# Kalamazoo Valley Bird Observatory Annual Report 2022





American Redstart (Setophaga ruticilla)

#### **KVBO TEAM**

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#### Kalamazoo Valley Bird Observatory

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# Kalamazoo Valley Bird Observatory

The Kalamazoo Nature Center's (KNC) mission is to create relationships and experiences that welcome and inspire people to discover, enjoy, value, and care for nature. As anyone who has been a part of KNC's work over the years knows well, many of those crucial experiences for the last 60+ years have focused on birds.

The pages of *Glimpsing the Whole: The Kalamazoo Nature Center Story*, which was published in 1995, explain the rationale for why KNC's early interest in birds was justified as a research priority:

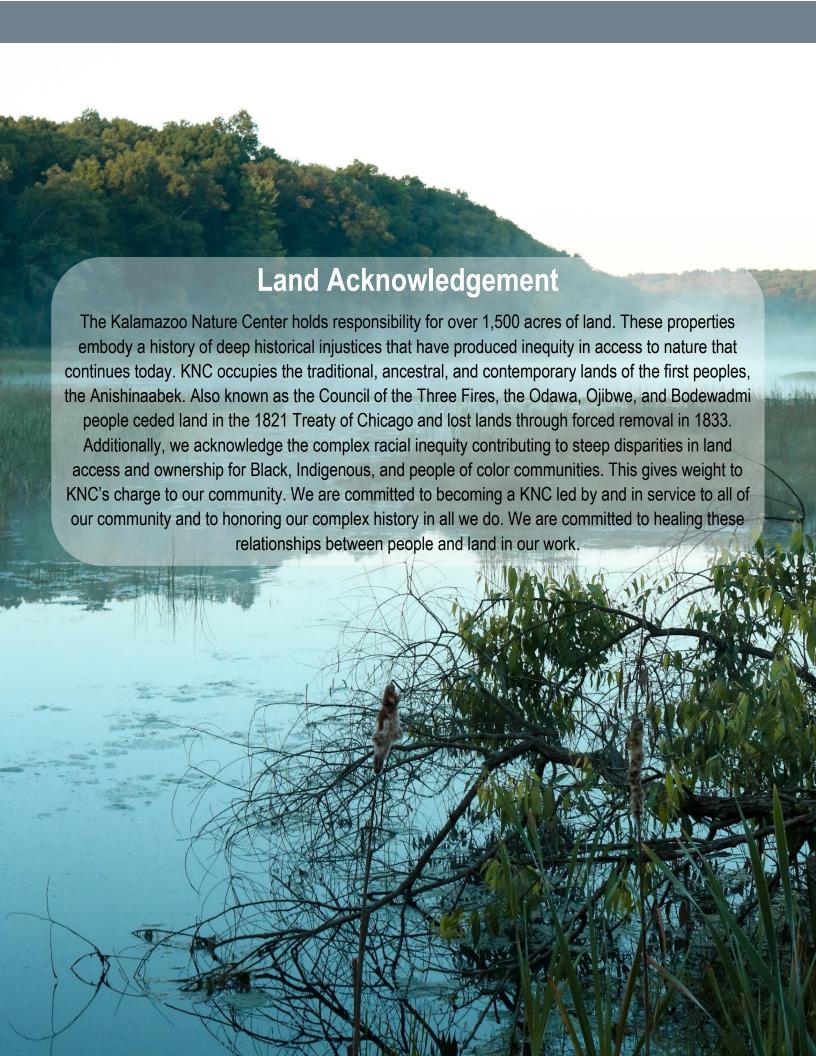
Bird populations are studied to learn both about the birds themselves and about their environments. Because birds have shorter life cycles than humans, they respond relatively quickly to environmental changes such as the presence of toxic substances, alterations in land use, and changes in habitats. They are highly visible and people are aware of what happens to them; just as the death of a canary warned a coal miner of dangerous gases in the mine, the status of a bird population warns people of other environmental threats. Because many birds are migratory, they can carry information about conditions far away and thus demonstrate the interdependence of the various regions of Earth.

A quarter-century later, these words still ring true. A 2019 report in the journal *Science* stunned North America with news that its bird population has declined by 3 billion since 1970. A recent Audubon study projects that up to two-thirds of all North American bird species are at risk of extinction due to climate change. These challenges and threats make long-term avian research more important than ever. As we recognize changes to populations and health, we can take action to protect birds and the habitats they depend upon.

For generations, the Kalamazoo Valley Bird Observatory (KVBO) has monitored the populations, health, and survival of birds that live in and move through our region. Very few communities are fortunate enough have the depth and history of observations and data that is available in Kalamazoo. This 2022 Annual KVBO Report provides not only highlights from the last year's work, but also a snapshot of the scientific quality that is possible when a community invests in conservation and research.

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#### **KVBO 2022 Year in Review**

#### **Greetings from the Kalamazoo Valley Bird Observatory!**

Any year spent working with birds is a good year. The Kalamazoo Valley Bird Observatory's 49<sup>th</sup> year brought many interesting highlights, unusual sightings, and memorable time spent with other bird-lovers.

While it is not unheard of to come upon a hawk while banding, the Red-shouldered Hawk that we found in a mist nest last fall was an impressive and intimidating sight to behold. We also discovered a Prothonotary Warbler out of its typical date range during fall banding, and finished the season's hummingbird surveys with an extraordinary event – an over nine-year-old Ruby-throated Hummingbird that tied the North American longevity record for the species.

Our Michigan Motus Array, which tracks radio-tagged birds, continues to help inform international research about migration patterns. A single Northern Saw-whet Owl was detected 17 times on the Jackson, MI receiver in 2022, helping researchers like Steven Lee at Ohio's Caesar Creek Banding Station to have new information about their over-wintering habits. This is the kind of data researchers crave. We're proud of KVBO's role in bringing these partners together.

My favorite memories from the past year involved bringing new friends to KVBO. Zoe Korpi, a Master's Student at the Ohio State University, visited to train our team in Motus tagging techniques. This training had been long anticipated, and having it now allows us to move forward with our own migration research studies.

Having new, eager people to work with, like last fall's interns – Kylie Blake and Belinda Wilson – is a joy for me. These two, while having great credentials as researchers, didn't have much bird experience when they started. Seeing their significant advancement in banding and bird identification skills was most satisfying for me.

We hope you enjoy reading about the rest of our 2022 adventures in the pages ahead. Please come out soon to visit!

Rich Keith

Director, Kalamazoo Valley Bird Observatory





# An Everlasting Legacy: A Tribute to our Dear Friend, Ray Adams, Jr.

June 27, 1945 - November 3, 2022

"Some birds are not meant to be caged, that's all. Their feathers are too bright, their songs too sweet and wild. So you let them go, or when you open the cage to feed them they somehow fly out past you. And the part of you that knows it was wrong to imprison them in the first place rejoices, but still, the place where you live is that much more drab and empty for their departure." - Stephen King

As the first Director of Research for the Kalamazoo Nature Center, Raymond J. Adams, Jr. was a force behind many of the pivotal scientific programs that continue today. Hired straight out of Kalamazoo College in 1967 by KNC's founders, Dr. H. Lewis Batts Jr. and Jean Batts, Ray launched the Kalamazoo Valley Bird Observatory, began KNC's fall banding surveys, led the Kalamazoo Area Breeding Bird Survey, and instituted annual spring migratory bird surveys at Kleinstuck Preserve. Ray also conducted environmental impact assessments and served as an expert witness, further extending KNC's reach and sustainability ethic into community development concerns.

Ray co-authored two lasting contributions to statewide natural history – *The Breeding Bird Atlas of Michigan* (1991), which compiled 214 bird profiles based on five years' worth of observations from over 1,000 volunteers, and *The Birds of Michigan* (1994), which included detailed information on over 400 birds. During his tenure, KNC became known as a leading institution for avian research.

As a passionate and dedicated naturalist, Ray had a tremendous impact on the staff, students, volunteers, and community members who learned from him and his work. Many young researchers and students who worked under his guidance went on to meaningful careers in ornithology, conservation, and science education. Without a doubt, Ray Adams' own love for nature left a lasting legacy in how Michigan understands and cares for our feathered friends.

#### Memories from KVBO's Team

FROM JOHN BRENNEMAN: What impressed me the most about Ray was his ability to put so much energy into birding, especially Christmas Bird Counts. I rode with him for a few of the counts when I first moved here, and he would drop me off to explore some sites, and then he would cover every road in his area. He would not quit until it was dark, and I was asleep in the passenger seat. He would also cover Gull Lake, staring through his scope for hours with tears streaming down his face from the cold wind, looking for every duck or any rare bird he could find. He had a passion of all things nature and wanted to record it all, which meant sleep was not an option sometimes. He would almost always get a piece of pie before lunch, which I think represented him well – he liked to do what he enjoyed first in his life.

FROM BRENDA KEITH: I have so many memories of working with Ray at KNC. He hired me in the late 80's to enter tons of data, and I soon graduated to become part of the bird research team, along with my husband Rich. I'm proud that to this day, we are still carrying on Ray's avian research program. One of my favorite memories was on one November banding day, Ray came down to the River Trail to check on me. As we were walking along, checking nets, it began to lightly snow. We started trying to catch snowflakes on our tongues and giggled like kids!

FROM RICH KEITH: When I first met Ray, he was very generous with his time and knowledge, helping me become an active birder and join a new "family" of those interested in all things birds. When Brenda and I became volunteers with the banding program, the amount of time Ray gave us was incredible. After just 3 years of training, I was able to set up nets at Pitsfield and start banding on my own. In the fall I would talk to Ray every evening with questions I had thought of that day. If something particularly different or interesting came up during banding, I would ride my bicycle a half mile to the house to call Ray, and he almost always was there when I needed him. This went on for several years, but only much later did I realize how much I bothered his family and co-workers. When Brenda started working in the office at KNC, she would often need some bit of information from Ray, only to have to put her work aside while Ray helped a reporter, politician, researcher, or average citizen with some bird-related question. I also learned no one else had ever been allowed to "take over" the banding operation Ray was so dedicated to.



A memorial fund has been established in Ray's honor:

Raymond J. Adams Jr.

Avian Research Endowment Fund
Kalamazoo Community Foundation
402 E. Michigan, Kalamazoo, MI 49007

Checks may be made payable to:

**KZCF/Adams Fund** 

And in the memo line, please include:





# **Kleinstuck Surveys**

The Kalamazoo Nature Center's daily spring migration surveys at Western Michigan University's Kleinstuck Preserve have continued since 1973. Using the same survey method every day allows researchers to track the movements of migrating birds as they make small and large pushes northward. The 2022 season, which lasted from March 22 – May 27, started out normally, with some early migrants already at Kleinstuck on the first survey day. The early migrating species usually overwinter in the southern parts of the U.S. These birds usually are gone by the time the majority of the neo-tropical species, which migrate to Central and South America, come through a bit later in the season.

Most of March and early April was cool and wet, with even a day or two of measurable snowfall. The first major push of warm air took place on April 23,

bringing a nice variety of new species into this area, including Baltimore Oriole and Rose-breasted Grosbeak. The unfavorable cold and wet weather that followed for another two weeks caused a slowdown in local migration as birds shifted their northward paths to other Great Lakes states like Minnesota. (This information can be found using migration forecast maps from the Cornell Lab of Ornithology. These tools predict each night's movement of birds using national weather radar. Learn more at: <a href="https://birdcast.info/migration-tools/migration-forecast-maps/">https://birdcast.info/migration-tools/migration-forecast-maps/</a>.)

Michigan's weather became more favorable for migratory birds beginning on May 7 when the winds turned to the south and the temperatures soared past 80°F. The majority of migration through Kalamazoo took place from May 7-15, with millions of birds flying through each night. Another noteworthy movement of birds followed on May 19-20. The last survey of the year took place on May 27 when only one migrant, a lone Mourning Warbler, was found.

#### **HIGHLIGHTS FROM 2022**

Two species has notable lower numbers in 2022: Nashville and Black-throated Green Warblers. Both of these species peak in migration during late April and early May, right at the time of Michigan's unusually cold weather. In an average year, ~75 individuals of each species are observed at Kleinstuck. However, in spring of 2022, only 17 of each species was observed.

A few other species had higher than average counts this year. The Swainson's Thrush doubled its average count, with nearly 125 birds found this year. The KVBO team was also excited to discover the first-ever nesting attempt of a Red-shouldered Hawk at Kleinstuck. Unfortunately, this nesting attempt failed for unknown reasons, but staff remain hopeful that they will try again next year. Altogether, the survey completed with 134 species observed – a fairly typical species count – for the 2022 season.



# **2022 Kleinstuck Preserve Bird Survey Species Observed**

Ducks, Geese, & Waterfowl	Owls	Nuthatches	Blackbirds & Allies
Canada Goose	Great Horned Owl	Red-breasted Nuthatch	Red-winged Blackbird
Wood Duck	Barred Owl	White-breasted Nuthatch	Rusty Blackbird
Mallard	Kingfishers	Treecreepers	Common Grackle
Trumpeter Swan	Belted Kingfisher	Brown Creeper	Brown-headed Cowbird
Pheasants, Grouse, & Allies	Woodpeckers	Gnatcatchers	Baltimore Oriole
Wild Turkey	Red-bellied Woodpecker	Blue-gray Gnatcatcher	Orchard Oriole
Grebes	Yellow-bellied Sapsucker	Wrens	New World Warblers
Pied-billed Grebe	Downy Woodpecker	House Wren	Ovenbird
Pigeons & Doves	Hairy Woodpecker	Winter Wren	Northern Waterthrush
Rock Pigeon	Northern Flicker	Carolina Wren	Golden-winged Warbler
Mourning Dove	Pileated Woodpecker	Starlings	Blue-winged Warbler
Cuckoos	Falcons	European Starling	Black-and-white Warbler
Yellow-billed Cuckoo	American Kestrel	Mockingbirds & Thrashers	Tennessee Warbler
Black-billed Cuckoo	Tyrant Flycatchers	Gray Catbird	Orange-crowned Warbler
Swifts	Olive-sided Flycatcher	Brown Thrasher	Nashville Warbler
Chimney Swift	Eastern Wood-Pewee	Thrushes & Allies	Mourning Warbler
Hummingbirds	Yellow-bellied Flycatcher	Eastern Bluebird	Kentucky Warbler
Ruby-throated Hummingbird	Acadian Flycatcher	Veery	Common Yellowthroat
Rails, Gallinules, Coots	Alder Flycatcher	Gray-cheeked Thrush	American Redstart
Virginia Rail	Willow Flycatcher	Swainson's Thrush	Cape May Warbler
Sora	Least Flycatcher	Hermit Thrush	Northern Parula
Cranes	Eastern Phoebe	Wood Thrush	Magnolia Warbler
Sandhill Crane	Great Crested Flycatcher	American Robin	Connecticut Warbler
Plovers	Eastern Kingbird	Waxwings	Bay-breasted Warbler
Killdeer	Vireos	Cedar Waxwing	Blackburnian Warbler
Sandpipers & Allies	Yellow-throated Vireo	Old World Sparrows	Yellow Warbler
Solitary Sandpiper	Blue-headed Vireo	House Sparrow	Chestnut-sided Warbler
Gulls	Warbling Vireo	Finches & Allies	Blackpoll Warbler
Ring-billed Gull	Philadelphia Vireo	House Finch	Black-throated Blue Warbler
Cormorants	Red-eyed Vireo	Purple Finch	Palm Warbler
Double-crested Cormorant	Crows & Jays	Pine Siskin	Pine Warbler
Herons, Egrets & Bitterns	Blue Jay	American Goldfinch	Yellow-rumped Warbler
Great Blue Heron	American Crow	New World Sparrows	Black-throated Green Warbler
Great Egret	Chickadees & Titmice	Eastern Towhee	Canada Warbler
Green Heron	Black-capped Chickadee	Chipping Sparrow	Wilson's Warbler
New World Vultures	Tufted Titmouse	Field Sparrow	Cardinals & Allies
Turkey Vulture	Swallows	Fox Sparrow	Scarlet Tanager
Osprey	Tree Swallow	Song Sparrow	Northern Cardinal
Osprey	Northern Rough-winged Swallow	Lincoln's Sparrow	Rose-breasted Grosbeak
Hawks, Eagles, Kites	Barn Swallow	Swamp Sparrow	Indigo Bunting
Cooper's Hawk	Purple Martin	White-throated Sparrow	
Red-shouldered Hawk	Kinglets	Dark-eyed Junco	
Broad-winged Hawk	Golden-crowned Kinglet		
Red-tailed Hawk	Ruby-crowned Kinglet		

# **Fall Banding**

For nearly a half-century, the Kalamazoo Valley Bird Observatory has surveyed and banded migratory birds each fall. For the last 25+ years, this work has taken place at both the Kalamazoo Nature Center and the Pitsfield Banding Station. Over the years, the team estimates the total number of birds banded at the combined sites to be nearly 600,000 with over 150,000 birds recaptured. Banding activities are completed under both Federal and State Bird Banding permits, and data from these efforts is shared annually with the United States Geological Survey's Bird Banding Laboratory. The following pages show highlights of observations and records from the 2022 banding season.

A highlight of every fall banding season is when the KVBO team hosts KNC's Nature's Way Preschool students for a week of banding. Morning and afternoon classes, alongside their teachers and families, get an up close look at the banding process and some of the amazing birds being fitted with identification bands on the day of their visit.



NATURE'S WAY

"We had a great week with John, Kyra and the bird banding team! Our families are always so impressed with the bird banding at the KNC. We had just over 300 visitors with our groups, and each one felt a greater connection to KNC after their visit."

> Heather Parker Goetzinger Director of Early Childhood

### **Many Hands Make Light Work!**

#### **LEAD BANDERS**

Rich Keith, Brenda Keith, and John Brenneman

#### 2022 BANDING ASSISTANTS & VOLUNTEERS

Belinda Wilson, Kylie Blake, Megan Heft, Pam Woodruff, Bob Nixon, Seth Chapman, Amy Vida, Daniel Sullivan, Liam Brenneman, Pamela Rups, Jean Lundberg, Stacy Burton, Talus Rutgers, Andrew Staufer, Karen Kolbasa, and Zoe Korpi

#### **VISITING BANDERS**

Mike Meadows & Christina Burt





Mike Meadows
Senior Marine Industries Ornithologist
at Joint Nature Conservation
Committee, Greater Norwich Area, U.K.



Christina Burt Assistant Keeper at Lincoln Park Zoo, Chicago, IL

"I was so grateful for the opportunity to be out in the field again and to utilize some of the skills I've gained as a zookeeper to aid in a real-world conservation project. I also learned a lot of valuable information about banding and migration that I was able to bring back to the zoo as well. The network of data collected by KVBO and other banding stations is invaluable, and I felt so lucky to play a small part in this incredible project!"

Christina Burt, Guest Bird Bander



# Kalamazoo Nature Center Banding Station Kalamazoo, Michigan

#### Top Ten Most Commonly Banded Species (60% of total birds):

1 Yellow-rumped (Myrtle) Warbler	254	6 Gray Catbird	85
2 American Goldfinch	236	7 Cedar Waxwing	85
3 White-throated Sparrow	160	8 Magnolia Warbler	70
4 Ruby-crowned Kinglet	141	9 Black-capped Chickadee	50
5 Swainson's Thrush	136	10 Dark-eyed (slate-colored) Junco	49







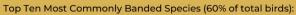
Total days of operation Total net hours for season Largest daily catch Most species in single day Total birds banded Number of species banded 81

50 4,418.67 155 10/6/22 9/2/22 & 9/4/22 26 2,106





# Pitsfield Banding Station Vicksburg, Michigan





4 Ruby-throated Hummingbird 5 Tennessee Warbler

6 White-throated Sparrow 135 194 7 Ruby-crowned Kinglet 106 157 87

8 American Robin 9 Golden-crowned Kinglet 156 78 137

10 Hermit Thrush 69











Total days of operation 60 Total net hours for season Largest daily catch 113 Most species in single day 23 Total birds banded 2,540 Number of species banded 78

10,042.17 10/16/22 10/16/22



### **2022 KVBO Banding Assistants**

#### **BELINDA WILSON**

Michigan State University

B.S. in Fisheries and Wildlife / Animal Science, 2021

"Being an Assistant Bander at KVBO was one of the best experiences I have ever had! Working with the banding team was exciting, enlightening, and challenging in a good way. I learned so much about all the different bird species we see in Michigan and about the conservation research that KNC does and it's remarkable. This experience made my passion for birds and conservation grow to a whole new level. My

goal is to one day work as a conservation scientist in a place like KNC and I plan to use what I have learned here in my future career."

"I came to KVBO passionate about birding and avian conservation. My experience before did not prepare me for the breadth and excitement of this opportunity. I have much to thank Rich. Brenda, and John for teaching Belinda and I about the intricacies of the banding process and expanding my knowledge regarding different avian species, how to identify them, and their behaviors. Every day of bird banding was unique because we caught different species and in different abundances. making each day engaging and a fun challenge. However, my favorite moment at KNC was getting to show the public the bird banding process, especially with the kids! Thank you to the KNC for teaching us about various conservation efforts at the center and being so welcoming to us interns."

#### **KYLIE BLAKE**

Boston University
B.A. in Earth and Environmental Science, 2021



KNC's bird banding team had an exciting find in 2022. They recaptured J22308, a female hummingbird that was at least a year old when it was first caught in the summer of 2014. This bird is now at least 9 years, 2 months old and ties the record for the oldest known Rubythroated Hummingbird on file with the national USGS Bird Banding Laboratory. The previous record-holder was a female first banded in West Virginia in August of 2006 and later recaptured in 2014.

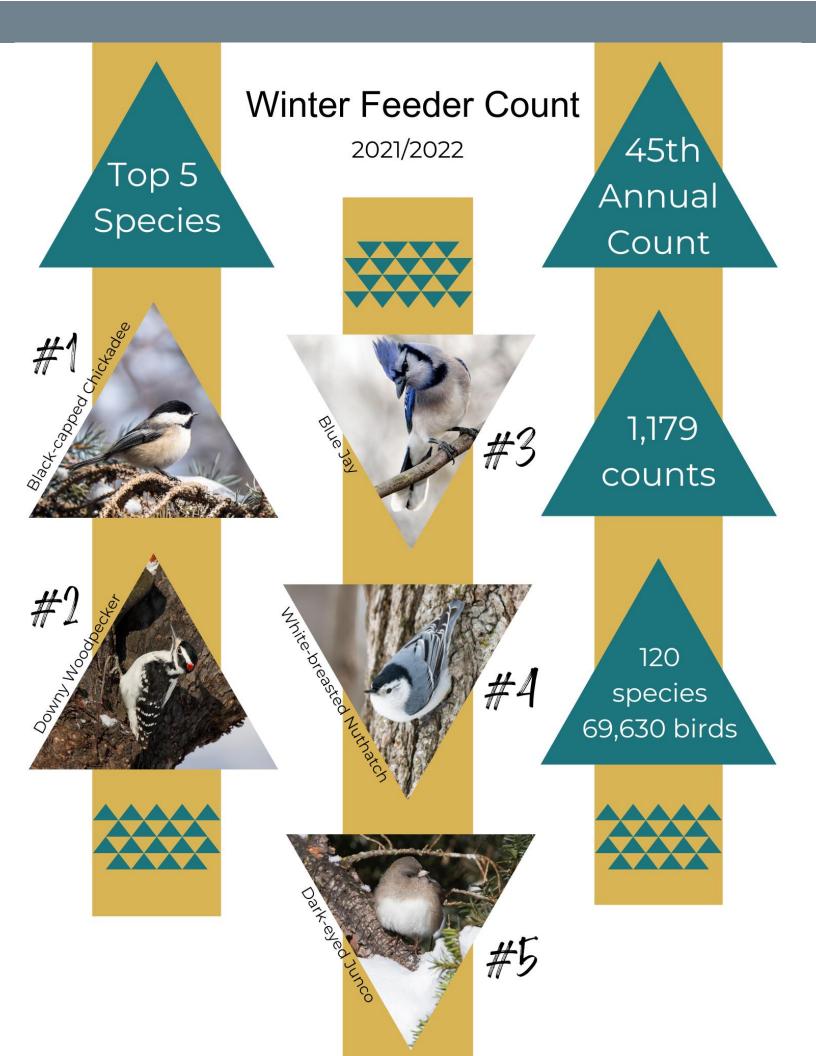
The banding event was run by Allen Chartier of Great Lakes HummerNet and KNC's own Brenda and Rich Keith. Together, these three are the only people who hold federal permits to band hummingbirds in Michigan.

# Research & Special Programs





Support the 2023 Birdathon! Visit: naturecenter.org/support/kvbo/

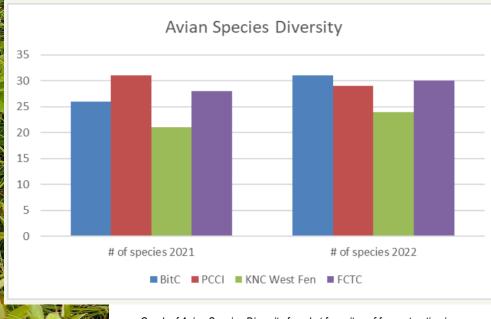




# Sustain Our Great Lakes: Fen Habitat Restoration

Avian surveys continued in 2022 alongside KNC's broader multi-year fen restoration initiative. With support from the National Fish and Wildlife Foundation's Sustain Our Great Lakes grant program, staff performed early morning wetland bird surveys hours during late May and again in mid-June using the Bird Studies Canada Marshbird Protocol. Each survey was done using playback recordings of five focal species with a five minute silent period before and after. These surveys were done at four sites throughout southwestern Michigan: the Southwest Michigan Land Conservancy's Bow in the Clouds Preserve, Pierce Cedar Creek Institute, Fort Custer Training Center, and the Kalamazoo Nature Center's West Fen.

There were 67 species recorded in surveys at all four sites together. Focal species of major conservation concern were found at two of the survey locations: Pierce Cedar Creek and Bow in the Clouds. Both the Sora and Virginia Rail were found at Bow in the Clouds, and the Virginia Rail was observed at Pierce Cedar Creek.



Graph of Avian Species Diversity found at four sites of fen restoration in SW Michigan. Continuous restoration and annual surveys over the course of more years may show greater changes in abundance, diversity, and focal species presence

# Fort Custer Avian Surveys





In 1997, the Kalamazoo Nature Center staff began providing bird research surveys to the Michigan Army National Guard's Fort Custer Training Center (FCTC) in Augusta, MI. The KVBO team remains responsible for different aspects of the research activities, which have included point count surveys and dedicated surveys for particular species of interest (such as Cerulean Warblers, Bluebirds, and Bald Eagles) across the property's 7,500 acres. Ongoing bird banding, including Monitoring Avian Productivity and Survivorship (MAPS) banding, began at FCTC in 2009. This collaboration, along with the land management services that KNC provides to FCTC, have played a role in Fort Custer receiving multiple national awards, most recently, the 2020 Secretary of Defense Environmental Award for Natural Resources Conservation in the small installations category.

#### **POINT COUNTS**

The 2022 survey year was a full point count year, meaning that 288 point counts were performed over the entire FCTC property. These points were established in 1997, and all have GPS coordinates so that the same exact area can be monitored each time. These surveys are performed during the early morning hours during June and early July. Each point survey is 10 minutes in length, and all birds heard or seen during that time are recorded on a log sheet differentiating between whether it was observed inside a 50 meter circle, outside a 50 meter circle, or as a flyover. This type of monitoring gives the team the ability to look at population trends and status changes of certain species. This year, John Brenneman, KNC's Senior Avian Biologist, recorded 5,520 individuals of 89 species. The first unusual observation this season was the increase in Black and Yellow-billed Cuckoos. Both of these species are fuzzy caterpillar specialists, and with the last two seasons of the Spongy Moth outbreak they have had a significant increase in food supply. Both of these species were found at 2 or 3 times higher than normal frequency at point counts during 2022.

#### **MAPS BANDING**

Banding took place on 21 days between May 31 and August 8, 2022. There are three sites located at FCTC incorporating wetland and dry upland habitats. There were a total of 364 newly captured birds and another 114 recaptured birds during the 2022 season. Ticks were removed from birds sent to Michigan State University for identification and testing for the Lyme Disease pathogen. There was also blood drawn from Yellow Warblers for a continuing study through Colorado State University. This project's goal is to determine the extent to which climate change is impacting survival and fitness in Yellow Warbler populations across their range by evaluating the rate of telomere shortening. Telomeres are caps at the end of DNA sequences that protect chromosomes from damage. Telomeres shorten with age as well as stress, and the rate of telomere shortening is negatively correlated to survival rates (i.e. the higher rate of shortening, the lower expected lifespan). In bird species, increased rates of telomere shortening have been associated with stress from environmental changes, which makes the rate of telomere shortening an ideal measurement when evaluating climate vulnerability in Yellow Warblers.

#### MARSH MONITORING



Since 2012 KVBO has been monitoring three sites at FCTC following the Bird Studies Canada Marsh Monitoring Program Protocol. Each of these point surveys are performed two times, once in May and the other in June. As a search for quiet and secretive birds, a playback system is used to encourage the target species to respond. Each count is 15 minutes long, consisting of a 5-minute silent listening period, a 5-minute call and broadcast session of the focal species, and a 5-minute silent listening period. The focal species studied include the Least Bittern, Sora, Virginia Rail, Common Gallinule/American Coot, and Pied-billed Grebe. In 2022, a total of 37 species were recorded at all three sites, with two of the target species being located. Virginia Rail responded at all three sites, and a pair of Common Gallinules were reported at one site.

#### RARE AND UNUSUAL SPECIES



KVBO takes special notes of any interesting or unusual species that are found at FCTC. This includes species found rarely in Kalamazoo during the summer months. This year was the second year in a row that a pair of Lark Sparrows has nested successfully at FCTC. Multiple Yellow-breasted Chats were also observed this year, continuing an annual streak since 2009. White-eyed Vireo and Prairie Warbler were also found on site with the Vireo being captured at a MAPS banding location. A Blue Grosbeak was also found in late May and marks the first time this species has been at FCTC.

# **National Audubon Society Christmas Bird Counts**



Every year, thousands of volunteers go out and count birds as part of the Christmas Bird Counts. These counts are held between December 14 and January 5 each year. Each of these counts takes place inside a 15 mile diameter circle where the observers identify and count all the bird species they can find in one day. The Kalamazoo Valley Bird Observatory staff help with 6 of these area counts each year: Allegan, Battle Creek, Dowagiac, Gobles, Kalamazoo, and South Kalamazoo.

Christmas Bird Counts first began in 1900, as an alternative to popular American Christmas "side hunts" where participants would compete to see how many birds they could kill. A concerned U.S. ornithologist, Frank Chapman, proposed counting the birds instead of killing them, and 25 counts by 27 individuals were performed that first year. Since then, that tradition has grown to include over 2,600 counts across 17 countries involving over 75,000 people annually.

This year, the 6 area counts that KVBO staff participated in had their fair share of weather challenges: very strong winds during the Battle Creek

count, almost 2 feet of snow on the ground for the Allegan count, and rain during the Gobles count. Despite these challenges, the team still had close to 100 participants help out. The group drove 2000 miles by car and traveled another 100 miles by foot to tally almost 54,000 individual birds of 95 species.



#### 2022 Christmas Bird Count Species List

www.audubon.org/conservation/science/christmas-bird-count

American Black Duck	29	Common Raven	4	House Sparrow	2147	Red-winged Blackbird	6
American Coot	353	Cooper's Hawk	19	Killdeer	1	Ring-billed Gull	2166
American Crow	5792	Dark-eyed Junco	2337	Lapland Longspur	2	Ring-necked Duck	57
American Goldfinch	568	Downy Woodpecker	413	Lesser Black-backed Gull	7	Rock Pigeon	1029
American Kestrel	28	Eastern Bluebird	398	Lesser Scaup	138	Ross's Goose	1
American Robin	858	Eastern Screech-Owl	12	Mallard	2766	Rough-legged Hawk	16
American Tree Sparrow	1002	Eastern Towhee	1	Merlin	1	Ruddy Duck	39
American Wigeon	7	European Starling	3819	Mourning Dove	1123	Sandhill Crane	3129
Bald Eagle	31	Evening Grosbeak	2	Mute Swan	377	Sharp-shinned Hawk	2
Barred Owl	5	Fox Sparrow	1	Northern Cardinal	1130	Short-eared Owl	2
Belted Kingfisher	27	Gadwall	226	Northern Flicker	162	Song Sparrow	89
Black-capped Chickadee	1116	Golden Eagle	3	Northern Harrier	1	Swamp Sparrow	9
Blue Jay	1471	Golden-crowned Kinglet	6	Northern Mockingbird	1	Trumpeter Swan	151
Blue-winged Teal	3	Great Blue Heron	36	Northern Pintail	9	Tufted Titmouse	636
Brown Creeper	26	Great Horned Owl	12	Peregrine Falcon	2	Tundra Swan	6
Brown-headed Cowbird	4	Greater Scaup	1	Pileated Woodpecker	82	Turkey Vulture	5
Bufflehead	359	Green-winged Teal	5	Pine Siskin	2	White-breasted Nuthatch	671
Cackling Goose	2	Hairy Woodpecker	135	Purple Finch	8	White-crowned Sparrow	3
Canada Goose	14788	Hermit Thrush	3	Red-bellied Woodpecker	368	White-throated Sparrow	8
Canvasback	2	Herring Gull	810	Red-breasted Nuthatch	35	Wild Turkey	500
Carolina Wren	56	Hooded Merganser	471	Redhead	11	Winter Wren	5
Cedar Waxwing	386	Horned Grebe	5	Red-headed Woodpecker	9	Wood Duck	6
Common Goldeneye	420	Horned Lark	62	Red-shouldered Hawk	22	Yellow-bellied Sapsucker	5
Common Merganser	21	House Finch	659	Red-tailed Hawk	142		

# **Motus Wildlife Tracking System**

The KVBO works with bird observatories around the globe to gather data on bird migration routes using the Motus Wildlife Tracking System. Led by Bird Studies Canada, this system uses networked receiving towers to detect specialized radio tracking devices on wildlife from up to 15 km away and shares these reports with researchers worldwide. At this time, the KVBO is connected with 18 statewide Motus receivers that make up the Michigan Motus Array. Together with other international receivers, this network dramatically increases researchers' abilities to track bird migration across Michigan and beyond. Since 2018, the data from Michigan Motus Array provided 135 confirmed detections of bird observations, contributing to at least twenty-five different research projects.

In 2022 alone, the Michigan Array received 61 confirmed signals, helping researchers across the United States to better understand important questions about species of conservation concern and public interest, such as how:

- The recovery, survival, and habitat use of Kirtland's Warblers is progressing following their removal from the Endangered Species List;
- Environmental lead levels in Flint, Michigan may influence juvenile migration success of American Robins;
- Roadways bisecting breeding habitat may affect habitat selection, health, and overall fitness in Eastern Whip-poor-wills; and
- The migratory vs. overwintering habitat uses may differ in Saw-whet Owls.

#### **LEARN MORE:**

- The 2022 Michigan Motus Array Report provides a snapshot of actual observations made by Michigan receivers and shares detail on the associated research projects for each – visit: <a href="maturecenter.org/motus/">naturecenter.org/motus/</a>
- The Motus Wildlife Tracking System website features worldwide maps, tracking data, and information about how to join the system – visit: motus.org
- The Motus Data Dashboard provides interactive features to explore data across species, animals, projects, stations, or regions – visit: motus.org/dashboard/
- The Audubon Bird Migration Explorer links data from Motus networks with detailed, geographic-based information to help users understand how migratory pathways intersect with conservation practice – visit: explorer.audubon.org/





**Learning & Engagement: Building Bridges with Birds** 

In 2022, the Kalamazoo Nature Center's Learning and Engagement staff created a range of public programs and experiences that were unprecedented in their deep connection to the Kalamazoo Valley Bird Observatory's longstanding research and conservation priorities. Highlights of these intentional collaborations are shared below.



#### DR. J. DREW LANHAM: COLORING THE CONSERVATION CONVERSATION

As the 2022 Terry Todd International Speaker Series invitee, Dr. Lanham discussed what it means to embrace the full breadth of his African-American heritage and his deep kinship to nature and adoration of birds. A noted ornithologist, Lanham challenged an audience of over 300 people to "watch, revere, and repeat" to build connections to nature and motivate new conservation activism. Lanham examined how conservation must be a rigorous science and evocative art, inviting diversity and race to play active roles in celebrating our natural world. Dr. Lanham is an endowed chair and professor at Clemson University, a MacArthur Fellow, and a widely published author and award-nominated poet. His works include "The Home Place: Memoirs of a Colored Man's Love Affair with Nature" and "Sparrow Envy."



Birds and other

living creatures face drastic changes and rapidly altered environments that impact their ability to survive. KNC developed a new 2022 exhibit that featured KVBO's year-round efforts to study the changing habits of birds.

Through engaging and interactive ways, this exhibit taught visitors about the work that KNC Conservation Stewardship staff conducts on a daily basis. The hands-on recreation of KNC's bird banding barn allowed visitors to experience what it is like to gather birds from the mist net and take them into the barn for measuring weight, height and fat content. Sample bird bands in varying sizes showed which bands are best for which birds. Visitors were invited to learn about nest-making materials and to try building their own. Historic collections of preserved eggs and an indoor replica of a Motus tower were on display. And, as a highlight

of the event, original artwork by Kalamazoo artist Olivia Mendoza (above right) was available to view and purchase.

Exit surveys revealed that KNC's visitors had an outstanding response to the exhibit. Altogether, 80% of visitors responded that the exhibit helped them to understand the ways birds are impacted by human actions, and over 70% left exhibit motivated to take action towards protecting the environment.



#### KALAMAZOO ZUGUNRUHE

This fall festival, held in September at KNC, celebrated the incredible migratory instincts of Michigan birds. In 2022, over 500 members of the local community were welcomed to enjoy free KNC admission and the day's many festivities.





#### The event included:

- Grand Opening of the *Up in the Air* exhibit
- Meet the Artist event with Olivia Mendoza
- Bird banding demonstrations
- Bird-friendly coffee giveaway and sale
- Children's Winged Parade
- Flight-inspired dance with Wellspring Dance
- Artist booths with bird-inspired arts and crafts
- Migratory Music concert, presented by the Connecting Chords Music Festival
- Audubon Society + KNC birding hike
- Prairie Hike with KNC Staff

- Bird of Prey Demonstrations
- Avian Lecture Series:
  - Dr. Sharon Gill on Soundscapes and Changing Environments
  - Dr. Gail Walter on Kalamazoo's Bird Friendly Treaty
  - Meg Heft on KNC's Animal Ambassador program
- Flying Things building crafts workshop
- Bird-nest-inspired fairy houses workshop
- Food Trucks



### New Podcast Released

The Fort Custer Training Center contains some of southwest Michigan's most untouched ecosystems. Podcast

producer Nora Duncan followed researchers from the Kalamazoo Nature Center through swamps, forests, and even fire as they worked in this wild and beautiful place.

Off the Trail is a five-episode podcast series that takes a closer look at this exciting collaboration. Episode 5: Songbird Secrets follows the KVBO research team through Monitoring Avian Productivity and Survivorship (MAPS) banding and point count surveys to discover how field studies can be used to understand threats to wildlife. Other episodes of the podcast focus on climate change, military conservation partnerships, invasive species and habitat management, prescribed fire, and efforts to protect the endangered Mitchell's satyr butterfly. Off



the Trail, a project of the Kalamazoo Nature Center through support from the Michigan Army National Guard's Fort Custer Training Center, is available on Spotify or at <a href="mailto:naturecenter.org/podcast">naturecenter.org/podcast</a>.

#### Other 2022 Publications

Inland Flyway Review. (2022). MAPS 2021 Report- MI - Fort Custer Training Center (FCTC: LACE, MOTT, SABO). *North American Bird Bander, Vol. 47 No. 1 & 2.* 

Inland Flyway Review. (2022). Fall 2021 Report- Pitsfield Banding Station/Kalamazoo Nature Center. *North American Bird Bander, Vol. 47 No. 1 & 2* 



# You Can Help Protect KVBO's Future

The Kalamazoo Valley Bird Observatory relies on the generosity of supporters to sustain the long-term work of our research program. As one of the oldest continuously operating bird observatories in the country, the ongoing collection of data from KVBO programs provides important information about the health of bird populations across decades. Your support makes a critical difference. Every gift matters to help meet KVBO's annual operating needs:

•	Seasonal bird banding assistant	\$3,675
•	Postage for annual mailings	\$1,500
•	Annual Motus cellular service	\$1,200
•	Zeiss 10x40 binoculars	\$1,000
•	Annual banding nets	\$500
•	End-of-season dinner for banding team	\$250
•	Banding pliers	\$100
•	Bird identification guidebook	\$55
•	OptiVisor headband magnifier	\$40
•	KVBO sweatshirt for staff	\$25
•	KVBO t-shirt for staff	\$15
•	Bag to hold 1 bird	\$7
•	Staff time to band 1 bird	\$2





Online: <u>naturecenter.org/support/KVBO/</u>

Mail: Kalamazoo Nature Center - Attn: KVBO Gift 7000 N. Westnedge Ave, Kalamazoo, MI 49009

# **Acknowledgments**

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#### **Staff**



Rich Keith Kalamazoo Valley Bird Observatory Director



Brenda Keith Senior Avian Biologist



John Brenneman Senior Avian Biologist



Interested in other bird-related speakers, events, and programs at the Kalamazoo Nature Center? Learn more at: naturecenter.org/programs/

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