



Missouri Master Naturalist

July-December 2022 Volume 12 Number 3



The flower that blooms late
is the most rare
and beautiful
of all.
~The Emperor, Mulan



Late Bloomer
New England Aster
Symphotrichum novae-angliae
Forest Park, St. Louis, Missouri
©2022 Jake Ronecker



Great Rivers Gazette

July-December 2022, Volume 12 Number 3

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Co-Editor: Bob Virag

Co-Editor: Lori Purk

The President's Corner

Dear Chapter Members,

Just stop for a moment and think about who we are:

"The mission of the Missouri Master Naturalist Program is to engage Missourians in the stewardship of our state's natural resources through science-based education and volunteer community service. Volunteers support conservation efforts and natural resource education in their local communities."

How cool is that?!

I am so proud to call myself a Missouri Master Naturalist and to be part of such a vital chapter. I am constantly in awe of the expertise and the work that comes from Great Rivers.

A little about me:

I am a retired middle school science teacher and have been a member of Great Rivers since 2018. My husband, Don Knobbe, and I have been focused on education about native plants and stewardship of restored natural areas and hope to discover opportunities in other areas.



I'm excited about the future of our chapter as we continue the good work we have been doing and realize new opportunities for outreach, service, and education.

Great appreciation to Bob Ochs for leading our chapter over the last four years. Through virtual and in person and back again, he led our chapter with grace and humor. Always the humor! Thanks a million, Bob.

Lisa Picker
President,
Great Rivers Chapter

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Front Cover Photo

Late Bloomer, New England Aster – by Jake Ronecker

Back Cover Photo

False Turkey Tail Fungus –by Jake Ronecker

Great Rivers Chapter Officers

- President ----- Lisa Picker **NEW!**
- Vice President----- Gerry Spitznagel
- Secretary ----- Chris Hull
- Treasurer ----- Diana Miller **NEW!**
- Board Member-at-Large ----- Carl Davis
- Board Member-at-Large ----- Reneé Benage
- Board Member-at-Large ----- Tara Morton

Chapter Advisor

Eli Isele, University of Missouri Extension St. Louis **NEW!**

Program Advisors

- Jenni Rabenau, Missouri Department of Conservation
- Bob Pierce, University of Missouri Extension

Committee Chairs

- Advanced Training----- Michael Meredith
- Tri-Chapter Coordination----- Gerry Spitznagel
- Partners and Projects----- Laura Madden **NEW!**
- Communication----- Bob Virag
- Membership----- Barbra Stephenson **NEW!**
- Diversity----- Karen Zelle
- Hospitality----- Annie Russell & Peggy Parr
- Master Naturalist Logo Apparel----- Kari Pratt



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.

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www.facebook.com/MMNGreatRiversChapter
and www.facebook.com/groups/15075118803379



UNDER NEW MANAGEMENT

Great Rivers Chapter 2022 Election Results

CHAPTER PRESIDENT

Lisa Picker was unanimously elected new Chapter President for her first two-year term. Lisa brings to the chapter her strong educational skills, finely honed by years of experience managing precocious middle schoolers. Lisa also became very familiar with the inner work of our chapter projects and volunteer organizations while skillfully serving as Chair of the Partners and Programs Committee. We predict the chapter will rise to new heights under her guidance.

Bob Ochs, Chapter President since 2019, completed his second and final two-year term in November. His four-year presidency was marked by two of the most challenging years of the program caused by the COVID pandemic. In spite of the hardships, Bob's wit, wisdom, charm, and humor continued to inspire the chapter members to action through this difficult time. Virtual meetings became the norm and yet Bob drew the chapter together valiantly with his skill as a natural leader. Thank you, Bob, for honoring us with your time and making us all feel part of a family.



Bob Ochs passing the presidential gavel to Lisa Picker

TREASURER



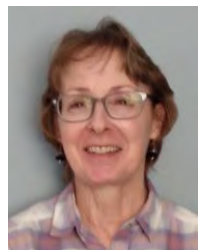
Diana Miller was unanimously elected new Treasurer for her first two-year term. Diana brings to the role her prior experience as Chapter Secretary and an extensive career in administration in the Rockwood and Eureka school districts.



Brenda Switzer, Treasurer since 2019, completed her two terms leaving the chapter in better financial condition than ever. Thank you, Brenda for your skill in managing our enterprise.

COMMITTEE CHAIR APPOINTMENTS

Membership Committee



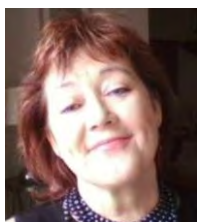
Barbra Stephenson, Class of 2009, was appointed new Chair of the Membership Committee, replacing Sherri Turner. Barbra brings over 13 years' experience as a Great Rivers member to this role, including 5 years as a Chapter Treasurer.

Barbra's strong understanding of the mission of the chapter and its long history of service will help provide solid recognition of member achievements.



Sherri Turner stepped down from her role as Chair of the Membership Committee. Sherri's two-year term was noted for the rapid growth of membership with the influx of new interns from the classes of 2021 and 2022 after a lull during the preceding COVID years. And this year, milestone awards and initial certification awards hit record numbers. Thank you, Sherri, for your talent in managing these ever-growing numbers and keeping all awardees informed.

Partners and Projects Committee



Laura Madden was appointed new Chair, Partners and Projects Committee, replacing Lisa Picker. As a recent graduate of the core Missouri Master Naturalist training program, Laura also brings a wealth of experience in organizing local St. Louis communities, passionate volunteers, and environmental organizations to address current issues.

MISSOURI UNIVERSITY EXTENSION CHAPTER ADVISOR



Join us in congratulating **Eli Isele**, the new Horticulture Field Specialist for MU Extension for St. Louis and St. Charles Counties and Chapter Advisor for Great Rivers and Confluence Chapters! Eli holds a BS in agriculture from the University of Missouri and an MS in sustainable development practices from the University of Florida. He is excited to return to Extension and work in our community. Welcome Aboard, Eli!



Please Welcome the Graduating Class of 2022 Great Rivers Chapter Interns! Congratulations!

Adrienne Kennedy
Brandon Forrester
Brenda Bredemeier
Cheyanne Lovellette
David Mitchell
Ed Levinskas
Elisa Edge
Ellen Sulser
Emilia Belciak

Erin Korsmo
Joseph Staples
Kathleen Benckendorf
Kim Funcik
Laura Madden
Linda Miller
Linda Munsell
Lynn Griffard
Mary Klauke

Megan Toups
Melissa Smith
Rachel Bartels
Rachel Odman
Sally Cohn
Scott Gilbert
Sinclair Bowman
Vanessa Cowart-Oberle





2022 Great Rivers Annual Report

Compiled by Bob Ochs, 2020-2022 Chapter President

It was a very good year! Thank you for all that you do!

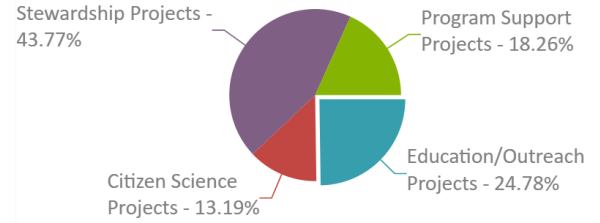
9,546 Volunteer hours, worth **\$ 272,443** to the Missouri economy

1,853 Advanced Training hours

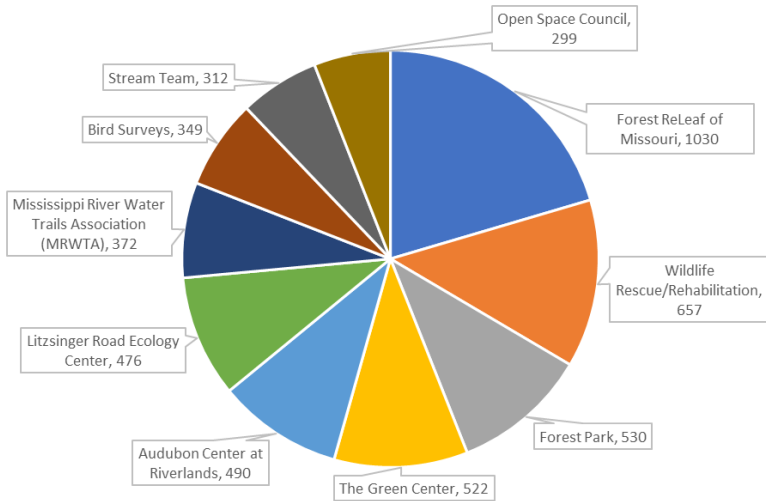
144 Active Missouri Master Naturalists in the Great Rivers Chapter

26 Great Rivers Interns from the Class of 2022

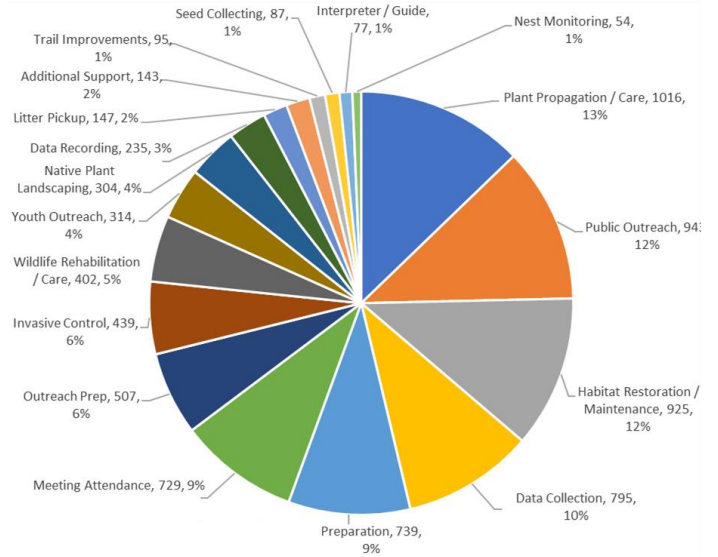
Hours by Reporting Group



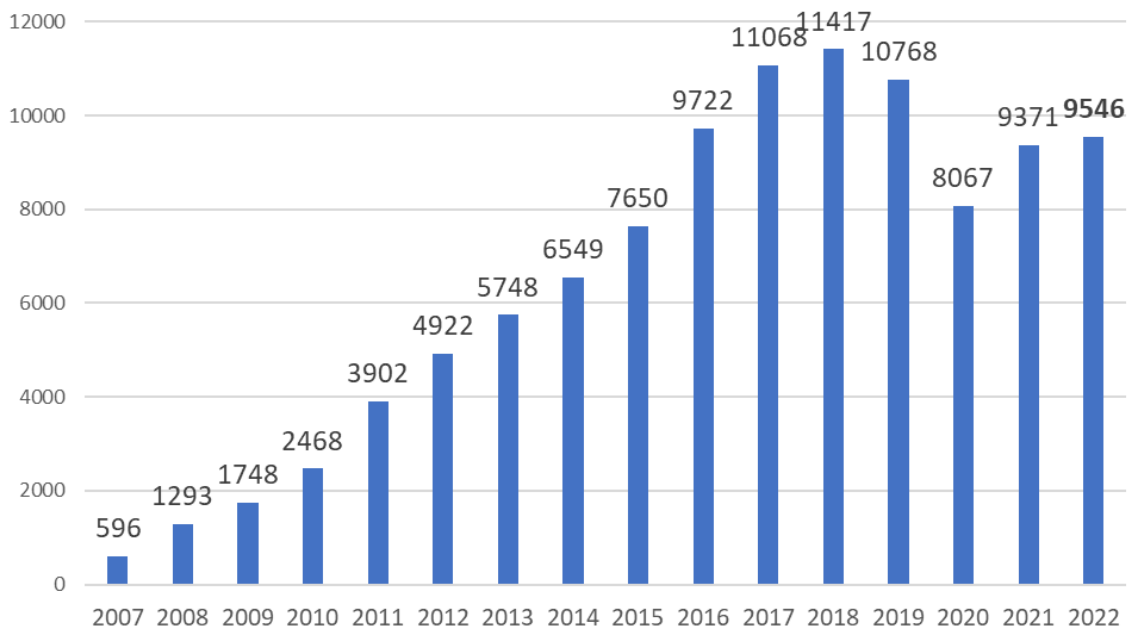
Top 10 Organization by Volunteer Hours



Categories of Work



Great Rivers Total Volunteer Hours by Year





2022 GREAT RIVERS WINTER HOLIDAY PARTY

Hosted by Annie Russell, Peggy Parr, and the Hospitality Committee
at the Audubon Center at Riverlands

The Great Rivers Chapter annual holiday celebration on December 20, 2022, was great fun! Many thanks to all who contributed to the potluck dinner with all the delicious food, and for the beautiful arrangements by **Annie Russell, Peggy Parr**, and the **Great Rivers Hospitality Committee**. **Mary Dueren** and **Michael Meredith** drew a good crowd at Heron Pond to watch the Trumpeter Swans roost, and Michael gave an outstanding presentation that summarized our year-end chapter results. But we are most grateful to the Audubon Center at Riverlands and the generosity of Ken Buchholz in providing the wonderful venue for this unforgettable evening. An enjoyable time was had by all! HAPPY HOLIDAYS!



Forty-five Great Rivers Merry Makers at the Audubon Center at Riverlands



Ken Buchholz, Director of The Audubon Center at Riverlands



New President, Lisa Picker, addressing the group



Michael Meredith's 2022 Annual Report



The squadron of Trumpeter Swan watchers at Heron Pond



Gazing at the Galilean Moons of planet Jupiter



Stewardship – Summer/Fall 2022

Spanish Lake Restoration Project by Larry Conant

Again, on November 26, 2022, five of your favorite volunteers toiled happily in the fog at the November Spanish Lake Fun Day Event. Pat Behle, Sue Forquer, Michael Meredith, Bob Virag, and Larry Conant won the award for Volunteers Who Had the Most Fun. The group returned on December 31 and had an even better time for the Year End Spanish Lake Fun Day.



Missourians for Monarchs by Renee' Benage

Missourians for Monarchs is a collaborative of conservation and agricultural organizations, government and non-government agencies, utilities, agribusinesses, and citizens committed to monarch and pollinator conservation. One of their goals is to increase pollinator habitat in Missouri by 385,000 acres (19,000 acres per year) of additional pollinator habitat with 200 milkweed stems per acre over the next 20 years. This objective is in concert with the U.S. Fish and Wildlife Service's 20-year national plan to develop 7 million acres of habitat with 1.25-1.5 billion milkweed stems.



Earlier this year, Missourians for Monarchs requested volunteers for surveying milkweed in the area, so I signed up. In July I received my packet that included my assignment to a 73-acre area in Columbia Bottom Conservation Area, as well as specific directions for how to do the monitoring. For sites 5 acres or larger we were to determine a path (transect) to walk, stop every 10 paces and mark a 1m x 1m sampling plot, and count the milkweed stems in each plot. Because of the size of the area, 150 samples were required to be statistically significant. When I realized how much was required of this project - I reached out to my friend, Nan Johnson, for help. I made a PVC meter square, so we didn't have to measure each plot. Nan and I set out on August 11th to find our plot via GPS and make and record all of our observations. Out of 150 samples, only one had any milkweed at all. We kept track of each plot - how much milkweed we saw (lots of zeros!) as well as any other forbs we could identify (lots of ragweed). All of this data was loaded to their data collection site.



We are looking forward to information about next steps for this project. For more information check out <https://moformonarchs.org/>.



Great Rivers Cleanup at the Confluence- The Columbia Bottom Conservation Area Results Are In! written by Missouri River Relief, contributed by Larry Conant

Thank you all so much for your time, energy and support during our Great Rivers Cleanup at the Confluence out of Columbia Bottom Conservation Area. As a small non-profit organization, we are able to do big things with the help of amazing people and organizations like you. Over 1/3 of our budget comes from individual donations alone, along with the muscle to remove tons of trash from the river thanks to you, our dedicated, river-loving volunteers. If you would like to help support future large-scale Missouri River cleanups like these, please head over to our donation page and help fund our stewardship, educational and recreational programs that connect people to the Missouri River. You can visit the event webpage for the full results and story here:

riverrelief.org/events/great-rivers-cleanup-at-the-confluence-2022 .

A full dumpster is such a bittersweet feeling the Saturday evening after a big cleanup. On one hand, it's so great that we removed such an immense amount of trash from the river. On the other hand, it shouldn't have been there in the first place. Nevertheless, 180 amazing volunteers joined us bright and early Saturday, removing almost 5 tons of trash out of a 10-mile reach of the Missouri and parts of the Mississippi River! Thank you to all of those who drove the extended drive through the Columbia Bottom Conservation Area to aid in our cleanup efforts.

Columbia Bottom has undergone so much change since our last cleanup in 2018. As our volunteer crew joined us throughout the days leading to the event, it was not recognizable to any. There was no longer a large view of the river from our crew camp nor a large field for our many tents, but the untouched area has become so nature rich and beautiful in a new way! There was still a great energy that made the crew excited about this cleanup. Columbia Bottom is located in a floodplain at the Confluence of the Mississippi and Missouri Rivers and there is certainly something magical about the meeting of our two largest in North America!

The crew got busy prepping the camp headquarters when we arrived Wednesday afternoon. After everything was set up, we couldn't resist a quick sunset cruise to the confluence before turning in for the evening. Thursday evening was our Big Muddy Sunset Cruise & BBQ with our sponsors, partners, and friends! This great event gives us a chance to give thanks to all the individuals and organizations that make what we do possible. The weather was yet again perfect for a beautiful boat ride to the Confluence.

Friday was our trash scout which is an essential part of our cleanup model. Before the event day, our volunteer crew goes out on the river to scout the 10-mile reach (or more) of the rivers to find areas of high-density trash and ensure that we examine the safety aspects of each location before we send volunteers there the next day. We collect this information to create smaller dispatch maps that our boat operators use on Saturday's cleanup.



Thank you to all of our amazing volunteers, partners, and sponsors! Photo by Alyssa Thomas.



Things are getting serious! Volunteers listening to the safety talk before getting fitted for lifejackets. Photo by Alyssa Thomas



Full boat of volunteers heading out to their trash site! Photo by Steve Schnarr.



Saturday was the big day! As volunteers slowly arrived at the boat ramp our staff and crew were so excited to see so many eager stewards. And we weren't the only ones! A KMOV 4 news crew joined us to record a live segment of our efforts, and even got on the river themselves! [Check that story out here.](#) We also had a wonderful article written by the St. Louis Post Dispatch about the cleanup in real time. [Click here to read this amazing article.](#)

While the trash rolled in by the boat load, staff and volunteers from Missouri River Bird Observatory went through a portion of the large blue trash bags to audit the plastic that was being collected off the riverbanks. Their team sorted each plastic item meticulously tracking the origin and type of each trash fragment to the best of their ability. Click here to see their results! Thank you MRBO for doing the nitty-gritty work to drive change towards reducing plastic use!

The accomplishments were celebrated with a hearty dinner from Celebrity Dining. An extra big, muddy thank you to our crew who make these events so successful!

Check out our trash haul below!!

The Results

Total Tonnage: 4.81 tons!	Total Volunteers: 179
Landfill: 3.47 tons	River Miles Cleaned: 11
Scrap Metal: 0.89 tons	(MM 8 – MM 0 and 3 miles downstream on the Mississippi)
Tires: 0.45 tons (45 tires)	



Groups Participating:

Stream Team 211, League of Watershed Guardians – Stream Team 5168, Odell Brewing, Spire, Cardinal Health, Brentwood High School, Bank of America, Odell Brewery, Missouri River Bird Observatory

Fun Team Names:

Mud Roughers, Environmental Action Club, Scraggly Few, Swear Bear Pirates, Merry Adventurers, Carp Killers, Dingo Dingo Lemur, Tiger Team, The Pickers, Hellbender Love, Muck Breakers, Trash Takers, Trash Ninjas

Trash Tally: 198 Bags of Trash!!! Plus...

- | | | | | |
|---|------------------------------------|---------------------------------------|---|---|
| 1 18' fiberglass boat chopped into pieces by crew ("Glastro" made in Amarillo, Texas) | 3 orange cones | 1 petroleum pipeline "warning" marker | approx. 80' braided steel cable | 1 volleyball |
| 10 tires with rims | 1 tractor seat with yellow cushion | 1 microwave shell | dozens rusted railroad spikes | assorted rubber balls of various size |
| 35 tires w/out rims | 1 refrigerator casing | 1 plastic trash can | dozens rusted iron pieces | 1 black rubber boot |
| 2 inner tubes | 1 leather recliner | 1 welcome mat | dozens rusted railroad base pieces | 1 large rubber dice made in China |
| 1 wagon wheel tire with partial axle | 1 cardboard box side pieces | 1 rusted trailer pin | dozens rusted barge chain pieces | 1 pink flip flop |
| 1 child's car seat | 1 boat bumper | 1 boat anchor | 1 steel cable with clevis pin | 1 black and white oxford child's shoe |
| 10 large chunks of Styrofoam | 1 boat bumper | 1 pump sprayer | 1 machete | 1 orange plastic key |
| 3 coolers | 1 boat anchor | 1 large plastic yard wagon | 1 bluebird house on 7' pole | 1 pair blue shorts |
| 1 water jug | 1 campfire grill | 1 car grill | blue plastic carousel horse | 1 Barbie doll with muddy dreadlocks |
| 1 carpet | 1 car grill | 1 plastic fender | 1 complete petrified turtle (head missing) | 1 Barbie doll leg |
| 1 lawn chair | 1 NDS grate | 1 NDS grate | 1 large piece driftwood root impregnated with rocks | 1 baby doll leg |
| 1 folding chair | 1 Grip 'n Grab (no longer grips) | 1 Grip 'n Grab (no longer grips) | 1 3-gallon plastic pot holding 1 plastic pumpkin | 1 bottle "Slime Licker Toxic Waste" product |
| 1 foam couch cushion | 1 carpet | 1 carpet | 1 squash gourd | 1 Skeletor |
| 1 very muddy tarp | 2x4's | 2x4's | 3 basketballs (1 split open) | 1 fat headed Batman |
| 5 5-gallon plastic buckets | 2 rebar lengths | 2 rebar lengths | 3 soccer balls(1 made of leather) | 1 Batman car |
| 7 50-gallon plastic barrels (1 with bottom only) | 2 10' aluminum pipe | 1 10' aluminum pipe | 4 softballs | 1 Big Wheel tire |
| 2 1-gallon jugs | 2 lengths PVC pipe | 2 lengths PVC pipe | 1 hardball | 1 pink Barbie convertible |
| 2 milk crates | | | 1 football | 1 radio tube bulb |
| 2 plastic pallets 43"x48" | | | 3 tennis balls | 1 bird bone |
| 2 lengths PVC pipe | | | | 1 animal skull |
| | | | | innumerable cans and bottles |

Thank you all from the bottom of our river loving hearts for making this clean-up such a success. We hope to see you at the next one! See you on the river!



STL TreeLC Community

“Tender Loving Care” for St. Louis Trees

by Brenda Switzer

We are all familiar with Forest ReLeaf of Missouri. The Great Rivers chapter donates over 1000 hours of service to them each year. Have you ever wondered about those trees after they leave the nursery and are in the ground? Approximately 20% don't survive, what about the trees already out there?

The city of St. Louis has more than 80,000 street trees and 25,000+ park trees. Let's be honest. We expect a lot from our trees. Their job is to reduce rainwater runoff, improve air quality, muffle noise, cool homes and sidewalks, and support wildlife. On top of that, provide a sense of peace and safety, basically improve mental health. Tough job in the city. What do we give them in return? Where's the love? Wouldn't it be wonderful if the trees received the same care once they were planted that they received at Forest ReLeaf?

Let me introduce **StLTreELC** which focuses on community-led tree care. The mission is to empower residents to improve the health and density of our urban tree canopy and make St. Louis a better place to live. Forestry like many government agencies is woefully understaffed and underfunded. There are not enough employees to care for our public trees. Many don't survive.

Healthy trees can better withstand disease and properly pruned trees are less likely to be damaged by automobile and pedestrian traffic. Both can cause decline in established trees. With proper training and equipment, basic tree care can be performed by residents. They can water, place tree guards, prune, and spread mulch. They can address small problems before they become worse. StLTreELC provides residents with the gear and training they need.

Joe Oelke, Webster Groves forester and Alan Jankowski St. Louis City forester, generously share their expertise with people from city neighborhoods. Residents receive official permission to care for the city trees. They are able to log in and update the city's data base. With this training volunteers are empowered to perform routine care allowing forestry to concentrate on technical tasks and dangerous problems.

What began as the pilot program, Benton Park West Neighborhood Foresters, is having the hoped-for ripple effect. The Friends of Willmore Park have requested our assistance in the Spring to help with their park trees. We are also considering expansion into Clifton Heights and Hodiament Tracks following the Brickline Greenway to St Vincent Park. Our eventual goal is to expand throughout the city and beyond

Urban areas definitely need more trees, but planting is only a start. Help us build a community of volunteers for the long-term stewardship of our trees. Please consider joining us in growing the tree canopy in the Metro area. We meet the 2nd Saturday of the month. Sign up for more info and updates on starting points at stltreelc.org



Area residents learning to prune



St. Louis forester Alan Jankowski with area residents



Michael Wohlstadter and area residents pruning



STL TreeLC = St. Louis Tree Loving Care Urban forestry non-profit located in St. Louis, MO.



St. Louis forester Alan Jankowski with area residents



St. Louis forester Alan Jankowski with area residents



St. Louis forester Alan Jankowski with area residents and Dan Gunther Alderman



St. Louis forester Alan Jankowski with area residents



A city resident learning to mulch

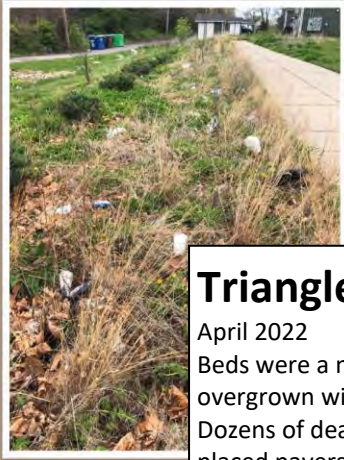


Recent honey suckle hack in a St Louis alley



Triangle Park Stewardship-The Greater Ville Neighborhood

by Tiffany Minx (Class of 2021)



Triangle Park BEFORE!

April 2022

Beds were a majority non-native perennials overgrown with weeds and strewn with trash. Dozens of dead trees. Hundreds of randomly placed pavers acted as tripping hazards and prevented regular mowing. No stewardship, community-based or otherwise.



DURING!

Thanks to the volunteers who supported this surprise project and whose hard work and dedication revived this community space lickity-split.



AFTER!

November 2022

- 400+ trip-hazard pavers removed
- 1500+ square feet of beds restored
- 40 trees and shrubs planted
- 230+ native perennials planted
- 200 bulbs
- Stewardship transitioned to neighborhood leaders!

See you next season!

Triangle Park Stewards of the Missouri Master Naturalists Great Rivers Chapter





Eagles in St. Louis

by Michael Meredith



Longtime Missouri Master Naturalists from the Great Rivers, Confluence and Miramigoua chapters can share plenty of stories from Eagle Days on the Old Chain of Rocks Bridge, some inspirational and some downright comical. Sadly, the perfect storm of a pandemic, followed by MSD’s Project Clear work, and now the Great Rivers Greenway’s enhancement of the area at the bridgehead have prevented what for many of us has been our favorite volunteer experience.

We hope that with the completion of the work at the bridgehead (currently planned for 2024) Eagle Days will someday return to the bridge... maybe in 2025? For now, though look for the 2023 event to be held at the Audubon Center at Riverlands as a one-day event in February. Prime eagle watching spots remain, from Riverlands Migratory Bird Sanctuary, the Great River Road, Clarksville, and any number of spots along the Mississippi.

The weather is the greatest determining factor in the number of visiting eagles. Cold, freezing weather upriver will drive the eagles southward to the better fishing to be found here. A typical winter might see anywhere from 1,500 to 3,000 eagles visiting our state.

But that’s all about migratory eagles. Like some professional athletes that choose to stay in St. Louis after their playing days are over, there are many eagles that choose to build a nest here locally and settle down (figuratively speaking of course).

The Missouri Department of Conservation conducts surveys by air to count the number of active nests within the state. In the 15 years since those surveys began, the number of permanent eagle nests has increased from 123 to 617 in 2021. Estimates of the number of eagle nests within the St. Louis region vary, from 40 to 60; and some of them are surprisingly close to human traffic.

My favorite eagle nest can be found in one of my favorite parks, **St. Louis County’s Creve Coeur Lake Memorial Park**. It occupies the high branches of a tree located on a small island at the edge of Mallard Lake. When the leaves are off the trees, you can see it from the Lakehouse Bar and Grill, though some binoculars will help. If you elect to take a walk around Mallard Lake, you can view it from the dirt trail that runs along the eastern edge of the lake. Don’t worry, you won’t have a problem finding it, there are signs that advise that you’re approaching an eagle nesting area (and please be quiet and don’t linger).

Volunteer at **Forest ReLeaf** or for one of the **Community Service Alliance** workdays, (or simply enjoy the park) during the spring and you’re likely to see the nesting pair flying around. If you’re fortunate, you might even catch a glimpse of a white head peeking out of the nest!



Missouri Counties with Eagle Sightings





Funding Awarded to Local Conservation Efforts

by Elizabeth Simons

In November, both **Great Rivers Greenway** and **Forest ReLeaf** received a **2022 Neighborhood Builders Award** from Bank of America. Each organization will receive \$200,000 to advance environmental opportunities while removing economic barriers in the St. Louis region.

Great Rivers Greenway will use the funds toward building the **Brickline Greenway** which will connect Forest Park, Fairground Park, Gateway Arch National Park, and Tower Grove Park. For more information about the Brickline Greenway, visit www.BricklineGreenway.org.

Groundbreaking on the **Mississippi Greenway: Chain of Rocks Park** was celebrated in October with youth music and dance performances and a community prairie planting at the site. The project is being funded by a \$990,000 Outdoor Recreation Legacy Partnership Award from the National Park Service and matching donations from the Mysun Charitable Foundation and the William R. Orthwein Jr. and Laura Rand Orthwein Foundation as well as nearly \$2 million from Great Rivers Greenway and a \$25,000 cost share from the Missouri Department of Conservation.

The funds will be used for the following at the Chain of Rocks Park on the Mississippi Greenway:

- A better visitor experience and place to host events and programs
 - Restrooms and drinking fountains for daily use
 - Local artwork that reflects the Mississippi Flyway migratory route and Chain of Rocks river geology
 - Picnic pavilion for group gatherings
 - Direct walking and biking access to historic bridge with river overlook
 - Event lawn and food truck area with water and electricity for community gatherings
- Restored habitat and ecosystems
 - Restoration of wetlands and woodlands that provide food and shelter for native wildlife on site including migratory birds
 - New 1.5-acre reconstructed prairie (already underway) with unpaved footpath running through
 - Permeable parking lot (to allow water to flow through), an overflow grass lot and rain gardens to reduce stormwater runoff from the site
- Safety and security on site:
 - Fence around site and gated entrance with staff on site during peak hours
 - Lighting in parking lot and video surveillance cameras
 - Emergency phone



New walking and biking access to the Old Chain of Rocks Bridge...with food trucks!

For more information about the Mississippi Greenway: Improvements to Old Chain of Rocks Bridge, visit greatriversgreenway.org/bridge

The **St. Vincent Greenway** in Wellston is currently under construction and includes a new park with a boardwalk and deck overlooking Engelholm Creek. The pocket park includes nature-based solutions to stormwater management and streambank stabilization. The Mysun Charitable Foundation is donating to build this segment of the St. Vincent Greenway including the pocket park. The segment of the St. Vincent Greenway between Trojan Park and the Wellston MetroLink Station will open in Spring 2023.

For more information about the St. Vincent Greenway Master Plan, visit greatriversgreenway.org/st-vincent-greenway-master-plan



New boardwalk for St. Vincent Greenway in Wellston



St. Vincent Park Pollinator Garden

by Chris Garhart

A little background on the pollinator garden. I have volunteered at St Vincent since 2012. I noticed in 2016 (before I became a Missouri Master Naturalist) that the hillside between the fence around the swimming pool and the parking lot below it was covered in bush honeysuckle. The park supervisor at the time said that the hill was too steep to mow. I suggested that we replace the honeysuckle with native herbaceous plants that can be cut to the ground once a year so we could keep the honeysuckle from regrowing. Stan had some Boy Scouts remove the honeysuckle from part of the hillside; I got seeds and plants from Wild Ones members and started planting in the summer of 2017. My goal was a variety of plants with something in bloom from early spring until November.

Some of the plants took off and spread while others have not survived. The pandemic shutdown definitely let some of the most obnoxious weeds thrive. To set the garden off from the mowed part of the hill where there is no fence at the top, I created a border of mulch along a row of prairie dropseed.

This year the first wave of color was the yellow of golden alexanders, pink garden phlox and purple coneflowers followed, then blue sage and orange coneflowers covered most of the hill as in the photo taken September 6.

Finally, the pale lavender of clumps of aromatic asters lasted into mid-November. In addition, there were smaller groups blue wild indigo, black-eyed Susans (*Rudbeckia hirta*), rattlesnake master, western sunflowers, butterfly milkweed, and blue mist flower.

This garden is a work in progress. Many thanks go to Marsha Gebhart, and all the Wild Ones members who donated plants and seeds. Some plants and seeds were purchased from Missouri Wildflowers and Forrest Keeling.

Wildlife Rescue Center Restoration

by Gerry Spitznagel

Stream Team #5899 , Scouts4Streams, traveled out to the **Wildlife Rescue Center** and performed a service project under the guidance of fellow Missouri Master Naturalist , **Eleasa Serotte**. We worked on an area that was once an old resort's outdoor entertainment area that had fallen into disrepair. The center has a vision of turning this grand old area into a place to hold outdoor fundraising events to help fund their mission. We removed invasive species and downed branches.

Funny story about this project. While cleaning up an area for a demonstration garden, we discovered a concrete slab under 5 inches of dirt! Moving to plan B for the demonstration garden. We also found a forgotten composite deck under many inches of leaves and soil. We made great progress but there is still plenty to do there.

Please consider this worthwhile organization for your volunteer service talents.





Citizen Science-Summer/Fall 2022

Missouri Stream Team

Water Quality Monitoring at McKenzie Creek

by Jake Ronecker

Who would have thought just 200 feet from River des Peres (a great sounding name but really just a channelized stormwater and sanitary sewer) one could find McKenzie Creek. This creek is a beautiful, meandering tributary to the river. McKenzie Creek originates just south of Tower Tee, then flows through Resurrection Cemetery and past a residential neighborhood before discharging into River des Peres.

This location along McKenzie Creek has been part of the Missouri Stream Team monitoring program for several years. In October, **Brenda Switzer** coordinated with Missouri Master Naturalists Great Rivers Chapter members, **Eleasa Serotte and I**, along with South Grand EcoCrew leader, Angie Weber, to take an inventory of macroinvertebrates, stream flow and stream water chemistry. The presence or absence of benthic macroinvertebrates (bottom dwelling organisms without a backbone that are visible to the naked eye) provide a good indication of the health of the creek. While the creek tested like most urban streams in the area, visually it was in great shape. Clean Stream had cleaned up trash and litter from the creek beds the day before. As you would expect, before any Missouri Master Naturalists quit for the day, more trash was removed.

Several Missouri Master Naturalists sample creek locations a couple times a year. Anyone is welcome to help. If interested, you can also sign up for classes and get training through the Missouri Stream Team website: www.mostreamteam.org



McKenzie Creek



Brenda cleaning the sampling net



Angie, Elisa, and Brenda pick macroinvertebrates from the net



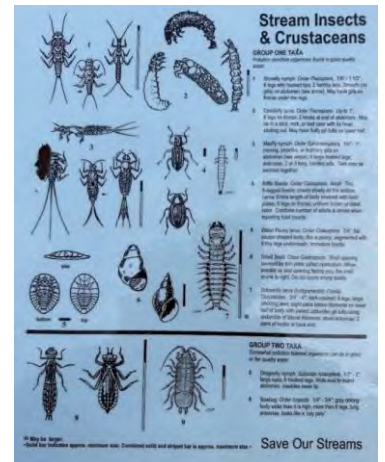
Macroinvertebrates are counted in ice trays



Stream discharge flow rate is measured with float balls



Dissolved Oxygen is measured with a colorimetric assay



Macroinvertebrate ID Chart identifies pollution sensitivity



Chronic Wasting Disease Sampling 2022

by Michael Meredith

The battle to address Chronic Wasting Disease (CWD) continues this year, with testing in 34 counties during the first weekend of the firearms deer season. **Tom Fasl and I** worked as recorders at different stations, taking down information about the hunter and logging the lymph node samples that were removed for testing.

Results from the testing won't be compiled until April, however we do know that the CWD sampling stations in those counties sampled 19,490 (80%) of the 24,264 total harvested in those counties. Deer that will be mounted are not sampled, as the retrieval of the lymph nodes is too invasive to leave a decent mountable cape.

With an overall harvest of 93,355, that's 20% of the total statewide opening weekend harvest. Between July 2021 and April 2022, Missouri Department of Conservation sampled and tested more than 32,000 deer for CWD. Of those, 86 tested positive for CWD (a thankfully low percentage of 0.27%).

Working at a sampling station can be a mixture of intense activity interspersed with periods of quiet. It's a great way to spend time with conservation professionals and meet the hunters that make up a notable percentage of conservation-oriented population. Sure, there may be the occasional "this is a waste of time" individuals, but by and large the overall community of hunters are supportive (and grateful) of Missouri Department of Conservation's efforts to keep a handle on the spread of the disease.

So next year, if you are looking for something out of the ordinary that embraces the concept of citizen science, consider volunteering for a sampling station. It's not for everyone. It's two days of long, long hours outdoors in the cold (with warming fires of course), and of course there is the reality of proximity to recently deceased cervids (not advised for those with sensitive sensibilities). But it makes for an excellent service and socialization opportunity.



CWD sampling station at New Cambria Livestock Auction



Our intrepid crew of CWD samplers, showing off cookies delivered by Sara Parker Pauley. At New Cambria Livestock Auction.



**ST. LOUIS
OPEN YARDS**
A NATIVE LANDSCAPING PROGRAM

Education and Outreach – Summer/Fall 2022

St. Louis Open Yards

by Lisa Picker and Don Knobbe

A few years back, Lisa and I got involved in the Bring Conservation Home program. Using the extensive report we received, we set to work removing invasive species, dedicating spaces in our yard for new plants, and ordering native species to attract insects that would support the birds, pollinators, and other animals we love so much. Our small efforts toward enhancing the native ecosystem in which we live became an obsession.

Hundreds of plants and thousands of hours later, we are proud of what we've done and all too happy to bend the ear of anyone who makes the mistake of inquiring about what we've been doing in our yard. Yet, when we look at our yard, neither of us sees a showcase ready, say, for the Native Garden Tour. With some areas sparsely planted and others jam packed with more species than Mother Nature intended, not to mention construction debris here and there from storm repairs to our house, the yard is, at best, a work in progress.



Enter St. Louis Open Yards. Mitch Leachman, who co-founded Bring Conservation Home for the St. Louis Audubon Society, founded this program to inspire homeowners to create native spaces at home and to give them opportunities to showcase their yards. Homeowners can become hosts by registering their yards with the program, providing descriptions of their spaces and details about plant species, points of interest, long-term goals for the space, strategies for creating the spaces, and dates and times when the yard can be visited. Members of the interested public can go to the website and search for yards in their area or according to a number of search criteria. Once a yard is selected, the visitor pays a small fee that is donated to a charity of the host's choice after deduction of administrative costs. Mitch assured us that our yard did not need to be in a finished state.

According to the website, "The St. Louis Open Yards program recognizes the tremendous diversity of native plants and their gardeners and that each native plant landscape looks different from week to week and month to month. No single day event can capture multiple seasons of beauty and inspiration; some gardens will be at their peak while others past or not yet reached, and all will look different on a different day. Our hosts' open dates reflect their own unique landscape and when they feel their yard is best seen."



We registered and opened our yard in July and again in October. We took inventory of many of our plant species and created small signs complete with common names, taxonomic names, and QR codes linked to online resources. We used scrap wood to make signposts and placed the signs all over our yard. We didn't bother labeling spring ephemerals or our non-native species. We highlighted species that were in bloom: echinacea and rudbeckia in July, and lobelia and solidago in October. Our visitors were interested in different aspects of our yard and were from different levels of expertise and accomplishment. Some sought inspiration, some were looking for solutions to specific problems like invasive plants, and others just wanted to spend time in solidarity with other curators of native spaces.

Lisa and I enjoyed learning from our guests and relating our experiences by way of encouragement. St. Louis Open Yards is looking to grow next season. We encourage you to visit the website to learn more. If you have a native landscape at your home that you would like to share with others, consider signing up.



CALL FOR HELP

IDA Certification Of Castlewood State Park As An Urban Night Sky Park

by Jake Ronecker



Recently, Castlewood State Park approached the Missouri Chapter of International Dark Sky Association (IDA) to be certified as an IDA Urban Dark Sky Place. An Urban Night Sky Place (UNSP) is an open space near or surrounded by a large urban area whose planning and design actively promotes an authentic nighttime experience in the midst of significant artificial light.

Why certify Castlewood State Park as an UNSP? Light pollution affects the environment, wildlife, our health, and our ability to appreciate the night's natural light. Unfortunately, light pollution is increasing at a global average rate of nearly two percent per year. More than 80% of the population of the United States lives in areas where the Milky Way is no longer visible. UNSPs educate the public on the benefits of proper outdoor lighting that ensures public safety while minimizing potential harm to the natural nighttime environment. UNSP designation incorporates the five principles of responsible outdoor lighting: 1. All light should have a clear purpose. 2. Light should be directed only to where needed. 3. Light should be no brighter than necessary. 4. Light should be used only when it is useful. 5. The use of warmer color lights is preferred when possible. By applying these principles, properly designed electric lighting at night can be beautiful, healthy, and functional. Incorporating these principles saves energy and money, reduces light pollution, and minimizes wildlife disruption.



Castlewood is the centerpiece of the Meramec River Recreation Association, established in 1975 for the protection and preservation of the Meramec River corridor. The park has an abundance of wildlife, including cricket frogs, wild turkeys, white-tailed deer and river birds (kingfishers and great blue herons, for example). Castlewood is very popular with St. Louis County residents, with upwards of 600-1000 visitors each day. The Park comprises over 1800 acres surrounded by other protected areas, such as Lone Elk Park, West Tyson County Park, and Sherman Beach County Park. Directly to the south and west is a large landmass of low-density population. Castlewood is located near Ballwin in the transitional zone where darker urban night skies can be enjoyed.





Mississippi River Water Trails Association

Naturalists as Decision Makers on the River

by Bob Virag

Many thanks to the nine intrepid Great Rivers board members and volunteers that helped the Mississippi River Water Trail Association (MRWTA) September 12, 2022 evaluate the suitability of short down-river educational paddling trips for upcoming events for the general public. The Missouri Master Naturalists included **Brenda Switzer, Carl Davis, Michael Meredith, Annie Russell, Peggy Parr, Barbara Cerutti, John Barnett, Mary Mierkowski, and myself.** We joined MRTWA board members on the river, including Joan Twillman, Melissa Sauter, and Craig Heaton on a four-mile round trip guided tour of the backwaters of Brickhouse Slough behind Dresser Island Conservation Area.



We had originally planned on a longer down river trip to the Audubon Center at Riverlands, but 15+mph winds with gusts to 25 mph on the river created white caps and three-foot waves that changed our minds. Still, while safely in the slough, the team tackled the two-mile paddle against the blustery winds with style on the trek to the Dresser Island causeway before lunch. The best part of the day was the quick sail back to the starting point in less than a quarter of the time! Great fun on the river!

After the event, the team helped the Mississippi River Water Trail Association plan for similar events. Comments about the kayak trip were very favorable. Suggestions for future events included guided nature tours on the river by reaching out to wider and more diverse audiences:

- Offer talks and field trips through St Louis Oasis and St Louis Community College Continuing Education, local school districts, college and university environmental education clubs.
- Develop partnerships with organizations that cater to active outdoor and nature seeking seniors, such as the Road Scholar program. Feature the Mississippi Water Trail and the nature and culture of the area.
- Also partner with local environmental organizations such as Great Rivers Greenway to expand and integrate the land-based trail systems with the river trail system.

These suggestions and more were taken to heart by the board of MRWTA, who plan to incorporate some of them in the upcoming 2023 season and beyond. The Mississippi River Water Trails Association was very grateful for our help.





Bows for Birds by Tara Morton

Winter adventurers: gather round for the annual Bows for Birds, hosted by Audubon Center at Riverlands! Twelve magnificent depictions of local birds have been crafted in wood and paint by artists such as yours truly. These colorful, life-sized wooden cutouts are each placed in a different park or natural area in the St. Louis region. A large bow is placed on a tree near the wooden bird to lead seekers in the right direction.

Once the bird is found, participants are encouraged to snap a picture with the bird, providing identification to the species and using the selected social media hashtag. Scavengers should also submit their worksheets to be entered into a raffle for a prize, announced at the end of the series.

Look out for these critters to fly to your local park beginning in December, and up through early February. Take your loved ones and little ones out for this fun winter activity which is sure to inspire joy on even the dreariest of days. Check out Audubon Center at Riverlands for the most up-to-date information, and happy hunting!



Three birds created by Chapter Member/Board Member at Large Tara Morton.
Photo by Emily Connor



Stream Table at Riverlands

by Bob Virag



Early sketch of me discovering the wonderful world of creeks, streams, and rivers. Credit: Bill Watterson

When Emily Connor, Education Manager at Audubon Center at Riverlands, learned of my work earlier this year building a Stream Table for the Litzinger Road Ecology Center, she asked if I would build one for her work at Riverlands. Challenge accepted! A grant to Audubon covered material costs and I gladly volunteered my time to build it.

This September, her wish was fulfilled with the delivery of the 6 x 3-foot Stream Table. It featured a waterproof tray and cradle, internal PVC piping, battery-powered recirculating water pump, diverging water outlets (to simulate our two Big Rivers and the Confluence), rocks, sand, model houses, animals, and foliage. The simulated stream dynamics are remarkably realistic. Erosion, deposition, point bars, ground water, springs, riffles, eddies, waterfalls, meanderings, oxbow lakes, deltas, and the effects of flooding all appear magically before the visitors within minutes. And the best part is that it draws and holds the attention of otherwise hardcore screen addicted little guests. They gleefully prefer to spend time getting a hands-on experience of how our local watersheds really work. It was an honor and privilege to provide this opportunity to introduce visitors to the beauty and wonder of our watersheds and rivers.



Here is what Emily had to say:

“Did you know that the Mississippi River Basin is the second largest watershed in the world and includes about 40% of the continental United States? An amazing river citizen and Audubon volunteer, Bob Virag, built an interactive watershed model to help community members discover the significance and geology of the Mississippi River and how it has changed over time!

*Come out to the **Audubon Center at Riverlands**, get your hands wet and sandy, while you learn and explore! Apparently, there is a kid magnet installed in this stream table 🧲 Thank you Bob!”*

But wait, there’s more! Did I mention that this Stream Table is portable? In October, Emily and her staff easily transported it to Little Creek Nature Area's annual Fall Festival. There, 300 community members were inspired by the forces that drive our river habitats. With all that action in the photo above, it was clearly a lot of learning going on!



World Class Bird Walk Guide, Mary Dueren

Editor's Note

Mary Dueren doesn't boast much about her achievements, so we should do that for her here.

Mary is unarguably a World-Class Bird Watcher and Guide.

In 2022, she quietly conducted over 20 Beginner Bird walks and surveys, introducing hundreds of first-time bird watchers to the wonders of our feathered friends.

She volunteered over 100 hours of her time this year as a guide, in the cold, ice, rain, and heat, in addition to her other volunteer service duties.

She consistently was awarded with excellent guest reviews, who greatly appreciate her dedication, depth of knowledge, and sense of humor.

When asked to describe what she does, she humbly and very simply says: "Birding is my most favorite thing to do, especially showing newbies what fantastic birds we have in the Midwest."

The world needs more guides like Mary.

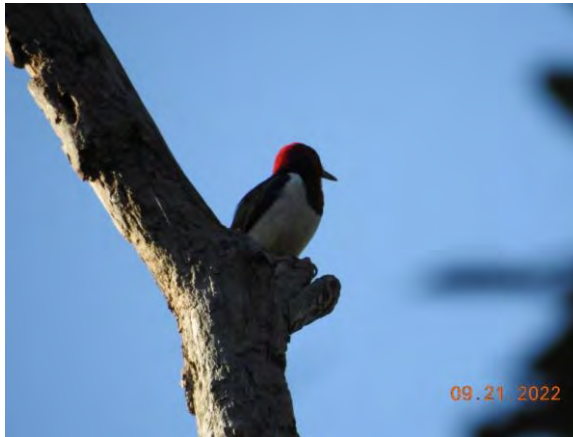
Here are a few photos of the sights she sees.



Guests on a bird walk on al Foster Trail in September



Guests on a bird walk on al Foster Trail in September



Red-head Woodpecker



Great Egret in the Meramec River



Northern Flicker



...and yes, she even finds some of the plants very interesting, Here is Yellow Jewel Weed.



River des Peres Watershed Coalition Festivals by Zoe Geist

This summer, Stream Team United’s local River des Pere Watershed Coalition conducted several events and festivals to highlight our water quality mission to the general public. Many thanks to the efforts of Missouri Master Naturalist-Great Rivers Chapter members this year supporting our cause.

Brenda Switzer was a water quality monitor for both **Bike with Your Boots On** events in 2022.

Bob Ochs talked to festival attendees and provided educational activities from the Great Rivers Chapter.

Geoff Stillwell talked to festival attendees and provided a watershed awareness activity for Stream Teams United this October.



Festival attendees visit Geoff Stillwell's Stream Team United watershed exhibit. Photo by Zoe Geist



Bob Ochs drew in the crowds to view the MMN Great Rivers Booth. Photo by Zoe Giest



Brenda Switzer (right) led her water quality team in the Bike with Your Boots On event on the River des Peres. Photo by Zoe Geist



Great Rivers Trash Talkers...err, Trash Bashers, at Willmore Park. Tara Morton (left), Elizbeth Simons (center), Geoff Stillwell (back center), and Brenda Switzer. Photo by Bob Ochs



2022 River des Peres Watershed Festival at Willmore Park , St. Louis. Photo by Geoff Stillwell



2023 MDC Natural Events Calendar

Features work of Missouri Master Naturalist-Great Rivers Chapter Member, Karen Zelle!



Karen Zelle, Missouri Master Naturalist -Great Rivers Class of 2017, won the treasured fold-out page for her photo masterpiece in the latest edition of the Missouri Department of Conservation’s popular 2023 “Natural Events Calendar”.

Congratulations, Karen, for this wonderful recognition of your talent!

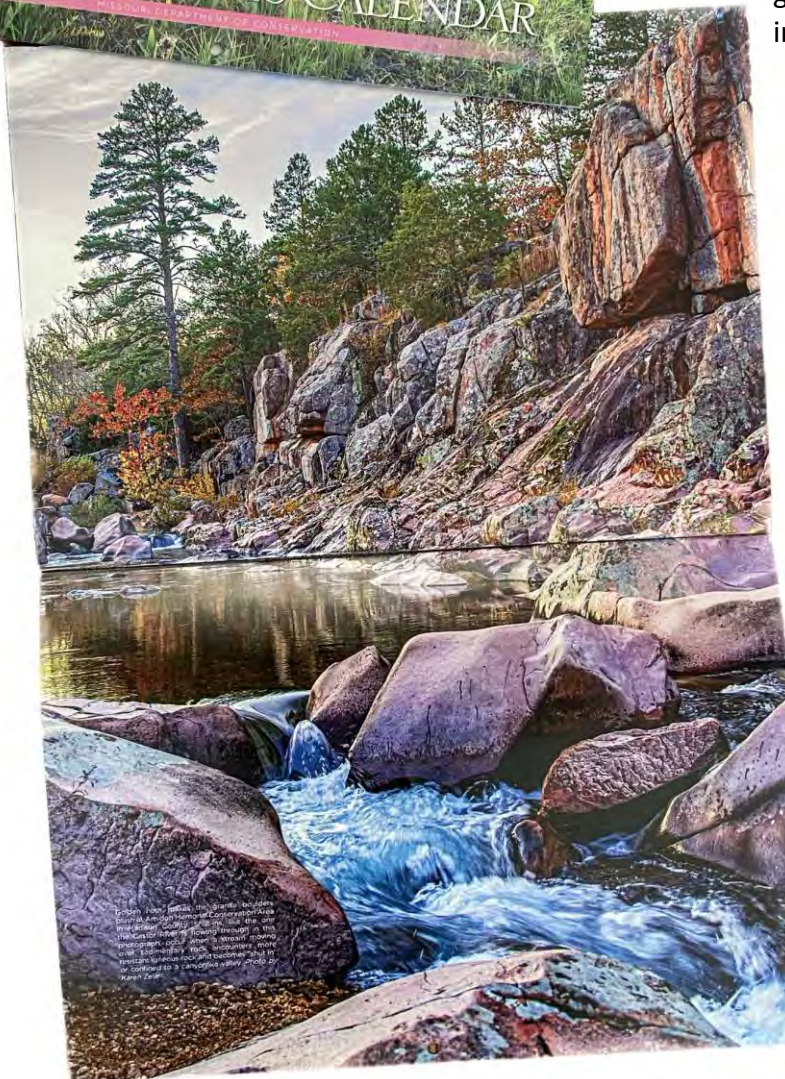
This awe-inspiring photograph displays the glowing colors of the Castor River Shut In in all their glory.

The caption reads:

“Golden hour makes the granite boulders blush at Amidon Memorial Conservation Area in Madison County. Shut Ins, like the one the Castor River is flowing through in this photograph, occur when a stream moving over sedimentary rock encounters more resistant igneous rock and becomes “shut in” or confined to a canyon-like valley.

Photo by Karen Zelle”

It's not too late to purchase this calendar. They can be found on sale at the local Powder Valley Conservation Nature Center, the August A. Busch Memorial Conservation Center, or online at the Missouri Department of Conservation Nature Shop at www.mdcnatureshop.com.



Golden hour makes the granite boulders blush at Amidon Memorial Conservation Area in Madison County. Shut Ins, like the one the Castor River is flowing through in this photograph, occur when a stream moving over sedimentary rock encounters more resistant igneous rock and becomes “shut in” or confined to a canyon-like valley. Photo by Karen Zelle



Great Rivers Photo Contest

Once again, with the change of every season, Great Rivers chapter members have the opportunity to present their prized photos for display on the home page of the chapter website.

- Two photos were selected for the front and back cover pages of this issue of this Gazette.
- Six additional photographs were selected for the website Home Page Slideshow. These can be viewed at www.greatrivers.org and are also shown below.

Please congratulate our Great Rivers photographers. Their work helps to further the program’s mission to improve public understanding of natural resource ecology and management by enhancing natural resource *Education and Outreach* activities.

Website Banner Photographs



American Painted Lady Butterfly
©2022 Sherri Schmidt



Elephant Rocks
©2022 Renee’ Benage



Sam A. Baker State Park
©2022 Barb Cerutti



Passionflower and the Pollinator
©2022 Sherri Schmidt



Monarch Butterfly on Rattlesnake Master
©2022 Renee’ Benage



Milky Way at Sam A. Baker State Park
©2022 Karen Zelle



Advanced Training-Summer/Fall 2022

We're Back!

This season marked our return to monthly in-person advanced training and business meetings. It was fun to see everyone again. The smiles on all the faces in the photos below tell the whole story.

The Missouri Master Naturalist Program is built on the camaraderie and social interaction of our team members, and this can only be achieved with face-to-face interaction.



Photo by **Bob Ochs**



Membership Awards announced by **Sherri Turner** and **Bob Ochs**. Photo by **Lee Phillion**



2022 Tri -Chapter Field Trip by Karen Zelle

On a sunny Saturday in early October, Master Naturalists from Great Rivers, Confluence and Miramigoua chapters along with interns from the class of 2022 met at Babler Park for the Tri-Chapter Field Day. The day was filled with pollinator and other presentations, wildflower hikes, a guided tour of the park, a silent auction and a special presentation by Confluence member **Steve Teson** about Reptiles and Amphibians of Missouri.

It was a fun day for all, and special thanks goes to organizer **Besa Schweitzer** of Miramigoua Chapter and her team.



Discovery hike with **Darla Priess** measuring tree



Alligator snapping turtle with **Steve Teson**, Confluence Chapter



Jan Castanis with snake



Carl Davis led the iNaturalist photography hike.



iNaturalist citizen science in action



Item Name: Missouri Master Naturalist Ornament
Description: Custom ornament made with
on a chicken egg
Donor Name: Lisa Picker
MINIMUM

Lisa Picker's hand decorated Pysanky Egg donation for the silent auction



Fall Photography Field Trip in Forest Park

by Karen Zelle

Seven chapter members recently gathered in Forest Park for our first photography field trip. The trip was organized by **Barb Cerutti** and included exploring the Nature Playscape and the creek and woods beyond. We began the day sharing photography knowledge and tips. Next, armed with cameras and cell phones, we spent several hours photographing everything the park had to offer while enjoying each other's company.

In attendance were Missouri Master Naturalists **Barb Cerutti, Renee Benage, Bob Virag, Karen Zelle, Jake Ronecker, Michael Cople and Jeanne Bauer** and Barb's daughter, Maggie Dunlop. We look forward to scheduling additional trips and hope more photographers will join us!





Bunker Hill Weekend Workshop by Janis Schweitzer, Miramigoua Chapter

Twenty-seven Missouri Master Naturalists from the Miramigoua and Great Rivers Chapters traveled to Bunker Hill Ranch for a weekend of volunteer service and advanced training. Great Rivers Chapter members included **Larry Conant, Diane Goulis, Glen and Emily Horton, Christine Garhart, Eleasa Serotte, and Sheri Barley.**

Friday, September 9, 2022 Advanced Training and Service

Our first activity on Friday afternoon was a **visit to a cave, foraging, and trail maintenance** organized by Darla Preiss and Rick Schweitzer with Kirsten Alvey-Mudd, the Executive Director of the Missouri Bat Census, a Cave Research Foundation Fellow, and a member of the National Speleological Society providing Advanced Training at every turn below and above ground. All participants in this activity returned happy and muddy.

Our main service activity on Friday afternoon was **building and placing ten bluebird nest boxes.** Lillian Collins and her husband Alan arrived with all the wood pieces cut and ready to be assembled. They also arrived with a nail shooter, a compressor, an electric drill, hammers, platforms to build the bird houses around, bungee cords to hold them together while we were gluing them, and a tool for pounding the steel poles into the ground. Assembling the boxes was still not easy since each piece was different. We set up assembly lines including gluing, and shooting nails, more gluing, and more shooting nails, hammering in nails, and testing the swinging side. At this point we sometimes had to take the birdhouse apart and put it together again when the door didn't swing. The last step was gluing on the roof and then shooting nails into it. Finally, we attached the nest box to a steel pole, located a suitable spot, and pounded the pole into the ground. I thought this was a fun activity. None of us were nailed although I did paint glue on Ken Barrows at least twice. Thank you Miramigoua for paying for the wood for the nest boxes.

Saturday, September 10, 2022 , Advanced Training Classes.

Bat Ecology led by Kirsten Alvey, the Executive Director of the Missouri Bat Census, with lots of videos, photos, graphs and enthusiasm. Kirsten began with lots of photos of bats and statistics showing how their populations have declined before and since the arrival of White Nose Syndrome. She explained why smaller bats populations have been more affected by WNS than larger bats populations.

Cave Ecology led by Kirsten Alvey. Kirsten obviously loves everything that belongs in caves and is working hard to identify and protect caves that are endangered by pollution or construction projects. Kirsten does a lot of cave exploration and has pictures of beautiful new caverns she had helped discover. She explained to us that the other cave dwellers are dependent on the bat's guano to support the food chain and how the collapse of the bat population has affected the populations of cave crickets, and cave salamanders. She talked briefly about the harmful effects of graffiti and people touching formations in caves.

Foraging led by Kirsten Alvey. Kirsten began by introducing us to wild edibles by videos and through some of the things she had collected before the class. She talked about when and where to look for each wild edible and cautioned us about edibles that can be harmful.



She also shared the many native plants that she prepares as jellies and alcoholic beverages.

All of Kirsten's presentations were well received. She was prepared, very knowledgeable, and passionate.

Wildflower Identification, iNaturalist and Smart Phones led by Lillian Collins and Darla Preiss. Lil and Darla led the group identifying wildflowers and Darla worked with individuals to help them take quality photos that iNaturalist could use to identify the plants.

Forest Management led by Rebecca Landewe, Chief Ecologist, L-A-D Foundation. Rebecca spoke about the L-A-D Foundation and the Pioneer Forest where she is the first ecologist employed to study the impacts of the many types of forest management on the environment above and below ground. She talked about how the climate, geology, soils and land use history have shaped the forests and other natural communities in the Ozarks region.

Forest Management Hike led by Rebecca Landewe and Bob Cunningham, who created the original forest management plan for the Bunker Hill Ranch Forest many years ago. He guided them in creating the open woodland we drive through when we enter the property. We drove to an area of the forest that had been hit by a derecho about five years ago. After the derecho, Bob helped Bunker Hill arrange to sell the wood that was salvageable. He explained to us how the natural succession was working and would continue to unfold for decades. We then went to another area where many trees were crowded together. We cored two trees and found that a small tree was the same age as a much taller tree. This is an example of a place where Bob would recommend "timber stand improvement" to remove the smaller tree, which would make more water and nutrients available for the taller tree.

Invertebrate Identification led by Kim and Jeff Saxton. Jeff and Kim showed us how to collect invertebrates and set up stations along the Jacks Fork River where we could practice identifying them using keys and with their assistance.

Sunday, September 11, 2022 Clean Stream led by Rick Schweitzer.

Eight Missouri Master Naturalists from the Miramigoua and Great Rivers chapters and one guest speaker, Kierston Alvey, Director of the Missouri Bat Census, collected trash from the Jacks Fork River. They floated 6 miles from Alley Springs to the town of Eminence. Along the way they picked up cans and bottles, shoes and shirts, large pieces of plastic and metal, an innertube, and one tire. Kierston dug up the tire and transported it on her kayak a short distance until we could move it to a canoe. It was a beautiful day and a fun way to help keep our Missouri streams clean



Advanced Training Speaker Series-Summer-Fall 2022

July 17, 2022, by Chris Hull

Using Motus for Local and Long-distance Tracking of our Smallest Animals

Sarah Kendrick, US Fish and Wildlife Migratory Bird Biologist Sarah_kendrick@fws.gov

Sarah provided an exciting introduction to the Motus Wildlife Tracking System <https://motus.org>. This is an international collaborative research network that uses coordinated automated radio telemetry to facilitate research and education on the ecology and conservation of migratory animals.

Biologists and naturalists track wildlife to learn about their home range, territory size, movements, and breeding demography. This information supports an understanding of not only movement at the local landscape level, but also hemispheric migration.

The system utilizes bird banding (for a unique identifier), radio telemetry, geolocator tags, and satellite telemetry. Because bands and tags cannot exceed 3% of a bird's weight, they must strike a balance between the weight requirements and the battery life. That is, the transmitter required for a small bird, Monarch or a dragonfly will have a shorter life. Whereas a larger bird (Turkey, Prairie Chicken) can accommodate a transmitter which has a longer life (2-3 yrs.) and with additional capabilities, such as an accelerometer.



Motus tags are pre-programmed to emit a unique signal, at a set frequency, and at a given emission rate to save battery life. The size of the bird drives the methods in which the tags are mounted, with options including tail-mount, backpack, glue, leg, and collars. The radio signals are then detected by an array of antennas, cell towers, satellites, and receivers.

Motus nanotag radio transmitters weigh from 0.2 to 2.6 grams, are roughly an inch long, and emit a pulse every 5 to 30 seconds. Motus stations (receivers) are setup in arrays which track the tagged animals when they approach at distances of up to 15 km. Over 1400 Motus stations are currently located across the Americas, in Europe and in Australia and they all operate on the same frequency.

Motus currently has 484 projects, with almost 31,000 tagged animals, including 274 species.

The number of Motus stations have exploded between 2018 and 2022, not only in the USA but also Central America. Because funding for new stations is often accompanied by money for tagging projects, data from migrating birds is also exploding.



Sarah demonstrated how migrating birds, bats and large insects are tracked by Motus stations, and how this information is accessed using the website. Picking *Explore Data* and then *Receiver Locations* will bring up a Google Map of locations. Picking on a specific receiver brings up the data about the receiver and the tags that have been located, along with the history of those specific tags. Because the system is open source, the data that is generated from the system is available for all who choose to use it.

She presented animated reports which were generated by the Columbian nonprofit SELVA: Research for Conservation in the Neotropics <https://oldselva.selvaorg.xyz/en>. One project tracked Gray-Cheeked Thrushes and other birds as they migrated from South America to North America. The data illustrated where and when birds stopped to fatten-up for the rest of their journey, and where and when they next flew. Some birds traveled as much as 1000 km/day during migration. Fun fact: One third of birds that breed in Missouri leave the USA. Thus, helping these birds requires that we not only address their habitat in the USA but also their wintering grounds, breeding grounds, and stopover sites. We learned that the fuel load (fat) acquired at a stopover site influences the pace of migration. That is, higher fuel loads support a faster pace of migration. Whereas a lower fuel load results in a slower migration pace.

Motus data on bat movement is used by Great Lakes Wind Farms to locate windmills. Another project uses Motus to track Kirtland's Warblers (an endangered species) as they fly from their wintering grounds in the Bahamas to their breeding habitat in Michigan and further tracks their movement once in their breeding habitat.

Questions from chapter members centered around use of the website and opportunities to donate.



August 16, 2022

Great Rivers Greenway , St. Vincent Area Ecological History and Current Conservation Efforts

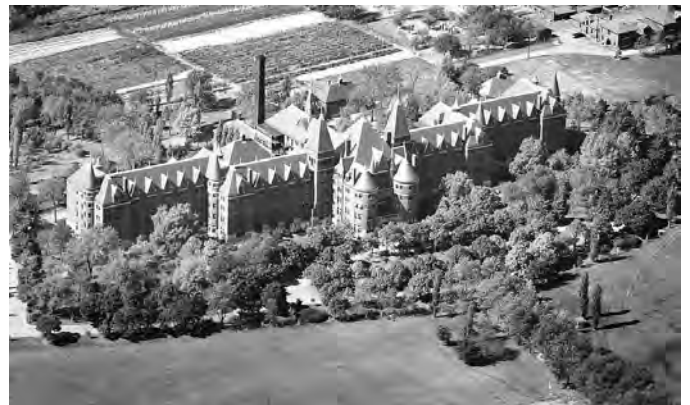
Elizabeth Simmons, Great Rivers Greenway Community Program Manager and MMN-Great Rivers Class of 2021



Elizabeth spoke of the rich heritage of St. Vincent Park area and the value it continues to provide to the local residents and the native flora and fauna that thrives there.

St. Vincent County park is named for the former St. Vincent’s Hospital first opened on the site in August 1895. Built for the then-enormous cost of \$500,000, it was the finest institutional building of its time. The interior included custom woodwork and stained glass windows and the 140 acres of surrounding landscape provided patients with therapy and recreation opportunities. Food for the patients was even grown on the hospital’s property. In 1977 the land surrounding the hospital was turned into a county park, and in 1980 St. Vincent County Park was opened to the public.

While it has since been converted to apartments, the castle-like building’s dramatic turrets, towers, and spires remain. When it first opened, the building was located between the Huntley and Eden Stations on the Wabash Railroad (now the MetroLink line). A railroad stop just for the hospital was added at the foot of a long series of steps that led up the hill to the main entrance. As you travel along the greenway, you can still see these steps once used by hospital staff, visitors, and the Daughters of Charity.



These Catholic institutions left behind large areas of open space that still exist today. The land around the hospital became St. Vincent County Park and opened to the public in 1980.

Great Rivers Greenway is working with partners at St. Vincent County Park to replace invasive plant species with native plants. Native plants along the St. Vincent Greenway sustain soil, prevent erosion, lessen floods, clean and replenish streams, refill ground waters, nourish pollinators, provide food and shelter for wildlife, and provide many benefits for our minds and bodies.

Read more about the future plans for the park and its adjoining St. Vincent Greenway in Elizabeth’s article on [page 14](#) and Chris Garhart’s article on [page 15](#) of this issue of the Gazette.

September 20, 2022

St. Louis Astronomy Society, Rich Heuermann, Board Member at Large

Rich Heuermann, gave a stellar show-and-tell presentation of several types of portable astronomical telescopes available to the general public. His presentation was very informative and well received, especially the discussion about features, advantages, benefits, and costs of the various instruments and the step-by-step instructions on their use.



The audio file can be found in the ZOOM folder of the Great Rivers Chapter Google Drive:

[2022-09-20 MMN-GR-Astronomical Telescopes-Rich Heuermann](#)



October 18, 2022, by Chris Hull

Plastics Reduction, Leslie Gittemeier, MOGreenFuture Wildlife Conservationist

lesliegittemeier@gmail.com , 636-284-0910

Leslie Gittemeier provided a very enlightening presentation which ultimately focused on ways in which we can reduce our consumption of plastic. She began by explaining the system from which materials are extracted, transported, produced, distributed, consumed, and disposed, along with the ecological and societal impact that occurs at each step in the system.

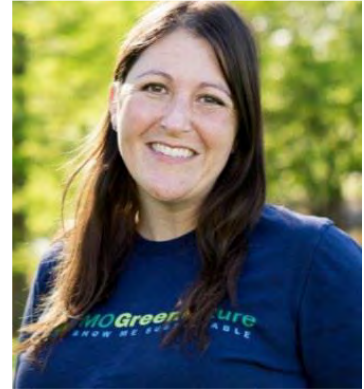
We next learned that America’s trend of consuming an ever-increasing volume of resources was designed by post-WW2 economists (and supported by President Eisenhower) to spur the economy. Two of their most effective strategies for the new Materials Economy were Planned Obsolescence and Perceived Obsolescence. These strategies continue to create higher demand for products at a lower cost, which drive globalization, economic inequality, pollution, and climate change. Perceived obsolescence drives us to purchase products based upon style rather than function.

One of the key points of her presentation is that the real cost of these low cost products has been externalized because the end customer is not paying for the loss of natural resources, the resulting health problems, or the loss of workers options for gainful and safe employment.

- **The volume of plastic:** It is greater than the overall mass of all terrestrial and marine animals. We are producing 400M tons/year, more than the earth can renew. Almost one half of plastic is used just once before being discarded. 99% of plastic has been discarded within 6 months.
- **Our ability to manage plastic waste:** Almost 1/3 of our plastic is leaked into the environment, including the oceans and waterways. Other countries stopped taking our plastic waste because it is contaminated with materials that degrade the quality of plastic which would be made from this ‘recycled’ plastic.
- **The Impact:** Plastic is now found in our water, our food, in rain, and in the roots of plants. Plastic is killing marine birds, reptiles, and mammals. Humans are currently ingesting 250g of plastic per year, and this is being found in the placentas of unborn babies and in human breast milk. Toxic chemicals which are used in, or produced by, the manufacture of plastics impact hormones, pregnancy, and reduce men’s sperm count [Reference: Count Down.](#)
- **The Trend:** Emissions into the air from the manufacture of plastics are increasing at a dangerous rate. Because fracking for natural gas generates the chemicals that are

used in the manufacture of plastics, we are ensured a pipeline of inexpensive plastic.

Fortunately, Leslie informed the group of several solutions and organizations (local, regional, national, and global) where we can gain further knowledge, engage with others, and take action to address these problems. Please take some time to explore these links.



[Circular Economy Network](#) (A networks of businesses, policymakers, innovators, universities, cities, philanthropic organizations and thought leaders that are focused on eliminating waste, keeping materials in use, and regenerating nature)

[Extended Producer Responsibility](#) Goal of including all the environmental costs associated with a product throughout the product life cycle to the market price of that product. An example of a product with hidden costs is automobile tires

[The 5-Rs of Waste Management](#) Traditional 3-Rs + Refuse and Rot

[Plastic Audits](#) Creating a global database of marine debris, and demanding corporate accountability

[Beyond the Bag Challenge](#) Solutions to minimizing or eliminating the need for bags

[Mississippi River Plastic Pollution Initiative](#), because 40% of the plastic pollution entering the Gulf of Mexico comes from the Mississippi River

[One STL](#) Seven counties working together to improve water, recycling, emissions, food access

[STL Green Business Challenge](#) Progress tracking of local businesses

[Missouri Green Schools](#) Resources for schools to set and track sustainability education goals

[Green Dining Alliance](#) Offers restaurants strategies to improve sustainability

[The Story of Stuff](#) by Annie Leonard. This tremendous 20-minute video is a must-see



November 15, 2022, by Chris Hull
Saint Louis Zoo Wildcare Park, Jo-Elle Mogerman, Director



Jo-Elle Mogerman leads the Zoo's new North Campus, a 425-acre property located in north St. Louis County in the city of Spanish Lake. Having previously held leadership positions at Shedd Aquarium, the Brookfield Zoo, and the Illinois Nature Preserves, she now oversees the creation and the development of this new and exciting attraction

for the St. Louis community and tourists.

The Wildcare Park, which is currently planned to open in 2027, will work to increase the population of endangered ungulates (large animals with hooves) while also providing a phenomenal guest experience. The park will have breeding herds of Zebra, Addax, Bongo, and Roan Antelope, Somali Wild Ass, and Przewalski's Horse. The large size of the tract of land, including 24 acres of lakes, allows planners to divide the land into distinct components that are specific for woodland, wetland, savanna species, and for Conservation and Animal Science. The planners believe that the animal density and distance from humans will be sufficient to minimize stress on the animals.

Visitors will choose from many attractions, including an 11-story observation tower, safari tours, the Wallaby

Walk, the Zooseum, and upscale lodging cabins. Dr. Mogerman emphasized the many synergies of the park and the zoo being only 15 miles apart. She also spoke of the efforts which have been taken to integrate the park into the community so that the area is enhanced by the investment and the visitors, but not unduly burdened by its presence. One common concern of areas residents is that traffic could be crippling. Planners are considering ways in which traffic issues can be mitigated, such as by constructing an interior perimeter road and by using public transportation to transport visitors so that the overall number of vehicles using the roads is reduced.

The tract of land was formally a golf course and lodge for the Plumbers and Pipefitters Union. Dr. Mogerman mentioned that the land has several non-native invasive species such as Bush and Japanese Honeysuckle, and she didn't miss the opportunity to open the door for future collaboration on stewardship efforts. She further noted that the crew is working to eradicate tall fescue from the land and replacing it with a mix of native grasses and forbs.

Chapter members asked questions about the impact on the area ecosystem, the potential of incorporating native animals into the landscape, animal stress, the use of technology to empathize with the animals lives, and addressing occasional flooding that occurs in the area.





Monthly Advanced Training Opportunities



Advanced Training Speaker Series 2022 Calendar

2022 PAST EVENTS

1/18/2022	New Member Orientation	Bob Ochs, Bob Virag, Lisa Picker, Michael Meredith, Kari Pratt
2/15/2022	BirdSafe STL	Jean Favara, V.P. Conservation St. Louis Audubon Society
3/15/2022	The MMN Program Going Forward	Jessica Hoey, MDC Relevancy Chief and Jenni Rabenau, MDC Partner & Citizen Engagement Specialist
4/19/2022	Nighttime Photography	Dan Zarlenga, MDC Media Specialist
5/17/2022	Chapter Meeting	Business meeting only
6/21/2022	CHAPTER PICNIC	Susie Van de Riet, Forest Therapy
7/19/2022	MOTUS Tracking of Wildlife	Sarah Kendrick, MDC State Ornithologist
8/16/2022	Great Rivers Greenway	Elizabeth Simons, Community Program Manager
9/20/2022	Astronomy	Rich Heuermann, William Breeden, St. Louis Astronomical Society
10/18/2022	Plastics Reduction	Leslie Gittemeier, Wildlife Conservationist
11/15/2022	St. Louis Zoo, WildCare Park	Dr. Jo-Elle Mogerman, Saint Louis Zoo WildCare Park Director
12/20/2022	Holiday Party	

SAVE THE DATES!

Monthly Advanced Training Opportunities



Advanced Training Speaker Series 2023 Calendar

NOTICE!

***ALL FUTURE MEETINGS WILL BE HELD AT POWDER VALLEY CONSERVATION NATURE CENTER!
Hope to see you there!***

1/17/2023	New member orientation	Lisa Picker, Michael Meredith, Carl Davis, Bob Virag, Kari Pratt
2/21/2023	Teaching Evolution - Part 1	Geoffrey Stillwell, MMN-Great Rivers Chapter
3/21/2023	Teaching Evolution - Part 2	Geoffrey Stillwell, MMN-Great Rivers Chapter
4/18/2023	NOAA Storm Spotter Training	Kevin Deitsch, Warning Coordination Meteorologist, NWS-STL
5/16/2023	Native Fish in Missouri	Bob Hrabik, Ichthyologist, MDC
6/20/2023	Chapter Picnic	Becky Robertson, MDC, Discover Nature program
7/18/2023	Conservation and Legislature	Kyna Iman, Missouri lobbyist and duck hunter
8/15/2023	MDC from the Top	Sarah Parker Pauley, Director, MDC



Great Rivers Member Milestones

2022 Awards and Recognition.

Year-end announcements as of December 31, 2022

The Great Rivers chapter appreciates the completion of challenging work and consistent dedication to our mission of the following members:



Silver Dragonfly
2,500 hour Milestone Pin
Michael Meredith



Gold Dragonfly
1,000 hour Milestone Pin
Mary Dueren
Pam Fournier
Sue Forquer
Mary Mierkowski
Donna Scott
Brenda Switzer



Pewter Dragonfly
500-hour Milestone Pin
Larry Conant
Barb Davidson
Barbara Brain



Bronze Dragonfly
250-hour Milestone Pin
Jan Castanis
Chris Hull
Tara Morton



2022 Recertification Pin
"Grass Pink" Orchid

- Miguel Acosta
- Sharon Baldassare
- Sheri Barley*
- Jack Barnett*
- Jeanne Bauer
- Renee' Benage
- Glenn Bish
- Barbara Brain
- Jan Castanis
- Barb Cerutti
- Brenda Christ
- James Christ
- Patty Clarke
- Larry Conant
- Linda Cook
- Barb Davidson
- Carl Davis
- Denise Davis
- Mary Dueren
- Ann Early
- Ann Eggebrecht
- Tom Fasl
- Sue Forquer
- Pamela Fournier
- Chris Garhart
- Deborah Grupe
- Jack Hambene
- Brenda Hente
- Bill Hoss
- Chris Hull
- Kathleen Kapayou
- Don Knobbe
- Mary Kreppel
- Melissa Leech

- Cindy Lueder
- Debra Maurer
- Vaughn Meister
- Michael Meredith
- Claire Meyners
- Mary Mierkowski
- Diana Miller
- Tiffany Minx*
- Kris Monahan
- Tara Morton
- Bob Ochs
- Kathy O'Neill
- Joan Park
- Peggy Parr
- Lee Phillion
- Lisa Picker
- Kari Pratt
- Lori Purk
- Jake Ronecker
- Ann Russell
- Sherri Schmidt
- Donna Scott
- Eleasa Serotte
- Cindy Steinbruegge
- Barbra Stephenson
- Geoff Stillwell
- Brenda Switzer
- Sean Tracy
- Sherri Turner
- Bob Virag
- Tessa Wasserman
- Pam Wilcox
- John Willmann
- Michael Wohlstadter
- Karen Zelle



Initial Certification
Dragonfly Pin

- Miguel Acosta
- Sheri Barley*
- Jack Barnett*
- Michael Cople
- Anna Hancock
- Therese Heitman
- Steve Hughes
- Eileen Kinsella
- Tiffany Minx*
- Kris Monahan
- Cindy Neu
- Jean Nock
- Michaele Penkoske
- Tony Pryse
- Eleasa Serotte
- Elizabeth Simons
- Gerry Spitznagel
- Celeste Sprung

**Indicates Interns who also recertified in the same year.*



Naturalist's Journal

David's Story

by Mary Risberg , Class of 2018

It was a tragic and heartbreaking night in January 2017, we lost our son, David in an auto accident. You are never the same person after such a loss. You strive to come to terms with the loss. How can we make sense of this loss? What can we do, how can we move forward?

David loved the outdoors...he was a hunter, fisherman, and adventurer. David graduated from college with a degree in Wildland Soil Management, and was passionate about science, habitat improvement and taking care of our planet. We felt the need to find a way to honor and continue his love of nature and conservation passions.

In the following days and months, and in conversations with friends, my husband, John, was introduced to Brandon Butler, the executive director of the Conservation Federation of Missouri. John and Brandon talked about David, his work with the US Geological Survey in Arizona, and his work for Missouri landowners to improve the habitat on their lands. David was an independent, hardworking young man.

After discussions about David's interests, John and Brandon hit upon the idea of creating a grant fund that would support local organizations performing boots-on-the-ground conservation projects in Missouri. Thus, the David A. Risberg Affiliate Grant Program was created in the fall of 2017 with an endowment at CFM derived from contributions from family and friends.

The CFM Grant program is now heading into its sixth year. Grant requests are accepted from CFM affiliate organizations (there are now more than 100) beginning in September with a deadline of December 31. Then in January, the selection process begins with a committee composed of CFM board members and community representatives. The grants are awarded in March.

In March of 2022, nineteen CFM affiliates received grants totaling \$22,000. The grants went to the following: Duckhorn Outdoors Adventures, Greater Ozark Audubon Society, Land Learning Foundation, Missouri Bow Hunters Association, Missouri Coalition for the Environment, Missouri Grouse Chapter of Quail and Upland Wildlife Federation, Missouri Hunter Education Instructor Association, Missouri Hunting Heritage Federation, Missouri River Relief, Missouri Stream Team Watershed Coalition, Missouri Trappers Association,



David hunting



David analyzing soil samples



David clearing cedars off glade in Missouri



David's Story (continued)

National Wild Turkey Federation, Missouri River Bird Observatory, Ozark Trail Association, Pheasants Forever, Inc & Quail Forever, Student Air Rifle Program, The Open Space Council for the St. Louis Region, Wildlife & Fisheries Graduate Student Organization-MU, Young Outdoorsmen United.

John and I continue to be impressed with the groups from throughout Missouri submitting requests for projects to educate our youth and improve Missouri's natural areas. The grants provide an opportunity for affiliates to take grass roots action by supporting projects funded in whole or in part through the endowment. The Fund supports a wide range of conservation activities including, but not limited to youth hunter education and fishing programs, habitat improvement projects, conservation education workshops, trail and clean stream maintenance and improvement projects, and wildlife, forest, prairie and watershed preservation efforts.

We owe a debt of gratitude to the dedicated support staff at CFM, Tyler Schwartze, Michelle Gablesberger, and Micaela Haymaker. Without their help and excellence in administering the grant program, we would be up a creek without a paddle....

We hope the fund continues to grow and welcome the opportunity to continue the inspiring work being done in our state to enhance and preserve the wonderful outdoor land we all enjoy.

Contributions may be made to the David A. Risberg Affiliate Grant Program through the [CFM website](#) by pressing the [Donate](#) button and selecting the "Risberg Memorial Fund" under the Type of Donation pull down tab.



David setting a prescribed burn on Missouri property



David and his team managing the prescribed burn

Our Risberg Grant

by Michael Meredith

The three St. Louis chapters of Missouri Master Naturalists have benefited from the generosity of the Risberg Grant program. In early 2021 we were awarded \$2,000 to be used in new intern training, part of that went into the immediate purchase of 55 copies of Aldo Leopold's *A Sand County Almanac* that were distributed to the 2021 class of interns.

Nine copies are left, with the remaining funds being sufficient to purchase another 60 to 70 copies. It's been proposed that going forward, we include a copy of Leopold's seminal work as a gift to each intern that certifies, beginning with the 2022 class and beyond (until funds run out of course).



Naturalist's Journal

Susan Pang's Home Native Garden Featured in Wild One's Journal!

Credit: Wild Ones Journal, Winter 2022. Vol. 35, No. 4, wildones.org



By Barbara A. Schmitz

If there is one thing certain about Susan and Kei Pang, it is that they are serious about being ecologically friendly, from building a new home for themselves, to creating a native landscape that is home to many insects, birds and other animals.

In 2016 the Pangs hired the architect who designed the Mid-America Buddhist Association in Augusta, Missouri to custom design their Creve Coeur, Missouri home, Susan said. "At the outset, we knew that we would build a climate-adapted landscape to match the climate adaptations built into the house like solar and geo-thermal, 2x6 framing with higher R factor insulation, 5/8 drywall throughout and a metal roof to start the journey of the rain being escorted to rain gardens."

In 2017-18, they started working on their landscaping. "We rented machines for digging trenches and rain garden basins and berms," Susan said. "We hired someone to operate the equipment and help with the digging, but much of the work we did ourselves."

A Master Gardener since 2010, Susan said she really started to understand the importance of native plants and habitats after being assigned to the Litzsinger Road Ecology Center. That experience, along with the experience she gained by planting natives at their previous home, helped her to come up with ideas for their Creve Coeur property.

The biggest difference at their



A monarch butterfly nectars on New England aster on the Pang property

new home is that she didn't have to rip things out. "The bulldozer did that," she said.

Reading articles about native landscaping and becoming a Wild Ones member helped fill in her knowledge about things she didn't know.

But she knew one thing: "Every landscape is unique, and every person has different experiences," Susan said.

The Pangs also knew there were things they didn't want on their property, such as an irrigation system, which they had at their previous

home. That, she said, was an "ordeal," dealing with maintenance.

Pang said she always had a plan in her head for their landscape. "I just knew how it was going to work, but I never wrote it down."

At first her husband Kei didn't understand her passion for natives and why they were doing what they were doing. But now he understands and has done "a lot of shoveling and digging" to convert their property into a paradise for pollinators, insects and other animals, Susan said.

Their own property is just a little shy of 1 acre, but they also care for



Pang (continued)



Member Garden
Susan and Kei Pang
St. Louis (Missouri) Chapter



the property of a neighboring garden chapel, bringing their total bit of heaven to 3 acres.

“Our native plant area is the entire property plus several acres behind our home where we managed to eradicate a 50-year infestation of bush honeysuckle over the course of several years,” Pang said. They hired someone to “root dock” the several acres because “it was the healthier way to protect the animals and desirable plants we wanted to keep,” she said. “Even with the bush honeysuckle, there was still some neat plants worth preserving like sassafras and elderberry.”

For others dealing with invasives,



Left, top: Another example of a healthy border of elderberry shrubs keeping invasives at bay. Left, bottom: Fences add accent borders and protect habitats from domestic pets. Above: The Pang prairie in the first year. While it looks bare, it was filled in with transplants and heavily seeded.

About the garden

- Susan and Kei Pang’s property is located in Creve Coeur, a suburb of St. Louis, Missouri. The city derives its name from Creve Coeur Lake, which is shaped like a broken heart.
- Their property is home to lots (hundreds or perhaps thousands) of native plants and has earned St. Louis Audubon Society’s Home Silver, Gold and Platinum honors. It includes three rain gardens, a frog pond, a prairie, woodlands and a permaculture area.
- Susan’s favorite wildflower is wild quinine (*Parthenium integrifolium*) because the white flowers bloom for quite a long time and the foliage is large and bold. But she also likes prairie dock (*Silphium terebinthinaceum*) and purple poppy mallow (*Callirhoe involucrata*). She says: “Basically, it is hard for me not to love most plants as I get to know them and see their wonders up close, after spending years watching them grow and seeing the butterflies, moths, birds and insects they attract. It is gratifying to see finches eating the seeds from coneflowers and even from sweetgum trees!”
- The Pang yard is often visited by monarchs, hawks, owls, fox, deer, wild turkey, squirrels, tree frogs, toads, many kinds of song birds and insects including bees and spiders.

Pang recommends they have realistic expectations.

“Our philosophy is that when we get rid of something, we aggressively and abundantly plant and seed the area and keep it up,” she said.

“In our situation, the best natives to plant were things that grow like honeysuckle, such as elderberry or sumac. They sucker and shoot out rhizomes ... and have a huge roots web under the ground.”

That heavy abundance helps to keep the plant or plants you don’t want at bay, she said. Still, she does a honeysuckle sweep one or two times a year to get rid of the few plants that somehow survive.

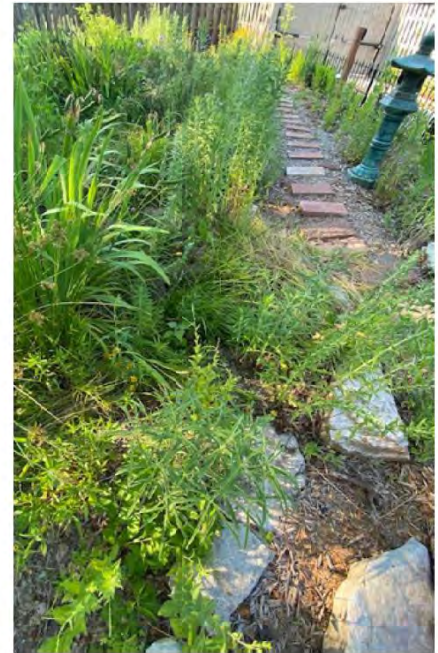
Pang said their landscaping follows the lay of the land.

“Our house sits higher than the downward sloping majority of the land, so this naturally lent itself to rain gardens,” she said. “The rainwater is channeled off the metal roof, into the gutters, downspouts and under the pavement to three basins. The higher ground consists of a drought-loving prairie and there are woodlands on the periphery. Also, we put in a special area that I call a permaculture area where garden and food scraps are fed to composting worms, eliminating the need for excessive landfill waste.”



Pang (continued)

Member Garden
 Susan and Kel Pang
 St. Louis (Missouri) Chapter



Above, left: The Pangs planted additional native perennials under shrub colonies to add even more protection from aggressive invasive plants. Above, right: Paths throughout the Pang yard help with maintenance and make for more pleasurable walks.

Pang said she learned about permaculture in 2018 while studying in Guatemala for five weeks. “Being immersed in it got me interested in it ... and made me realize how important it is to reuse resources like coffee grounds and to make compost with table scraps.”

She said you don’t need to spend a lot of money to do it — you can use old trash cans – and you’ll find it turns into beautiful black soil without doing much.

Pang said she also asks neighbors if she can have their leaves, which she uses for composting. “I always leave the leaves and have never raked, and just allow them to decompose.”

She’s also placed signs on her property to educate her neighbors and others that her property has native plant gardens. Again, it helps people to understand her landscape is intentional, she said.

People new to native landscaping should join like-minded organizations, Pang recommended. “We’re fortunate that in the St. Louis area

we have many organizations like the Sustainable Backyard Network, St. Louis Audubon Bring Conservation Home, Shaw Nature Reserve, Grow Native and the Missouri Prairie Foundation, Master Gardener and Master Naturalist programs ... and of course Wild Ones is a national organization with many opportunities to continue learning.”

These groups not only help with learning, but many also offer seed swaps or hold plant sales, allowing you to save money, she said, as you transform your property.

Lastly, Pang recommends people read books about natives, such as “*Garden Revolution* by Larry Weaner.

While the Pangs belong to the St. Louis Chapter of Wild Ones, they also spend time in other states that have chapters and are even starting a seedling chapter in South Dakota where they own land.

“The whole state doesn’t have a Wild Ones chapter,” Pang said. “We spend a significant amount of time there, so we are trying to build

a community of people to start a chapter. I’ve done projects there for fun, such as putting bat boxes in the Whitney Preserve, but I know if I put my heart and soul into this, we could really get it going.”

Susan said she feels nature rewards us, and she wants others to experience that same feeling.

“I feel like we’re doing something for nature, and doing a lot for ourselves,” she said. “Native landscaping is a spiritual experience for me.”

For instance, Pang said she has many bees in their yard, but she’s never been stung by one.

“If you become comfortable in your garden, then the garden becomes part of you,” she said. “I’m part of that landscape and that landscape is part of me.”

Editor’s Note: We’d like to feature members’ native gardens, large or small, in upcoming issues. If you’re interested in sharing your native garden, send four to six high-resolution photos, as well as a brief description, to journal@wildones.org. Please include your contact information so we can follow up.



Naturalist's Journal

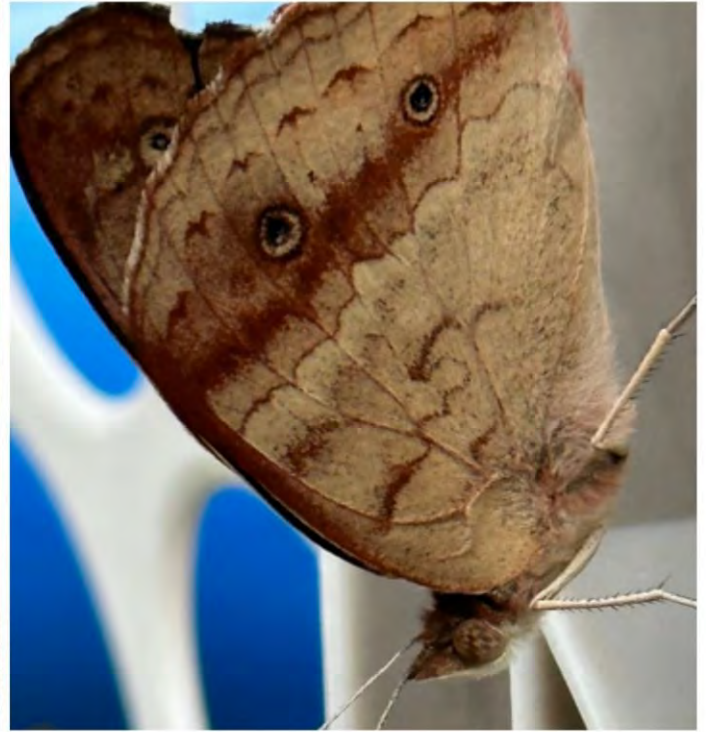
Initial Training Nature Notes from the Class of 2022

Vanessa Cowart's Journal

Welcome aboard, Vanessa!



Backyard Lepidopterans photographed on an iPhone during my time in Master Naturalist training. I have an even bigger appreciation for these precious pollinators now.



Olivette Parks for Pollinators BioBlitz 2022



Survey for Missouri Bumble Bee Atlas



Vanessa Cowart's Journal (continued)



One of my favorite adventures during training was a 3 hour tour of the replicated prairie and glade at Shaw Nature Reserve by a wonderful retired entomologist and restoration biologist named James Trager.



Naturalist's Journal

2022: Missouri Deeproot Clubmoss "Diphasiastrum tristachyum"

by Miguel Acosta

How many times have you been told, "keep your head up while walking on the trail?" It's a good thing to do, but in this case, I was on a nature photography trip with the Webster Groves Nature Study Society and really needed to keep my head low to the ground. We were searching for clubmoss. Having never seen this species before, I stuck out locating it, as I misidentified all different species of moss along the trail and cliff edges at Hawn State Park. That was until Rick from the Missouri Native Plant Society locked his gaze on our targeted species – Missouri Deeproot clubmoss "Diphasiastrum tristachyum."

At first glance it looks like a small evergreen tree. Leaves are evergreen in appearance, appearing opposite but spirally arranged with four evenly spaced leaves in a cycle, appearing as four columns. Branch leaves are blue-green, appressed with the base extending down the stem (decurrent), the whole leaf narrowly spatula-shaped and broadest near the tip. The free portion is scale-like, up to 1/16 inch (to 1.7 mm) long, to .9 mm wide, toothless, tapering to a pointed tip and is often whitish green at the tip end. All 4 leaves in a spiral cycle are similar in size and shape, making the branches squarish to roundish in cross-section.

Spores develop in spike-like or cone-like structures called strobili, usually 3 or 4 strobili clustered at the tip of a long stalk (peduncle), occasionally 2 or as many as 7. One to 3 peduncles rise up to 5 inches above the leaves, with appressed, scale-like leaves spiraling up at regular intervals. Strobili are 3/8 to 1+ inch long. Each strobilus also distinctly stalked on forked branches, stalks typically becoming shorter with each fork. Each tiny spore sac is attached to a scale (sporophyll) that is about 1/8 inch (to 3.5mm) long, broadly diamond to tear-drop shaped and tapering to a slender, sharply pointed tip. Scales are initially light blue-green and tightly appressed, turning yellowish as they mature and light brown when dry, then become more spreading to release the spores in late summer into fall. The strobili can persist through winter.


Now that I have described the target species, I will share how I captured the image. One of my 2022 goals is to invest more time in "macro photography." So to get this image, I laid on my side, on the ground, the lower perspective helped me to achieve the composition I desired. Once I had a decent composition, I used an umbrella diffuser to mitigate the strong dappled light which was pouring in from the canopy. Next took a test shot to determine if what I saw is something I would be pleased with and I was. Then I used a technique called focus stacking (which combines multiple images taken at different focal distances to give a resulting image with a greater depth of field than any of the individual source images. The end image is a focus stack of 20 images aligned and blended in Adobe Photoshop.

Until the next adventure. If you enjoyed this article and would like to be updated when I post new blog articles, please subscribe to my blog. fotografiabymiguel.com

Thanks for stopping by!



Missouri Deeproot clubmoss
"Diphasiastrum tristachyum"
ISO 500 – 105MM – F5.6 – SS 1/125th
Photo by Miguel Acosta



Never underestimate
the cleverness of mushrooms
to find new food!"
— Paul Stamets

False Turkey Tail Fungus
likely *Stereum ostrea*
Forest Park, St. Louis, Missouri
©2022 Jake Ronecker