



Missouri Bird Conservation Initiative Newsletter

Working together to conserve bird populations and their habitats

Note from the Chair

by Allison Vaughn

Missouri Bird Conservation Initiative Chair

In recent years, national conservation organizations such as the National Wildlife Federation and National Audubon Society have featured articles highlighting the importance of landscape conservation in urban and suburban areas to support wildlife and human well-being. The 2007 publication of Doug Tallamy's *Bringing Nature Home: How You Can Sustain Wildlife with Native Plants*, started a revolution in America's urban yards when homeowners, schoolyards, and businesses began shifting their mowed lawns to more natural landscapes. In the City of Columbia, the development of the CoMo Wild Yards Program (inspired by St. Louis' Bring Conservation Home Program) initiated a certification program that celebrates yards with native plants, places for wildlife to shelter and rear their young, and yards that support pollinators, birds, rabbits and other wildlife that inhabit any city.

The Missouri Department of Conservation is keenly aware of the importance of nature protection in not only rural areas, but urban and suburban communities, and communities that have limited access to the natural world. One Health is an MDC initiative that acknowledges an understanding that natural settings are better for the environment (whether urban or rural). These natural settings support our mental health and well-being, in addition to supporting ecosystem services such as clean air, reduced summer temperatures, and reduced flooding.

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The 2023 Missouri Bird Conservation Initiative (MoBCI) conference will focus on MDC's ground-breaking One Health initiative that engages local governments, citizens, and private organizations within and adjacent to municipalities to connect citizens to nature. Seventy percent of Missourians live in urban areas. MDC is reaching out to these Missourians to "Bring Nature Home." The MoBCI Grants Program for fiscal year 2025 will be offering grants that dovetail with MDC's One Health/Community Conservation outreach.

This issue includes an article about a nature sanctuary that serves the community in a suburban neighborhood and now boasts a bird list totaling 169 species. Also included is a report from Missouri State Ornithologist Kristen Heath-Acre on upcoming research on Whip-poor-will and Chuck Will's Widow populations in Missouri. These are the nocturnal birds that keep us company, or awake, at night in woodlands with their loud vocalizations. You'll also find other engaging articles and photos from Missourians.

Please join us at the annual MoBCI conference which will be held August 24-25 (Thursday-Friday) at the Columbia Country Club. Registration includes Thursday night's mixer of heavy appetizers and Friday's lunch. Not only is this a great educational event, but the camaraderie and Silent Auction in a beautiful setting can't be missed!

Happy Birding! 🐦



Photo by Betsy Garrett

Columbia Audubon Society member Betsy Garrett snapped a photo of a Red-shouldered Hawk in her yard. Once considered relatively uncommon in urban areas, Columbia, Missouri neighborhoods with mature tree canopies are now home to several active Red-shouldered Hawk nests.

Jerry Wade Youth Habitat & Education Program

MoBCI offers grants to promote bird habitat conservation projects that provide an educational component for youth.

These grants may be awarded to private and public organizations, or to individuals who partner with organizations. Eligible activities include projects that protect, enhance or restore bird habitats on any lands in Missouri. All projects should be habitat based and include a specific educational component for youth.

For more information or to apply for a Youth Habitat and Education Program grant, please visit: mobci.net/yhep. 🐦





Golden-winged Warbler with Motus tag

Motus Wildlife Tracking System 2022 Update: Missouri, the Midwest, and Neotropics

Trevor Lindsay

Missouri Department of Conservation

Sarah Kendrick

U.S. Fish and Wildlife Service



The Motus Wildlife Tracking System (Motus) is a collaborative research network that uses arrays of automated radio telemetry receivers to study movements of small animals. Motus works using ultra-lightweight radio tags coded to the Motus frequency attached to our smallest species of migratory birds, bats, and even large insects. When a Motus-tagged animal passes within range of any of the over 1,500 Motus receivers in the world, the signal of the tag is detected and stored. This collaborative array of receivers across the hemisphere allows researchers to learn more about migration timing, stopover sites, and wintering locations more efficiently and at broader scales to target conservation efforts and habitat management for some of

our most rapidly declining bird species that need targeted conservation through their full annual cycle.

Full Annual Cycle Conservation of Migratory Birds

The Missouri Department of Conservation has supported full annual cycle (FAC) conservation efforts for migratory landbirds since 2009 and has supported full annual cycle of our migratory waterfowl species for decades. FAC conservation involves working to protect migratory bird species that breed in Missouri when they are beyond our state's borders. Roughly 335 species occur in Missouri each year, give or take vagrants and rarities. Of those, 170

species breed in Missouri, and 84 of those leave Missouri in the non-breeding season. Fifty-eight of these birds, or one-third of Missouri breeding migratory bird species, leave the U.S. in the non-breeding season for up to 8 months of the year. As a conservation community, we cannot ignore the threats that landbirds face when they are beyond our borders and know that we are doing all we can for bird conservation.

MDC has proudly supported FAC landbird conservation since the creation of the Association of Fish and Wildlife Agencies' Southern Wings program in 2009, which provides a menu of international conservation project partnerships on migratory stop-over sites and the wintering in Mexico, Central America, and South America for our long-distance migrant landbirds. States then choose which projects to support that best benefit birds that breed and migrate through their states to support FAC conservation work. MDC has been a lead state contributing to Southern Wings; in fact, FAC conservation is included in MDC's Comprehensive Conservation Strategy (Missouri's State Wildlife Action Plan).

Motus Tracking Informing Conservation

Motus tracking of birds through migration and beyond identifies timing, stopover sites, overwintering locations, and even overwinter survival, to inform conservation work for migratory birds throughout the annual cycle. Motus can also be used for local tracking efforts to target conservation and management actions that give us the greatest return on effort for the broadest suites of species, including birds.

Missouri's approach to Motus receiver station placement has been to build two east-west latitudinal arrays, or "digital fences" of stations with detection diameters as close as possible to maximize detection of Motus-tagged animals as they migrate north-south through the state.

Motus Growth in Missouri and Beyond

Missouri's efforts in placing stations also helped build out the Midwest Migration

Network's Strategic Motus Plan, which outlines east-west latitudinal arrays and stations along major rivers and the Great Lakes across USFWS Region 3. Missouri's first Motus station was placed in October 2018 at MDC Headquarters.

In January 2018 there were 17 Motus stations across the Midwestern states of Iowa, Indiana, Illinois, Michigan, Missouri, Minnesota, Ohio, and Wisconsin. Currently, there are 186 stations situated across these states with more planned for deployment in the immediate future.

An equally important area for a stronger Motus network is throughout the Neotropics. Motus tagging efforts won't tell us much if we don't have active stations along these species' migratory routes and winter ranges. In January 2018, there were 8 Motus stations between southern Mexico and Colombia. Currently, there are now 58 active stations as of April 2023. While there has been much progress placing Motus stations in the Neotropics since 2018, there is still a critical need for expansion of the Motus network in this area.

The 2020 CSWG also included funding for the placement of 11 Motus stations in the Neotropics: four stations in Mexico's Yucatan Peninsula, three in Costa Rica, and four in Colombia. Between two USFWS grants and donations by Missouri birding groups and private citizens, conservation partners in the Midwest will have supported the placement of 20 Motus stations in the Neotropics in the last few years. Many stations have been placed in recent years thanks to dedicated conservation partners in the region. Since 2018, Missouri Motus stations have logged 317 total detections consisting of 180 individual tags representing 24 species of bird and one species of bat (Table 1, page 6). Animals detected by Missouri Motus stations were deployed by 25 different projects across the western hemisphere.

Notable Missouri Motus Detections

As of May, there have been 15 additional stations deployed across the state so far in 2023, bringing the number of Missouri Motus stations

to 36. The MoBCI Foundation, along with challenge grant support from several MoBCI affiliate organizations, helped defray the cost of one of these stations. Several notable detections have been recorded by Missouri Motus stations. These noteworthy detections include species of conservation concern, long detection/stopover times, “recaptures” or multiple detections within the state, and unique highlights of the journeys these birds make every year.

As a result of the aforementioned USFWS CSWG funding, SELVA and MDC deployed 50 Motus tags on 25 Golden-winged Warblers and 25 on Wood Thrush on their wintering grounds pre-spring migration 2022. The strategy for tagging these birds pre-migration was to increase the probability of later detections as the tagged birds move north toward a more robust network of Motus receivers in the U.S. and Canada on spring migration. USFWS Migratory Bird Biologist and previous MDC State Ornithologist, Sarah Kendrick, traveled to Costa Rica in early March to assist SELVA’s Nick Bayly, Ernesto Carman (2022 MoBCI Conference keynote speaker), and Paz Irola in this tag deployment effort. Over the course of that week of Sarah’s visit, five Wood Thrush and four Golden-winged Warblers were tagged. The remaining tags were deployed by Nick, Paz, Ernesto, and other project partners in the following weeks.

On May 2, 2022, one of the male Golden-winged Warbler that was tagged by the group was detected at the Hurley station in the Missouri Ozarks. A week later, on May 9, the same bird was detected at the new Columbia Motus station placed in honor of Brad Jacobs by the Columbia Audubon Society and MDC. Jacobs was the previous ornithologist at MDC and a major advocate for investing in full annual cycle conservation, especially by state agencies via AFWA’s Southern Wings Program; Jacobs passed away in May 2020. This Golden-winged Warbler that Kendrick had helped process and tag months earlier, was the first detection on the Jacobs station in Columbia where Kendrick lives in and where Jacobs lived. It’s mind-blowing that



Photos by SELVA, Costa Rica (selva.org)

Female Cerulean Warbler

the first detection on a station placed in honor of Jacobs, who dedicated decades of his life to supporting migratory birds, was a bird that his MDC ornithologist successor tagged in part due to his years of inspiration.

Not only are these detections incredibly coincidental, but they also give us data on a seven-day stopover on spring migration for this bird. The bird stopped in Missouri, likely in Ozark forests, to refuel and regain energy along its journey north. Along with this individual, three other Golden-winged Warblers from this small sample of 25 tagged birds were detected by Missouri Motus stations. Another goal of Missouri’s two latitudinal Motus arrays is to capture potential movements of birds through our contiguous blocks of Ozark forest that we

Table 1. Bird and bat species documented in 2022

Species	# Detections	# Individuals
Common Nighthawk	17	12
Eastern Whip-poor-will	15	9
Virginia Rail	6	5
Sora	10	9
Least Sandpiper	2	2
Semipalmated Sandpiper	3	3
Stilt Sandpiper	5	4
Western Sandpiper	1	1
Lesser Yellowlegs	15	5
Semipalmated Plover	1	1
Black Tern	25	14
Common Tern	2	2
American Kestrel	85	25
Blue Jay	3	1
Bank Swallow	1	1
Barn Swallow	4	4
Gray Catbird	7	5
Swainson's Thrush	80	58
American Tree Sparrow	1	1
White-throated Sparrow	6	4
Rusty Blackbird	1	1
Golden-winged Warbler	5	4
Mourning Warbler	3	1
Canada Goose	2	2
Eastern Red Bat	1	1

suspect are serving as stopover habitat for forest birds. These detections (and others) on our Motus stations are helping us to validate these assumptions with data. These detections also provide further evidence that the more Motus stations you have across the landscape in strategic arrays, the more we can learn about migration ecology and the more tags will be deployed across that network together.


Even though none of the 25 Wood Thrush tagged during this project were detected in Missouri, the documented detections during their migrations provided us with interesting insight. Wood Thrush are large enough to carry a tag with a battery that lasts a full year across their annual migratory cycle. This means that not

only were we able to track their spring migration into the north-eastern U.S and onward, but also their return migration south in the fall. Tracks of eight of these 25 tagged Wood Thrush show strong regional migratory connections to the northeastern states or southeastern Canadian provinces. Incredibly, within the returning tags detected across the eastern U.S. during the fall migration, it was documented that two individuals were detected back at the site where they were tagged the previous year in Costa Rica. This entire effort, especially the site fidelity of some individuals, is a great example of how Motus can be used as a tool as we continue to learn about species' migration and full annual cycle bird conservation.

Missouri Support of Motus Projects

With the outstanding support of MDC, USFWS, and contributions to a Missouri Conservation Heritage Foundation account from Burroughs Audubon Society, Missouri Birding Society, Columbia Audubon Society, and Greater Ozarks Audubon Society, SELVA conducted a project in winter 2022–23 to collect the first-ever data on overwinter survival of Cerulean Warblers on shade-grown coffee farms and mature forest using local tracking with Motus tags to fill a key knowledge gap for this declining species. Not only will this initiative provide insight into the wintering movements and habitat selection of Cerulean Warblers, but it will also expand our knowledge of the species full annual cycle migration as the tagged birds are detected northward as they leave their wintering grounds. As of mid-April 2023, the first Cerulean Warblers had begun to migrate north from these tagging sites on the wintering grounds in Colombia – three individuals have been detected on Costa Rican Motus stations so far.

More to Come


Many thanks to the widespread support of Motus in Missouri and beyond. A special thanks goes to MDC for taking a chance on investing in Motus technology over the last five years, giving a huge boost to Midwestern Motus network growth, and continuing their support. The contributions of Missouri birding groups to Motus research projects is not common across states – Missouri continues to set an example in its conservation leadership and partnerships. The USFWS and MDC are excited to continue this work to learn more about Neotropical migrants collaboratively. For more information see the [complete 2023 Motus report](#)¹. 

Motus Resources to Learn More

Motus Wildlife Tracking System²: Explore Motus projects, tags, receiver data, and

learn about active projects and read recent publications. Access Motus Guides for deploying receiver stations, tags, and analyzing and visualizing data.

Midwest Migration Network³: Keep up to date with the latest Motus news in the Midwest, and connect and collaborate with other professionals working with Motus in the Midwest.

Motus Recorded Webinar⁴: Missouri River Bird Observatory Winter Learning Series 2023 – Motus Bird Tracking: An hour-long recorded presentation by USFWS Migratory Bird Biologist and Midwest Regional Motus Coordinator Sarah Kendrick in winter 2023 as a Motus update for Missouri, the Midwest, and tagging efforts mentioned above. 

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- For an up-to-date list of popular and scientific articles on Motus projects, visit www.motus.org/data/publications.

1. <https://mdc.mo.gov/sites/default/files/2023-05/2022MotusReport.pdf>

2. <http://www.motus.org>

3. <http://www.midwestmigrationnetwork.org>

4. https://www.youtube.com/watch?v=UztOcn_7w8k&list=PLAOy_N5MO85d0EVBCa6hPSne3_-LSDobQ&index=3&t=13s

Wild Bird Rehabilitation: Proudly Celebrating 30 Years of Helping Native Missouri Songbirds

Lori Moore-McMullen

Director, Wild Bird Rehabilitation



Our journey began in 1993 when Founder Carol Kershner turned a passion for wild songbirds into a community service organization dedicated to the care of native Missouri songbirds. Wild Bird Rehabilitation (WBR) opened its clinic on June 7. The first WBR clinic was a 1200 square foot facility located on Big Bend Blvd. in Crestwood. In August 2005, WBR moved to its current location at 9624 Midland Blvd in Overland, MO. This location provided more space as well as an area for an aviary for birds in transition to their natural habitat. Growth continued as the demand for services, and calls, came from all over the state of Missouri. To this day, we remain the only organization in the St. Louis region, and the entire state of Missouri, solely dedicated to the rehabilitation of native wild songbirds.

Today, WBR helps an annual average of 2,000 birds at the center by providing the best, most comprehensive medical treatment and nutrition available to support their rehabilitation and release. In 2022, we treated 102 different species at all different stages of life.

At this time of year, we are raising hundreds of babies who have come to us for reasons such as fallen nests, parents are no longer in the area or have been harmed by cats, dogs or other predators. We have received more than 600 baby birds in the past two months so our volunteers and staff are very busy being surrogate parents – feeding babies every 10, 20 and 30 minutes. We also treat adult bird injuries throughout the year for many of the same injuries, in addition to window strikes. Currently, our average cost to care for a bird is \$121.



“We are hungry!” Fallen nest of House Finches impatiently waiting for next feeding.



Baby Crow found abandoned – now enjoying all the excitement at the center.

Photos by Wild Bird Rehabilitation



Baby Blue Jay excited to be out of his basket.



Our latest baby Pileated Woodpecker. She is growing up so fast!



Northern Mockingbird ready for lunch.

Our volunteer phone team fields more than 10,000 phone calls from rescuers, concerned citizens and peer organizations from our region, nationally and even internationally. They answer calls from 7am-7pm daily. In addition to determining if a bird is injured or an orphan in need of help, they often provide alternatives to avoid separating the bird from its parents and removing the bird from its habitat. This is another very important part of what we do to support conservation efforts.

We also provide education about the value, needs, habitats and care needed to support our songbirds. We do this through our website, printed materials and attending events. We also have staff and volunteers who speak to schools, organizations and community groups, as time allows.

As a 501(C)(3) not-for-profit organization, our operations are 100% funded by contributions from individuals, companies and foundations. We receive no federal, state or local government funding. In addition, we rely on hundreds of volunteers to assist in our work each year.

Birds cared for at the facility are federally protected as a result of the Migratory Bird Treaty and WBR is licensed and permitted by the Missouri Department of Conservation and the U.S. Fish & Wildlife Service. We are also members of the National Wildlife Rehabilitation Association and the International Wildlife Rehabilitation Council.

WBR is proud to be celebrating our 30 year anniversary this year and we remain grateful for the generosity of our community, those who give, and have given, of their time, talents and resources making our work possible for the past 30 years.


If you are interested in becoming a volunteer or supporting our efforts in other ways, please reach out to by phone at 314-426-6400, by email at wbr.edir@gmail.com or by visiting our website at wildbirdrehab.org. 



Figure 1. Warbler species found during BirdSafeSTL surveys.

Update: The BirdSafeSTL and Lights Out Heartland Projects

Jean Favara and Nina Fogel

St. Louis Audubon Society



Bird populations have declined by nearly 30% since 1970¹. Habitat loss, changing climate conditions, cat predation, and collisions all play key roles in this decline. As our urban and suburban footprints continue to increase, it is important that we understand how human inputs impact bird mortality.

St. Louis sits underneath the Mississippi Flyway, one of the major migration pathways in the United States. Sixty percent of North American songbird species and forty percent of North American waterfowl utilize this flyway on

their seasonal migrations in the spring and fall. In addition, researchers identified St. Louis as the fifth most dangerous city to birds during spring migration and the sixth most dangerous during fall migration due to the interaction between artificial light at night and its location along the flyway².

St. Louis Audubon Society (SLAS) established the BirdSafeSTL project in 2020 to understand bird mortality via building collisions in St. Louis. During fall migration in 2020 and 2021 and spring migration 2021-2023, volunteers from around the region conducted standardized

1. Rosenberg KV, Dokter AM, Blancher PJ, Sauer JR, Smith AC, Smith PA, Stanton JC, Panjabi A, Helft L, Parr M, Marra PP. Decline of the North American avifauna. *Science* 2019; 366(6461): 120-124

2. Horton KG, Nilsson C, Van Doren BM, La Sore FA, Dokter AM, Farnsworth A. Bright lights in the big cities: migratory birds' exposure to artificial light. *Frontiers in Ecology and the Environment* 2019; 17(4): 209-214.

walks through downtown St. Louis during migration to collect data on bird mortalities. For more detailed background information on the BirdSafeSTL project, refer to the MoBCI 2020 Newsletter, pg. 23.

Here we report on some findings from these five seasons of data collection from the BirdSafeSTL project:

In total we have found 830 birds that were likely killed via window collision around the focal buildings we survey. In addition, we have found 82 stunned birds and 40 birds around buildings not included in our survey. We have recorded 83 species, 25 of which were warblers (family Parulidae; Figure 1). The most common species found during the surveys were Ovenbirds (Figure 2; n=111), White-throated Sparrows (n=79), Tennessee Warblers (n=64), Common Yellowthroats

(n=60), and Indigo Buntings (n=38). Ovenbirds, Common Yellowthroats, and Indigo Buntings are species that breed in Missouri. Tennessee Warblers migrate through our area, and White-throated Sparrows winter in the region.

Bird strikes were much more prevalent at some buildings than others. Over half of the strikes were recorded at four buildings. The building with the most strikes (20% overall) is located at 800 Market Street. It is a 31-story building encased in black mirrored glass (Figure 3). The high-strike buildings are all located adjacent to a park with trees and other natural elements. We suspect that there are more strikes at these buildings because internal lighting reflects the nearby trees and sky through their large windows.

Figure 2. Ovenbird found during a BirdSafeSTL survey in 2021.



Across all buildings, there were more strikes on the north side (37%) compared to the west (26%), south (23%) and east (14%). This information about where bird strikes most often occur can help SLAS and other advocacy groups approach building managers with tailored, data-driven suggestions about how and where to modify their buildings to mitigate bird strikes. Additional analysis from the BirdSafeSTL project using data from 2020 through 2022 can be found in this report produced by the National Audubon Society and KPMG.

In addition to collecting data, St. Louis Audubon Society has become a partner in the Lights Out Heartland project. Lights Out Heartland focuses on protecting birds from light pollution especially during the high-intensity migration periods in the spring and fall. Reducing light pollution at night protects birds and other wildlife from the dangers of light pollution and saves energy and money...a triple benefit that is hard to beat! SLAS became a partner to encourage further education and outreach to communities about the dangers of light pollution and to

provide an opportunity for organizations and buildings to commit to lights out periods during high intensity migration periods.


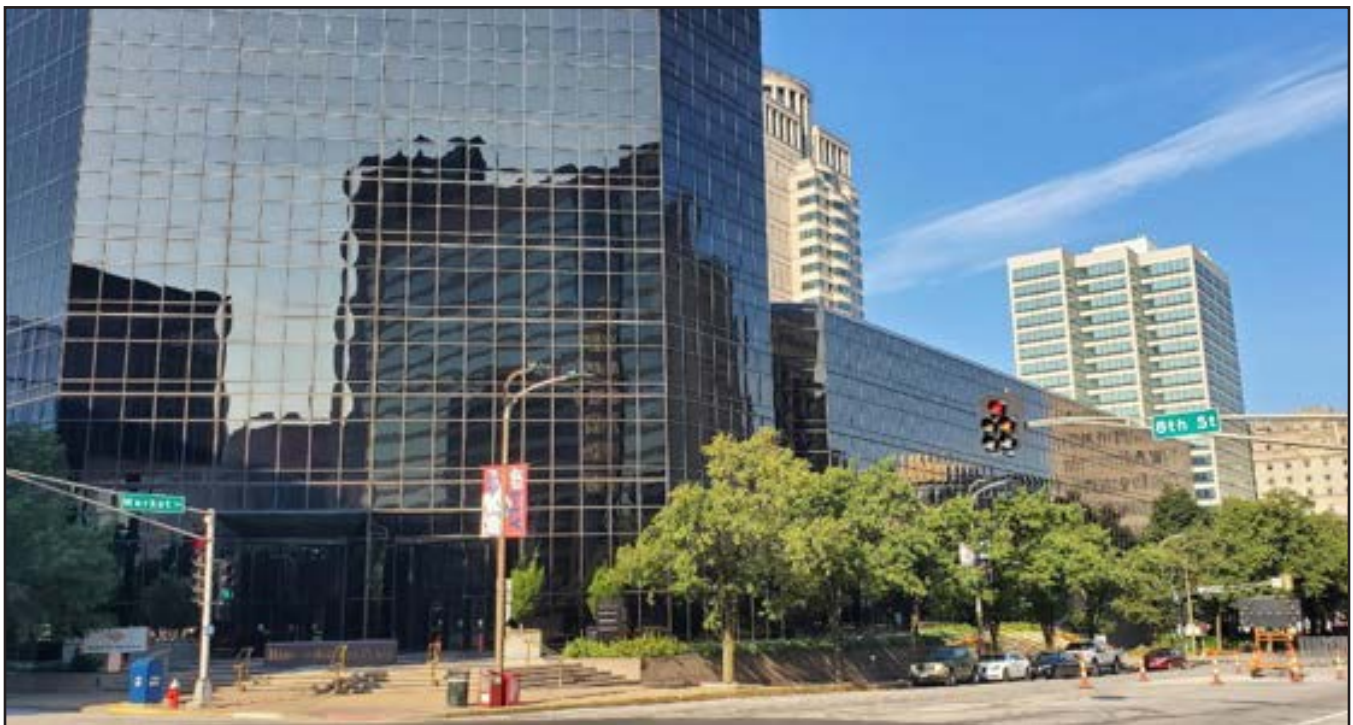
Advocacy efforts through the Lights Out Heartland and SLAS led to St. Louis County and the cities of Ellisville and Clayton to adopt resolutions to reduce light pollution. As part of St. Louis County's resolution, they now turn off the lights at night in some county owned buildings in May and September. Additionally, Lights Out Heartland worked with the Gateway Arch National Park to extend its lights out period from the first two weeks in May to the entire month to further protect migrating birds. If your organization would like to become part of the Lights Out Heartland community, contact information is here. As the commitment to reduce light pollution in St. Louis continues to grow through the Lights Out Heartland project, the cumulative effects of reducing the light pollution footprint in our region will prevent birds from being attracted to our dangerous urban landscapes during high intensity migration periods. 

Figure 3. The building at 800 Market Street in the survey footprint with the most bird strikes. This building has trees close to the building and is also located across from City Garden Park, a green space containing vegetation that is attractive to birds. We suspect that the large amount of mirrored glass reflects the trees and sky which results in many bird strikes.



An Introduction to Bring Conservation Home in St. Louis

Shannon Coleman

Outreach Specialist, Bring Conservation Home Program

Dan Pearson

Director, Bring Conservation Home Program




Since 2011 St. Louis Audubon Society's Bring Conservation Home program has conducted just over 1,900 site visits in 115 zip codes across the St. Louis region. More people than ever before are turning to native plants when making landscaping decisions. According to the National Wildlife Federation, in 2022 nearly one in three U.S. adults wanted to support wildlife in their garden and one in four people sought out species native to their area to achieve that goal. Important to note that those statistics have increased steadily in recent years, by 26 percent and 17 percent respectively since 2020. The Bring Conservation Home program has experienced a 76% increase in site visit requests received each month since 2021. After a consultation or certification assessment, we offer yard signs that communicate to neighbors and act as passive recruitment tools for interested passersby. This means that as our map of affiliated landscapes expands, so does our waitlist. To meet this demand we recently hired our first full-time Outreach Specialist, and are already looking to expand even further. Additionally we are encouraging our volunteers to complete the training to become habitat advisors and help with site visits.

As part of a larger effort to ensure all Missourians have access to nature in their communities, the Missouri Department of Conservation (MDC) has adopted a tiered approach to focusing the department's urban community conservation efforts in the St. Louis region. Highest priority tiers are areas which have historically experienced disinvestment, and where residents have limited access to nature.



Photos courtesy of Bring Conservation Home

In partnership with MDC, we are also adopting a 3-tiered approach. Within the highest-priority Tier 1 areas the standard site visit fee will be completely waived. Outside of Tier 1 areas we are now offering our services to everyone for a suggested fee, but accepting any contribution they feel is affordable at that time. To find out which conservation tier your site belongs to, email us at bch@stlouisaudubon.org. We hope that by offering flexibility and expanding our outreach, we will be able to help bring high quality natural spaces and ecological connectivity to even more corners of our region. 



Tree Plantings along the Huzzah River

Restoring Riparian Corridors: Connecting Conservation to Private Landowners

Mike Currier

Board Member, Ozark Land Trust



"People don't care how much you know, until they know how much you care" (Theodore Roosevelt)

Ozark Land Trust (OLT) assists landowners achieve their conservation goals. As a land trust we provide technical advice and guidance on the tools and programs available that protect our valuable natural resources. Although OLT's primary tool is a conservation easement (a perpetual legal agreement that limits development and other uses to protect natural resources), we also provide cost-share in focus areas to implement conservation practices. On lands along the Huzzah River, practices have been developed through guidance of a local landowner committee, that support landowner management needs, and at the same time protect natural resources, wildlife/bird habitat and water quality. Through this planning process we listen to landowners in order to understand

their needs and issues and provide guidance in reaching their land-use goals while balancing the biological, habitat, and socioeconomic needs of the community.

Act locally to achieve regional conservation goals.

Land trusts like OLT play an important role in conserving natural areas, watersheds, stream corridors, green space, clean air and water on a regional scale. The synergy created through partnerships between private landowners, government and other non-governmental entities is essential to achieve healthy, resilient lands and waters that provide sustainable economic returns and durable conservation benefits.

Fishers and Farmers Partnership grants support landowners and conservation partners working together to protect soil and reduce

nutrient runoff to streams of the Upper Mississippi River Basin. The Huzzah, Courtois, and Shoal Creek Watersheds are showcased as one of the '10 Waters to Watch', nationwide. This recognition is for the conservation practices that have been implemented to provide healthier habitats for fish, wildlife, and people by the National Fish Partnership. The streams are within one of the Missouri Department of Conservation Priority Geographies, as landscapes and watersheds that exhibit high potential for conserving diverse habitats and their associated plants and animals. The local partnership was recently awarded another Fishers and Farmers grant that will be implemented in 2023–2024.

Funding from this and other sources have been used to stabilize streambanks, establish new and/or wider forested riparian buffers, fence cattle from streams and riparian buffers and provide alternative water sources for cattle that are excluded from streams. These practices improve and protect aquatic and forested riparian habitat and water quality of the Huzzah Creek and the Meramec River watersheds in Missouri. Occasional farm tours hosted by landowners and the landowner committee enable neighbors and other landowners to learn about the practices and the process of implementation. The duration of these cost-share agreements is 10–15 years. Although landowners are not obligated to maintain their management practice after the agreement expires, they want to keep them long after because of the benefits they see. Occasionally, conservation practices can lead to an inquiry about or even pursuit of permanent protection with a conservation easement. The goal is to affect social behavior so the 'ecological uplift' provided by stream corridor restoration is recognized and supported as a community-wide practice. It's a long-term conservation vision with durable benefits that transfers on-the-ground success to future generations.

Abigail Lambert, the River Stewardship Manager for The Ozark Land Trust, has been working in the Meramec River watershed for 20 years. Floodplains and forested riparian buffers are

two of the most important elements to a healthy watershed and robust wildlife habitat. These habitats also have the most fertile and productive soils to grow hay and cattle in the Ozarks. Landowners that depend on their land to make a living cannot convert their land to a bottomland hardwood forest, but many landowners in the Huzzah Watershed have been willing protect and establish riparian corridors with native trees shrubs, and grasses in exchange for cost-share on other practices. Since landowners make the daily land-use decisions for their properties to accomplish their needs (based on their values, beliefs, and attitudes) it is essential that we listen, learn, and have their guidance to finding balance between conservation and land use. Under this program, 200 conservation practices have been implemented along more than 15 miles of Huzzah Creek.

An alternative reliable clean water source is the key to stream riparian restoration. Under the streambank restoration agreements along the Huzzah, landowners essentially trade pasture land and stream access, for fencing, an alternative clean water source and a hardened stream crossing. A clean water source (other than stream water) has many benefits for the rancher — less disease, improved animal health, higher average daily weight gain for calves. Also, landowners get stream bank stabilization and easier access to pastures with hardened stream crossings, and the many ecological benefits provided by an intact riparian zone. On the ecological/ biodiversity side of the equation, a restored riparian corridor provides connectivity to larger forested habitats, retains sediment and organic debris that improves water quality, provides shade, and cooler water temperatures to support the development of aquatic organisms, all of which enhances fish and wildlife habitat.

What does this have to do with BIRDS?

Birds thrive in vegetated riparian zones. Studies comparing well-vegetated buffers to bare riparian stream banks show that flying insects are up to twice as abundant in vegetated buffers,

and aquatic invertebrates proliferate in these zones. Caterpillars and aquatic insect nymphs provide a rich nutrient source important for avian fitness and reproductive success. Stream corridors dominated by a diversity of native trees and shrubs produce far more caterpillar biomass than corridors dominated by non-native species like fescue or bush honeysuckle. And the nuts and berries produced from native trees, vines and shrubs are a superior energy source. Vegetated buffers provide food, cover, a migration corridor and breeding habitat for some species. In addition, birds help with the restoration process by distributing seed and serving as bio-indicators of riparian health.

The optimal stream buffer width depends on many factors including the proximity and connection to habitat blocks; each stream is unique. Research indicates that a buffer 10-30 meters wide protects the physical, chemical, and aquatic integrity of small streams. This includes nutrient removal, sediment trapping, erosion protection, water temperature reduction, and the development of macro invertebrate and fish communities. But studies also indicate a larger buffer, up to 150 meters wide, may be needed to support 90 percent of bird species. How do you mesh landowner needs with bird conservation?

The buffers established and widened with cost-share assistance by OLT and others range in width from 15 meters to more than 30 meters. This benefits birds, but not as much as we might like in the birding community. However, we can feel good about the species that benefit like Yellow Warblers, White-eyed Vireos, Belted Kingfishers as well as other birds including other neotropical migrants that may use these corridors on their way to larger blocks of habitat. As avian ecologists and land protection advocates, we can applaud landowner initiatives that benefit avifauna and a range of other species in re-vegetated stream corridors. 🐦

(Special thanks to Abigail Lambert, Ozark Land Trust, and Rob Pulliam, The Nature Conservancy)



Photo by Tom Tetzner, USFWS

Yellow Warbler



Photo by Jessica Bolser, USFWS

Belted Kingfisher



Photo by Robert H. Borton, USFWS

White-Eyed Vireo



Columbia Parks and Recreation conducted a prescribed fire on part of the Columbia Audubon Nature Sanctuary Grassland Restoration area in early 2023. The area has responded with many blooming composites and other wildflowers.

The Same Mission, Expanded

Bill Mees

Nature Area Manager, Columbia Audubon Society



The mission of Missouri Bird Conservation Initiative (MoBCI) is to conserve, restore, and protect bird populations. Pursuit of this mission has been accomplished primarily through MoBCI's call for on-the-ground bird habitat projects which are reviewed and prioritized for funding. Historically, this process has resulted in a focus on projects with the greatest habitat impact on large acreages. The result is a significant improvement in bird habitats across the state. However, the potential positive impact of smaller urban projects has been undervalued, leaving them underrepresented in MoBCI's funding priorities.

The goals to conserve, restore and protect bird populations haven't changed but a broader interpretation of conservation goals is evolving

for urban settings. A new MoBCI/Missouri Department of Conservation (MDC) Community Conservation initiative will select projects that help citizens enjoy improved environmental health in their communities and to experience and appreciate nature. Other benefits will be improvements in air quality, reduced flooding and mitigate summer temperatures. More than adding habitat, this broadened focus will help urban populations understand and value conservation.

The Community Conservation initiative does not deflect attention from birds but broadens the focus to include an appreciation for conservation's other tangential benefits.

In 2014, MoBCI funded a "small" project spearheaded by Columbia Audubon Society with support from the Columbia Parks and Recre-

ation Department and the Hawthorn Chapter of the Missouri Native Plant Society. The intent of the project was to transform an unused and overgrown fescue cattle pasture into something that more closely resembled a native prairie. Because it was situated in an urban neighborhood, it is an example of what an urban project can accomplish.

An early (pre-project) hike across the fescue field generated this comment from a participant: "This is a beautiful prairie." REALLY?? This person and many others don't have an understanding of what a native prairie is, much less its benefits to improve air quality, slow or prevent rainwater runoff, sequester carbon, or mitigate summer heat radiating from pavement and buildings.

The summer of 2023 marked the eighth growing season for this grassland restoration project. The benefits of this urban project compare

favorably with the large acreage projects usually recommended by MoBCI for funding.

Here's a list of some of the benefits:

- Adjacent neighbors, walkers, and bicyclists on the adjoining city trail appreciate the sights, sounds and the smells of the "prairie." It has become a destination for many who enjoy nature.
- Many visitors ask about the process of grassland restoration for their own backyard landscaping or for acreage owned outside the city.
- This project is located in Columbia's Hinkson Creek watershed which is a focus of the city's efforts to reduce flooding and improve water quality. This grassland/prairie project helps with both.
- Moberly Area Community College conducts student field trips to the area for its Conservation Biology and Plant Biology classes.
- The Xerces Society held a class at the property for volunteers participating in the Missouri Bumblebee Atlas project.

Before the grassland restoration project began, the area was a fescue pasture with invasive species like sericea, and lots of fescue. This area was target rich for ecosystem rehabilitation.



- Columbia Public Schools offers a field trip for all twelve hundred second-grade students to visit the property and learn about bird banding, raptors, and bird song communication.
- The project has created 15 acres of pollinator habitat. A myriad of native bees, butterflies, and insects benefit from the conversion of fescue to native vegetation. Birds enjoy the expanded “bug” buffet.
- The project is the focus for two trail-side interpretive signs. One informs visitors about grassland restoration, the other explains the benefits provided by pollinators.
- The success of the restoration project and the accompanying community feedback has encouraged the city’s Parks and Recreation Department to restore others of its properties and to enlist volunteers to remove invasive plant species along the city’s trail system.
- This past spring the city conducted a prescribed burn on its portion of the 15-acre project. Seeking approval for a prescribed fire in an urban setting was a “teachable moment” for both the adjoining

homeowners and city administrators. Both now understand how fire is a natural phenomenon that keeps a grassland healthy.

- More birds and species have been attracted to the area including Indigo Bunting, Chipping Sparrow, Common Yellowthroat, and American Woodcock.

This “small” project has had an outsized and for many, an unpredicted impact on this urban community. It offers an example of what MDC and MoBCI anticipate for future targeted Community Conservation projects.

The request for proposals for Community Conservation projects will be available on the MoBCI website (mobci.net). Regardless the number of acres, the benefits can be enormous for your community. MoBCI and its affiliates want to help you and your community participate in this broadened view of conservation. 🐝

Two years after the seeding of the grassland area, it erupted in blooms of bee balm, black-eyed Susan, and other wildflowers that pollinators and birds alike keyed into for food sources.



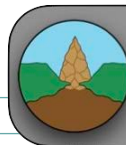


Blackbirds put on a spectacular show at the northern Boone County blackbird roost.

Going against the grain: Lessons from studying birds in big numbers

Joanna and Eric Reuter

Founders, Ozark Outsider, www.ozarkoutsider.com



Ozark Outsider

We have a contrarian streak in us. Though most birders get super-excited about rarities, we've chosen to dedicate considerable birding effort towards species that occur in big numbers in Missouri. We've analyzed eBird data, combed through reports on the MOBIRDS listserv, and delved into other written materials to gain insight into the timing and location of concentrations of various species. These efforts helped us discover a winter blackbird roost in northern Boone County featuring the nightly gathering of 2 million or more birds [1]¹, a mind-boggling spectacle that ranks among our most cherished birding experiences.

1. Reuter, J., and Reuter, E. 2020. Millions of blackbirds at a winter roost in *Miscanthus* fields, Boone County, Missouri. *The Bluebird*, v. 87, no. 3 (Sept), p. 169–182. https://mobirds.org/Bluebird/2020/September_2020.pdf.

Years spent as field trip leaders and newsletter editors for the Columbia Audubon Society motivated us to identify exciting birding opportunities that might appeal to people with a wide range of birding skill and knowledge. Seeing and marveling at birds is often a first step towards caring about and wanting to conserve birds in general, and birds in big numbers could represent an easier entry point than, say, hard-to-see warblers or skill-requiring shorebirds.

So far, so good. But reality being complicated, the deeper we delved, the more we encountered interesting, challenging, and occasionally uncomfortable issues and questions about some bird congregations: consider blackbird roosts. We love knowing of one we can go visit, but we can choose when to interact with it. But ask yourself honestly: Would you want millions of

blackbirds roosting in your backyard for months on end? And if you don't think the nightly noise would bother you, then what about the droppings? And the reported disease (histoplasmosis) potential? Not surprisingly, huge concentrations of blackbirds create conflict with humans, and as a result, there are provisions to control not just the non-native European Starlings that often co-mingle with blackbirds, but also native blackbird species².

Control measures aren't unique to blackbirds. The Light Goose Conservation Order (dating back to 1999) expanded hunting opportunities with the goal of better controlling the rapidly expanding Snow Goose population. As with blackbirds, Snow Geese can be magnificent to behold at peak concentrations, as when a million or more congregate at Loess Bluffs NWR. But also like blackbirds, what's fun to see is only part of the story: coastal marshes near overpopulated Snow Goose breeding grounds have experienced serious damage to vegetation.

In the 1930s, Trumpeter Swans had dwindled to a known national population of only 69, but captive breeding and reintroduction efforts have resulted in wildly successful population recovery.

2. **Missouri Department of Conservation.** Blackbird Control. Accessed July 1, 2023. <https://mdc.mo.gov/wildlife/nuisance-problem-species/blackbird-control>.

In Missouri, winter high counts have rocketed from near zero 30 years ago to well over 3000 in 2022. We enjoy watching regular winter flyovers of Trumpeter Swans at our property in central Missouri, something unheard of just a decade ago. However, the number of swans reported in Missouri over time suggests an exponential growth rate that can't continue long-term. Will Trumpeter Swans become a nuisance as well as a spectacle?

Bird concentrations can also shift geographically over time. In the 1960s, the American southeast was known for its winter blackbird roosts, but eBird records suggest large numbers of blackbirds are now being observed farther north and west, including in Illinois, Missouri, and Kansas³. Beginning around 1970, Snow Geese dramatically expanded their winter range from narrow coastal zones into broad swaths of the mid-continental interior. Trumpeter Swans have also broadly expanded their range, starting with reintroductions but continuing beyond.

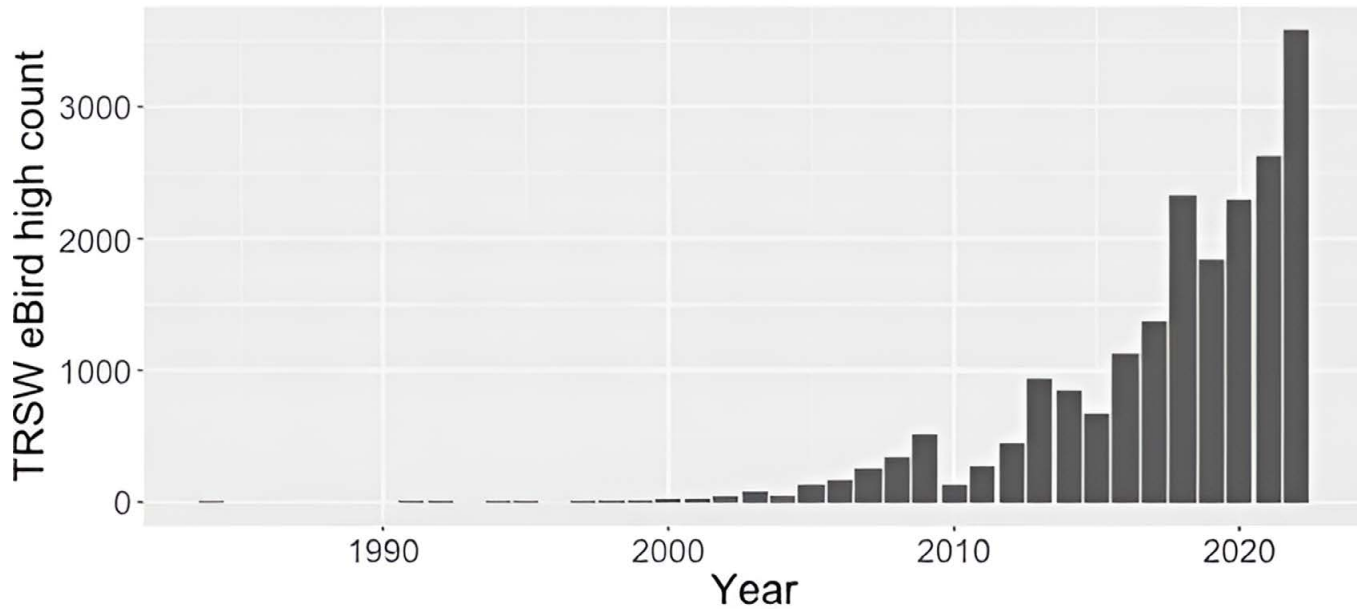
How did once-imperiled Trumpeter Swans become so successful, and spread so far? Why did Snow Goose populations swell to problem-

3. **Reuter, J., and Reuter, E.** 2020. Millions of blackbirds at a winter roost in Miscanthus fields, Boone County, Missouri. *The Bluebird*, v. 87, no. 3 (Sept), p. 169–182. https://mobirds.org/Bluebird/2020/September_2020.pdf.

Masses of Snow Geese now routinely feed in wintertime cornfields.



Missouri Trumpeter Swan High Count by Winter



Rapidly increasing winter high counts for Trumpeter Swans in Missouri are indicative of the broader population increase over time.

atic levels, and shift to overwintering inland? How can the area around one roost site support so many blackbirds through the winter, and what has drawn them to Missouri? Part of the explanation may relate to one thing these birds have in common: They can eat grain, especially (and increasingly) corn.

Missouri dedicates a lot of land to corn. Of the state's ~44.6 million acres, more than 20% were used in rotational corn/soy production in 2022 [3], and land-use data show that conversion of land to annual crops is ongoing. Additionally, over the last nine decades, Missouri agriculture has become more concentrated, with once-diversified farms now growing mostly corn and soy; more intensified, with a steep and steady rise in US corn yields per acre⁴; and more reliant on chemical fertilizers and pesticides that come with unintended environmental consequences. While intensive agriculture continues to expand, unplowed prairie and high-quality grasslands have become sparse. Is it any wonder that

corn-eaters are thriving and grassland species are dwindling?

Although we enjoy the spectacles presented by big concentrations of corn-eating birds, we've come to believe that these dynamics are enabled by a broader restructuring of bird habitats and diets through agricultural policy, with avian winners and losers. While State of the Birds⁵ reported a 34% decline in grassland birds since 1970, it also reported a 34% increase in dabbling/diving ducks and an astounding 1076% increase for geese and swans. Birds that can eat the abundant corn produced by industrial agriculture are clear beneficiaries. Meanwhile, many birds that are struggling rely on all-but-obliterated grasslands and insect populations suppressed by pesticide (over)use.

The standard rebuttal to such concerns is that we have to grow ever-more food. Setting aside the fact that ~35% of US corn goes to feeding

4. Nielsen, Robert L. Historical Corn Grain Yields in the U.S. Accessed July 1, 2023. <https://www.agry.purdue.edu/ext/corn/news/timeless/YieldTrends.html>

5. North American Bird Conservation Initiative. State of the Birds 2022. Accessed July 1, 2023. <https://www.stateofthebirds.org/2022>.

engines (via ethanol production [6]⁶) rather than people, is there a way we have our grasslands and eat them, too? Perhaps not directly, but we can eat mammals that are managed to benefit grasslands. For example, the National Audubon Society's Conservation Ranching program is a "market-based conservation approach [that] offers incentives for good grassland stewardship through a certification label on beef products.... [C]onsumers can contribute to grassland conservation efforts by selectively purchasing

beef from Audubon-certified farms and ranches." If enough people were to go against the grain and choose grass-fed meat from well-managed grasslands, it might undercut aspects of our birds in big numbers habit. But if it meant we could enjoy watching grassland birds without having to chase them as rarities, that would be okay by us. 🦋

Note: This article is adapted from a talk we gave for the Missouri River Bird Observatory's 2023 Winter Learning Series; [see the online recording](#)⁷ for a more complete discussion and graphical presentations of data.

6. **Alternative Fuels Data Center.** U.S. Corn Production and Portion Used for Fuel Ethanol. Accessed July 1, 2023. <https://afdc.energy.gov/data/10339>.

7. <https://www.youtube.com/watch?v=omK7d7U4G2g>

Waste corn inevitably ends up on the ground during harvest, fueling population and/or range expansion in birds that have adapted to eat it.





Known for their springtime call in Ozark woodlands, Whip-poor-will populations are in decline across their range.

Tracking the Populations of Whip-poor-wills in Missouri

Kristen Heath-Acre

Wildlife Ecologist, Ornithologist, Missouri Department of Conservation




The Eastern Whip-poor-will is an iconic migratory bird found in the eastern United States that is experiencing steep declines across its range. Breeding Bird Survey data show that Eastern Whip-poor-will abundance has declined roughly 2% a year in Missouri and across the Midwest since 1966. Despite its population declines, the Eastern Whip-poor-will is a relatively under-studied bird until recently. Researchers at the University of Illinois and Ohio State University have initiated more in-depth investigation into whip-poor-will ecology and the potential causes of whip-poor-will declines in the Midwest. Foci of this research include investigations into Eastern Whip-poor-will temporal niches, food-source availability, and monitoring full life-cycle habitat use which includes identifying migratory pathways, and breeding and winter

habitat connectivity. Plans to continue these studies in Missouri are underway.

A primary focus of whip-poor-will research is food availability. Researchers at the University of Illinois found a positive association with large moth abundance and the abundance of whip-poor-wills in central Illinois. A staggering decline in insects globally is a major concern for whip-poor-will conservation, and pesticides likely play a large role in these declines. Several species of moth found in the fecal samples of whip-poor-wills in Illinois are considered agricultural pests and are targets of neonicotinoid insecticides. Neonicotinoids are pervasive in soils, soluble in water, and have been found to negatively impact bird populations. They are banned in the European Union but remain the most popular pesticide in the United States.

Whip-poor-will temporal niches may compound the impact of steep declines in prey availability. Researchers found that whip-poor-will activity is strongly associated with the lunar cycle, where increased activity is seen during full moons and decreased activity is seen during new moons. This is likely because whip-poor-wills use their eyesight to forage for moths and need some light by which to capture prey. This narrow window of forage time when whip-poor-wills gorge on moths, combined with alarming declines in moth abundance, may be a compounding factor in whip-poor-will declines.

Migratory connectivity is another piece of the Eastern Whip-poor-will conservation puzzle. Researchers at the Ohio State University used archival GPS tags to track Eastern Whip-poor-wills from various sites across the Midwest during the breeding season to their wintering grounds. They found that whip-poor-wills captured across a large area of the Midwest migrated through a narrow corridor from southern Missouri to eastern Texas, circumvented the Gulf of Mexico entirely, and wintered in closed-canopy forest in southern Mexico and Central America. High rates of deforestation on winter grounds and light pollution and building collisions along their migratory pathway are potential contributing factors to population declines.

It's not all bad news. Certain areas in Missouri remain a stronghold for breeding Eastern Whip-poor-wills and researchers want to know why. Investigations into the occupancy and survival of whip-poor-wills in the Missouri Ozark region, moth abundance, and these correlations with habitat management may help shed light on ways to maintain or increase whip-poor-will abundance in Missouri and elsewhere. Currently, a collaboration on Missouri Eastern Whip-poor-will research is newly underway between the Missouri Department of Conservation, U. S. Fish and Wildlife, U. S. Forest Service, and the University of Missouri. 

2023 MoBCI Conference has Charter Sponsors

For the first time in its decades long and storied history of superb annual conferences, the 2023 MoBCI Conference scheduled for August 24–25, 2023 will have formal sponsors. The MoBCI Steering Committee thanks Ameren Missouri, the Missouri Department of Conservation (MDC), and the Missouri Conservation Heritage Foundation (MCHF) for this sponsorship support. All three organizations are longstanding MoBCI partners, and their combined support is especially meaningful during times of rising costs on all fronts. The impact of the support enables the conference to maintain its high quality and allows registration costs to be kept as low as possible.

Thank you Ameren Missouri, MDC & MCHF!





Original artwork and text by Zita Robertson for this wayside interpretive panel at Wakonda State Park as a project for her fulfillment of the Young Birder Award. Funding for the panel was provided by the Missouri Birding Society.

Share What You Know

Zita Robertson

American Birding Association's Young Birder of the Year



When Odysseus left Ithaca to fight in the Trojan War, he left his infant son, Telemachus, in the charge of a friend.

His name was Mentor, and he was responsible for Telemachus's education. Since then, Mentor's name has become a common noun in many languages, meaning 'an experienced and trusted adviser.' I have only been birding for six or seven years, but such advisers have played a significant role in my birding adventures.

I was nine years old when I began to pay more attention to the birds around our property here in rural Northeast Missouri, and it was also around this time that I met my first mentor, John Bursewicz. He was a retired biology professor

from the local college, and he took it upon himself to teach me about birds.

I remember studying taxonomy with him for several months. Our sessions always began with reviewing the homework he gave me the week before: identify a bird on a picture, study the worksheets on the respiratory system of birds, read a couple chapters of *The Life of the Robin* by David Lack, or understand the succession of plant communities along the sandy shores of Lake Michigan. These were all interesting topics I'm glad I learned from him, because I later realized that these have all contributed to learning what originally interested me — bird identification. It also opened

doors to many other areas I didn't even know I would be interested in: ecology, anatomy for bird art, life history and behavior.

On one occasion, he quizzed me about the waterfowl orders of Eastern North America. I knew he was ready to move onto the next section in the field guide, but before we started with the new material, I really wanted to tell him what we had seen that week at the nearby Wakonda State Park. It was January, and we'd spotted a goose on Agate Lake, frozen into the ice. I asked Mr. B. what would then happen to this goose once it was released from the ice. He started by telling me about Lake Baikal in Russia. He took out a piece of paper, and began to explain how the nutrient cycle works in such large, isolated bodies of water. He talked about crustaceans and fish and algae; how the persistent wind from one direction mixes the water, stirring up things from the bed; the role that ice plays in keeping this cycle running... And on a smaller scale, he said, this is what happens in Agate Lake at Wakonda.

In our hour-long session that day, we never opened up the field guide to learn about the next orders. He saw that nutrient cycles was what could keep my interest, and that was what I would learn willingly. I still remember the details he told me because he presented the right information at the right time.

I think this is a wonderful mentor-mentee relationship. By meeting with me regularly and knowing me in person, Mr. B. was able to influence all aspects of my birding — what I do, what I know, and how I go about learning more. Telemachus and Mentor may have had a similar relationship, but I think mentors come in all shapes and sizes.

Neil Hayward, for example, has also been an important mentor in my life, even though we have never met. He lives over a thousand miles away in Cambridge, Massachusetts, where he serves as President of the Brookline Bird Club and teaches birding. He is also a writer and editor for the journal *Bird Observer*, and, most importantly

for me, a mentor for the writing module in the American Birding Association's Young Birder of the Year Mentoring Program (YBY).

As part of the annual YBY program, young birders from the US and beyond send their writing in to the ABA, six to ten pages each. The mentors then review all the submissions and give detailed feedback. Every year I participated in the YBY, it was really helpful to read Mr. Hayward's response to my writing. He told me what I had done right to tie the different parts of the story together, how I was one of the few who used dialog in short stories, and quoted a couple of interesting parts that showed how my voice stays the same in both non-fiction and fiction pieces. He was very supportive, but also pointed out the mistakes he found: generally grammar mistakes, but he also explained how an ending seemed too abrupt in one essay, but in a different short story it was good because the lack of a definite conclusion left the reader

Common Yellowthroat illustration by Zita Robertson





Dickcissel illustration by Zita Robertson

wondering what would happen next. He said that my first non-fiction would probably be boring to someone who is not interested in birds, but I should not give up on essays, because I just need to incorporate more stories that illustrate my point: I should show, not tell.

With all the attention he gave to my writing, I felt that my work had value. He motivated me to submit pieces for the writing module year after year. I learn a lot from his advice, and continue to write both fiction and non-fiction.

While Mr. B. was able to teach me entire systems along with a great deal of detail depending on where my interests led us from week to week, Mr. Hayward only sees a small portion of my work each year and he only has one opportunity to give

feedback on my submissions. They both helped me improve my work by giving me personal feedback — but even this personal feedback is not always necessary for someone to become an important mentor in a young person's life.

In 2022, I was honored to be invited by Edge Wade, president of the Missouri Birding Society and an amazing birder and mentor herself, to attend the MBS Fall meeting. My family and I spent the weekend birding near Columbia, Missouri, and I learned a lot from the people on the field trips and from the evening presenters.

Julie Zickefoose, after a full day of birding with all of us, talked to us on Saturday evening. She is a nature artist and writer from the Appalachian foothills of Ohio, and she was going to share stories about her newest book, *Saving Jemima*. However, based on what she felt the group was interested in, she decided to focus on a previous work of hers, *Baby Birds*, instead. She shared with us information about her way of birding, about why and how she does what she does. It was a fascinating hour we spent with her, because just like Mr. B., she read her audience well.

From her presentation, it was obvious that she loved writing, illustrating, and sharing her passion for all of it. She inspired me to share my passion, too. Since I met her, I found the courage to lead two series of weekly bird walks at Wakonda State Park and I have connected with even more birders.

As you can see, the different mentors in my life teach, give feedback, and inspire. I think there are as many kinds of mentors as there are people who know something and are willing to share their knowledge. Mr. B, Mr. Hayward, Ms. Zickefoose, the other mentors at the ABA, and countless other adults have helped me learn about birds and become a better birder, so even if you don't have time to be a typical mentor like Telemachus' Mentor, I encourage you to reach out to young people and share your unique set of knowledge. Mentors make a difference. 🐦

Restoration for Education: Native grassland restoration on the Boone County Nature School

Mischa Schultz

University of Missouri Wildlife and Fisheries Graduate Student Organization



The goal of this project was to restore a 2–3-acre plot from fescue to native prairie species. The YHEP grant provided the funds to purchase 6 acres of custom native seed mix including Little Bluestem and Prairie Dropseed. The native seeds were purchased from Heartland Seed of Missouri. The final application of herbicide on the plot was completed in the fall of 2021, followed by the broadcasting of prairie plant seeds by Missouri Department of Conservation (MDC). In January of 2022, graduate students from the University of Missouri (MU) and students from Rock Bridge High School (RBHS) teamed up to broadcast the native grass seed supplied from funding by the YHEP grant. Graduate students assisted students from RBHS with bird surveys and plant identification. The plot that was restored is still in the first stages of restoration as native grasses can take up to two years to fully establish. The plot will continue to grow and be monitored by the graduate students at MU, as well as enjoyed by the students who visit the Boone County Nature School.




Photo by Mischa Schultz

Rock Bridge High School students help spread the seed for the prairie restoration project at the Boone County Nature School on a snowy day in 2022.



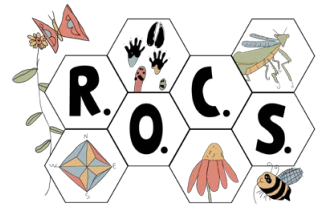
Bill Mees of Columbia Audubon Society walks through the nearly completed Council House that will serve as an outdoor teaching area that Columbia Audubon helped fund. This wooden structure was modeled after a similar shelter in the Great Smokies National Park.

The Columbia Audubon Society donated significant funding for the construction of the Boone County Nature School Council House, an ADA outdoor shelter complete with a fire pit that overlooks a small pond. On June 13, Columbia Audubon members including Bill Mees, Nature Areas Committee Member, visited the construction site to track the progress of construction. This beautifully constructed shelter has stadium seating, is wheelchair accessible, and is located in a lovely setting next to the pond which has had the shorelines cleared of invasive bush honeysuckle. The MoBCI Foundation and Columbia Audubon Society alike are pleased to serve as original donors to the Boone County Nature School that will serve all 5th grade students in Boone County. To learn more about the Boone County Nature School, visit their website at boonecountynatureschool.com. 

YHEP Grant helps with Bush Honeysuckle Removal in Rolla

Lara Burns

Rolla Outdoor Collaborative School




ROLLA OUTDOOR COLLABORATIVE SCHOOL

The Rolla Outdoor Collaborative School (ROCS), a recent recipient of the Jerry Wade Youth Education Grant, is working hard to make their classroom a native habitat. Students and adults alike have been using Pullerbear tools purchased with grant funds to remove Privet and Asian Bittersweet around their classroom, located within the Ozark Rivers Audubon Nature Center in Rolla, Missouri. The cleared area will be planted with native species to encourage birds, butterflies, and other native fauna. So far the school has planted wahoo bushes, button bush, and a few wildflower prairie species.

“Our school co-hosts the annual Fall Nature Festival that will take place here in the Ozark Rivers Nature Center on September 9th. We will have several native plant vendors at the festival and will be able to pick up many more native species with our additional grant funds to plant around our classroom in the fall,” says Gina Root, Director of ROCS.

Thanks to these grant funds, the students of ROCS have the opportunity to learn more about invasive species, both their impact on the environment as well as responsible removal, and the identification and benefits of native plants.

ROCS is a non-profit collaborative preschool, homeschool enrichment and afterschool program that serves approximately 80 students each year. With a mission of building resilience and independence in children, the program is completely outdoors and takes place in the 70 acre Ozark Rivers Audubon Trails and Nature Center.

To learn more about ROCS or the Ozark Rivers Audubon Nature Center, visit www.RollaOutdoorSchool.org or contact Gina Root at director@rollaoutdoorschool.org. 



Photos by Gina Root

Parents of ROCS using the Pullerbear tools to remove invasive privet bush.



The Pullerbear tools allow easy removal so even the youngest ROCS students can use it.

MoBCI Member Organizations

As of July 2023, the following 77 organizations have signed a Memorandum of Agreement to participate in the Missouri Bird Conservation Initiative:

Academy of Science of St. Louis
American Bird Conservancy/
Central Hardwoods Joint Venture
Audubon Center at Riverlands
Audubon Society:
• Chariton Valley Chapter
• Columbia Chapter
• Grand River Chapter
• Greater Kansas City Chapter,
Burroughs Audubon Society
• Greater Ozarks Chapter
• Midland Empire Chapter
• River Bluffs Chapter
• St. Louis Chapter
Avian Conservation Alliance
Bellefontaine Cemetery & Arboretum
City of Des Peres Parks & Recreation Department
Clay County Dept. of Parks,
Recreation & Historic Sites
Coldwater Outing and Game Preserve
Conservation Federation of Missouri
Ducks Unlimited
Eleven Point River Conservancy
Forest Park Forever
Forrest Keeling Nursery
Great Rivers Habitat Alliance
Greenbelt Land Trust of Mid-Missouri
Kansas City Wildlands/Bridging The Gap
L-A-D Foundation
LaBarque Watershed Stream Team Association
Litzsinger Road Ecology Center
Mark Twain National Forest, USDA Forest Service
Massasauga Flats, LLC
Missouri Army National Guard
Missouri Bird Conservation Foundation
Missouri Birding Society
Missouri Conservation Heritage Foundation
Missouri Department of Conservation
Missouri Department of Natural Resources,
Division of State Parks

Missouri Department of Transportation
Missouri Falconers Association
Missouri Master Naturalists:
• Boone's Lick Chapter
• Great Rivers Chapter
• Hi Lonesome Chapter
• Loess Bluffs Chapter
• Osage Plains Chapter
• Osage Trails Chapter
• Springfield Plateau Chapter
Missouri Native Plant Society:
• Hawthorn Chapter
• Osage Plains Chapter
Missouri Native Seed Association
Missouri Park and Recreation Association
Missouri Prairie Foundation
Missouri Quail & Upland Wildlife Federation
• Grouse Chapter
Missouri River Bird Observatory
Mussel Fork Legacy Marsh LLC
National Wild Turkey Federation, MO Chapter
North American Grouse Partnership, MO Chapter
Ozark Land Trust
Ozark National Scenic Riverways
Pheasants Forever
Platte Land Trust
Quail and Upland Wildlife Federation Inc.
Quail Forever
Sierra Club, Ozark Chapter
The Nature Conservancy, Missouri Field Office
Truman State University
U.S. Fish & Wildlife Service:
• Big Muddy National Fish & Wildlife Refuge
• Ecological Services
• Great River/Clarence Cannon National
Fish & Wildlife Refuge
• Loess Bluffs National Fish & Wildlife Refuge
• Mingo National Fish & Wildlife Refuge
• Missouri Private Lands Office
• Swan Lake National Fish & Wildlife Refuge
University of Missouri-Columbia
Watershed Institute, Inc
and The Watershed Land Trust
Webster Groves Nature Study Society
Wild Birds for the 21st Century
Wild Bird Rehabilitation Inc.
Wildcat Glades Conservation & Nature Center
Wings Over Weston
World Bird Sanctuary

To find out more about the Missouri Bird Conservation Initiative and how you can participate as a member organization, visit our website:

www.mobci.net 



Annual Conference • August 24–25, 2023

Columbia Country Club, 2210 Country Club Dr., Columbia, Missouri

Online registration and schedule at <http://www.Mobci.Net/registration>

CONFERENCE THEME

“One Health Concept Of Community Conservation”

SPONSORS



SCHEDULE

	THURSDAY, AUGUST 24
5:00 pm	Registration
6:00 pm–7:30 pm	Social time, with heavy hors d'oeuvres
7:30 pm–8:00 pm	Welcoming remarks/housekeeping (John Burk, MoBCI Steering Committee) Open Silent Auction
8:00 pm–9:00 pm	Keynote speaker Jason Sumners (Assistant Deputy Director with the Missouri Department of Conservation) “One Health” concept of conservation. The focus is effectively communicating the importance of ecological connectivity to the health of everything and everyone to the masses in urban areas that represent a majority by the numbers but have also lost this perspective.
9:00 pm–10:00 pm	Continue social time

	FRIDAY, AUGUST 25
7:15 am	Coffee and tea for conference registrants
8:00 am–9:00 am	Welcome and highlights of the year Allison Vaughn (Chair, MoBCI Steering Committee) General Assembly Meeting
9:00 am–10:15 am	Community Conservation Background and examples. Three, 20-minute presentations on the concept of community conservation and examples: <ul style="list-style-type: none"> • <i>A presentation outlining the new community conservation tiers.</i> Jason Jensen (Missouri Department of Conservation) • <i>Light pollution impacts to bird populations and the Dark Sky Initiative.</i> Vayujeet Gokhale (Professor of Physics at Truman State University) • <i>Reducing Powerline and Window Collisions of Raptors in Urban Areas.</i> Steve Heying (Missouri Falconers Association)
10:15 am–10:30 am	Project poster session and break
10:30 am–11:30 am	3, 20-Minute presentations providing additional examples of community conservation: <ul style="list-style-type: none"> • <i>Green infrastructure in urban development planning.</i> Ronda Burnett (Missouri Department of Conservation Community Conservation Planner) • <i>Addressing deer population problems that will arise in urban green areas that impact habitat quality.</i> John George (MDC Central Region Resource Management Supervisor) • <i>Prescribed Burning Associations and community coordination of prescribed burning.</i> Wes Buchheit (Missouri Prescribed Fire Coordinating Wildlife Biologist with Pheasants and Quail Forever)
11:30 am–12:30 pm	Lunch with Presentation <ul style="list-style-type: none"> • <i>Update on Wetlands Summit.</i> Tyler Schwartz (Director of CFM)
12:30 pm– 2:00 pm	Breakout sessions to brainstorm on calls to action where attendees will rotate amongst the tables. Sessions will be 20 minutes and each session will be provided 4 times. <ul style="list-style-type: none"> • <i>Farmers & Fields.</i> Emily Beck (Natural Resource Conservation Specialist, MFA) • <i>Farm Bill delivery in Missouri.</i> Nate Goodrich (ASTC Partnerships, NRCS), and Doug Helmers (Retired USFWS) • <i>Discussion of Youth in the Outdoors Outreach.</i> Laura Semken (Missouri River Bird Observatory Education Coordinator) • <i>Discussion on community sustainability.</i> Jason Jenson (MDC)
2:00 pm–3:00 pm	Table Topic leaders summarize what was discussed in the respective sessions.
3:00 pm–3:30 pm	Closing comments <ul style="list-style-type: none"> • <i>How WE can make a difference for birds.</i> Allison Vaughn (MoBCI Chair)