

**Fiscal Year 2023 Report**  
**1 August 2022 - 31 July 2023**

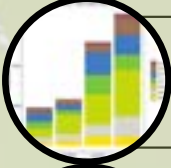


# Our Mission



## Conservation

To contribute to the **conservation** of birds and their habitats via science, education, and advocacy.



## Science

To **gather data** 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 learning opportunities** for people of all ages and backgrounds to enjoy and learn about species and habitat conservation.



## Advocacy

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

## Staff

**Dana Ripper Duke**  
Director/Founder

**Ethan Duke**  
Director/Founder

**Marlee Dodson**  
Operations Assistant

**Tessa Poolman**  
K.C. Community Conservation  
Educator

**Laura Semken**  
Education Coordinator



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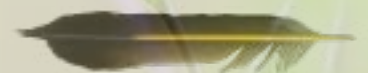
**Tammy Gillespie,**  
Columbia, Missouri

**Janine Machholz**  
Glasgow, MO

### Cover photo: The Importance of Conservation by Lisa Saffell

For me, this photo screams "Bring back the prairies and grasslands!" There is a quote by Sir David Attenborough, "No one will protect what they don't care about; and no one will care about what they have never experienced". My photo does not do this tiny immature Henslow's Sparrow justice. It was a truly serendipitous moment in time. A bird that I searched and searched for on several occasions just popped up out of the grasses, four feet away from me while I was walking with some birding friends. A glorious five or six minutes spent with this beautiful and fragile creature that was very curious about the three humans who were fawning all over it.

Before I became interested in birds I had no idea about the importance of habitat. Once I discovered that there were thousands of birds outside of my urban yard, and that many of them could only be found in very specific habitats I became curious. When I started to experience moments like the one I had with the Henslow's Sparrow I started to care....very much. Many of my friends and family live vicariously through my photos and stories. I share my experiences, photos, and knowledge of birds and insects and many people who have never even heard of, much less seen, a Henslow's Sparrow will learn some things about this bird and about its conservation status. They will learn that its numbers are declining and that it is endangered in several states because most of its preferred habitat has been converted into agricultural land. Small things add up and we can't overlook the value of constantly sharing photos and information to friends and family on social media. The only way we can make people care about conservation is by making them aware.



# Letter from the MRBO Directors

Ethan Duke & Dana Ripper Duke

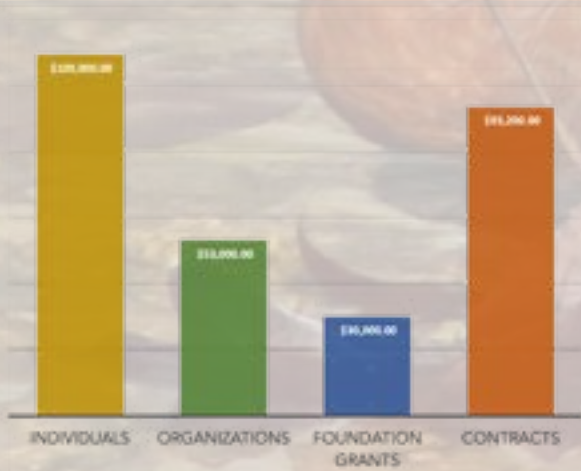


**With our thanks to other MRBO staff, the Board of Directors, and the volunteers who keep the BirdHouse open and make the BirdSafeKC project possible.**

Fellow conservationists,

Thank you for your interest in reading this report on the activities of the Missouri River Bird Observatory (MRBO) during fiscal year 2023, which ended July 31<sup>st</sup>. If you are a first-time reader, welcome! MRBO's mission tagline is *conservation via science, education, and advocacy* and you will see that these are the topic areas addressed in this report. In the delivery of conservation on a daily basis, it is actually quite difficult to separate these three areas. Science is foundational to everything we do and informs MRBO's education and advocacy programs. Effective advocacy for sound conservation policy relies on education and outreach to build people power. And education programs often take the form of presenting scientific data and important information about current events and policies. It is sometimes challenging to know whether to categorize a public event, for example, in the Science, Education, or Advocacy section. Like ecological systems, everything is connected!

MRBO is now 13 years old as an official 501(c)3 organization, and was founded upon work begun in central Missouri in 2008, making it effectively 15 years of age. At the time we saw a potential niche for an independent, bird-oriented non-governmental organization (NGO) focused on scientific research, monitoring, and education. The wildlife conservation community here in Missouri was extraordinarily welcoming of a start-up NGO and we immediately found ourselves connecting MRBO with a variety of partner organizations. These partners are still at the heart of everything we do – MRBO's Science takes place in partnership with state agencies and larger NGOs, our Education programming is done for and with schools, other organizations, and community groups, and our Advocacy is done in service of a large collective of conservation partners.



We are often asked how MRBO is funded and how funding is used. Please see the graph to the left for information about FY23 income sources. In FY23, funds were used for staff salaries (69%), project travel (10%), facility costs (6%), program supplies (6%) and other (9%), which includes various expenses such as IT, printing, and insurance. At the programmatic level, each focal area is funded differently. MRBO's Science work is almost entirely funded by contracts from state and federal agencies and large nonprofits. These entities engage MRBO to collect bird data on lands that they own or manage in order to get a measure of how effectively habitat management is sustaining bird populations. Our Education work is currently funded by a combination of foundation grants, Missouri Department of Conservation partnership funds, grants from other NGOs, and individual donors. For most of MRBO's history, Education was funded entirely by donations from individuals. Advocacy efforts are funded in small part by unrestricted individual donations but are mostly done on a volunteer basis by MRBO staff with assistance from traditional volunteers. The BirdSafe

Kansas City project, for example, is operated entirely by a small team of very dedicated volunteers, many of whom who have been working on the project for almost five years. MRBO's extensive work on plastic pollution and food system reform is currently unfunded. Please see the charts on page 11 to view specifics on income and expenses by program area.

MRBO currently occupies two locations in the Village of Arrow Rock, Missouri. One is the BirdHouse, which is primarily a visitors' center catering to tourists of the Village. The center is staffed largely by volunteer interpreters who provide conservation education to the general public. The other facility is the Lawless House and grounds, a site owned by Missouri State Parks and occupied in partnership with the local nonprofit Friends of Arrow Rock. The Lawless property is the site of MRBO's Arrow Rock Nature School, an intensive endeavor that has finally come to fruition during FY23. You can read about the Nature School in this report and updates are provided in all of MRBO's seasonal newsletters and monthly e-newsletters.

As you are finishing with this report, please take a look at the very back cover and peruse the *Seven Simple Actions to Help Birds*. As the name implies, these are everyday things that are very easy for individuals to do, and collectively these actions will contribute to the conservation of birds and other wildlife. We encourage you to dive deeper into one or more of these issues beginning with the information at <https://www.3billionbirds.org/7-simple-actions>. If you have the means, we also urge you to give to conservation nonprofits, whether that's MRBO or one of our extraordinary partners, who are addressing environmental issues on a larger scale than we can as individuals.





# Science



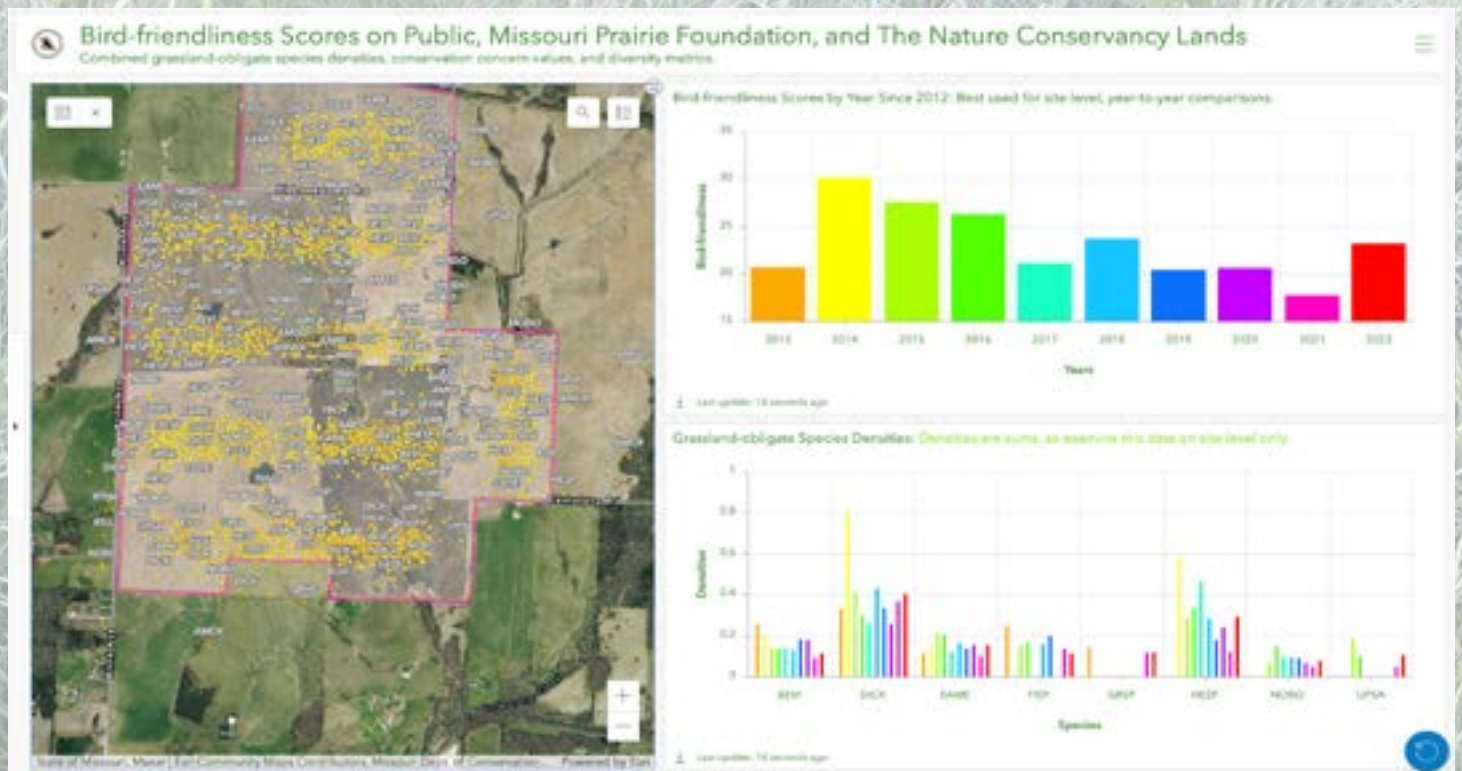
## Monitoring Birds in Missouri and Beyond



MRBO has been conducting comprehensive bird and habitat surveys in the Midwest's most **impaired habitats - prairies and wetlands** - since 2012. In FY23, we surveyed 87 prairie sites in Missouri, two in Kansas, and two in Oklahoma. Twelve of the Missouri sites and all of the Kansas and Oklahoma sites are private property; the remainder are Missouri Department of Conservation, Missouri Prairie Foundation, and The Nature Conservancy properties. MRBO surveyors collectively logged over **16,000 detections of target species**, bringing our full dataset to over 100,000 birds. Dickcissel was the most frequently detected of the grassland obligate species, while Loggerhead Shrike was the scarcest. Unlike previous years in which small numbers of Greater Prairie-Chicken were detected, none were observed this year.

Survey data are analyzed in the platform R to result in density and abundance estimates. Over the past 10 years, bird densities at many sites have declined, probably reflecting overall hemispheric trends in population. However, some sites that have been reconstructed to prairie, or that have undergone **intensive management** with the explicit goal of improving wildlife habitat, are showing stable bird densities or slight improvements.

MRBO Director Ethan Duke has developed an innovative way to display and share data using **interactive online dashboards** such as the one pictured below. Data from public lands are accessible to anyone, while data from private sites are restricted to each landowner. Survey data are available for viewing on these dashboards the day after surveys are complete.

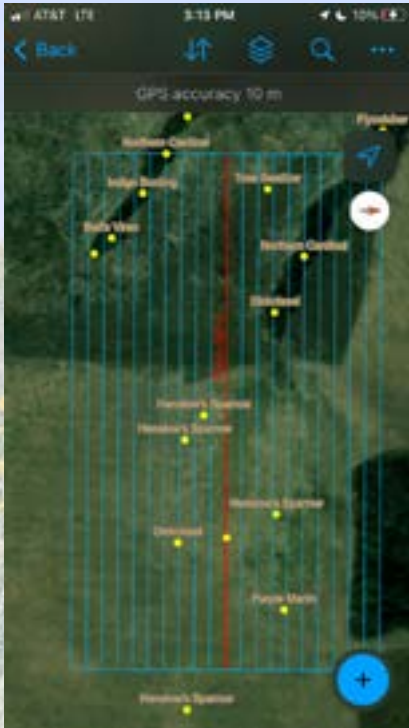


Funded by



Audubon





Bird survey data are collected using ESRI Field Maps (pictured above) on mobile devices such as smartphones and iPads. This app allows surveyors to enter a placemark for **birds exactly where they are seen or heard** on the landscape. Traditional distance measures, depicted here by gridlines, allow MRBO to calculate accurate abundance and density estimates for each target species. Having precise locations of birds on a site helps land managers understand how prescribed fire, grazing, and other management activities affect bird use of their land.

This year we had the opportunity to survey ranches in central Oklahoma as well as the Flint Hills and Gypsum Hills (pictured below) of Kansas. These surveys were part of the Bobolink Foundation's innovative range management project, and the National Audubon Society's **Conservation Ranching** Program.



Henslow's Sparrow by Linda Williams.



MRBO had an **all-star team of surveyors** during the 2023 field season. Clockwise from left (excluding MRBO Directors): Jacob Tsikoyak of Warrensburg MO, Matt Longabaugh of Lawrence KS, Kendell Loyd of Springfield MO, Shawn Hawks of Boonville MO, and Josh Smith of Tulsa OK.



Grazing by American Bison, such as those pictured above at Dunn Ranch, and domestic cattle can be an important prairie management tool for public and private land managers. Some of MRBO's grassland survey work focuses on measuring the **effects of grazing** on prairie bird presence, abundance, and density.



Henslow's Sparrow is a prairie obligate species of conservation concern, and one of **13 target species** for MRBO surveys.



# Education

## Arrow Rock Nature School

After several years of preparation, in September 2022 MRBO piloted the first session of the Arrow Rock Nature School. Students from Glasgow Elementary spent three days immersed in **outdoor inquiry** activities that aligned with their classroom curriculum. Since that time, MRBO has welcomed more than 100 students from six additional schools who participated in one to three day Nature School programming. Thanks to the support of partners, funders, and the MRBO Education Committee, and because of the dedication of a full-time MRBO staff member, the **Arrow Rock Nature School is now a reality!**



## Natural History Programs



In addition to the Nature School, MRBO participates in regular spring programs for schools in partnership with the Friends of Arrow Rock and Arrow Rock State Historic Site. We lead natural history sessions that complement the cultural history programming provided by partners. During the spring of 2023, MRBO hosted **20 natural history programs reaching 1150 students**. This was the most well-attended spring school program in MRBO's seven years of involvement.

## Youth Programs Statewide



MRBO is committed to providing educational opportunities for young people throughout Missouri. All of our education programs are designed to inspire **appreciation and regard** for all species and to promote a positive message about our shared natural resources. While birds are the primary vehicle for delivering the messages of conservation awareness and nature appreciation, MRBO also provides students with programs on native plants, outdoor recreation, general ecology, pollinators, stream life, and more!

In FY23, MRBO delivered **21 youth programs around the state**. We also continued the expansion of the Missouri Young Birders club, with 12 new members joining this year.



6 Core funding & programming partners



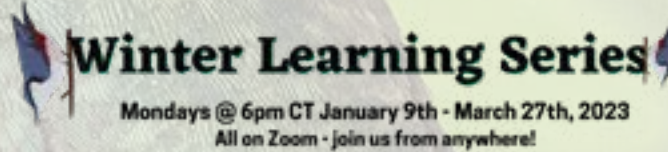
# Young Explorers Camp

Over two weeks in June, 22 students aged eight to eleven participated in Young Explorers Camp. Each day YEC campers were **guided through play** to enjoy and appreciate the outdoors, increase awareness of connections in nature, and discover ways they can be stewards of nature. Campers learned a variety of **outdoor skills** and took part in fun, creative inquiries into local habitats and their wild residents.



# Adult & Family Events

MRBO had a very successful FY23 delivering programs for adults and families around the state and virtually. Over the course of the year MRBO hosted or participated in **31 events and presentations** around Missouri in addition to those previously mentioned. A few examples include presentations at Daniel Boone and Missouri River Regional Libraries, providing activities at Earth Day, pollinator, and general nature festivals, and providing trainings for Missouri Master Naturalists.



Over the winter we rolled out an 11-part online webinar series with guest speakers on a wide variety of conservation topics. This Winter Learning Series reached **more than 500 people**, with many individuals attending more than one session.

We also had a great 2023 Arrow Rock Birds, Bees & Blooms Festival in late April. Almost 1000 people attended from all over the state and learned about native flora and fauna from **38 educational booths and vendors**.

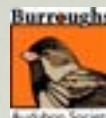


The most unique program of the year may have been Owls Under a Night Sky, which we hosted with Truman State Astronomy Professor Vayu Gokhale and his students. Attendees were treated to a fascinating stargazing program along with Northern Saw-whet Owl banding.

# New Education Staff

FY23 saw a significant expansion in MRBO's education program. **Education Coordinator Laura Semken** (right) became a part of the organization in March, bringing years of experience to MRBO. She conducted all of the Spring Arrow Rock Natural History programs, delivered youth programs across the state, and has made enormous strides in the implementation of the Arrow Rock Nature School.

In FY23 MRBO worked with the Department of Conservation to develop a new joint position in Kansas City. That position became a reality late in the FY, with **Tessa Poolman** (left) joining us as the **KC Community Conservation Educator**.



Background photo: Ruby-throated Hummingbird Nest by Bill Duncan



# Advocacy

MRBO's advocacy action takes many forms. MRBO staff members write to and meet with representatives, testify at hearings in the State Capitol, attend and co-sponsor lobby days, hold trainings for concerned citizens, and engage with businesses to encourage bird-friendly actions.

## Safe Passage for Migrating Birds



MRBO's BirdSafe Kansas City program has been operating for four years. In 2019 and 2020, the program focused on collecting data on bird strikes at more than **30 buildings** in the KC metro. Data collection continues to date (thanks to many volunteers!), but we have added components of public outreach and direct advocacy to building managers. For example, we are working closely with representatives of the **T-Mobile Center**, one of the most strike-prone buildings in the metro, to determine best practices for strike reduction. Center staff are now engaged in BirdSafe surveys daily. We are also engaged with Kansas City's Office of Environmental Quality on **lights out guidance**.



Successful advocacy on this relatively straightforward topic is more challenging than forseen. The strong and frequent engagement achieved in 2022 between BirdSafe and **Hallmark**, for instance, has not yet resulted in any action to reduce bird **collisions at Crown Center**. In the coming year, we will continue our efforts with a renewed focus on raising public awareness via media and leveraging public pressure for change.

## Plastic Reduction



MRBO continues to advocate for a steep reduction in plastic, including a full stop to production of single-use and other unnecessary products. Evidence continues to mount that **plastics are harmful** to human and wildlife health, that material extraction and plastic production are contributing significantly to greenhouse gas proliferation, and that recycling is simply not working to control the waste. We work for change in **corporate policy and legislation** and engage continually in public outreach events with people around Missouri and across the country.

MRBO and Missouri River Relief conduct two **brand audits** each year on plastic waste removed from the Missouri River. The volume of plastic is so high that takes several hours to audit just a fraction of what River Relief volunteers pull out of the river in one morning. The data are submitted to Break Free From Plastic's Global Brand Audit annual report.

In May MRBO's Director and Board Chairman traveled to Louisiana, where they spent several days researching **Cancer Alley**. This name was given to the area along the Mississippi River between Baton Rouge and New Orleans due to the extreme **concentration of petrochemical facilities** and associated heightened rates of cancer and other diseases in local residents. We spoke with area nonprofits and individuals working to limit further buildout of plastic production facilities, as well as workers in the oil and gas industry. All were aware of plans to increase plastic production despite almost universal opposition to the waste that is piling up around the world.





# Healthy Food, Diverse Lands & Clean Water

Sometimes we get the question *what does agriculture have to do with wildlife?* MRBO and many of our partners work to improve the food system because industrial agriculture as it is currently practiced is detrimental to wildlife, people, water quality, soil health, and climate. Over 90% of Missouri's prairie and 80% of its wetlands have been **converted from highly biodiverse ecosystems to monocultures**, particularly corn, soy, and tall fescue. This loss of habitat

has driven populations of birds and other wildlife to low levels, which are also increasingly pressured by widespread application of **toxic pesticides**. Run-off of animal waste and fertilizers from industrial operations are affecting water quality here in Missouri and downstream.

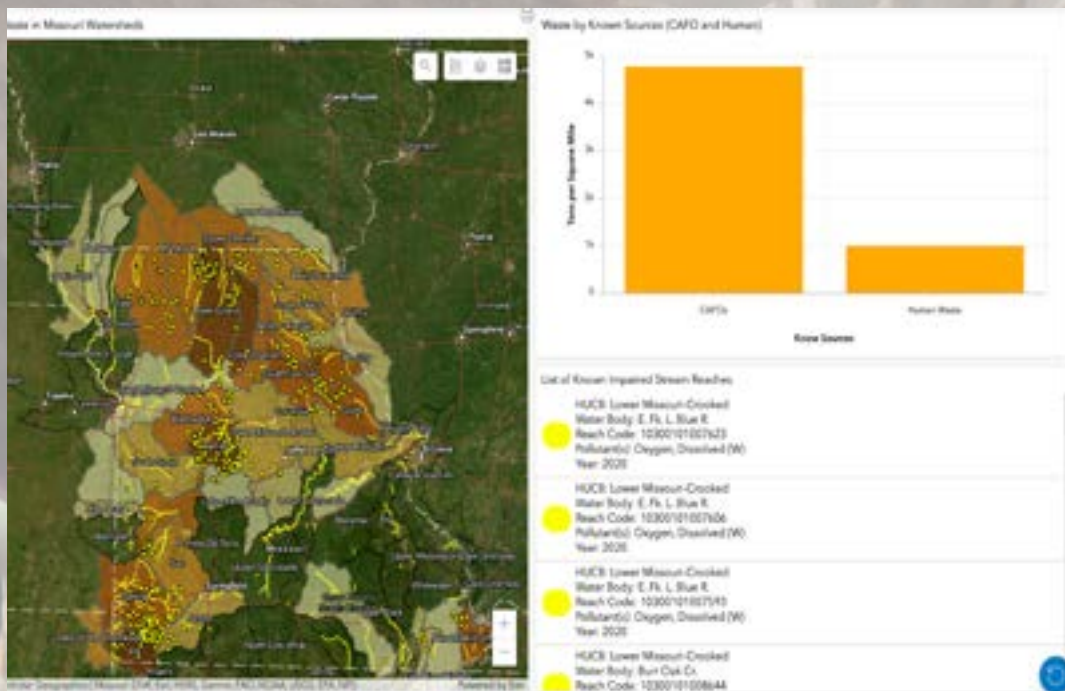


MRBO often joins partners for advocacy days at the Missouri State Capitol. These events give us a chance to speak with elected officials and their staffers, along with displaying the support of Missourians for conservation. Above: Directors Ethan Duke and Dana Ripper at **Clean Water Day** in April. Readers might note the paradox of citizens and organizations having to advocate for clean water - something that should be a very basic right for all.



The **Farm Bill**, re-crafted by Congress every five years with varying degrees of public and industry input, ultimately influences management on hundreds of **millions of acres** of land and directs billions of dollars in federal funding to everything from food assistance programs for families to the **restoration of wildlife habitat**. MRBO Director Dana Ripper went to Washington DC with the National Wildlife Federation in April to speak to the Missouri congressional delegation about the Farm Bill. We advocated for strong policy and funding support for **wildlife conservation, water and soil quality, and independent family farmers**. MRBO has also provided additional information to, and been involved in partner meetings with, congressional staffers on this topic.

MRBO Director Ethan Duke has used GIS to integrate data on animal waste from factory farms and other pollutants into watershed maps. These maps help **tell the story of the increasing impairment of many Missouri waterways**, affecting both drinking water and fish and wildlife habitat. To date, lawmakers in Jefferson City have consistently voted to relax regulations on industrial agriculture operations, lessen oversight of pollution by state agencies, and weaken county- and municipal-level regulatory authority.





# Thank you for your Support

The following individuals, agencies, and organizations provided financial support in FY2023: August 1st, 2022 to July 31st, 2023. We give thanks to them and to all who have supported the Missouri River Bird Observatory! YOU make our work possible.

Aaron & Angie Jungbluth	Christen Commuso	Hang Chen	Kate Corwin
Abigail Perkins	Christina Chapman	Hannah McFarland	Katherine Edman
Alex Ezell	Cindy Willis	Harley & Sarah Winfrey	Kathy Borgman
Alie Mayes	Conservation Federation of Missouri	Ingrid Palmore	Kelly Bonner
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Anonymous	David & Teresa Pearce	Jason Swanson	Krystal Anton & Steve Huey
Anonymous	David Butel	Jeanne Heuser	Kyle O'Bryan
Arrow Rock Lyceum Theatre	David Seidensticker	Jeff Cantrell	Laura Good
Arrow Rock Stock and Trade Co.	Deborah Malas	Jennifer Davies	Laura Morlan
Aulgur Livestock	Debra Fantz	Jennifer Pederson	Laura Robinson
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Buckner Foundation	Douglas & Barb Doughty	Julie Fisher	Linda & Robert Mayes
Burroughs Audubon Society of Greater Kansas City	Douglas Duncan	Kade Bruce	Lisa Patton
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Cherry Street Cellar	Georgana Cochran	Karen Zimmerman	Margaret Hockersmith



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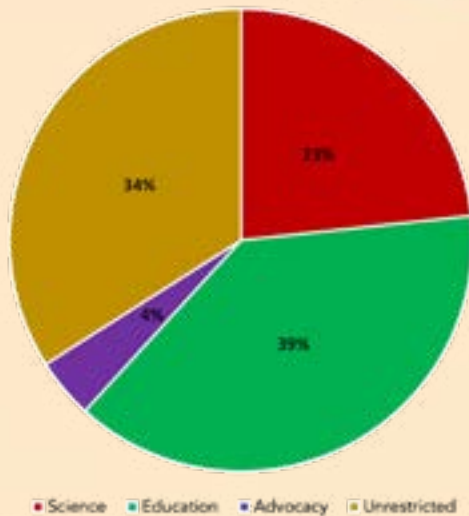
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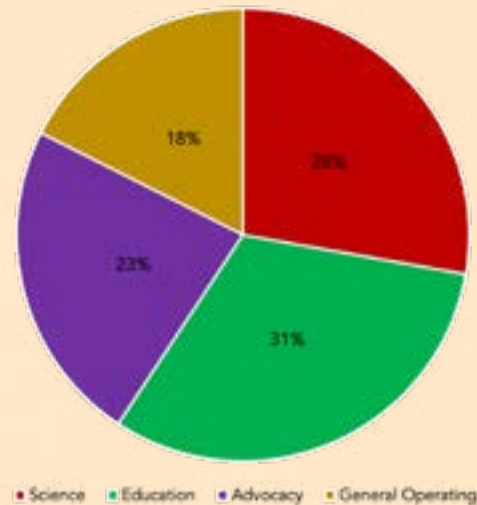
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# FY2023 Program Financials

FY2023 Income by Program



FY2023 Expenditures by Program





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