valley.cfm>

What are Neonicotinoids?



Neonicotinoids are a class of insecticides used to control aphids, weevils and other insects.

Some neonicotinoids may be highly toxic to bees for up to several days after an application.

Use care when applying any pesticide, regardless of the type, to help protect pollinating insects.

Honey bees, bumble bees, mason bees and other pollinating insects pollinate your fruit and vegetable gardens, native plants, and are critical for our environment and our economy.

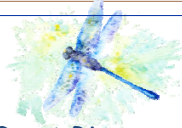
The proper use of pest control products can help maintain healthy ornamental plants. Some pesticides, including those in the class of neonicotinoids, may pose a potential risk to bees and other insects that benefit us. You can help reduce that risk.

Avoid applying any pesticides, including insecticides and fungicides, during bloom on ornamental plants that attract bees. Bees and other insects may be harmed if they consume nectar or pollen containing pesticides. Apply pesticides only after flower petals have fallen, when ornamental plants are less attractive to bees. This will reduce the risk to bees coming in contact with pesticides.





Thank You!



- Special thanks to Bob Virag of the Great Rivers MMN chapter . In his usual fashion he brought 2 large trunks full of loppers, hand saws, spray bottles, herbicide, all donated by Greenway Network. Bob Virag, you make us feel so proud. we'll follow your lead any day of the week except some Saturdays. Thank you for keeping us in connection with our partner Greenway Network and for your knowledge & inspiration
- And thank you Greenway Network!. Your long term commitment to stewardship is always applaud able. You make us shine.
- Thank you Mary Culler of Missouri Stream Team Watershed Coalition. We are now partners with such a formidable force.
- The Missouri Department of Conservation thanks us and the Missouri Stream Team Watershed Coalition also so appreciates our work. THANK YOU

CONFLUENCE CHAPTER !

- Truckloads of thanks to Honeysuckle Hackers: Rob Merriman, Jim Middleton, Gary Schneider, Ken Benson, Alberta McGilligan, Tom Holt, Bob Lee, Mark Zupec, Jill Zupec, Alison Robbins, Martha Hessler, Leslie Limberg, Jim Biehle, Gail Gagnon, Sue Stevens, Tessa Wasserman, & Jennifer



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
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- Confluence Chapter Stream Team #3612—Cliff Parmer
- Babler State Park—Alberta McGilligan and Bob Coffing
- Lewis & Clark Boathouse and Nature Center—Tom Nagle
- 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 and Tom Holt
- 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
- Cuiivre River and Don Robinson State Park—Bob Coffing
- Outdoor Classroom, Frontier Middle School—Jeanice and Jerry Kaiser
- Amphibian Monitoring—Steve Teson
- Wetlands for Kids—Glenn Bish and Rob Merriman
- Native Seed Collection & Distribution Phil Rahn
- Native Flower Potting & Distribution Alberta McGilligan
- 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/>