

THE WARBLER

SUMMER 2022

Cradle to Career Nature Education

BY ASHLEY LOCKWOOD

We are integrating a “cradle-to-career” concept into our Nature Education for Stewards of Tomorrow program (NEST). Cradle-to-career (C2C) emphasizes equitable distribution of learning across age classes and social backgrounds from birth to college and career.

C2C acknowledges that certain learning and developmental benchmarks are at risk when factoring in issues like racism, economic hardship, lack of transportation and homelessness, which are present in some of the BIPOC majority neighborhoods we serve through NEST. C2C focuses on nurturing learning while addressing risk factors and providing tailored and nuanced assistance at each stage of development to counter learning setbacks that can follow into adulthood.

C2C is elevating our Nature Education for Stewards of Tomorrow (NEST) program most notably in the Ferguson-Florissant School District. Due to the power of partnership, we are offering FFSD students free/coordinated transportation, lunch meals, and internship opportunities for school credit or paid work experience throughout the year. This C2C structure is a set of stepping stones stationed throughout the developmental K-12+ phase of life. NEST accounts for equitable access to nature and STEAM-based concepts in early childhood, middle school, high school, and early adult stages. We design our programs to emphasize hands-on learning, leadership skills and teamwork.

Our goal is to create and support a community of practice and inclusion by hearing the needs of our community and subsequently better serving both people and birds. A C2C approach requires regularly accepting feedback from the people and schools we serve, relying on the expertise of our community partners, raising voices for regional policy changes, and pinpointing funds to back these objectives. The development of a C2C centered ethos thus perpetuates new generations of nature stewards and community leaders.

Find more about **NEST** at

<https://riverlands.audubon.org/programs/landing/education-0>



Tara Hohman and Caia Gillett instructing Alternative Spring Break interns on nest box maintenance this past March.

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Photo: Yellow Warbler. Sheen Watkins, APA 2017





Photo: Audubon Center. Roger Ottwell

From the Director

BY KEN BUCHHOLZ

Where have we been? Where are we going? We have been taking stock of our past while planning for an even brighter future as we wrap up our 10th Year Anniversary!

We have enhanced existing programs and created new ones over the past several years in response to the needs of the birds and the communities we serve. We have expanded Nature Education for Stewards of Tomorrow (NEST) while keeping our environmental education curriculum current with today's science learning standards and remaining relevant to the needs of our partner schools and their students. A recent and generous \$225,000 grant from the Mysun Charitable Foundation is enabling us to span NEST across more grade levels at Ferguson-Florissant Schools creating a "cradle to career" pathway for tomorrow's conservation leaders and nature stewards. The Mysun Foundation's funding has also spawned a new Alternative Spring Break internship and weekend community programming at Little Creek Nature Area!

We continue to improve habitat for birds through science and collaboration. A case in point, our bottomland forest avian survey kicked off its eleventh year in May. Audubon science crews are once again conducting point counts over the next few months on 49,000 acres of critical floodplain forest spanning 100 miles of the Mississippi River. The monitoring sites start at Riverlands and go north of Louisiana, Missouri. The survey is a key tool for informing the Corps management of this vital yet increasingly scarce bird habitat.

We have secured \$93,000 since 2018 from the Missouri Bird Conservation Initiative (MoBCI) for native seed and volunteer coordination to augment the Corps' ongoing restoration of the 1,200-acre prairie marsh at Riverlands, one of the largest grassland conservation projects in eastern Missouri. This collaborative effort supports several priority species including Eastern Meadowlark, Dickcissel, Northern Bobwhite, Sedge Wren, Willow Flycatcher and Bell's Vireo. More restoration work is slated in the coming months to improve bird habitat in the Heron Pond section of the prairie marsh.

Habitat destruction and degradation are among the causes that continue to threaten cavity nesting birds. The Riverlands Nest Box Program, "hatched" a few years ago, is now providing artificial nesting habitat for American Kestrels, Eastern Bluebirds, Purple Martins and Tree Swallows. We will be adding Wood Duck boxes in the near future! The Corps, World Bird Sanctuary and St. Louis Audubon Society are jointly supporting this effort. Six hatched kestrel chicks and Purple Martin gourds teeming with eggs are chief among the nesting outcomes so far this spring and summer!



Join us July 3rd for an **Ahhh-dubon Evening!** Buy tickets at <https://riverlands.audubon.org/events/ahhh-dubon-evening>.





From the Director continued ...

Where do birds go the other eight months of the year? Audubon's Migratory Bird Initiative is researching questions just like this. To this end, we installed a Motus Tower at the Center last December through a coordinated effort with the Corps, St. Louis Audubon Society, Midwest Motus Network and Missouri Department of Conservation. Motus towers "ping" when birds tagged with geo-locators come within transmitting range. The birds' whereabouts provide scientists with valuable real time data to help shape bird conservation strategies. Further, we are integrating Motus into our NEST Program to spark NEST students' interest in conservation technology and careers.

Programs we created in response to Covid such as the Riverlands Wellness Series are proving to be effective mainstays for introducing new audiences to birds, our Great Rivers and public lands while creating unique opportunities to understand, appreciate and protect these natural assets. One outcome already is that hundreds of people have kayaked in Ellis Bay. For most of them, this was their first time touching the waters of the Mississippi River. We are thankful for the collaboration with the Corps and Mississippi River Water Trail Association for making safe and enjoyable paddling programs on Ellis Bay possible. You can expect more and similar outdoor experiences in the future.

We are evolving towards a center of conservation action. For example, we have been blending our education, conservation and public engagement programs to provide authentic experiences in nature that promote conservation for birds and habitat. This comes at a time when the survival of many bird species is at stake. Grassland birds particularly have suffered at the hands of humans to nearly irreversible decline.

More About The Riverlands Nest Box Program

Common but on the decline, the plight of the American Kestrel is particularly vexing. Learn why we are supporting the American Kestrel Partnership at kestrel.peregrinefund.org.



Motus Tower install in December 2021.

Over the next several months, our organization, the National Audubon Society, will undergo strategic planning. One anticipated result is greater context of our work at the Audubon Center at Riverlands with Audubon's broader bird conservation goals on the entire Mississippi River and beyond.

As the Center continues to evolve, we will double-down on our commitment to being the St. Louis Region's gateway to our Great Rivers, nature, and birds. We will remain a welcoming place where knowledgeable and friendly staff, volunteers and partners, enthusiastically engage all people in our mission.

We can't do it without the people who share our conservation values. This is why I am thankful to count you among our growing community of supporters!



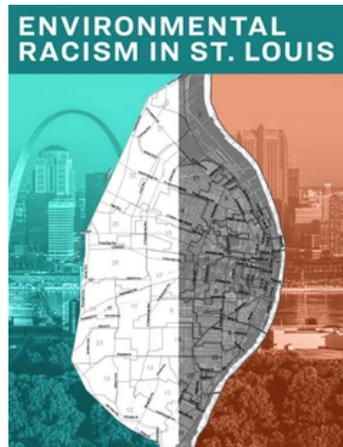


Conservation & Justice

BY CAIA GILLETT

When people experience nature they access boundless opportunities to interact with and better understand earth's complex natural systems. These experiences have been proven to support human health and well-being too. They have also inspired innovation, natural resource stewardship, and even a resilient business model. The key to this? Diversity, symbiosis, and adaptation.

The Riverlands Migratory Bird Sanctuary hosts 300+ bird species in a variety of habitats such as prairies, bottomland forests and wetlands. This biodiversity spans beyond birds and is reflected in the plants, animals and other wildlife found here. Greater biodiversity gives an ecosystem a better chance of sustaining itself. While we recognize the need to steward natural ecosystems, we also understand the importance of nurturing a healthy, diverse and inclusive community of people who can in turn support healthy ecosystems.



We aspire to connect the community, especially youth, to the beauty and significance of the Mississippi River's rich diversity of birds, other wildlife and habitat. These meaningful educational and conservation experiences, especially during childhood, are time-tested ways of developing environmental stewards. Further, the people who benefit from these natural spaces can also be the ones who help protect them. However, "nature for everyone" has not always been the status quo. In fact, there are great injustices and disparities that are unequally distributed amongst racial groups when it comes to the environment.

In cities, environmental hazards are often located in low-income neighborhoods of color. According to the St. Louis Environmental Racism Report, environmental health hazards such as asthma, lead poisoning and access to healthy food are felt greater by black St. Louisans than white residents. This contributes to a higher density of health issues, energy burdens, property vacancy, illegal dumping, and food deserts in these areas. Policies and practices have ensured long-standing profit for one group, discrimination to another, and kept Black, Indigenous and people of color from connecting to nature in the same way as their white counterparts.

To increase representation of BIPOC communities and youth of color in outdoor spaces, our Nature Education for Stewards of Tomorrow program NEST emphasizes marginalized communities in North St. Louis County, north St. Louis City and Madison County. This core service area approach allows us to hear the voices that have long been excluded from the conservation conversation. As such, we are actively creating safe spaces for these conversations to occur so we can learn, explore and support action towards environmental and racial justice. The environmental justice training we incorporated into our inaugural Alternative Spring Break internship this past March is just one example of this.

Communities that mimic nature also embrace diversity that invites more resources, knowledge and solutions. As individuals, we can practice self-education and self-awareness, make consumer choices based on corporations' environmental practices and hold leaders accountable for policy and actions detrimental to communities and nature. When we hold space for oppressed groups, it promotes the empowerment of all organisms and their benefit to the ecosystem.

[Learn about Environmental Racism in St. Louis](https://www.environmentalracismstl.com/report)
<https://www.environmentalracismstl.com/report>





Science & Birds

Every spring since 2011, Audubon science staff have taken to the Mississippi River to conduct a bottomland forest survey. We have partnered with the U.S. Army Corps of Engineers St. Louis District from the onset of the survey. The data we collect informs the Corps' management of this vital bird habitat.

So how does this work? Birds are excellent indicators of habitat health. This is because they are easy to study, we know which birds like which habitats, and they quickly respond to habitat changes. Because we know that certain birds rely on specific habitats and these habitats alone, their presence or absence can reveal essential information. This knowledge, combined with already compiled survey data and USACE forest inventory, adds significantly to our understanding of bottomland forest birds and the health of their associated habitats.

Surveying bottomland forests isn't easy though. It requires patience, endurance, a "can-do" attitude and lots of equipment such as a boat, kayaks, GPS devices and binoculars. We begin in mid-May and end by mid-July. Most surveys start around 5:00 a.m. so we can reach a study site when birds are typically active.

The survey spans 49,000 acres of USACE managed forests across 100 miles of the Mississippi River and 80 miles of the lower Illinois River. The survey sites start from Maple Island at Riverlands and go as far as Gilbert Island around Saverton, MO.

Most sites are accessible only by motorboat. Once at a site, navigating to survey points is its own challenge often requiring trekking through poison ivy, stinging nettle, muddy sloughs and fallen trees. All of this to conduct a point count survey where staff identify all birds heard or seen within a ten-minute time period.

We strive to identify every bird seen or heard, but our work focuses on nine focal species that represent different habitat types within bottomland forests. The focal species include American Redstart, Cerulean Warbler, Indigo Bunting, Prothonotary Warbler, Yellow-breasted Chat, Red-headed Woodpecker, Red-shouldered Hawk, Willow Flycatcher and Warbling Vireo. They represent charismatic and secretive species, as well as species of conservation concern.

We monitor about 145 points each year, and have surveyed 26 unique islands over the years. Seasonal flooding has cancelled or shortened some surveys. We are monitoring a new set of islands and points this year. Increasing the unique sites and points will augment our ongoing research to evaluate species densities and trends over time, map areas that are most important (spatial prioritization) and establish bird-habitat interactions, or in other words what parts of the forests do birds find most important.

Through better understanding of bottomland forest birds and their habitat needs, and where the best conservation opportunities exist, we are promoting a healthier future for birds!



Science staff boating to a survey site during last year's bottomland forest survey.

Why Our Bird Science Matters

<https://www.audubon.org/news/new-report-highlights-need-restoration-and-resilience-along-upper-mississippi>





Technology, Hope & A Nightjar

BY TARA HOHMAN & ASHLEY LOCKWOOD

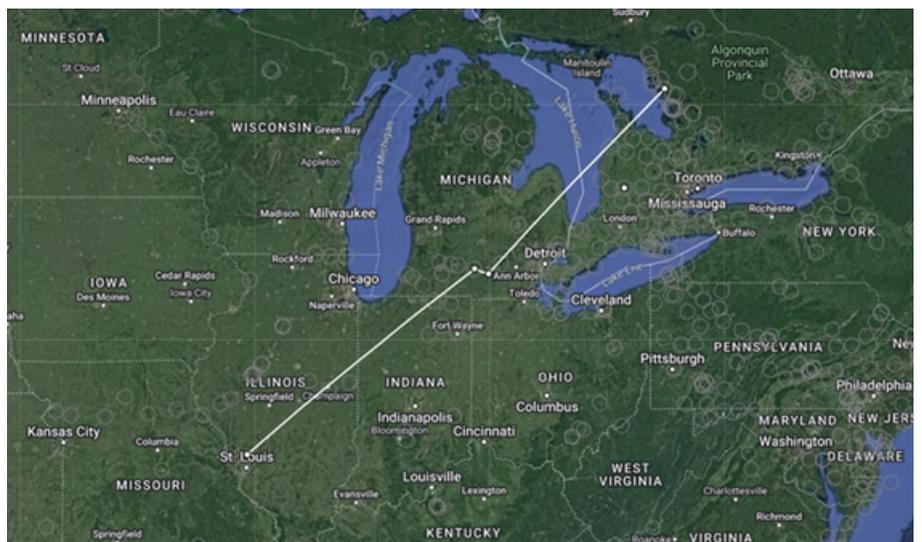
High above the Audubon Center is a multi-pronged bird detector called a Motus tower, a stationary structure that serves as a beacon of hope for birds. Motus is technology that uses antennas and radio telemetry to detect birds, bats and insects tagged with tiny transmitters called nanotags. The power of this technology for bird conservation lies in a collaborative network of scientists and academics who use the tracking data to, among other things, denote migration patterns across space and time. This data is informing where and how to work to protect birds.

Motus requires three coordinated components to work: receiving towers, nanotags on birds, and "tagged" birds coming within approximately 10 miles of the towers. Efforts to install more towers and develop the research required in order to outfit birds with transmitters are well underway across the Western Hemisphere. This data is expected to spur conservation efforts across migratory routes, breeding grounds and overwintering habitat. The data we are collecting at our tower at Riverlands is feeding into Audubon's Migratory Bird Initiative, a hemisphere-wide initiative to track and map migratory bird pathways.

Installed in December 2021, the Riverlands Motus tower had remained silent of detections. That is until this past April when our tower was "pinged" by a nightjar in the early morning hours! This specific bird was tagged in 2021 as part of a study on Common Nighthawks and Eastern Whip-poor-wills at the University of Guelph in Ontario, Canada. Our first detection transmitted more than just another step towards integrating field work, acquired technology and immersive databases to better understand the life cycles of birds, it signaled a brighter future for birds!

Audubon Migratory Bird Initiative

<https://www.audubon.org/conservation/migratory-bird-initiative>



This map illustrates the journey of the nightjar detected at Riverlands based on other Motus towers that detected it. <https://motus.org/data/receiversMap>





Spawning Sturgeon

BY INSIYAA AHMED

Lake sturgeon (*Acipenser fulvescens*) were once abundant in the Upper Mississippi River and the Great Lakes. This prehistoric species, first appearing in the fossil record 150 million years ago, can grow to be 8 ft long and weigh almost 300 pounds. Populations of lake sturgeon have drastically declined since the 1800s due to overharvesting for meat and caviar, pollution, habitat loss, and altered river hydrology. Another contributing factor to their decline is that although they are a long-living species (up to 150 years), they don't reach reproductive age until 25-30 years and spawn periodically every 3-5 years. Spawning is dependent on water temperature and flow, both of which have been altered in the Upper Mississippi. Lake sturgeon are now listed as threatened or endangered in 19 of the 20 states in their range.

The Missouri Department of Conservation (MDC) and the US Fish and Wildlife Service (USFWS) began stocking the Upper Mississippi with lake sturgeon in 1984. To date, nearly 500,000 sturgeon have been stocked in Missouri waters. The sturgeon are released as fingerlings in hopes that they will survive to maturity and begin reproducing naturally.



Five lake sturgeon were documented spawning below Mel Price Locks and Dam.



Corps Wildlife biologist Ryan Swearingin is holding a lake sturgeon while it is being scanned for a PIT tag.

In 2015, there was a historic sighting of lake sturgeon spawning below Mel Price Lock and Dam in West Alton, MO. This was estimated to be the first time in over a century that lake sturgeon were documented spawning in Missouri, and it is still the only confirmed lake sturgeon spawning site in Missouri. The MDC and the St. Louis.

District Rivers Project (RP) applied for and received a grant from the Nature Conservancy's Sustainable Rivers Program to study the conditions below the dam that contributed to this rare event. The data could be used to model a way to potentially recreate the flow and gate conditions elsewhere along the Upper Mississippi to encourage spawning conditions for lake sturgeon. As part of this study, daily water temperatures, dissolved oxygen, and water velocity data is collected below the dam during the spring, coinciding with the sturgeon spawning season. Ryan Swearingin, RP wildlife biologist, is collaborating with the St. Louis District water control and hydraulics division to create models of the river during the 2015 spawning event. There is also ongoing coordination among RP biologists, water control, and dam operators to achieve desired shoreline velocities suitable for spawning by opening the dam gates, with 1-2ft/s as the target.





Spawning Sturgeon continued...



Lake sturgeon eggs are sticky and attach to rocky areas by the shore. The spawning process involves a single female releasing eggs and several males surrounding her to fertilize them.

In addition to studying river conditions, MDC fisheries biologist Sarah Peper is leading efforts to collect, measure, and tag lake sturgeon below Mel Price Locks and Dam. Multiple trot lines are set and baited throughout the spring to capture lake sturgeon. This past spring, 11 sturgeon were tagged, with additional sturgeon too small to tag captured and released. There are multiple tags used to track sturgeon. The first is a PIT (Passive Integrated Transponder) tag that can be used to identify individual fish and help track movement, growth, and survival. It is small (1-2 cm), quick to insert, and works passively without a battery. The fish must be captured and physically scanned with a PIT tag reader to get information from the tag. The captured fish are also checked for an existing identification tag, called Coded Wire Tags that may have been placed at a hatchery or for other research projects. Lastly, a radio tag is surgically placed in the sturgeon, which can track the fish's movement remotely through receiver devices placed in the water. The battery lasts 5-6 years. By tracking lake sturgeon, we can hopefully target specific habitats to protect.

Lake sturgeons were again documented spawning below the dam on the morning of April 23rd, 2022 for the first time since the 2015 event. This provides an exciting opportunity to gain an even better insight into what conditions encourage sturgeon spawning and build more robust models that could improve management along the river and help revive this charismatic and ancient species.

Students Campaign for Conservation



Crossroads College Prep students Jasmine Hanin, Sophia, and Maya created this storybook about conserving Shovelnose Sturgeon during a recent program at the Center! Crossroads students have been part of our programs since 2010!



Sarah Peper, MDC fisheries biologist, is inserting a radio tag into a captured lake sturgeon. This process requires a small surgery but does not cause harm to the fish. The tag can be read by receivers placed in the water and helps track movement of sturgeon along our waterways.



ASHLEY LOCKWOOD, EDUCATOR

HOMETOWN: Dexter, MI

EDUCATION: BS in Fisheries and Wildlife Science, specialization in Conservation Ecology and a PSM in Fisheries and Wildlife Administration, specialization in Natural History at Oregon State University

FAVORITE BIRD: Turkey Vulture

WHAT SPARKED YOUR LOVE OF NATURE: Informal education! Think natural history museums, Animal Planet shows, zoos, aquariums, and camp!

WHAT IMPACT DO YOU HOPE TO MAKE: I want to leave a legacy of empowering people. For someone to know that they are completely capable of making a change, to me that is the very meaning of stewardship, and the nexus of conservation and social justice.

FAVORITE PART OF YOUR JOB: Working with partners! These organizations let us offer such a variety of experiences that I get a hand in experiencing and coordinating that every day feels like a field trip! How can you not love learning something new or doing something brand new every day?

Team Member Spotlight



JONAH ECKELS, EDUCATION COORDINATOR

HOMETOWN: Evansville, IN

EDUCATION: Social Studies Degree from Concordia University Wisconsin

FAVORITE BIRD: Purple Martin

WHAT SPARKED YOUR LOVE OF NATURE: Started when I was a kid with a love for dinosaurs, Steve Irwin, Zoobooks, and Zoboomafo. I love being outside and learning about new things!

WHAT IMPACT DO YOU HOPE TO MAKE: I hope to show people the wonders of the natural world and get people excited about the outdoors and conservation!

FAVORITE PROJECT: My favorite activity so far with Audubon has been helping lead bird walks at Riverlands and more recently at Little Creek!



Team Member Spotlight



We Work Locally for Birds & People!



Why Your Support Matters

Our work is local and is therefore supported locally by people, corporations, foundations and organizations who share our conservation values. We generate fully 100% of our revenue from charitable contributions (70%), government grants (20%) and earned revenue (10%).

Regular yearly donations keep our Center relevant and vibrant while making it possible to implement effective conservation, education and public engagement programs that make the St. Louis region an even better place for birds and people to live.

Donate with cash, check or online with a credit card, which also has a monthly giving option. To donate stock or other appreciated securities email Ken Buchholz at ken.buchholz@audubon.org for instructions.

Make checks payable to the Audubon Center at Riverlands and mail to:
Audubon Center at Riverlands
301 Riverlands Way
West Alton, MO 63386

Give online at <https://riverlands.audubon.org/>. Click on the Donate button.

THANK YOU!

Volunteer

Volunteers are maintaining and enhancing our conservation, education, and public engagement programs. Volunteer opportunities include visitor services, front desk and admin support, native plant garden, programs and events and birds surveys Start volunteering by contacting riverlandsvolunteer@audubon.org.

Photo: Common Yellowthroat. Gary Robinette. APA 2018.

Staff Team

Ken Buchholz, Center Director
Emily Connor, Education Manager

Caia Gillett, Program Assistant
Jonah Eckels, Education Coordinator

Tara Hohman, Conservation
Science Associate

John McGrath, Weekend Assistant

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Upcoming Events



Summer Happenings

Register at riverlands.audubon.org/events



Wellness Series

- Kayaking on Ellis Bay
- July 16 & August 30
- 9:00a

Field Day Fridays

- Fridays between June 17 - August 5
- 9:30a to 11:00a

Ahh-dubon Evening

- July 3rd
- 6:00p
- Fireworks, food, live music, & more!

Nature Night at Riverlands

- July 23
- 8:00p - 10:00p
- Moth viewing, stargazing, night hikes & more!

River Ark Art Installation

In celebration of the Audubon Center at Riverland's 10-year Anniversary, we have commissioned artist Thomas Sleet to create a sculpture titled River Ark. Sleet says, "The work I envision for this site consists of two parallel rows of driftwood, charred, and oiled, and set vertically into the ground. I will orient this installation along some relative geologic and celestial alignments such as: equinox, solstice, east / west line, sunrise / sunset designation, and elevation of slope." You can get sneak peek of the sculpture model at the Audubon Center at Riverlands. The artist will unveil his work later this fall!

Photo: Thomas Sleet collecting timber at Riverlands.



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riverlands.audubon.org

Photo: Bald Eagles at Riverlands. Doug Hommert

Discover the Trail & River
Treasure Challenge
this summer!

Learn more at
<https://trailnet.org/20treasures/>

