

THE RECTRIX

A Newsletter of the Missouri River Bird Observatory

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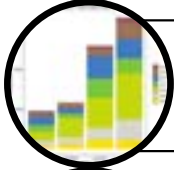
rectrix /rek-triks/ noun. (pl. -trices) any of the larger feathers in a bird's tail used for steering in flight.

Our Mission



Conservation

To contribute to the conservation of Missouri’s migratory and resident birds through scientific research, education, 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 & Outreach

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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Cover Photo: *Snack Time*
by Amy Watts



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Letter from the MRBO Directors

Happy Holidays, Fellow Conservationists!

We hope the year 2023 has been good to you. It has certainly been good here at MRBO. One of the biggest accomplishments of MRBO this year was adding two educators to our staff (Tessa Poolman and Laura Semken, at the right in the staff photo), which has propelled the organization’s outreach work to new heights! The Arrow Rock Nature School became a solid, fully functioning endeavor thanks to Laura, and MRBO has made enormous progress in delivering nature programs in Kansas City thanks to Tessa. These were big goals that, after much planning, fundraising, and relationship building, have come to fruition because we have the right educators for the job.



In the areas of science and advocacy too, MRBO made great strides in 2023. We surveyed more acreage in imperiled habitats than in any year previously, thanks to an awesome field crew. We’ve successfully delivered critical information about clean water, habitat management, food system reform, and many other important policy issues to hundreds of Missouri voters, thanks to our coalition of conservation partners. And MRBO itself has never run more smoothly as an organization, thanks to the behind-the-scenes work of Marlee Malmberg (center in the staff photo) on daily operations, communications, fundraising, and event organization.

Yes, there is a lot to be grateful for as this year comes to a close. Above all we want to thank the birds...the beings that bring us all together and inspire joy and imagination. We hope that you will consider birds – their needs for survival, their connection to everything else in the biome, and their ability to move people in positive ways – as you navigate daily life. There are so many ways from large to small that we can help individual birds as well as whole populations. The things that birds need, such as healthy water and air and expanses of quality habitats, are also things that humans need. The holiday season is a great time to mindfully examine how your actions affect the species with which we share our home and celebrate the ways in which you contribute to their continued existence.

With warm wishes for a Happy New Year,
Dana and Ethan

Nature’s Nest Box

Dear Friends,

As we come to the end of another year, I am reaching out to you with a unique and impactful opportunity to become an integral part of our conservation efforts. We are thrilled to unveil our latest initiative—the “Nature’s Nest Box”—a planned giving group that empowers individuals like you to leave a lasting legacy for environmental conservation.

The Nature’s Nest Box represents a commitment to the preservation of our natural world for future generations. By including MRBO in your will, you have the chance to create a lasting impact on the landscapes and habitats that define the beauty of the Missouri River region. Your visionary support will play a pivotal role in safeguarding these critical ecosystems, ensuring that they thrive and flourish long into the future.

Imagine a world where diverse bird species fill the skies, where vibrant ecosystems pulsate with life, and where natural habitats serve as sanctuaries for biodiversity. Your involvement in the Nature’s Nest Box can transform this vision into reality. Your legacy gift will contribute directly to scientific research, educational

programs, and advocacy initiatives that foster environmental stewardship and resilience.



By joining the Nature’s Nest Box, you become a champion for the health of our planet and a guardian for the delicate balance of nature. Your donation will enable MRBO to expand our conservation efforts, protect endangered species, and advocate for policies that promote sustainability and ecological harmony. Together, we can create a healthier environment not only for the hundreds of wild species that call the Missouri River region home but also for people.

As a member of the Nature’s Nest Box, you will be joining a community of like-minded individuals who share a passion

for environmental conservation. Your commitment will inspire others to follow suit, creating a ripple effect that extends far beyond the immediate impact of your generous gift. The changes you support today will reverberate through time, leaving a legacy of environmental consciousness and responsibility.

We invite you to be a part of this journey towards a sustainable and harmonious future. Your decision to include MRBO in your will is an investment in the well-being of our planet, a testament to your dedication to preserving the natural wonders that define the Missouri River region. Together, we can create a legacy that transcends generations, leaving a world that is richer, more vibrant, and more resilient for all.

Thank you for considering this profound opportunity. We look forward to welcoming you into the Nature’s Nest Box and celebrating the positive impact your legacy will have on environmental conservation.

With gratitude,
Diane
MRBO Chairman of the Board

Working Toward Lead-Free Ammo In Missouri and Beyond

By Jeff Meshach, Deputy Director, World Bird Sanctuary

I recently did some research on the effects of lead on raptors, or birds of prey. In my line of business, which is working to save raptors and other birds, it was almost impossible for me to not pick up the basic effects of lead, which are sickness and death. My biggest surprise during my research gathering was how many scientific papers, with research starting as far back as 1876, have been done on the effects of lead on not only birds, but most other classes of life forms. I was astounded that with all this knowledge out there, that there would be anyone that didn't know about the ill effects of lead. Unfortunately, there are some that disregard all the research, and continue to use lead to hunt. At first, I felt like lashing out. "C'MON PEOPLE!" I thought. "LET'S GET WITH THE PROGRAM!" Only took me a few seconds to know that losing my temper is not the way.

For one to first understand the effects of lead, and then help spread the word, education must be involved. For all of us that are aware, there are millions of others that have no idea of its effects. Those same people might not care to look into the issues. This seemingly careless attitude is not their fault, and is not the end of the world for us. In America, the attitude that "this issue could never affect me" seems to be quite commonplace. If those of us that have the knowledge go about "convincing" the correct way, we can gather spokespeople quickly and much more efficiently move toward a no-lead future. So, as it almost always is, education is the key. Be patient. Allow those you are speaking with to give their point of view. As mentioned earlier, never lose your temper. Nothing is gained when that happens. While you may not convince someone that chooses not to care about the evidence against lead, you are probably causing curiosity and/or starting to change minds of those listening on the fringe. Always remember that you have literally tons of scientifically proven information backing your argument.



Many bird species feed on a carcasses, as evidenced by this Blue Jay and Hairy Woodpecker.

nervous system. This system is responsible for the working of the diaphragm. The diaphragm is the bellows of the lungs, keeping oxygen coming in and carbon dioxide going out, even during sleep. When the diaphragm slows or stops working, the gases cannot be exchanged and the bird suffocates.

In raptors, lead is inadvertently eaten when a bird feeds on a gut pile or carcass that was shot with a lead bullet. Hunters have traditionally left the gut pile where the animal falls, because the guts are biodegradable. Even a bullet that passes through soft tissue sends off shards of lead that lodge in the surrounding soft tissue. Some of the larger shards can move as many as 15 inches from the original bullet path. It is safe to say whatever is left behind by the hunter is laced with lead shards. Guts that are collected (not left at the kill site) ultimately go to a land fill, where eagles, vultures, gulls and crows feed. Guts that are left in the field are also fed on by many hawk and owl species. Any bird species that will feed on suet (songbirds, woodpeckers, jays) are at risk, too. Researchers determined that only 85 milligrams (that's 0.0085 grams) of lead are enough to kill a Bald Eagle. As a comparison, a

To contribute to the 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.



What happens to a bullet as it passes through a body cavity.

Because of my interest in bird behaviors and bird training, I am one to figure out and then explain the root of an issue. If you can get to the bottom line, you can then move more quickly to the issue's repair and conclusion. While a shard of lead lodged in a live bird's muscle tissue can ultimately lead to lead poisoning, lead taken into the digestive system much more quickly brings about potentially fatal symptoms. Like all nutrients from the food we eat, lead becomes part of the slurry in the stomach, then is absorbed into the bloodstream through the wall of the small intestine. Lead attaches much more quickly than calcium to the red blood cells that transport nutrients and oxygen to the tissues. Calcium is a very important element to all the body's systems. When lead is carried to body tissues instead of calcium, the systems (e.g., circulatory, digestive, nervous) start to shut down. This is when we start to see the behavioral symptoms: reduced activity, weakness, drooped wings and lack of coordination. The system probably most important to the whole body is the central



This Red-Tailed Hawk and Bald Eagle are fighting over a deer carcass. There are many diurnal and nocturnal raptors that feed on carcasses.

World Bird
SANCTUARY



Jeff Meshach

It is not just the non-game species that are killed by lead. Before 1991, when a federal law prohibited the use of lead shot in waterfowl hunting, it's impossible to say how many tons of lead shot went into the environment. When lead shot that didn't hit its target sunk to the bottom of ponds, lakes and marshes, it was later eaten by waterfowl (especially dabblers, swans and geese) as they foraged for food. With upland game species, the shot spread on the ground from misses was eaten as grit. Grit is usually small rocks eaten by many bird species, and it helps birds digest hard-shelled seeds. Unlike many raptor species, when gamebirds and waterfowl become sick, they seek hiding places, since showing signs of sickness attracts predators. This is why it is rare to see these species lying around, which leads to less concern for them. Yet, they die from lead poisoning as quickly as the raptors.

While all the above is very concerning, there are things already happening that are bringing the promise of a brighter, lead-less future. Because of the inquiries from conservation minded hunters, individuals and organizations, many ammunition companies are now producing lead alternative bullets, many of which can be bought at any store that sells ammo, or can be ordered on line. There are at least 16 ammo producers that make full copper bullets and lead-free shotgun shells. Since 1991, shotgun shell producers have made steel shot shells. More recent shot inventions are TSS (Tungsten Super Shot), Hevi-shot, which is a tungsten/iron/nickel combination, and bismuth. Although few and far between for now, there are places that will take and recycle unused lead bullets and shotgun shells. For the recyclers, make sure to ask exactly where your unwanted lead ammo will end up. There are some places that will say they recycle, yet the lead ammo may still end up in the hands of unconcerned users. If you like to target shoot, shooting your leftover lead bullets and shotgun shells at any Missouri Department of Conservation shooting range is a good thing. MDC cleans up the lead and disposes of it responsibly.

Finally, there is a reason humans took lead out paint long ago, and continue to produce no-lead gasoline. Of course, the reason is lead is toxic to us, too. Let's give wildlife the same courtesies we bestow upon ourselves. The more of us that join the growing no-lead-in-ammo army, the more quickly the lawmakers will have to listen, and one day ban lead from any type of ammunition.

modern-day penny weighs 2.0 grams. The great folks at the Minnesota Raptor Center performed some calculations and found that only two pieces of size-6 shot (a size commonly used for hunting many gamebird and waterfowl species) equals almost exactly 85 milligrams. As a comparison, two grains of rice equal 85 milligrams, so a very small amount of lead does a lot of damage.

Conservation Federation of Missouri's Resolution on Lead Shot

Conservation Federation of Missouri
2021 Resolutions

#2021 – 10

Originating Committee: Upland Wildlife Committee
Author: Connor Wilson, Ethan Vanderwert, Charles Knocke (CLC)
Intended Recipient: Missouri Department of Conservation

Require Non-Toxic Shot for Small Game on All Missouri Department of Conservation Areas

WHEREAS, lead shot from shotgun pellets is toxic and poisons humans and wildlife through direct consumption or food web interactions, exposing over 130 species, including mammals, upland game birds, scavengers, raptors, waterfowl, amphibians, and humans; and

WHEREAS, lead ammunition is toxic to wildlife in two ways: primary poisoning (an animal ingests spent ammunition directly from the environment when searching for food) and secondary poisoning (an animal consumes lead poisoned or contaminated prey while hunting or scavenging); and

WHEREAS, lead is banned from gasoline, paint, and other household items in most developed countries, but is still used as our primary shot source; and

WHEREAS, wildlife are not likely to encounter lead from natural sources in the wild and primarily gain exposure from humans; and

WHEREAS, lead exposure can affect both the peripheral and central nervous system in wildlife and humans; and

WHEREAS, animals that survive lead poisoning often experience long-term negative effects that make them more susceptible to dangers such as predation and car collisions; and

WHEREAS, lead shot deposited on the land will not decompose and may contaminate soils and water or be consumed by wildlife; and

WHEREAS, mitigation or removal of lead contamination is possible, but is prohibitively expensive; and

WHEREAS, since 1991 waterfowl hunters in Missouri have been required to use non-toxic shot which has reduced incidences of lead poisoning from lead-shot ingestion by birds – including waterfowl and eagles – and other wildlife; and

WHEREAS, it is estimated that lead-poisoning deaths of mallards in the Mississippi Flyway have fallen by 64 percent, and overall ingestion of toxic pellets declined by 78 percent over previous levels; and

WHEREAS, 37 conservation areas in Missouri have lead shot bans for all hunting with shotguns along with 20 other conservation areas that have lead shot bans for dove hunting; and

WHEREAS, expanded restrictions would increase efficacy of human health and wildlife protections from lead poisoning; and

WHEREAS, there are currently 13 types of non-toxic shot that are approved by the United States Fish and Wildlife Service; and

WHEREAS, while prices and availability fluctuate, non-toxic shot has been available for small game loads at prices that are comparable to lead shot; now, therefore, be it

RESOLVED that the Conservation Federation of Missouri assembled this 6th day of March, 2021, recommends that the Missouri Department of Conservation expand the requirement for the use of non-toxic shot to all small-game species when hunting with shotshells on all property it owns or manages.

Searchable keywords: human health, hunting regulations, state public lands, small game, toxic shot, lead shot, non-toxic shot, lead poisoning
Expires: March 6, 2026





Education

Education Program Updates

This fall, Missouri River Bird Observatory educator Laura Semken led 10 traveling outreach programs reaching over 1,500 individuals. She traveled from the Ozark Rivers Audubon Fall Nature Festival in Rolla, to a Mo Foster Adopt program in Jefferson City and back again to Arrow Rock and Columbia working with families and school groups, all with the goal of connecting participants with nature.

Also during the fall, the Arrow Rock Nature School at the Lawless Farmstead hosted six schools, 191 students and 40 adults this fall. Schools included Miami, Slater, Blackwater, Orearville, and Glasgow plus one home school group. The Traveling Nature School reached an additional 114 students and 16 adults at three more school visits which included Marshall and Bunceton. Nature school programs focus on the value of biodiversity, how food webs function, and the life cycles and adaptations of plants and animals found in the forest, pond and prairies of Missouri.

Students from Orearville sent thank you letters in appreciation for their time learning outdoors. Here are just a few of the testimonials to the benefits of learning outside:

"The thing I most enjoyed about this trip was when we got to go to the pond

and see all the little bugs that we would not get to see without a net. One thing I learned was that dragonflies don't start off with a long shaped body." Sincerely, Ben

"Thank you for allowing us to partake in the exploration of Arrow Rock State Park and the capturing of the wildlife there. It was very fun and it made me feel confident about myself because no one else wanted to touch the animals. I enjoyed catching the animals at the pond the most because I love water. It was also educational because I learned that tadpoles can be much bigger than I thought. The trip was super fun and I hope we can do it again, as long as we go on a hike!" – Cooper (The Fungi Kid)

"The thing that I really liked about Lawless Farm was when we got to make the food web. I enjoyed making the food web because we all had to work together as a group." - Claire

"The main thing that I took away from this experience was how every organism has its own special role in their ecosystems." – Charlotte

The Arrow Rock Nature School is made possible because of generous grants and donations from the Buckner Foundation, Patterson Family Foundation, Bass Pro,

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.



and individuals from the community. We would also like to thank our partner organizations the Missouri Department of Conservation, Missouri State Parks and the Friends of Arrow Rock.

In MYBC news, a new chapter in the Ozarks has been formed led by Tausha Aubuchon from Rolla, Missouri. We now have five chapters, five leaders, and 76 members. In November the monthly meeting presentation was done by one of the members, Levi Hartz, on Birds found in Wetlands. He did a wonderful job sharing his explorations with both stories and original photos shot on site. He also gave birding pointers and other practical information about planning a bird expedition.



curate engaging programs tailored to their preferences.

With continued dedication to community engagement and conservation efforts MRBO hopes to make a meaningful impact, and we look forward to witnessing the positive outcomes of new initiatives in the coming weeks and months!





Little Nestlings Corner!
Tammy Gillespie, MRBO Volunteer and Board Member
Answers are on page 15.

There are 7 simple actions YOU can do to help birds. We highlight each of these in the coming year. This month we talk about how you can help birds by becoming a citizen scientist.



Learn bird facts

 The bird population has gone down 30% since the 1970s.
 The US Fish and Wildlife Service reports bird watching is growing. In 1980, 12 million Americans took part in bird watching activities. It was up to 45 million by 2019!

Ask bird questions

Why are there fewer birds? Habitat loss is the biggest threat. We list the next two reasons. Do you think they are in the correct order? Write 1 next to the biggest threat and 2 next to the second leading threat to birds in the United States. See the correct order on page ____
____Birds flying into windows
____Cats killing birds

Meet other kids who want to help birds

Go to <https://www.moyoungbirders.org/> to learn about doing fun birding activities like the Christmas Bird Count, a free, annual citizen science activity that started in 1900.

Bird Photo Contest ends December 31, 2023



Did you know that you can win a cash prize and an opportunity for YOUR bird photographs to be seen on social media and by people throughout our state? It's true! The Missouri River Bird Observatory has an annual bird photography contest and it includes a youth category.

Entry fee: \$10 per photo for youth aged <16 years old
Prizes: Youth First Place: \$300 and Youth Second Place \$200
Scoring: Photographs will be judged on:

- Composition (1/3)
- Originality (1/3)
- Technical and artistic quality (1/3)

Rules, previous winners' photographs and full instructions on how to upload your photo and pay the entry fee (\$10 per photo) is available at <https://mrbo.org/photocontest2023/>

Tip: MRBO has a free webinar on Bird Photography! Go to <https://mrbo.org/bird-photography-webinar/> to learn more!



1. Study the birds in the bird feeder picture. Draw a circle around each bird you think you have seen before.
2. Fill in the empty, bird shape with the colors of your favorite bird. Go to <https://mrbo.org/newsletters/> to see different types of birds.
3. Why do we have fewer birds than we did in 1970? Share your ideas.



What is citizen science? Citizen science is when regular people, including kids, help scientists study the world.

Directions: Practice citizen science skills by examining a plant and completing this form.

	Draw this part	Describe it	What do you think it does for this plant?
Stem			
Leaf			
Roots			



Advocacy

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

Why Lights Out Programs & Bird-Safe Windows Are Critical

On the morning of October 5th, 2023, the bird conservation community was astonished by news out of Chicago that a major bird collision event occurred over night and into the morning. At just one building, McCormick Place, a predominately glass structure on the Lake Michigan shore, more than 1,000 birds died. Volunteers with Chicago Bird Collision Monitors and researchers with the Field Museum of Chicago reported birds striking windows above their heads while they were collecting carcasses from the ground.



This event was caused in part by uncontrollable conditions – a high density of migrants heading south into adverse weather conditions and low cloud cover – along with the avoidable circumstances of a known collision-prone building at which lighting was not extinguished despite multiple pleas from conservationists. McCormick Place typically averages 500-1,000 bird strikes each year, a very high rate; studies have shown that **strikes are reduced by almost 80% when the building's lights are extinguished**. Management is aware of the problem and in fact the building is nominally part of the Lights Out Chicago program, but only intermittently employs the Lights Out guidance that is embraced by many Chicago businesses, particularly on the lakeshore. As you can see from the graphic on the right, which was published as a full page in

Today in Chicago we are experiencing an unprecedented number of window collisions. This is just under 1000 birds salvaged from a single building along the lakefront THIS MORNING! The bulk were Tennessee, Palm, Myrtle Warblers, and Magnolia Warblers. I can't imagine what the rest of the city's casualty figures will look like. The previous high count for one building in the last 40 years was a couple hundred birds.



the Chicago Tribune a few days after the event, the American Bird Conservancy and other local, regional, and national bird conservation organizations are calling for more rigorous action to prevent bird strikes.

On a positive note, the October event immediately motivated residents and elected officials in the nearby suburb of Evanston, Illinois to begin developing a Lights Out program in their town. The enormous number of bird deaths, and the associated photos and accounts from people on the ground, generated a remarkable amount of press that further increased public awareness of this issue. Hopefully, this tragic story will continue to drive the implementation of Lights Out adherence, employment of strike deterrents on existing collision-prone windows, and inclusion of bird-safe glass on new construction. These measures are especially important in metropolitan areas that lay within major migration routes, such as Kansas City and St. Louis.

You can read more about the Chicago bird collision event, including an analysis of the environmental conditions that caused such an intense migratory fallout: <https://birdcast.info/news/major-collision-event-in-chicago-4-5-october-2023/>



Missourians Gather for Clean Water!

Advocates at 'Clean Water Now' event urge MO residents to take action, stop pollution

By Claudette Riley, *Springfield News-Leader* Staff Reporter
This story originally appeared in the *Springfield News-Leader* on Sunday, November 19th and is republished with permission.



Chris Jones, Hydrosience Research Engineer

A noted water quality research engineer who has documented the impact of large-scale animal feed operations on the environment, small farmers and rural communities in Iowa stopped in Springfield on Friday evening to issue a warning.

Chris Jones, who has authored a new book *The Swine Republic: Struggles with the Truth about Agriculture and Water*

Quality said the time to act is now if Missouri does not want to replicate the pollution that has plagued his home state.

Jones, an expert in hydrosience who recently retired from the University of Iowa, said Iowa is home to thousands of concentrated animal feed operations — a CAFO has at least 1,000 confined or stabled animals — far more than the 500 or so CAFOs present in the Show-Me State.

He said the shift from small, independent and family-owned farms to large animal operations, some of which are corporately owned, has been disruptive and created profound environmental challenges.

"If you try to stave off CAFOs down here and preserve your water quality, you will have to fight," he warned Friday.

"It is not hopeless but just keep in mind that you are in for the fight of your lives to preserve your natural resources once the big livestock producers" start to expand, he said.

Jones was the main attraction at "Clean Water Now" events Thursday in Columbia and Friday in Springfield. He was part of a panel that included:

- Tim Gibbons, communication director for the Missouri Rural Crisis Center, which represents independent family farmers, rural families and their communities and citizens concerned with food supply, natural resources and democracy;
- Jess Piper, executive director of Blue Missouri and a voice for the «Dirt Road Democrat» movement. The former teacher from northwest Missouri is an advocate for rural communities and public schools;
- Curtis Millsap, who along with wife Sarah and their children, operate Millsap Farms just four miles north of Springfield. Their diverse 25-acre farm includes organically grown flowers and vegetables.

Even though the Springfield event was the Friday before a holiday week, more than 125 people showed up to the Judy Thompson Conference Center on the campus of Drury University.

Interest was heightened because Missouri Prime Beef Packers, based in Pleasant Hope, recently has sought a permit from the state Department of Natural Resources to dump treated wastewater in the Pomme de Terre River.

Residents in communities surrounding that water source — just 50 miles north of Springfield — have been fighting the permit. DNR recently issued a draft notice indicating its intent to deny the permit.

The final decision is still up in the air with public hearings set for December and early January.

Dave Coonrod, an environmental advocate and volunteer with Missouri Guardrails, a group working to protect property rights and clean water, started the two-hour event by noting the learning curve for this issue is steep for many.

Coonrod, former Greene County presiding commissioner, urged the crowd to get informed, spread the word, and reach out to those who set policy and make laws in an effort to protect water quantity and quality.

"When we get up every day, I think most of us without a second thought turn on our tap and it's clean and you can drink right out of it," he said.

Gibbons urged the audience to support limitations and oversight for any large-scale, corporate and multi-national farm and animal operations.



At a "Clean Water Now" event Friday, November 17th in Springfield, a panel included, from left, Tim Gibbons, Chris Jones, Jess Piper and Curtis Millsap. Photo by: Claudette Riley

He said buffers must be set, at the state and local levels, because CAFOs generate concentrated animal waste, which must be handled properly so it does not end up in a water source.

“Local control is having local people, local county commissioners generally create additional setbacks — setbacks from the CAFO to people’s houses, setbacks from the waste application from people’s personal property, from farms that have been there for generations, from water sources,” he said.

In Missouri, the Republican-controlled legislature severely curtailed local control over CAFOs with a 2019 law that prohibits cities and counties from adopting regulations that are stricter than those at the state level. Cedar County commissioners in the Stockton Lake area were among those who challenged the law, only to be defeated when it went to the Missouri Supreme Court.



Tim Gibbons, Missouri Rural Crisis Center Communication Director

In moderating the discussion, Gibbons said the encroachment of large-scale operations has led to dire outcomes for farmers, consumers, rural communities and the environment.

“Today, a handful of corporations dominate the U.S. pork market, sidelining countless family farm hog producers. This consolidation has far-reaching implications for our food system, national security, and the livelihoods of countless farm families,” said Gibbons, in a news release prior to the event.

“With a new Farm Bill on the horizon, we need a fresh vision and a Farm Bill crafted for and by Americans, taxpayers, farmers, and consumers — not one dictated by corporate interests.”

Jones said Missouri is fortunate because there is ample land set aside for public use and conservation, which is not the same in Iowa.

“In Iowa ... everything that can be farmed, it is farmed,” Jones said. “We don’t have these natural areas where we can buffer the effects of farming.”

Small actions can add up, advocates say

Millsap, who started a farm north of Springfield where he raises vegetables, flowers and his children, said one way to fight back is to support small and independent farmers.

“There are a lot of bad things in the world and there is a lot of Goliaths but there is also a lot of little stories that are gradually making a difference,” he said.

An organic farmer, he said there are no silver bullets but there are ways to make small differences that will pay off in bigger ways later.

He said big issues, like water quality, will not be solved with “one big overarching” fix. Instead, he argued small steps will tap or nudge toward the right outcome.

“What have I learned from farming for 16 years? One of the things I’ve learned is that small actions matter. They aren’t the whole thing but every time somebody chooses to buy food that was produced in a way that is better than we have described here — that honored the virtue of clean water, that honored biodiversity, that sequestered carbon — then they are tapping that little silver hammer,” he said.

Piper, who made an unsuccessful bid for the state House in 2022, said efforts to protect water quality and family farms are critical to the survival of small towns, hospitals and school districts.

She said the “challenges of rural decay and disinvestment are all intertwined.”

Piper said given that Republicans have a supermajority in Jefferson City, any effort to fight expansion of CAFOs in Missouri will have to get creative and loud. She added that a supermajority of either party limits opposition.

“What Chris is talking about that happened in Iowa, the same thing is going to happen here unless we stand up and we talk back,” she said. “And every single one of you in here deserves better than that and so do your kids and grandkids.”

She offered a variety of steps that citizens can take to protect natural resources in Missouri.

“Talk to folks, call your representatives, if you can run for something run for something, write letters to the editor, find a candidate, a nominee, that you believe in, write postcards for them, open up your wallet,” Piper said. “Sometimes you have to budget for democracy. Send someone a few dollars so they can work on your behalf.”

Missourians must decide how much animal manure waste is too much

Your Turn
Cheryl Y. Marcum
Springfield News-Leader

Thanks to Missouri Guardrails, The Ozark Society, et al., for co-sponsoring The Inconvenient Truth About Clean Water in Missouri on Friday night at the Judy Thompson Conference Center at Drury University. It featured recently-retired University of Iowa research engineer, Dr. Chris Jones, and a panel.

As the scientist responsible for the system of water quality sensors maintained by the University of Iowa, Jones regularly blogged what the data reported: water dangerously polluted with nonpoint agricultural “nutrients,” think nitrates and phosphorus. Missouri has no comparable system of water quality sensors.

Jones’ recently published book, “The Swine Republic, Struggles with the Truth About Agriculture and Water Quality,” is a collection of those blogs. Check out the blog that grabbed public attention in 2019 just as we faced Senate Bill 391: <https://cjhones.ihr.uiowa.edu/blog/2019/03/iowas-real-population>. It compares Iowa’s human population waste to the ghastly amounts of food animals’ waste in the state, by watershed.

In 2019, Cedar County residents opposed Senate Bill 391, which disemboweled the authority of county commissions and county health departments to regulate concentrated animal feeding operations (CAFOs) in their communities.

Our Cedar County Commission partnered with the Cooper County Public Health Board, non-profit Friends of Responsible Agriculture, and three farmers to file a lawsuit against the state of Missouri. The goal: to protect rural residents’ water, air, soil, health, our precious rural lifestyles, and our property values from CAFOs intruding too close to where we live.

After the Cole County Circuit Court ruled in favor of the state, the plaintiffs appealed to the Missouri Supreme Court. In March 2023, it ruled unanimously that our state legislature has full authority to regulate CAFOs — to determine the proximity of CAFO industrial barns, omnipresent manure waste lagoons, and perpetual manure waste land application, to our homes, public places, and water features. Our legislature requires no setback from homes for “barns” confining up to 81,999 laying hens, or up to 2,499 finishing hogs. All sizes of manure systems may be located within 50 feet of a residence and manure waste applied within 50 feet of property boundaries. Think about that.

We were fortunate to have the opportunity to learn about the looming clear and present danger from Dr. Jones and panelists Tim Gibbons, Missouri Rural Crisis Center; Jess Piper, fierce advocate for rural communities; and Curtis Millsap, who raises broilers, turkeys, layers, goats, hogs, cattle, flowers, and vegetables, plus operates a home bakery and several other enterprises on his 20-acre Millsap Farms in Springfield.

Follow up with “Iowa’s Real Population” blog, read Jones’ book, and talk to everyone you know about how much untreated animal manure waste spread on our land is too much.

Cheryl Y. Marcum lives in Cedar County.



Scientists say untreated animal manure waste spread on our land is too much.
GETTY IMAGES

Thank you to everyone that came out to the Clean Water events in Springfield and Columbia, and to all of the co-sponsors!





Community News

Despite addictive news of gloom and doom, hope flourishes around us

Shawna Bethell, MRBO Volunteer & Independent Journalist
This story originally appeared in the *Kansas Reflector* and is republished with permission.

I talked to a friend of mine recently. She has always been one of those people who began work around 8 a.m. and could easily be found editing her final report a good 12 hours later, taking a break only to go on an arduous hike to reach her daily exercise goals. But now, she said, she's often ready to go back to bed by noon, too tired or indifferent to work or even go on the gentlest stroll.

I understand. I often find myself ready to hide under the covers by noon and I'm beginning to think it is not allergies or illness or even a less-than-quality night's sleep. It is simply world fatigue: too much doom, darkness, drama. Too much news, too much social media, too much bickering just to bicker. The world is burning and I — who have been an activist all my life — just want to pop in a movie and let the flames rise.

But I am beginning to wonder how much of the doom is cultivated by major media outlets angling for our attention. And as a writer, it pains me to say this.

I do believe our climate is changing. I believe we have just faced a dangerous pandemic. I don't dispute these events. However it is also well documented that humans are geared to fixate on the negative. It is theorized that early in our evolution, we had to focus our awareness on danger — the negative aspects of life — because it was necessary for survival. Media outlets can prey on this tendency.

The problem is that a fear-based existence also creates apathy, a numbness that eventually prevents us from engaging. I am afraid that for the past few years we have been in such a permanent "high alert" status, that we have tuned out, out of self-preservation.

A journalist friend wrote in his newsletter over the summer that after researching his work and flying across two continents shrouded by smoke, his optimism is finally eroding. I have felt the same myself, until recently.

It's not that I've become a Pollyanna or that I have my head in the sand. Often, even, I have been called a pessimist, though I prefer to think of myself as a realist. I still believe that humans will not act for change until they find themselves face to face with whatever dread thing is happening. For example, we are appalled at images of sea animals dying from masses

of plastic in their stomachs; however, unless we were on the beach with the suffering beast, most of us will continue to buy plastic trinkets.

But my fear is that we are reaching a point when even the people who do care and who do act are becoming unable to do so. I fear, in our fear-based, media-fed apathy, that we will not dredge up the fortitude to make plausible change happen. I am afraid we will only ask ourselves, "What's the point?"

Last night I watched a nature show, which I rarely do anymore, and I braced myself. Understanding the issues of climate and extinction, I dreaded the feeling of despair I knew would come when the show ended and they gave me the dire warning about what we are losing. But the warning didn't come. Instead, the narrator explained in a single sentence the richness we still had and the opportunities to protect it. It left me hopeful, enamored with our natural world and re-invested in its protection. The television producers had used a different mental tactic, and it hit its mark.

As a writer and activist, I understand the anger and the urge to shock people into action. But I have also come to believe it doesn't work; people revolt against feeling guilty.

Of course we need to be informed as to the hard realities that exist, because they are real, and we must rely on quality journalism for that information. We also need to understand that quietly and without fanfare, people across the world are doing amazing things. Instead of scrolling for doom, we must acquaint ourselves with solutions and share them.

It is true that our world will never again look the way it did when any of us were born. Change is happening rapidly. But it is possible to work within the parameters we have and move forward. That, too, is already happening. It is OK to hope. Let it be as contagious as our fear.



A Blue Jay perched on a bare branch can serve as a symbol of hope during this winter season, when so much seems awry in our country and the world. Photo by Shawna Bethell

Upcoming Events - MRBO & Partners

- Nature Art: Winter Reflections**
Date: Saturday, December 30th, 2023 10:00 AM - 2:00 PM
Where: Anita B. Gorman Conservation Discovery Center, 4750 Troost Ave, Kansas City, MO 64110
Nature provides incredible inspiration and one-of-a-kind art supplies in our own backyards. Welcome in the new year as we explore the native habitats throughout the Discovery Center's big backyard and gather dried stems, leaves, berries, nuts, grasses, feathers and other winter treasures. Step back inside and use your creative side as you create your own unique nature art! If accommodations are needed, please e-mail the instructor, Susan Harris at Susan.Harris@mdc.mo.gov, at least one week prior to the program.
 - Crazy Cool Birds**
Date: Saturday, January 13th 10:00 AM - 2:00 PM
Where: Anita B. Gorman Conservation Discovery Center, 4750 Troost Ave, Kansas City, MO 64110
Come learn about bird behaviors and adaptations and maybe even imagine you are a bird!
 - Happy Healthy Home Family Day in Arrow Rock**
Date: Saturday, January 13 from 10:00 AM - 12:00 PM
Where: Arrow Rock State Historic Site Visitor Center
Try recipes that can reduce the amount of plastic waste in your home plus discover fun ways to upcycle everyday items into garden treasures. This family friendly event will be set up in stations so you can make-n-take your creations home.
 - Woodpeckers of Missouri**
Date: Saturday January 20th 10:30 AM - 12:00 PM
Where: Anita B. Gorman Conservation Discovery Center, 4750 Troost Ave, Kansas City, MO 64110
Join Missouri River Bird Observatory staff for an in-depth look at woodpeckers' distinctive markings, communication behavior, habitats, ID tips, conservation projects and more! Woodpeckers of Missouri Part II: Following the program, come build a woodpecker feeder to take home and display on your landscape!
 - Kestrel Nesting**
Date: Saturday February 10th 10:00 AM – 11:00 AM and 12:30 PM – 1:30 PM
Where: Anita B. Gorman Conservation Discovery Center, 4750 Troost Ave, Kansas City, MO 64110
Kestrels are the only falcon on this continent to nest in cavities. They are found on farmland, suburban and urban areas. Because of changes in their environment, these beautiful falcons have declined in some areas. Join naturalists at the Discovery Center for one of two sessions to learn more about nesting boxes, the importance of monitoring kestrels and how nesting boxes allow us to do that.
 - All About Birds Family Day**
Date: Saturday, February, 17th from 10:00 AM - 12:00 PM
Where: Arrow Rock State Historic Site (ARSHS)
We will begin our adventure at the ARSHS visitor center. Create bird friendly crafts, take a bird observation hike to the BirdHouse, and enjoy hot cocoa while participating in the Great Backyard Bird Count.
 - Conservation Federation of Missouri Convention**
Date: Friday, March 1st 5:00 PM - Saturday March 2nd 9:00 PM
Where: Lodge of Four Seasons, Lake Ozark, MO
Join fellow Missouri conservationists for learning sessions, resolution crafting, and policy sessions. MRBO is sponsoring the Saturday affiliates luncheon.
- For more information visit our website:**
<https://mrbo.org/events/>



Winter Learning Series 2024

All conservation, all the time

Every Monday @ 6:30 pm CT January 8th - March 25th,
All on Zoom - join us from anywhere!

- January 8th - Intro to the Learning Series: Why These 11 Topics Matter for Wildlife Conservation - Dana Ripper & Ethan Duke, MRBO
- January 15th - The Missouri Legislature's 2024 Session and the Environment - Charles Miller, Missouri Confluence Waterkeeper
- January 22nd - Nearby nature: Trends in Urban Biodiversity From the Global to Local Scale - Dr. Christine Brodsky, Pittsburg State University
- January 29th - The Problems with Plastics - It's Worse Than You Think! - Rebekah Creshkoff, Beyond Plastics
- February 5th - Rare Insects of Missouri and Their Conservation - Steve Buback, Missouri Department of Conservation
- February 12th - Light Pollution and Birds - Travis Longcore, UCLA Institute of the Environment and Sustainability
- February 19th - What Does Coffee Have to Do With Birds?! - Sarah Kendrick, US Fish & Wildlife Service
- February 26th - Your food - Prairie, Birds, and Beef Production - Steve Clubine, Rancher/Grassland Biologist
- March 4th - Nature's Best Hope - Doug Tallamy, University of Delaware, Award Winning Author
- March 11th - Dicamba/2,4-D and Trees: Old Chemicals Causing New Problems - Robbie Doerhoff, Missouri Department of Conservation
- March 18th - Creating Safer Passages for Migrating Birds - Krystal Anton, Johnson County Community College
- March 25th - The Swine Republic: Struggles With the Truth About Agriculture and Water Quality - Chris Jones, Research Engineer/Author

Registration



bit.ly/winterlearning2024



Help Support MRBO in Our End of Year Fundraisers:
CoMoGives and The Eighth Annual Photo Contest



<https://comogives.com/product/missouri-river-bird-observatory/>
For the first time, MRBO is a participant in CoMoGives, an annual online fundraiser that supports 175 high-impact nonprofits in Columbia and Mid-Missouri. The Community Foundation of Central Missouri organizes this event yearly and last year helped raise almost \$2 million for the participating organizations.

Some of the fun is in the "Peer to Peer" section of the CoMoGives website. Several of MRBO's Board Members, friends, and staff are offering donors "rewards", shown above, for their support.



Hope is The Thing With Feathers



<https://mrbo.org/photocontest2023/>
Support conservation AND have the chance to win big cash prizes! Adult entries are \$25 and youth entries are \$10, with all proceeds going to MRBO's education and outreach programs! Thanks to the contest sponsor, Wood & Huston Bank, the contest awards are:
Conservation Grand Prize: \$1,000
First Place: \$500
Second Place: \$250
Third Place: \$150
Youth First Place: \$300
Youth Second Place: \$200

Thank you to everyone who attended our supporters parties!

MRBO is very thankful for the many supporters who make our work possible. Each year we host an event to take the opportunity to express our gratitude in person to all. In the past we have hosted "The Supporters Party" at the BirdHouse in Arrow Rock. As our donor base has expanded we felt that it would better serve those we wanted to thank if we moved the festivities closer to them. After much consideration, we decided the best way to accomplish this mission was to have four parties, three for our supporters and one or our fabulous volunteers who help keep us afloat. We want to thank those who attended the Kansas City, Marshall, and Columbia parties!



Thank you for your Support

The following individuals and organizations have provided support during 2023 along with several anonymous donors. 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 December 13th, 2023 - the date this issue went to print - will be acknowledged in the spring issue of the Rectrix!

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|----------------------------|---------------------------|---------------------------------|------------------------------------|
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In Memory of Jerry Nelson:
Jerry was an avid birder and strong supporter of youth programs. We hope this contribution will further enhance the vision of MYBC. May it continue to instill a spirit to exploration, learning, and create opportunities for all to enjoy the birding experience.
-Brian Nelson and Family

Little Nestlings Corner Answers:
The top two threats to the U.S. bird population: 1) Cats kill about 2.4 billion birds each year 2) Birds flying into windows kills 599 million birds each year.
Source: <https://ecolsys.annualreviews.org>





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Hope is The Thing With Feathers

The Missouri River Bird Observatory's
Eighth Annual Missouri Bird Photography Contest
November 1st - December 31st, 2023

