

THE RECTRIX

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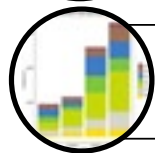
A Seasonal Newsletter of the Missouri River Bird Observatory



Our Mission



To contribute to the conservation of birds and all wildlife through scientific research, education and outreach, and conservation policy advocacy.



Science

To gather information about avian communities and habitat use that will assist state, federal, and private natural resource managers in their efforts to implement conservation programs.



Education

To provide opportunities for people of all ages to learn about species and their habitats.



Advocacy

To advocate for sound, science-based conservation policies that benefit birds, other wildlife and environmental quality.

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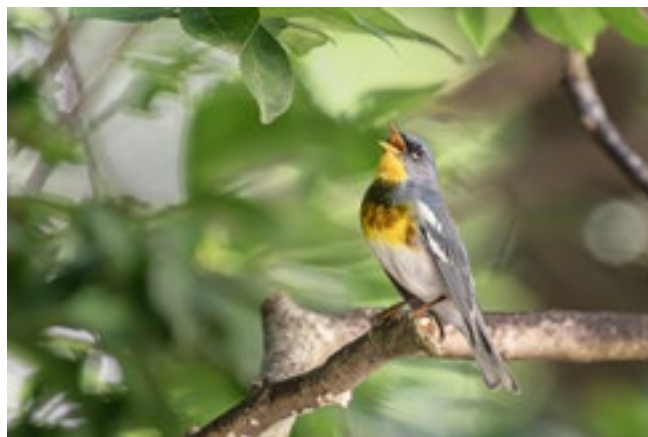
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Melina Matheney
Central Region Education
Coordinator

MRBO's Core Values

- Robust data and scientific integrity
- Time-and-cost-efficiency and use of technological innovations
- Fostering the formation of partnerships
- Embracing and encouraging equity, diversity and inclusion
- Empowering and providing opportunities for young people

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On the cover: Northern Parula by Mary Moore



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Among The Giants by Hal Moran



Letter from the MRBO Directors

Dear MRBO supporters and friends,

Welcome to the summer issue of *The Rectrix*! Much has been happening at MRBO and we hope you will enjoy reading about it all. The Grassland Bird Survey project is currently in full swing, staffed by a full-time crew of four plus two part-time technicians who are returning to MRBO from previous field seasons. This survey crew is covering 78 sites throughout Missouri and one ranch in Arkansas in MRBO's 13th year of monitoring grassland-obligate bird populations. We are thankful for the project management skills of Matt Longabaugh, who is this year's Crew Leader.



We are also fortunate to have welcomed a stellar addition to the MRBO staff – Central Region Education Coordinator Melina Matheney. You can meet her on page 10. Melina and Environmental Educator Isabelle Guthrey are currently operating the Young Explorers Camp, our immersive nature day camp in Arrow Rock. Meanwhile, staff members Tessa Poolman, Kaylee Woelfel, and Marlee Malmborg are conducting outreach programs all over the state, engaging hundreds of people in outdoor activities, bird-friendly actions, and species conservation. At the time of this writing in mid-June, MRBO has conducted 97 education programs throughout the state in 2025.

We MRBO directors have also been engaged in the advocacy pillar of MRBO's mission. There is a lot of work to be done advocating for positive conservation policy these days! You can read about this on pages 18 to 23.

This summer marks MRBO's 15th year as an organization! We hope everyone will join us in Arrow Rock for the Missouri River Bird Observatory 15th Bird-Day.

Sincerely,
Dana & Ethan



SAVE THE DATE! Celebrate MRBO's 15th Bird-day with us

Saturday August 9th, 2025
5:30 – 9:30ish
@ the MRBO BirdHouse
406 Main Street, Arrow Rock MO

Food, drinks, and live folk music!

[RSVP here - https://bit.ly/MRBOs15th](https://bit.ly/MRBOs15th)



MRBO at Recent Events



Tessa at the Kansas City proclamation ceremony recognizing International Dark Sky Week



Dana and Ethan with Ranger Rick at the National Wildlife Federation annual meeting



Tessa hosting parents for the first EPA Kansas City Conservation Cafe



Melina, Marlee, Kaylee, and Tessa represented MRBO at the annual Conservation Day at the Capitol, hosted by the Conservation Federation of Missouri



Unbound Book Festival: "The Thing With Feathers" panel with author Lindsey Drager, photographer Noppadol Paothong, and poet Christopher Citro

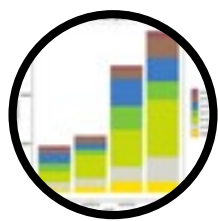


Bonne Femme Water Festival at Rock Bridge State Park, with City of Columbia Recycling Ambassador Brenda Peculis, Dana, and former MRBO Board Chair Diane Benedetti



Ethan speaking about bird song at the Daniel Boone Regional Library in Columbia

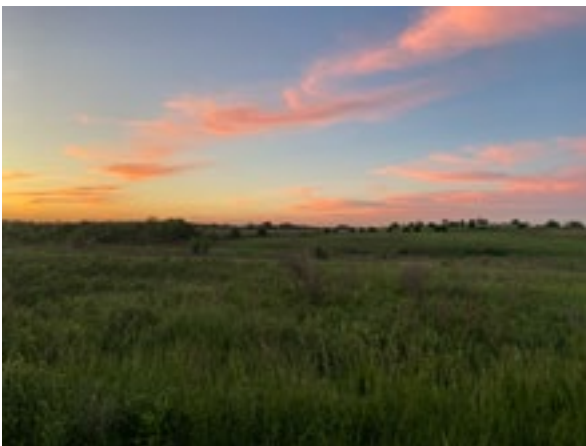




Science

To contribute to conservation by gathering information about avian communities and habitat use that will assist state, federal, and private natural resource managers in their efforts to implement conservation programs.

Tracking Missouri's Grassland Birds: 2025 Survey Update



Shelton Memorial Conservation Area

Since 2012, the Missouri River Bird Observatory (MRBO) has been working to monitor grassland birds across Missouri and surrounding states. These birds - such as Meadowlarks, Bobolinks, and Grasshopper Sparrows - are in trouble. Across North America, grassland bird populations have declined by more than 700 million since 1970. Missouri's prairies, both public and private, provide vital habitat and refuge in increasingly fragmented landscapes.

Each spring and early summer, MRBO biologists and field technicians head out at sunrise to walk hundreds of miles of grassland, recording every bird they see or hear. This year marks our 13th consecutive season of surveys. Since early May, **the crew has already surveyed 63 sites, covered more than 150 miles of transect, and recorded over 22,000 individual birds from 120 different species!**

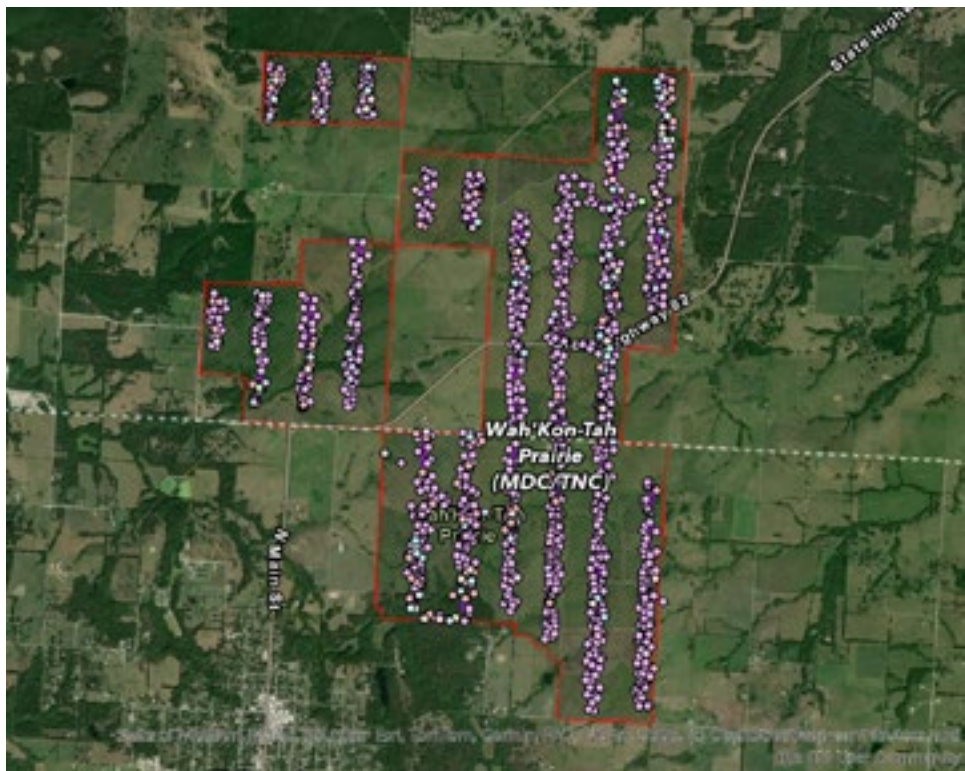
The data collected from these surveys help us estimate bird population densities and evaluate how habitat management efforts are working. MRBO works with a wide variety of partners, including the Missouri Department of Conservation (MDC), The Nature Conservancy, the Missouri Prairie Foundation, and landowners participating in programs like the Audubon Society's Audubon Ranching Program, the Native Forage Initiative and the Regional Conservation Partnership Program.

MDC's public prairies, alongside managed private lands, are critical strongholds for grassland birds. Monitoring efforts like these allow us to track trends over time, assess habitat quality, and inform conservation decisions across Missouri's priority grassland regions.

Want to explore the data? Check out MRBO's interactive dashboards at mrbo.maps.arcgis.com for maps, charts, and more on Missouri's bird-friendly grasslands.



Good Morning Sunshine by Carol Weston



Bird detections on transects at Wah'Kon-Tah Prairie





Prairie State Park is managed using fire and grazing by bison

A (very small!) prairie ringneck snake

Meet the Grassland Bird Survey Crew!



Melinda Weeks

Melinda grew up in a rural town in northwest Missouri and earned her B.S. in General Biology from Northwest Missouri State University. She has always felt most at home in the outdoors, enjoying activities such as hunting, fishing, horseback riding, hiking, and especially birdwatching. Melinda moved to the Ozarks in 2019, where she met her husband, David. Together, they spend their free time road-tripping across the country in search of new and exciting bird species. Most of her career has focused on nature education, and she is passionate about engaging people with the outdoors, fostering appreciation for the natural world, and sharing new knowledge. This is her first field season with MRBO, and she is thrilled to merge her greatest passions: adventure, education, and birds.

Jacob Yoder



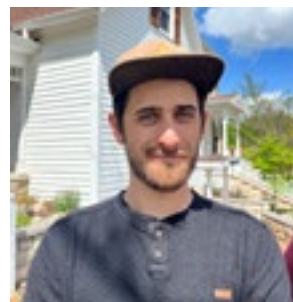
Jacob grew up in Wisconsin, where he developed a deep love for the outdoors through fishing, canoeing, camping, and hiking. He began avidly birdwatching about six years ago, and birds have since become his primary interest and favorite way to connect with nature. Jacob earned a Bachelor's degree in Conservation Biology from the University of Wisconsin–Madison, where he also studied evolutionary biology, ecology, and paleontology. Prior to joining the Missouri River Bird Observatory, he worked at Badlands National Park in South Dakota and within the Wisconsin State Parks system.



Matt Longabaugh, Crew Leader

Matt hails from small town Sabetha, Kansas. Influenced by field work in Latin America (and a long-standing fascination with tropical biology in general), Matt attended the University of Kansas where he double-majored in ecology & evolutionary biology and Spanish. Matt's passion for birds and birdwatching eventually led him to some of his other favorite hobbies: photography, travel, and most recently, wildlife audio recording. He has been a part of MRBO's field survey crew since 2019, working on wetlands and prairies across Kansas and Missouri.

David Weeks



David is a native of the Ozark Mountains, born and raised in northern Arkansas before relocating to the Branson area in 2013. A lifelong lover of the outdoors, David is fascinated by the natural world in all its forms—both plant and animal. After meeting his wife, Melinda, in 2019, he began traveling more extensively, deepening his love for adventure and discovery. David enjoys photographing nature, collecting plant samples, and exploring other cultures—especially through their food. An avid adventurer, he looks forward to the many new places, birds, wildflowers, and people he has yet to encounter.



2025 Kestrel Project: A Season of Partnership, Education, and Gratitude

This year's American Kestrel Nest Box Monitoring Project was a true testament to the power of collaboration, community engagement, and conservation in action. With 26 nest boxes installed across Missouri and Illinois, we were thrilled to have five active American Kestrel nests and two Eastern Bluebird nests. While the numbers are exciting, it's the people behind the project—the dedicated landlords and landowners—who made this season especially meaningful.

At the heart of this project is a simple but powerful idea: conservation happens best when it happens together. Our participating landlords and landowners didn't just offer space on their properties for nest boxes—they became active stewards of kestrel conservation. Each landowner played a crucial role in monitoring their boxes, reporting activity, and staying in touch with our team throughout the season.

Thanks to the generous support and partnership of the Missouri Department of Conservation, we were able to band all five active kestrel nests, totaling **22 chicks—15 females and 7 males**. What made these moments so impactful was that everyone involved in the project had the opportunity to participate in the banding process. Several got to see up close the very reason we do this work: to protect, study, and celebrate one of Missouri's most charismatic raptors.

Through these personal experiences, we were able to educate our partners about the importance of providing safe nesting sites for American Kestrels, a species whose populations have been declining across much of their range. Hanging and maintaining nest boxes isn't just a conservation act—it's a commitment to protecting a piece of our shared natural heritage.

We are incredibly grateful for the time, care, and curiosity our landowners brought to this project. Their enthusiasm for learning and their willingness to support kestrel conservation inspires us and strengthens MRBO's mission.



To each of our landlords, landowners and to the MDC: thank you. Your support allows us to do more than collect data—it allows us to create lasting conservation impact, rooted in community and shared purpose.

If you want more information on joining in on the project email Marlee at marlee.malmborg@mrbo.org. If you would like to support the project you can go to our website here: <https://mrbo.org/MRBO/Support.aspx>.



Nestbox landlord Dee Gullickson





MRBO's 2025 Kestrel Project partners gather for a special moment with one of this year's fledglings! Pictured (clockwise from top left) are box landlords Shaun Schmitz, alongside MDC's Chris Cain and Reid Viegut and MRBO's Marlee Malmborg; Marge Lumpe; and Norm and Beth Stucky. Thanks to the dedication of these landowners and the support of the Missouri Department of Conservation, all five active nests were successfully monitored and banded this season.





Education

To contribute to conservation by providing opportunities for Missourians of all ages to spend more time outdoors and to learn about species and habitat conservation.

Meet Central Region Education Coordinator, Melina Matheney!



Melina grew up in a small rural town in Northeast Missouri. Raised by two environmentally passionate parents, her childhood was enriched by outdoor activities and she was encouraged to explore all of Missouri's natural wonders.

Her undergraduate years proved to be very formative as her passion for plants, education, and travel took hold. During the spring and fall she often found classes or work that taught her about plant life while spending summers leading middle school camps. Her interest grew far beyond the Midwest when she studied abroad in Australia. Soon after, she completed her degree in Environmental Studies at Truman State University in Kirksville, MO. Eager to explore new landscapes, she packed her bags and landed in southwest Utah where she worked in a conservation corps restoring trails and habitats. As a midwestern girl in the desert she felt an ever-growing desire to understand the natural world. Driven by her fascination of western flora, she once again packed her bags and moved to California for the next four years where her passion for botanical life flourished. She spent her first summer working for the US National Forest Service in a rural town in Northern California. This is where she learned how to navigate rugged terrain and find stories in the landscapes. The next two years were devoted to the Santa Barbara Botanic Garden as a rare plant technician. As she was hunched over a newly discovered population of rare plants, there was no moment more defining than sweating under a hot California sun and thinking "Is this work? I could do this forever." Her fourth summer she decided to rejoin the National Forest Service in northern California where

she reconnected with her Californian ecological "roots". Through each position she always found her best moments were the ones when she could share her joy and curiosity with others.

In her role with MRBO she hopes to foster enthusiasm and connection between Missourians and the beautiful natural world around them. When she is not delving into plant life you could find her seeking adventure through hiking, reading, cooking up new recipes, floating down a river, flying a kite on a windy day, or enthusiastically dancing. She would love to facilitate the fun through outdoor activities with you!

Central Region Education Update

Nestled along the scenic Missouri River, the historic town of Arrow Rock became a vibrant outdoor classroom for over 875 students and 126 adults during the Arrow Rock Natural History Programs. In the months of April and May, Isabelle Guthrey led the nature walk section while guiding these curious minds through discussion of Arrow Rock's natural resources of chert, salt, and the water from the Big Spring. Each resource topic brought up questions of their importance to humans and other creatures in the environment. Isabelle also led engaging activities like a bird scavenger hunt to increase interest in Missouri bird watching and bird migration patterns. These programs provide an opportunity for schools around mid-Missouri to come out and make historical, cultural, and natural connections. They are conducted in partnership with the Friends of Arrow Rock and Missouri State Parks.

This year is the 9th annual Young Explorers Camp (YEC) held for two, week-long sessions for young explorers ages 8-11 years old.

During the first week of YEC, every day was focused on shared experiences, team building, and igniting curiosity through natural play and exploration. The nine campers explored concepts of animal and plant adaptations like camouflage and mechanics of movement. They crafted bird feeders, created sun prints using plants, made clay creations, and built their own boat from natural materials. Campers also got to experience cooking and eating foraged nettle soup over a campfire.

Using Big Muddy National Wildlife Refuge and Arrow Rock State Historic Sites, we experienced many wildlife interactions in the forest, creek, and prairie ecosystems. There was an overwhelming consensus on the highlight of camp



being our water day which included fishing and creek exploration! Campers explored around the edge of the lake as well as catching macroinvertebrates in the creek. They even had the chance to get a little muddy through discovery of the natural clay deposits. Catching insects in the open fields came in a close second as the excitement of chasing butterflies took hold.

The second week of camp is taking place at the time of this writing in mid-June, and our Junior Naturalist camp for kids ages 11-14 will be held in July with more fun-filled activities and place-based learning. These camps wouldn't be possible without the support from Arrow Rock State Park staff, Friends of Arrow Rock, Missouri Department of Conservation, and the many presenters that were willing to come out and share their expertise.

Also, this spring MRBO reached more than 769 people across five different festivals and tabling events.

Future educational programs will be taking place at various libraries across mid-Missouri. Each program is individually crafted and meant to increase awareness of bird species and their conservation covering topics of migration, pollinator habitat landscaping, and the Seven Simple Actions to Help Birds.

If your organization or group is interested in educational programs, please reach out to education@mrbo.org.



Campers catching frogs....



...playing in the clay bottom of the Big Spring



...and picking mulberries



Kansas City Region Education Update

So far in 2025, the Missouri River Bird Observatory (MRBO) has delivered 29 programs and events in the Kansas City metro, reaching 544 individuals of all ages through more than 22 hours of direct engagement. Our efforts have spanned community outreach, formal education, and hands-on activities—and none of it would be possible without the help of

our incredible partners. With an established and growing presence in Kansas City, we're thrilled to see that many of our programs this year were requested for a second or even third time!

We kicked off the spring with a well-loved favorite: an Eastern Bluebird nest box building workshop in partnership with the Missouri Department of Conservation (MDC) at the Anita B. Gorman Conservation Discovery Center. Participants were provided all the materials

and tools needed to build their own nest box, and with guidance from both MRBO and MDC staff, they constructed their boxes from start to finish while learning how to install and care for them to benefit bluebirds and other native cavity-nesting birds.

In another creative collaboration, MRBO partnered with the Kansas City Art Institute to contribute to a first-year sculpture course. Our team shared ecological insight into Missouri's cavity-nesting birds, helping students design bird-safe sculptures that reflect biological needs and conservation best practices.

MRBO also continued a popular series of bird-themed programs in partnership with MDC naturalist Susie Harris—this time on the east side of the metro at Burr Oak Woods Nature Center. Topics included American Kestrel nest boxes, the woodpeckers of Missouri, and hummingbirds. These sessions paired natural history presentations with hands-on takeaways, such as nest box kits or nature activities, to encourage participants to stay connected to wildlife at home.

A new and exciting opportunity this year was MRBO's invitation to lead a breakout session at the Kansas City Partners Luncheon, hosted by the Kansas City Region Community Conservation Team. Our presentation on Kansas City's role in bird conservation highlighted how vital the metro area is not only for resident species but also for migratory birds. We were honored to share the stage with other local conservation leaders who are shaping impactful programs across the city.

We were also excited to see the return of the Big Muddy Speaker Series to Kansas City this spring, hosted by the Little Blue River Watershed Coalition. This beloved series offers the community a chance to explore environmental topics in a casual, engaging setting. Tessa was one of this season's featured presenters, offering a talk titled *Avian Life Along the Missouri River*, which explored the essential role the river plays for many of Missouri's bird species. The event took place at Diametric Brewing Company, bringing science, conservation, and community together over a shared appreciation for birds and waterways.





Increased collaboration with MARC Head Start also marked a meaningful step forward this spring. Tessa teamed up with Community Conservation Liaison Lily Davis to represent MRBO at the Head Start 60th Anniversary Family Fun Fest. There, we engaged families, educators, and advocates with nature-based resources and activities, including a Missouri wildlife bandana craft station. Tessa also presented at a Head Start ECHO session through the University of Missouri's Telehealth Network, where she shared the importance of early nature engagement and practical ways educators can introduce young children to the outdoors in their own communities.

Of course, spring programming wouldn't be complete without connecting with students across a wide age range—from preschoolers to high schoolers and even lifelong learners. Tessa delivered interactive classroom sessions that brought the natural world directly to learners across Kansas City and beyond.

And true to our roots, MRBO continued to lead innovative bird walks this season. Tessa guided over eight walks this spring, from an Earth Day celebration at the Linda Hall Library Arboretum to themed hikes that combined birding with other outdoor interests—like “Birds and Blooms” at the Discovery Center and a unique birdwatching-by-bike ride through Forest Hill Calvary Cemetery.

As we reflect on a season full of activity, we're inspired by the growing interest in birds and nature across Kansas City. We look forward to continuing these partnerships and exploring new ways to bring people and birds closer together.



Egg-cited for Baby Season?

Spring brings fresh starts and new beginnings. As the days grow longer and the weather warms, migratory birds make their annual return, ready to find mates, build nests, and raise their young. This seasonal shift marks the beginning of "baby season." During this time, wildlife becomes especially active, and encounters with baby animals become more frequent. Whether it's a nest of chirping songbirds or a fawn tucked away quietly in the grass, it's a reminder that nature is busy welcoming the next generation.

New beginnings often bring new questions such as "what should you do if you find a baby bird on the ground?" Should you intervene, or is it best to leave things be?" Hopefully, this guide will help you navigate baby season with care and confidence, so you'll know when it's best to lend a hand, or when to let nature take its course.

FAQ's

How long do baby birds stay in the nest?

- Small songbirds: ~2 weeks
- Larger birds (i.e. woodpeckers): ~3-4 weeks
- Raptors (e.g., hawks, eagles): ~8-10+ weeks
- Waterfowl, shorebirds, game birds: typically leave their nest immediately

Can I move a nest in an inconvenient spot?

No. Most bird nests are protected by law (Migratory Bird Treaty Act). Moving them without a federal permit is illegal. It is best to leave them alone until the chicks have hatched and left the nest.



Ruby-throated Hummingbird Nest by Bill Duncan



Is it safe to let my pets near baby birds?

No. Cats and dogs are natural predators of small animals and may try to hunt, catch, or kill the birds. Even well-behaved animals can stress or harm wildlife. The best thing you can do is keep your pets inside, leashed, or kept far away from the nest.

Can I feed or give water to baby birds?

No. If the bird appears abandoned or injured, contact a licensed wildlife rehab center. They are professionally trained to provide the appropriate care, including proper feeding techniques, and species-specific diets.

What else can I do to help birds?

- Follow the 7 Simple Actions
- Watch from a distance
- Keep lights off at night
- Educate others!

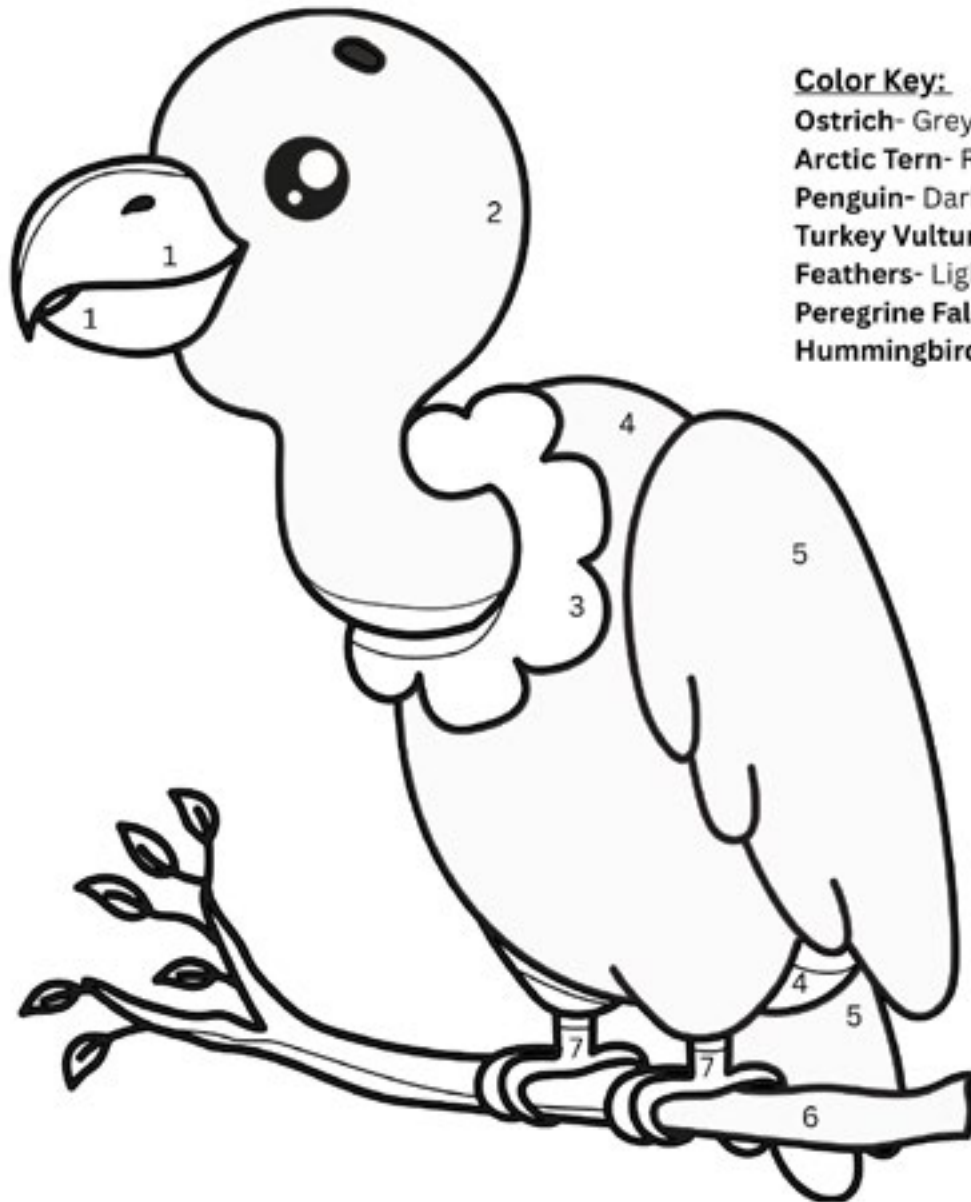
Let's enjoy and appreciate this beautiful season while giving wildlife the space and support they need to thrive.



Little Nestling's Corner

Color by Number Trivia

Play this fun trivia and use the answers to color in the bird! Follow the numbers on the picture to the associated trivia question. Then find your answer (and color) in the answer key.



Color Key:

Ostrich- Grey or White

Arctic Tern- Red

Penguin- Dark Brown

Turkey Vulture- Orange

Feathers- Light Brown

Peregrine Falcon- Yellow

Hummingbird- Black

This is a California Condor. They are one of the largest birds in North America with a wingspan reaching 9.5 feet!

Questions:

1. What is the fastest bird in the world?
2. Which bird migrates the farthest distance annually?
3. Which bird has the largest eyes relative to its body size?
4. What type of bird can fly backward?
5. Which flightless bird is known for huddling together to stay warm during harsh Antarctic winters?
6. What do birds molt periodically as they grow or change seasons?
7. What bird can detect the smell of dead meat (carrion) from miles away?



Answer key on page 17!

Gardening for Birds, Bees, and Butterflies: Parts 3 and 4

by Dan Getman, Kirksville Area Master Gardener

Part 3 – Host Plants to Attract Butterflies: Do you remember when you first became aware of butterflies? I don't! But I do remember when I first became interested in gardening for butterflies. When we lived in Kansas City, we enjoyed visiting Powell Gardens, about 45 minutes away. On one summer visit, we were amazed by their large, beautiful butterfly gardens, with lots of butterflies flying around. They also provided information on butterfly gardening, including the concept of "host plants", which was a new concept for us. Butterflies, and moths, utilize specific plants, called host plants, to lay their eggs on. The eggs hatch, the larva feed on the leaves, increase in size through several molts, and butterflies then form a chrysalis. Moths form a cocoon. Many butterflies use specific host plant species and others use several different plant species. Adult butterflies require both nectar as fuel and host plants to raise their young.

If you want to attract butterflies to your yard, there are several things you should do:

- Minimize, or eliminate, your use of insecticides.
- Plant a diversity of native plants that bloom throughout the year - perennials, trees and bushes, and supplement with annuals – see the February newsletter for a list.
- Plant host plants for your butterflies to raise their young.

Here's a list of the > 25 host plants we now have in our yard and the butterflies they support. The plants marked with an asterisk are those we routinely find caterpillars on:

- Tulip tree*, black cherry (tiger swallowtail)
- Golden alexander, fennel*, parsley*, dill* (black swallowtail)
- Prickly ash*, gas plant*, hoptree* (giant swallowtail)
- Spicebush* (spicebush swallowtail)
- Paw paw tree* (zebra swallowtail)
- Pipevine* (pipevine swallowtail) - we don't have pipevine in our yard, but a friend routinely finds caterpillars on her pipevine
- Cabbage* broccoli* (cabbage butterflies)
- Milkweed species – common*, swamp*, butterfly weed* (monarch butterfly)
- Pussytoes* (american lady)
- Other host plants we have, include; False nettles (question mark, comma butterflies, red admiral butterflies); Snapdragons (buckeye butterflies); Clover, wild senna (sulfur butterflies); Coneflowers (silvery checkerspot); Asters (pearl crescent); Willows (red-spotted purple and viceroy butterflies); Violets (great spangled, regal and variegated fritillaries); Hackberry tree (hackberry emperor, mourning cloak, tawny emperor, American snout); Viburnum bushes (summer azure butterfly); Red cedar trees (olive hairstreak butterfly); Native grasses - little bluestem, switchgrass (skippers).
- There are also three species of hummingbird hawk moths that we routinely see in our yard (host plants viburnum and native honeysuckle*) – hummingbird clearwing, snowberry clearwing and white-lined sphinx.

In an earlier newsletter, we talked about the importance of native plants for insects, which birds feed their young, with caterpillars being a common food. If you have lots of birds in your yard, they will likely enjoy your host plants and the caterpillars they provide. This is especially the case during nesting season – generally May, June and July. In general, I rarely find large caterpillars during nesting season, presumably because the birds find them first. However, if I regularly search for caterpillars (ie every day or so), I will often find them and will raise some in plastic containers with their host plant. Later in the year – July, August, September – I can often find large caterpillars, presumably because the birds are mostly done raising their young.

Raising butterflies is a really fun project for kids. They absolutely love to find the caterpillars on their host plants, watch the



Spicebush Caterpillar on Spicebush Leaf

caterpillars grow in containers and form their chrysalis. But they really get a kick out of holding and releasing the butterflies. If you want to get started, plant some parsley, dill or fennel (for black swallowtail butterflies) and either broccoli or cabbage (white cabbage butterflies). These can all be grown either in the ground or in containers.

A wonderful book on butterflies is listed below. It contains approximately 25 species of butterflies, their host plants, and the range where they're found in the U.S., as well as photos of their egg, caterpillar and chrysalis. The National Wildlife Federation also has a website, which show the number of butterfly and moth species supported by each plant family, which you can search by zip code (<https://nativeplantfinder.nwf.org>).

Here's a few additional things we've learned from our experiences; (1) if you want to find caterpillars on large trees, such as a tulip tree or black cherry tree, plant a sapling and regularly cut them back as they grow and treat them as more of a bush, (2) if you see a butterfly fluttering around the leaves of a plant, not the flower, it's probably a female laying eggs, (3) some butterflies overwinter in their chrysalis, which is common for some of the swallowtail butterflies. We routinely see this when raising caterpillars in the fall – they will form their chrysalis, overwinter and then emerge in the spring when temperatures rise into the 70s F. If you do this, place the chrysalis in your garage, rather than in your house – otherwise it may emerge in your house during the winter, and (4) although we find spicebush and zebra swallowtail caterpillars on spicebush and paw paw tree, respectively, it's not every year. We are at the northern edge of the range for both the butterfly and their host plant.

Resources: The Life Cycles of Butterflies (2006), by Judy Burris and Wayne Richards; and Butterfly Gardening and Conservation (2005) by Dave Tylka, Missouri Department of Conservation.

Part 4 - Berries for Birds, with Benefits for Pollinators: My interest in gardening originated with a desire to create habitat for birds to attract them to our yard, so that I could photograph them. Over the last 12 years, we've routinely done a planting each spring and fall, usually with a theme, or area of the yard, as a focus. One focus was "berries for birds". Over a couple of years, we planted more than 25 native species of berry-producing trees and bushes, totaling > 180 plants. Amazingly, despite the large quantity of plants covered in berries, we rarely observe many berries left on the plants. However, with the emergence of periodic cicadas, last





Cedar Waxwing with Crabapples

year was different. The birds were leaving many berries alone, presumably feasting on cicadas, but then resumed eating them after the cicada emergence ended.

There are many species of birds that routinely feed on berries year-round, and there are others that fatten up on berries to prepare for, and during, their annual migration. But not all berries are created equal. Native berries produced in summer, are generally high in sugars, whereas those produced in fall are high in the fats needed to fuel birds' migration. In contrast to native berries, according to Doug Tallamy, non-native plants (for example; autumn olive, glossy buckthorn, bush and Japanese honeysuckle) produce fall fruit low in fats.

In addition to the berries they provide, native plants also support a number of caterpillars for birds to feed their young, and these plants flower at slightly different times during the spring and summer, also supporting pollinators throughout the season. In our experience, most berry-producing natives, in bloom, have lots of different pollinators visit them, so they are a good addition to any pollinator garden.

Here is a list of the berry-producing plants we have in our yard, organized by the season they provide berries. The numbers in parentheses are the number of butterfly and moth species supported by those plants, and those with an asterisk* require male and female plants to produce fruit:

- **Mid-Summer berries:** serviceberry (82), red-twig and yellow-twig dogwood (94), aromatic sumac (48), red elderberry.
- **Late Summer berries:** arrowwood viburnum (83), black cherry (318), fringetree* (12), black and red chokeberry (29), american elderberry (28), gray dogwood (94), chokecherry (318).
- **Fall berries:** nannyberry viburnum (83), beautyberry, spicebush* (1), blackhaw viburnum (94), hackberry (50), flowering dogwood (94), native honeysuckle (27).
- **Berries that persist into winter and the following spring:** red cedar* (23), winterberry* (35), crabapple (230), american cranberry viburnum (94).

Some additional things we've learned:

- In general, it's best to have at least 2 of a berry-producing plant, so as to maximize fruit production. This is because many plants have mechanisms to prevent self-pollination by the same plant. This is to ensure maximum genetic diversity of the subsequent generation. We generally plant bushes in groups of 3.



- In the case of cultivars, in order to maximize berry production, it usually requires another compatible cultivar that blooms at the same time. An example is the commonly-sold "Blue Muffin" arrowwood viburnum. In our experience, we planted 3 bushes, which grew and flowered well, but only produced sporadic fruit. Once we planted another compatible cultivar (such as "Autumn Jazz" or "Indian Summer"), or a native bush, we had prolific berry production. I have photos of the effect if anyone is interested. There is no issue if you plant the native bushes, as long as you have at least 2 plants.
- Most berry-producing plants produce best in sunny or partially sunny locations.
- Some species require both a male and female plant to produce fruit on the female plant. Examples we have are; winterberry*, spicebush*, fringetree* and red cedar*. Unfortunately, with the exception of winterberry, most plants are not sold as male or female plants. However, in the case of fringetree and spicebush, when in flower, you can usually tell the difference between male and female plants. Or, if they are large enough to produce berries, only the female plants will produce berries.

I'm a big fan of the large, native bushes. They grow relatively quickly to a large size (generally 8-12ft x 8-12ft) and produce flowers that support pollinators and berries that support birds, especially during migration. As native plants, many serve as host plants for dozens of caterpillars that birds use to raise their young. Many also have attractive red or orange fall colors. If you have the room, these are a terrific addition to any garden.

All of these berry-producers offer benefits. However, some of my favorites include; Trees - Serviceberry, Crabapple and Red Cedar; Bushes - Arrowwood Viburnum, American Cranberry Viburnum, Gray Dogwood and American Elderberry. Elderberry prefers moist areas and will sucker and spread, so if you're interested, choose a suitable location where it can spread. If you'd like additional information on any of these plants, feel free to contact me at daniel.p.getman@me.com.

Resources: Number of butterfly and moth species, by zip code, for each plant family (<https://nativeplantfinder.nwf.org>). Gary Ladman at Classic viburnums is a great resource for the compatibility of viburnum cultivars for pollination (<https://www.classicviburnums.com>). Winterberry male/female compatible pollination chart (<https://www.skh.com/wp-content/uploads/2011/06/Winterberry-pollination.pdf>).

Dan Getman and his wife Kathy are Master Gardeners in Kirksville, MO. For the last 12 years, they have been improving their 5 1/2 acre property to create habitat for birds, bees, and butterflies. This has included removing invasives and planting >250 native perennials, >150 bushes and >50 trees. The Getmans have nest boxes for bluebirds, tree swallows, chickadees, northern flickers, great crested flycatchers and house wrens. They raise both mason bees and leaf cutter bees and have participated in an annual state-wide bumble bee survey program.

Color by Number Trivia Answers from page 15

1. What is the fastest bird in the world?
Peregrine Falcon
2. Which bird migrates the farthest distance annually?
Arctic Tern
3. Which bird has the largest eyes relative to its body size?
Ostrich
4. What type of bird can fly backward?
Hummingbird
5. Which flightless bird is known for huddling together to stay warm during harsh Antarctic winters?
Penguin
6. What do birds molt periodically as they grow or change seasons?
Feathers
7. What bird can detect the smell of dead meat (carrion) from miles away?
Turkey Vulture



Advocacy

To contribute to conservation by advocating for sound, science-based conservation policy that benefits birds, other wildlife and environmental quality.

During the first half of 2025, MRBO completed:

- 22 meetings with 16 State Senators and Representatives
- Four hearing testimonies at the Missouri State Capitol
- One public comment to the Missouri Department of Natural Resources
- 12 meetings with US Congressional offices, House and Senate Agriculture Committee staffers, and the USDA Chief of Staff
- One testimony at an Environmental Protection Agency hearing
- Three public comments on the Waters of the United States definition, Endangered Species Act definition of harm, and Office of Personnel Management federal employee reclassification



Federal Policy News and Commentary

*Re-printed from The Birding Community E-Bulletin
courtesy of Paul Baicich and Wayne Petersen*

THE BIRDING COMMUNITY E-BULLETIN June 2025

THE ONSLAUGHT

There is no easy way to describe – let alone enumerate – the dizzying array of anti-environmental proposals advanced by the Trump Administration.

Tracking the *onslaught* – perhaps the most accurate word – would fill multiple pages in this E-bulletin, including efforts to weaken the Endangered Species Act, increase mining-logging-drilling recklessly across sensitive habitats, eliminate thousands of essential jobs across crucial Federal Departments, jeopardize needed investments in firefighting and prescribed burns (especially in the West and impacting Forests, Parks, Refuges and beyond), gut NOAA and end its climate work, undermine the Endangered Species Act, and much, much more.

Delays and victories over these concerns through the courts are hopeful, but they are also slow in coming. Pushbacks over the sale of federal land – e.g., the last-minute removal from the House budget bill to sell 547,000 acres of western BLM lands because a few key GOP members objected – are also heartening but not always forthcoming.

We don't have the space to describe each of these moving targets and the damage that will occur from

planned cuts to key federal land-managing, science, and wildlife agencies. But we do recommend that you carefully check out the alerts you are surely receiving from birding, hunting/fishing, conservation, natural resource, and public policy advocates coming to most of you on a regular basis. This will be particularly important with the key budget issues currently moving from the House to the Senate.

To give you some context, one of the President's budget proposals is to completely wipe out funding for a key program within the United States Geological Survey (USGS), the Ecosystems Mission Area, which conducts research and monitoring of the U.S. The situation described below, threatening the Eastern Ecological Science Center (EESC) of USGS – formerly the Patuxent Wildlife Research Center – is emblematic of so much going on across multiple federal agencies, and it deserves special attention.

THE PATUXENT SITUATION

Many birders, naturalists, and environmentalists have been following the disturbing situation at the Eastern Ecological Science Center, based at the Patuxent Research Refuge, in Laurel, Maryland. The EESC includes the Bird Banding Lab, the North American Breeding Bird Survey, and the Native Bee Lab, among other research



efforts of vital importance to the conservation of our native wildlife. This center was pivotal historically in the toxicology findings of the effects of DDT on Bald Eagles and other species, the restoration of Whooping Cranes, and key findings on the habitat of forest interior-dwelling birds.

As it now stands, the budget for the Ecosystems Management Area nationwide would go from \$293 million to \$29 million and EESC for FY 2026 cut to exactly \$0.00.

If EESC is defunded, it cannot be easily reconstituted. For starters, just consider the loss of research staff engaged in ongoing work and the irreplaceable institutional memory at stake. Up to 1,000 employees around the USGS Ecosystem Area could be laid off in a Reduction in Force (RIF).

The scientists at EESC, aided by many hundreds of volunteers around the country, collect data and engage in research that is used by other Department of Interior agencies - such as the U.S. Fish and Wildlife Service and the National Park Service - and widely across the nation by universities and many conservation NGOs.

For us, projects around the Bird Banding Lab and the Breeding Bird Survey in particular provide the invaluable citizen-aided data to track bird populations, especially for those species which have been undergoing a shocking decline since 1970. It is also the zone where the distinction between "non-game birds" and "game birds" begins to blur.

Fortunately, there was a temporary injunction issued by a federal judge in California in late May to stop widespread federal layoffs across a dozen or more federal agencies. But this could be lifted tomorrow or held in place for months.

In any case, there is good reason to believe that serious advocacy can work, considering that it was widespread citizen concern that put a stop to including the sale of over half a million acres of BLM lands originally in the "Big Beautiful Bill" in the House in May. (See the mention of this action in the "Onslaught" news item above.)

This all means that the current delay of layoffs is an opportunity for more dialogue and advocacy. But time is of the essence. These deep concerns need to be carried to Members of Congress, not simply wait for the courts to rule. Readers can easily contact their members of Congress, especially the Senators looking at a budget reconciliation bill and the FY26 federal budget, to ask them to save the Ecosystem Mission Area of USGS.



American Bald Eagle by Ev Luecke

What we have here is an existential threat to conservation science underpinning over a century of research and field biology performed by USGS and its predecessors, all with input from citizen and community volunteers. Imagine what it may mean to no longer have key federal wildlife science programs to study breeding birds, gather data from collected bands, and continue a century of research on bird migration and populations!

It is always best to compose your own message to your Senators and House member, but here is a shortcut on this crucial issue where you can easily add more details. It was crafted by the American Bird Conservancy (ABC): <https://act.abcbirds.org/a/take-action-usgs-funding>

This Birding Community E-bulletin is being distributed to active and concerned birders, those dedicated to the joys of birding and the protection of birds and their habitats. It is compiled and edited by Paul Baicich and Wayne Petersen. You can subscribe to the E-Bulletin here: <https://bit.ly/35Xd3hO>

Access an archive of past E-bulletins on the website of the National Wildlife Refuge Association (NWRA): <https://www.refugeassociation.org/birding-community-e-bulletin>



Divestment from America's Natural Resources

by MRBO Directors Dana Ripper and Ethan Duke

Dear Reader:

The anti-environmental actions and philosophy of the federal administration and much of the United States Congress, while unconcealed and aggressive, can get lost in the daily barrage of news on multiple topics. Here, we provide a summary of actions that is as up-to-date and as comprehensive as possible in the hopes of aiding conservationists in tracking threats to natural resources. Readers will note that a majority of these actions are motivated by the goal of increasing fossil fuel production and use – either by directly investing in oil, gas, and coal production; avoiding or fast-tracking review processes; divesting from renewable/clean energy development; or suppressing data and/or general recognition of the effects of fossil fuels, both environmental and social.

We also note that there are various agencies, such as the US Fish and Wildlife Service and the Environmental Protection Agency, necessarily named in this document since many actions of concern are coming out of those agencies. We caution the reader that it is agency leadership, selected by the White House and, in most cases, approved by the US Senate, driving these actions; the concerns stated herein do not reflect the authors' opposition to the agencies themselves. While the policies of these agencies have varied to some degree under past administrations, until the present time they have largely adhered to their nonpartisan, apolitical missions.

For a full document (10 pages + list of sources) which elaborates on the following information, please see: https://mrbo.org/Documents/Divestment_in_Americas_Natural_Resources.pdf. Even this longer document is probably not comprehensive in its list of attacks on United States natural resources.

I. Legislative Branch Actions – US House of Representatives and Senate

In May 2025, the U.S. House of Representatives narrowly passed H.R. 1, a sweeping budget reconciliation package—after removing a controversial amendment that would have authorized the sale of over 500,000 acres of public lands in Nevada and Utah. This sparked widespread opposition from conservation groups, outdoor advocates, and even some lawmakers within the Republican caucus. Representative Ryan Zinke (R-MT), a former Interior Secretary, played a pivotal role in stripping the provision, threatening to vote against the entire bill if the land sales remained. The amendment was ultimately removed through a manager's amendment just before the House vote, which passed 215–214.

Despite this temporary win, when H.R.1 went to the Senate, Senator Mike Lee (R-UT), who serves as Chair of the Senate Energy and Natural Resources Committee, with support from some other Senators, **reinserted the public lands sales provision and upped it to more than three million acres of BLM and US Forest Service lands in 12 western states.** At the time of this writing, those three million acres are written as a mandatory sale, **but an additional provision has been added**

that allows the Secretary of the Interior to sell up to 40% of public lands – about 250,000,000 acres. (See, for example: <https://www.americanprogress.org/article/what-to-know-about-the-senates-public-lands-sell-off/>)

It is imperative to wildlife and natural resources conservation that this does not pass into legislation. Beyond the specifics of any one sale, the broader concern is the dangerous precedent this would set: normalizing the idea that our shared public lands can be liquidated for short-term financial gain. **Public lands are held in trust for all Americans and the erosion of that principle could open the door to more sweeping privatization efforts in the future.**

H.R. 1 also includes a provision that could dramatically reduce public oversight of federal environmental decisions. Tucked deep into the bill, Section 80121(h), called “Judicial Preclusion,” would prevent federal courts from reviewing a wide range of agency actions, such as permits, leases, and wildlife protection decisions, even if they are challenged in court. While this provision is placed under a section about oil and gas development in Alaska, its wording is broad enough to apply nationwide. This could remove an essential check on federal agencies, allowing major environmental decisions to go forward without the possibility of legal challenge - undermining both the rule of law and community rights.

II. Executive Branch Actions – White House and Cabinet Agencies

Executive Orders

In 2025, the White House issued a series of executive orders that roll back decades of environmental progress and shift federal policy heavily in favor of fossil fuel development. These orders pulled the U.S. out of international climate agreements, dismantled climate and environmental justice offices, and removed key protections for public lands and natural resources. One order, *Unleashing American Energy*, fast-tracks oil and gas drilling on public lands, cancels clean energy funding, and eliminates many requirements for environmental review. Another, *Zero-Based Regulatory Budgeting*, requires energy-related rules to automatically expire within five years unless they are reapproved without adding regulatory costs - effectively threatening to wipe out safeguards on pollution, efficiency, and wildlife protection.

Other executive actions include opening over 100 million acres of national forest to industrial logging, ordering lawsuits against



MRBO Directors in Washington DC, April 2025

states with climate liability laws, and directing federal agencies to override state-level climate policies. These sweeping orders not only increase pollution and greenhouse gas emissions, but also reduce public input, eliminate oversight, and potentially violate existing laws. Conservation groups are already challenging some of these actions in court, warning that the long-term impacts could be devastating for public health, climate stability, and the natural places Americans depend on.

White House Proposed FY26 Budget

The White House's proposed Fiscal Year 2026 budget includes devastating cuts to conservation funding, particularly programs that protect fish, wildlife, and their habitats. The U.S. Fish and Wildlife Service's State, Tribal, and NGO Conservation Grants Program would be slashed by \$171 million, effectively eliminating some of the nation's most successful conservation tools. These include the North American Wetlands Conservation Act, the Neotropical Migratory Bird Conservation Fund, State & Tribal Wildlife Grants, and the Cooperative Endangered Species Conservation Fund—all of which support essential habitat protection, species recovery, and partnerships with local conservation groups. Meanwhile, the National Park Service faces a \$1.2 billion cut, including a \$900 million reduction in operations, with the administration suggesting it may transfer some parks to state control if they are deemed "too obscure" for federal oversight.

In addition to gutting wildlife programs, the proposed budget also targets clean energy and climate initiatives. It cancels over \$15 billion in unspent funds from the Bipartisan Infrastructure Law and cuts key Department of Energy programs by billions more - including a 75% reduction to the Office of Energy Efficiency and Renewable Energy and a major rollback of research programs focused on solar, wind, and battery technology. The administration frames these cuts as a rejection of "radical" and "woke" climate efforts, but the result would be a weakened response to pollution, stalled energy innovation, and fewer protections for public lands and wildlife in the face of growing environmental threats.

Agency Actions Rulemaking

- **Waters of the United States (WOTUS):**
Following the Supreme Court's *Sackett v. EPA* decision in 2023, which removed protections for many



With friends from the American Bird Conservancy, National Wildlife Federation, Audubon Connecticut and Maine Audubon in Washington DC

wetlands and streams, the EPA and Army Corps revised the WOTUS rule—and are now considering even deeper cuts. These changes could strip protections from seasonal and isolated waters essential for flood control, drinking water, and wildlife. Weakening WOTUS would ignore science and public input and place downstream communities at greater risk.

- **Endangered Species Act - Definition of "Harm":**
Federal agencies are proposing to remove the definition of "harm" under the Endangered Species Act, which currently includes damaging habitat that kills or injures protected species. This change would make it harder to safeguard critical habitat, despite habitat loss being a major driver of extinction. The proposal threatens both wildlife and outdoor economies that rely on healthy ecosystems.
- **Migratory Bird Treaty Act - Incidental Take:**
The Department of the Interior has reinstated a 2017 policy that limits enforcement under the MBTA to only *intentional* bird kills, excluding incidental deaths caused by industrial activity. Yet most bird mortality comes from infrastructure like power lines and waste pits—predictable and preventable harms. This rollback removes industry accountability and weakens core bird protections that had bipartisan support for decades.
- **EPA Endangerment Finding:**
The EPA is attempting to overturn the 2009 endangerment finding, which requires regulation of greenhouse gases under the Clean Air Act. This finding is grounded in scientific consensus and has been upheld in court. Eliminating it would undermine climate action and further dismantle environmental and public health protections.

Federal Workforce Terminations

The federal government is undergoing major workforce cuts that are already having profound effects on environmental protection and public services. In early 2025, the Department of the Interior laid off thousands of employees across agencies like the National Park Service and Bureau of Land Management, with more cuts still pending. The Environmental Protection Agency has also slashed hundreds of positions in its Environmental Justice office, crippling its ability to address pollution in underserved communities. Meanwhile, over 32,000 AmeriCorps service members were abruptly terminated following deep budget cuts, gutting national programs in education, disaster response, and public health. These actions have triggered lawsuits and a federal judge has issued a temporary halt to some of the layoffs, but the administration continues to pursue policies that erode civil service protections, including a proposed rule that would allow easier firing of career federal employees.

These cuts go beyond staffing—they threaten decades of scientific research and conservation infrastructure. The U.S. Geological Survey's Ecosystems Mission Area, which monitors endangered species, wildlife diseases, and habitat health, faces complete elimination. In Missouri, institutions like the



Columbia Environmental Research Center and the Cooperative Fish & Wildlife Research Unit at the University of Missouri could be shuttered, halting critical research and laying off experienced scientists. As these programs are dismantled, the nation risks losing not only vital data but also generations of expertise in protecting natural resources and public health.

Funding cancellations

Since January 2025, the federal government has canceled billions of dollars in environmental and climate-related grants, many of which were already awarded and in use. The Environmental Protection Agency (EPA) alone terminated 400 grants worth \$1.7 billion, along with the full shutdown of its environmental and climate justice block grant program, which was designed to help underserved communities tackle pollution and climate threats. Major funding streams from the Inflation Reduction Act—like the Greenhouse Gas Reduction Fund and Climate Pollution Reduction Grants—were also dismantled, cutting off support to local, state, and tribal governments working to lower greenhouse gas emissions.

In addition to the EPA cuts, the Department of Agriculture canceled key programs like the \$3 billion Partnerships for Climate-Smart Commodities, which helped farmers adopt sustainable practices. The Department of Energy also withdrew nearly \$4 billion in clean energy grants, even pulling support from active projects in 23 states. FEMA's Building Resilient Infrastructure and Communities (BRIC) program, which helped towns prepare for disasters like floods and wildfires, was also eliminated—despite being cost-saving and passed with bipartisan support. These sweeping cancellations not only remove funding from vital climate and resilience programs but also leave communities more vulnerable to pollution, weather disasters, and energy insecurity.

Censorship of language and data

The administration has restricted the use of terms like “climate science”, “greenhouse gases”, “environmental policy”, “environmental justice” and “pollution” in government communications, a move widely regarded as censorship designed to protect fossil fuel industry interests. This effort includes deleting vital climate data from the websites of key agencies

such as the USDA, EPA, NASA, and the State and Defense departments—resources essential for planning responses to climate impacts. In response, environmental and farming organizations have sued the USDA, arguing that withholding this information harms farmers by limiting their ability to prepare for extreme weather and access climate-related funding. Additionally, references to “climate change” have been scrubbed from the websites of the White House and the Department of the Interior, while the EPA removed its entire climate section in April, stating it would be “updating language to reflect the approach of new leadership.”

III. Judicial Branch Actions

The National Environmental Policy Act (NEPA) has long required federal agencies to evaluate the environmental impacts of major projects - like highways, pipelines, and mining - before approval, ensuring public input and science-based decisions. But in 2025, major changes have weakened this process. Through Executive Order 14154, the administration removed longstanding NEPA rules, disbanded oversight by the Council on Environmental Quality, and replaced binding regulations with a non-enforceable template that speeds up project approvals and limits public involvement. Critics warn that this shift prioritizes industry over environmental protection and could leave communities vulnerable to unchecked development.

Adding to this rollback, a Supreme Court ruling in *Seven County Infrastructure Coalition v. Eagle County* on May 29th, 2025 narrowed how agencies must interpret environmental impacts. The Court ruled that agencies only need to consider direct effects of projects under their control, not broader consequences like increased oil drilling enabled by new infrastructure. While this may accelerate permitting, it significantly limits the scope of environmental reviews and may allow major environmental harms to go unexamined.

Collectively, these executive and judicial actions represent a significant shift in environmental policy, prioritizing expedited development and agency discretion over extensive environmental review and public participation. These changes undermine environmental protections and reduce transparency in federal project approvals.

What can you do right now?

- Call your senators and representative about the reconciliation package (H.R.1), the White House's proposed FY26 budget, and anything else you are concerned about. The authors of the More Than Just Parks Substack have great suggestions here: <https://morethanjustparks.substack.com/p/theyre-trying-to-give-away-your-national>
- Stay informed about what's happening. Here are some of the organizations we at MRBO follow for updates:
 - National Wildlife Federation
 - American Bird Conservancy
 - Earthjustice
 - League of Conservation Voters
 - Backcountry Hunters and Anglers



Remember, it's almost always better to call or email your elected officials directly, and submit individual public comments, vs. signing on to an online petition. Gather information from various conservation organizations and then write your own script!

If you would like further information or assistance, please email us at dana.ripper@mrbo.org and ethan.duke@mrbo.org. We get it - calling members of Congress is no one's favorite thing. But if they don't hear from us, they don't know what we support or oppose!



2025 Missouri Legislative Session Recap: Standing Up for Wildlife, Water, and People

The 2025 Missouri legislative session ended in mid-May, and MRBO remained a strong voice for wildlife and healthy communities at the statehouse. We continued to advocate for environmental protections, rural resilience, and local decision-making throughout the session - often working alongside Missouri Stream Teams United, Missouri Coalition for the Environment, Missouri Rural Crisis Center, and others.

Our *Show-Me Less Plastic* campaign remained a key focus, helping educate lawmakers on the environmental and health benefits of reducing plastic use. We also weighed in on critical issues like PFAS chemical regulation, clean water protections, pesticide accountability, and local authority to address CAFO impacts.

Some legislative highlights from this session:

- **Plastic Bag Preemption Repeal (HB 428):** Though it didn't get a hearing, this bill would have restored local control to communities wanting to reduce plastic pollution.
- **PFAS Foam Regulation (HB 1466):** A step forward in protecting Missouri's first responders, water and soil from toxic chemicals used in firefighting foam. This bill did have a public hearing but carried no further.
- **Freedom to Farm Act (SB 297):** Referred to committee but also went no further—this law weakens state oversight of agricultural operations and limits emergency powers during crises.
- **Pesticide Manufacturer Shield (SB 14 / HB 544):** This proposal sought to limit the ability of Missourians to sue pesticide producers—even if harm occurred. It did not pass this session but may return. There was a fair bit of drama as industry sought to influence this legislation in many ways.
 - <https://missouriindependent.com/2025/02/25/political-attacks-stiffen-opposition-to-missouri-bill-to-protect-pesticide-makers/>
- **Restoring Local CAFO Oversight (SB 400):** This bill would have reversed 2019's harmful restrictions on county-level environmental regulation but did not advance.
 - <https://www.news-leader.com/story/opinion/2025/04/27/missouri-law-prevents-counties-blocking-cafos-opinion/83243734007/>
- **Water Export (SB 82):** This bill passed and provides new safeguards against the commercial export of Missouri's water by requiring the entities seeking export to go through a DNR permit process, public comment, and soil and water commission review.
- **Clean Water Commission Reforms (SB 569 / HB 488):** Competing visions for the future of Missouri's water governance emerged, with significant debate over public representation and conflicts of interest. No changes were finalized this session.
- **Nonnative Invasive Plants (SB 105):** This bill passed with strong support from the Missouri conservation community and will prohibit the sale, transport, or propagation of certain invasive plants in Missouri—including burning bush, Japanese honeysuckle, sericea lespedeza, perilla mint, and climbing euonymus—starting January 1, 2027. Nurseries must submit affidavits pledging compliance.

As always, MRBO will remain engaged and vigilant. Our advocacy is grounded in science, focused on equity, and driven by the belief that healthy ecosystems benefit us all. You can stay up to date with future legislative updates at:

- [Missouri Coalition for the Environment's Bill Tracker](#)
- [Stream Teams United's Legislative Lookout](#)
- [Conservation Federation of Missouri Legislative Action Center](#)

Special thanks to allies in both state and federal work:

Bill McGuire, Melissa Vatterott, Maxine Gill, Ashlen Busick, Jeanne Hauser, Cheryl Y Marcum, Loring Bullard, Max Sano, Melinda Hemmelgarn, Ginny Wallace, Leanne Tippet Mosby, Mary Culler, and Emily Young.



At the Clean Water Commission bill hearing on April 8th, 2025



With friends and allies at a Missouri Department of Natural Resources hearing in Pierce City, MO



Plastic Project Update

The Show-Me Less Plastic (SMLP) Project is a collaboration between MRBO and Missouri Stream Teams United. Since the last issue of *The Rectrix*, the SMLP team has delivered the following events:

- March 7th – Presentation to the Lake of the Ozarks Realtor Board
- March 8th – Presentation at the Conservation Federation of Missouri's annual convention
- March 26th – Presentation to the National Garden Clubs Environmental School
- April 12th – Plastic Brand Audit in Sugar Creek with Missouri River Relief staff and volunteers
- April 21st – Screening of the documentary *Plastic People* and subsequent panel discussion at the Daniel Boone Regional Library in Columbia
- May 12th – Show-Me Less Plastic statewide advocates meeting with guest speakers from Beyond Plastics
- May 15th – Presentation to Greater Ozarks Audubon Society
- May 17th – Plastic Brand Audit in Council Bluffs, IA with Missouri River Relief staff and volunteers – special thanks to Matt Britt for leading this audit!
- May 21st – Regional Roundtable for the Bootheel Regional Planning Commission and municipalities in Dexter
- May 30th – First meeting of the new local group, Columbia NoMoPlastic
- Additionally, one or more members of the SMLP team tabled at six public festivals



Plastic Brand Audit at Sugar Creek with Missouri River Relief



Presentation to the National Garden Clubs Environmental School



Screening of the documentary "Plastic People" in Columbia

Emily Young of Stream Teams United, Representative Bruce Sassman, and MRBO Director Dana Ripper at Great Rivers Day at the Capitol



Rethinking Plastic Through Local Change

By Emily Young, Stream Teams United Plastic Pollution Advocacy Outreach Coordinator

On May 21, Stream Teams United (STU) hosted the first *Show-Me Less Plastic* Regional Roundtable at the Bootheel Regional Planning Commission in Dexter. Facilitated by Emily Young, with support from STU Executive Director Mary Culler and MRBO's Dana Ripper, the workshop aimed to share information about the plastic pollution crisis, explore practical local solutions and ordinance options, and spark discussion around community-specific strategies for addressing plastic use and waste. With more than 460 million metric tons of plastic produced globally each year - and no effective system for managing the resulting waste - local leadership and action are key in reducing plastic pollution from its source.

Attendees included regional planning commission staff, a city mayor, Chamber of Commerce representatives, and nonprofit leaders. We were also pleased to host Missouri District 151 Representative Steve Jordan and Deidre Belmar from U.S. Congressman Jason Smith's office. The diversity of perspectives, interests, and backgrounds brought valuable insight and energy to the discussion.

After a brief overview of the history of plastic production, the plastic lifecycle, and its impacts on human health, natural resources, and local economies, we reviewed examples of successful ordinances and management strategies from communities across the United States. The second half of the workshop engaged participants in an open conversation about the current state of plastic waste in their communities and what changes might be possible. These discussions were grounded in local realities, including community priorities, available resources, and potential partnerships. A major theme that emerged was the importance of sharing this information with the broader community - especially in schools - through coordinated educational campaigns.

This event marked the first in a series of regional workshops that will be held across Missouri over the next two years. Conversations like this - with the decision makers working on the ground in their communities every day - are vital in increasing awareness of the plastic pollution crisis and creating positive change in the Show-Me State for the people who call it home.

Stream Teams United and MRBO extend sincere thanks to our hosts at the Bootheel Regional Planning Commission. Their partnership was instrumental in coordinating the event, and the welcoming venue encouraged meaningful, close-knit dialogue. We also thank the Corner Stop Cafe for partnering with us to provide a plastic-free lunch for workshop participants.

Interested in bringing a Regional Roundtable to your community? Contact Emily Young, STU Advocacy Outreach Coordinator, at streamteamsunited@gmail.com or 573-337-4058.



Emily speaks to a room of regional planners, Chamber of Commerce representatives, and elected officials and their staff in Dexter, MO





Community News

Upcoming Events

See more at <https://mrbo.org/Events/Calendar.aspx>

Bird Migration Patterns with the Missouri River Bird Observatory

Tuesday, June 24th at 6 p.m.

Little Dixie Library, 111 N. 4th St. Moberly, MO

MRBO is excited to bring the incredible story of Missouri's migratory birds to the Little Dixie Regional Library in Moberly, MO!

Whether you're a seasoned birder, a nature lover, or just curious, this free program has something for everyone.



- Discover the amazing journeys migratory birds take each year
- Learn how to identify different species and understand their role in our ecosystems
- Find out how you can help protect their habitats through simple conservation efforts

Join us for an engaging, family-friendly presentation and become part of the mission to protect Missouri's birds for future generations!



MRBO at the Sedalia Area Farmers' Market

Friday, July 11th from 3 p.m. to 6 p.m.

1814 S. Limit Ave. Sedalia, MO 65301

Come see MRBO at the Sedalia Area Farmers' Market! We'll have fun activities for kids *and* adults—stop by to learn about one of Missouri's most fascinating pollinators: the hummingbird! These tiny birds are full of surprises, and we'll share how they help support healthy ecosystems. Whether you're a seasoned bird lover or just curious, we'd love to chat with you!

Nature Rx: Nature's Namaste ~ Gentle Yoga and Sound Bath

Saturday, July 19th from 8 a.m. to 9:30 a.m.

Anita B. Gorman Conservation Discovery Center: 4750 Troost Ave, Kansas City, MO 64110

Start your day with a 60-minute gentle yoga and sound bath session led by a trained AimWell Yoga Studio instructor followed by a relaxing stroll through the native plant gardens with MRBO's Tessa Poolman.

You are sure to walk away refreshed and ready to enjoy the rest of your weekend. If accommodations are needed, please e-mail the instructor after registering and at least one week prior to the program.



MRBO 15 Year Anniversary Party

Saturday, August 9th from 5:30 p.m. to 9:30ish

The BirdHouse: 406 Main St. Arrow Rock, MO 65320

We're throwing open the doors to the BirdHouse for a lively, come-one-come-all evening celebrating birds, friends, and the natural world! This free community event replaces our usual supporter parties for the year, and we'd love to see *everyone* there—no tickets, no entry fees, just freewill donations and new supporterships welcomed.

- **Live music by the folk/bluegrass duo Nelson & Hunt**, whose nature-inspired tunes (and bird-loving energy!) will make your heart sing.
- A variety of themed food and drink stations like the **Raptor Repast** (meaty mains), the **Hummingbird Bar** (colorful cocktails), and more, with something for every palate. As always, food will be locally sourced in keeping with the MRBO mission!
- A **Dark Sky viewing** experience starting around 8:15 p.m.



Come for the birds, stay for the music, food, and great company. No need to stay the whole time—drop in and out as you like. We can't wait to celebrate with you!



 **MRBO 2025 monthly webinars**
Third Monday of the month • 6:30 pm Central time on Zoom

Pesticides: A Bird's Eye View to Protect People, Pollinators & Planet with Melinda Hemmelgarn https://bit.ly/pesticidesJuly2025	
July 21st	
Toxins in Avian Wildlife: Conservation Implications with Dr. Heather Barron https://bit.ly/AvianToxinsAugust2025	
Aug 18th	
Entomology Research in Missouri with Leah Gastonguay https://bit.ly/InsectsSept2025	
Sept 15th	
The Facts About Cats and Native Wildlife with Dr. Jan Riley https://bit.ly/catsOctober2025	
Oct 20th	



Who Are You Looking At? by Steven Ward

MRBO's Bird Photography Contest Returns July 1st!



Hope is The Thing With Feathers
The Missouri River Bird Observatory's
Tenth Annual Bird Photography Contest
July 1st - August 31st, 2025



The Missouri River Bird Observatory is excited to announce the return of our annual bird photography contest. Open to amateur photographers of all skill levels, this contest is your chance to showcase the incredible beauty of Missouri's birds, wildlife, and natural landscapes.

Beginning July 1st, participants will be able to submit their photos directly through our website. Whether you're capturing the flash of color from a warbler in flight or the stillness of a heron at the water's edge, we want to see your perspective on Missouri's rich natural world.

Winners will receive cash prizes and will have their work published in a special edition of *The Rectrix*, MRBO's quarterly newsletter. Selected images may also be featured in future MRBO publications and outreach materials.

Start reviewing your photo archives or head outside with your camera – we can't wait to see what you capture!



Calling all Missouri bird photographers!

Want to show off your best photos, compete for cash prizes and contribute to bird conservation in Missouri? Enter MRBO's tenth annual photo contest!

Contest is open from July 1st to August 31st, 2025.
Photos must be of birds in the wild and they must have been taken in Missouri.
Entry fee: \$25 per photo
All contest entry fees support MRBO's education and outreach!

Contest Prizes

Conservation Grand Prize: \$1,000
First Place: \$500
Second Place: \$250
Third Place: \$150
Fourth Place: \$100
Director's Choice: \$200



Thank you to our sponsor!

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See all details and enter on our website or scan the QR code:
<https://mrbo.org/MRBO/PhotoContest.aspx>





“SHOW-ME LESS PLASTIC” COMMUNITY WORKSHOP

*Join the Missouri River Bird Observatory,
Stream Teams United, and the James River Basin Partnership
for a hands-on workshop designed to empower you
with the knowledge and skills to join the effort
to reduce plastic use and pollution in Missouri.*



AUGUST 23, 2025

**At Library Station in the Frisco
Community Room**

11:30AM - 3:00PM

**2535 N. Kansas Expressway
Springfield, MO 65803**

LUNCH IS INCLUDED

WHAT YOU WILL LEARN :

- The State of the Plastic Crisis
- Community Outreach Strategies
- Effective Messaging Through Media
- Empowering Grassroots Action



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IS FREE!**

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For more info, contact us at:
dana.ripper@mrbo.org



<https://bit.ly/PlasticWorkshopSGF>



Thank you for your support!

The following individuals and organizations and several anonymous donors have provided support since the publication of the March 2025 newsletter. We give thanks to them and to all who have supported the Missouri River Bird Observatory! YOU make our work possible. *Please note that donations received after June 19th, 2025 - the date this issue went to print - will be acknowledged in the next issue of the Rectrix.*

Scott Barnes
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Birds and Beans Coffee
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Boulevard Brewing Company
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Valerie Vreeland
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Wander'n Acres
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Hummingbird Enjoying Wildflowers by Craig Alexander



An Environmental Journey with Missourian Loring Bullard

I turned eighteen in 1970. I was at the time, I suppose, a typical eighteen-year-old—self-absorbed, awkward, but comfortably navigating a small-town existence. I never expected that events would lead me far from that small town, or take me on such an extended environmental journey—one that has lasted for fifty-five years. The year 1970, in many ways, marked a momentous turning point—not just for me, as I faced the draft lottery, but for the whole nation. The first Earth Day, in April 1970, launched a new environmental era. In January 1970, Richard Nixon signed NEPA, the National Environmental Policy Act, requiring environmental impact statements on federally funded projects—now one of the nation's bedrock environmental laws. The same year, Congress passed the Clean Air Act, with a vote in the House of an amazing 374 to 1.

This political re-alignment, this awakening, was sorely needed in Missouri, where environmental degradation had been building for over two centuries. 1970 marked a time of our state's reckoning with environmental abuses. In the spring of 1970, a horse in the eastern Ozarks, grazing just downwind of a lead smelter, suddenly fell to the ground, twitching and convulsing. In southwest Missouri, ninety drums of sludge from the distillation of Agent Orange, an herbicide used widely in Vietnam, were buried on a farm—soon rusting away, leaking dioxin into the Spring River.

The following year, the same dioxin-containing wastes would be hauled to St. Louis, mixed with used motor oil, and spread on roads and horse arenas for dust control. Sixty emaciated, sore-covered horses would have to be euthanized. Times Beach, where dirt roads were sprayed with waste oil, became a Superfund site, with 250,000 tons of dioxin-contaminated soil and materials eventually burned in a giant incinerator. The Clean Air Act, passed in 1970, required coal-fired power plants to reduce air pollution, but coal mining in Missouri, which had created moonscapes of spoil piles and strip pits, was totally unregulated.

At the age of 23, I entered the world of environmental regulation—first for the Springfield Health Department, although my “environmental health” work was primarily preventing human contact with bacteria or toxins in food, water, or air. Next, I worked in watershed protection, where I stayed for twenty-three years. Upon retirement, I became less active, but kept a hand in environmental matters. I paid my dues to environmental organizations fighting for causes I was passionate about, like ecological restoration, conservation easements, and night sky protection. And I paid attention, to some extent, to a rising tide of environmental threats.

The environmental crises of today are just as serious, perhaps more serious, than those in 1970. But they are also different. Pollution of water and air are often visible and easily conceptualized. To some extent, their severity can be simply gaged by measurements of pollutant concentrations and risk analyses. Climate change and biodiversity loss, in contrast, are exceedingly complex, with myriad feedback loops, complicated ecological relationships, and difficulties in modeling and risk analyses.

Some of our older problems are still with us, of course. Missouri's large urban zones still pose significant air and water quality challenges, but bigger threats, in my opinion, arise from corporate, industrialized agriculture—what I call Big Ag—which has in many ways degraded the environment and could potentially destroy the ecological foundations of agriculture itself. Years of pesticide use has vastly reduced pollinators, many of them the very creatures that pollinate our crops. Continual applications of chemical fertilizers, while providing plant nutrients, have done nothing to build organically rich, biologically-active soils. Nutrients in runoff have led to algae-choked waters and a Dead Zone in the Gulf of Mexico, where anoxic conditions mean fish and shellfish cannot survive. In essence, we've traded subsidized animal protein in the Midwest for the abundant, high quality aquatic protein the gulf used to provide.

In 2012, I retired, semi-officially, from the watershed protection business. I imagined myself relaxing on my back deck, admiring my native plants and water features, watching the birds, bees, and butterflies. It was my urban sanctuary, a respite from the hustle-bustle and annoyances of city life. But before long, I sensed that my environmental journey wasn't over. There were just too many bad things happening, environment-wise, and too few people speaking up about them. Public attention seemed to be fixated on a slew of sticky social and political issues. As if to underscore this new order, Earth Day 2020, originally intended as a fifty-year reawakening, wasn't even held, due to COVID.

Two things brought me out of hiding—disturbed me from a dreamy state on the back deck. The first was the politicizing of the “environment,” and the harangue of politicians saying we needed to dial back our efforts to protect it. The second was the incessant noises of the city—sirens, lawnmowers, motorcycles, but especially the enormously irritating whine of leaf blowers. Neighbors all around me were blowing their leaves, or grass clippings, or even their snow. The noise was bad enough, but I soon learned that leaf blowers had other bad attributes, including the release of air polluting hydrocarbons and the lofting of dust, spores, and pollen, creating risky conditions for asthma-sufferers.

When I read Doug Tallamy's book, *The Nature of Oaks*, I learned that it wasn't a good idea to blow leaves off the yard in the first place. Those fallen leaves can contain up to 500 species of caterpillars, prime food for birds—especially baby birds. By removing the leaves, which would otherwise break down into organically rich humus, we cut our yard's ecological potential off at the knees. In my front yard, I put up a sign from the Prairie Foundation that says, “LEAVE THE LEAVES.”



The author at age 5, a budding environmentalist.



I followed Tallamy's logic that urban and suburban landowners can play a huge role in sustaining ecosystems by using native plants in landscaping. These plants provide food for pollinators, seeds and dormant insects for birds and mammals, and robust carbon storage in deep roots. I decided my writing should present the views of a character I call the Backyard Naturalist—someone who strives to increase the ecological potential of his or her land—maybe by experimenting first in the back yard, away from the prying eyes of the passersby, before moving successful operations to the front, in full view.

In 2024, I made a trip with a friend, Todd Parnell, to north Missouri, where we visited with Doug Doughty, a fifth-generation grain and cattle farmer. Doug is concerned about the local proliferation of hog houses, or confined animal feeding operations (CAFOs), with their potential to pollute water and air. Doug is not against CAFOs per se, but worries about their environmental impacts. He has only to look north, to Iowa, to see how large numbers of CAFOs have decimated water quality and streams.

The CAFO issue, however, is anything but clear-cut. Hog operations moved into north Missouri after a vacuum created by the "farm crisis" of the 1980s, when banks foreclosed on many farm properties. Initially, CAFOs brought hope of reviving small farming communities. Many people in those communities, however, now think the marginal economic benefits weren't worth it, given the declining quality of water and air and the detrimental effects on community services and quality of life.

I find the history of farming in Missouri very interesting, if complicated. That's why I'm thinking about writing a book about it, which would highlight today's problems, of course, but would mostly emphasize regenerative methods—the idea that farming, whether row-cropping or grazing, should have certain essential attributes. It should build healthy, organically rich soil so future generations of farmers can make their livings. It should protect and conserve water resources and increase biodiversity. Regenerative methods include cover crops, so soils are never exposed to the elements. Cover crops can also be grazed, increasing a farmer's profit margin, and when they decay, add organic content and increase rainwater infiltration through old root channels. On grazing lands, regenerative methods can simulate the prairie-buffalo dynamic—grass makes meat, animal wastes grows grass—a self-sustaining ecological cycle.

My environmental journey has taught me several life lessons, such as:

1. Good laws are necessary, and they work. When politicians say we need to "roll back regulations," no matter what they are, or how important they are, it infuriates me. Those laws and regulations came about for good reasons, and are intended to prevent future problems. To suggest doing away with them, willy nilly, is asinine.
2. As environmentalists, we need to talk more forcefully, and more often, about what we're for, as opposed to what we're against. In my case, a more positive approach is two-pronged; the first is to promote regenerative agriculture, as explained above. The second is to convince urban and suburban landowners that their yards are part of, and not separate from, the local ecosystem; and that collectively, those yards can play a significant role in saving the Earth's ecosystems. If enough landowners buy into this idea, we could, as Tallamy suggests, create a "Homegrown National Park," protecting more lands than all the national parks, forests, monuments, and grasslands combined. We will never have enough public parks and preserves to do the job. Private landowners must be a major part of the solution.
3. There are ample reasons for hope. Hope alone, of course, is not enough. We must act, and many of us are. More and more people are buying native plants, at least in Springfield. More farmers are becoming interested in regenerative methods, and some are making good livings at it. The public is showing increased interest in organic, pesticide-free, non-CAFO, grass-fed, locally grown food. Now if regenerative methods could just be prioritized in the Farm Bill for technical assistance and cost-share programs. Finally, resource professionals today seem to be more ecologically-oriented, more collaborative. Megan Buchanon, Director of Resilient Lands for the Missouri Nature Conservancy, suggests today's professionals are laser-focused on partnerships and teamwork, and understand the critical nature of working at the community level, where everyone has a "shared ecological context."



As I'm writing this, I'm sitting on my back deck, looking out across my little slice of urban landscape. I especially enjoy the dragonflies and damselflies, now showing up at my little pond. They don't care about my land ethic, of course, but they obviously enjoy my pond and the insect life it attracts. They don't share my concerns about biodiversity, but they do flatter me by visiting; by finding my landscaping choices to their liking. We all share the same planet, after all—the same spaces. My ethical behavior can't end at the fence line. I have ethical obligations to my neighbors, of course, but also to my fellow man, the planet, and all the wonderful life it contains. It's an environmental journey that I hope will never end.

The Backyard Naturalist website: <https://loringbullard.com/>

see Loring's recent webinar at:
<https://www.youtube.com/@moriverbirdobs/videos>





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Swainson's Thrush by Michael O'Keefe