Kalamazoo Nature Center

Kalamazoo Valley Bird Observatory

Annual Report 2023

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ABOUT US

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 meaningful experiences have focused on birds. Across the decades, KNC research staff have monitored the populations, health, and survival of birds that live in and move through our region.

Working under the name of the Kalamazoo Valley Bird Observatory (KVBO), this team's efforts extend beyond KNC's own properties to include regular surveys at the Pitsfield Banding Station, Kleinstuck Preserve, Fort Custer Training Center, and other partnering locations. Very few communities are fortunate enough have the depth and history of observations and data that are available in Kalamazoo. We are proud that this research legacy continues to have an impact on bird conservation, whether by informing local land management activities or supporting international migratory research.

Each year, we offer this KVBO Annual Report to provide highlights from our last year's work and to share a snapshot of the scientific quality that is possible when a community invests in conservation and research. We welcome you to learn more about this work and to consider joining our efforts. We remain grateful for your continued support.

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2023 Year in Review

Greetings from KVBO! It feels hard to believe, but the Kalamazoo Nature Center's fall bird banding program hit a major milestone this past year — our 50th anniversary. Over the decades, many things become predictable. We enjoy welcoming and training new seasonal banding assistants every year. We know to expect insect-eating warblers in September and seed-eating warblers in October. We love seeing the faces of Nature's Way Preschool students when they see a bird up close for the first time.

But each year also brings its own surprises. In the first few weeks of 2023 fall surveys, the team had banded 1,761 birds of 57 species, already about 40 percent of the total number banded in all of Fall 2022. The high number of early warblers was especially exciting. In the last 34 years, only two other years had as many warblers captured so early. Our cover model, the Bay-Breasted Warbler (*Setophaga castanea*) had particularly high numbers (120 in 2023), perhaps due to a large Canadian outbreak of eastern spruce budworm, its favorite food. Typically uncommon during fall migration, we only banded 40 last fall at KVBO.

The 2023 season had other highlights. Brenda and I traveled to Nashville in November for the Inland Bird Banding Association Annual Meeting, where we were learned more about Motus tagging from the team at Warner Park Nature Center. We'll use this knowledge in 2024 for a multi-state Wood Thrush monitoring project with the U.S. Fish and Wildlife Service, Fort Custer Training Center, and other partners. And, the new addition of a Motus receiver in Ann Arbor means that we now have complete east-west tracking coverage across southern Michigan.

I'm happy to report that my hands have finally healed from encounters with some of our more energetic net visitors: three Pileated Woodpeckers (the most ever in a single year) and a Red-Shouldered Hawk (only the second that we've ever banded). These pains feel worth it when we see how our data helps to support the conservation research of partners like the Bird Genoscape Project and the Institute for Bird Populations, who generously allowed us to share Jacob Job's wonderful article on his studies of Yellow Warbler migration. We remain grateful to supporters like you who have allowed us to take part in scientific partnerships like this for half a century!

Happy birding,

Rich

RICH KEITH
Director, Kalamazoo Valley Bird Observatory

Land Acknowledgement

The Kalamazoo Nature Center holds responsibility for over 1,500 acres of land. These properties embody a history of deep historical injustices that have produced inequity in access to nature that continues today. KNC occupies the traditional, ancestral, and contemporary lands of the first peoples, the Anishinaabek. Also known as the Council of the Three Fires, the Odawa, Ojibwe, and Bodewadmi people ceded land in the 1821 Treaty of Chicago and lost lands through forced removal in 1833.

Additionally, we acknowledge the complex racial inequity contributing to steep disparities in land access and ownership for Black, Indigenous, and people of color communities. This gives weight to KNC's charge to our community. We are committed to becoming a KNC led by and in service to all of our community and to honoring our complex history in all we do. We are committed to healing these relationships between people and land in our work.

KNC Avian Research History

Key milestones and impacts of the Kalamazoo Valley Bird Observatory

1960

Dr. H. Lewis Batts, a KNC founder and 30-year president, served as president of the Wilson Ornithological Society Council and on the board of the National Audubon Society.

KNC served as state headquarters for Michigan Audubon

Ray Adams was hired as first research staff.

First Kalamazoo-area Christmas Bird Count and informal banding surveys were held.

1970

Kalamazoo County Breeding Bird Survey began.

First spring migration surveys were held at Kleinstuck Preserve

Kalamazoo Co. Breeding Bird Atlas volunteers were recruited

First quantitative bird banding surveys were held using internationally accepted methodology and reported to the U.S. Geological Survey's Bird Banding Laboratory.

1980

Avian Research at the Kalamazoo Nature Center was published.

Field work was completed for the Michigan Breeding Bird Atlas.

Best in Field awarded to KNC at 1st SW Michigan Birdathon.

Rich and Brenda Keith joined KNC's banding volunteers.

1990

Monitoring Avian Productivity and Survivorship (MAPS) research started at KNC with the Institute for Bird Populations.

KNC managed Michigan's statewide bluebird nestbox network.

The Atlas of Breeding Birds of Michigan was published.

Pitsfield Banding Station is established, and the Keiths take on more formal roles with KVBO.

Research partnerships developed with USDA Forest Service, U.S. Fish and Wildlife Service, Michigan DNR, and Fort Custer Training Center.

2000

John Brenneman joined the research staff to support nest searches, point count surveys, and other monitoring

MAPS banding began at Fort Custer Training Center.

2010

Michigan Breeding Bird Atlas II was published.

Midwest Monitoring Network was established.

Michigan receivers were constructed for the Motus System.

2020

KNC led Michigan's efforts in an international Motus project.

KVBO began uploading data into the Avian Knowledge Network.

Avian research helped Fort Custer win Secretary of Defense Environmental Award for Natural Resources Conservation.

Expanded research partnerships aided a variety of bird conservation, disease ecology, pathobiology, and population monitoring studies nationwide.

KVBO Spotlight

< **Yellow Warbler**
(Setophaga petechia)

KVBO Chronicles

A Life Among Birds whose 'Colors There's Not Even Names For'

By Tom Springer

"If you have a zipper and buttons, be careful – they like to get snagged in the mist nets." That's Rich Keith's opening advice to rookies like me who visit the bird banding yard at Pitsfield Station near Vicksburg, Michigan. The name itself is an inside joke. The Station is the home of Rich and Brenda Keith. The "pits" and "field" refer to the 40-acre remains of a gravel pit and farm field that have since grown into a respectable second-growth woods.

The place looks unassuming until you learn what the Pitsfield Station and Kalamazoo Valley Bird Observatory (KVBO) have achieved in the annals of avian studies. The KVBO staff, who are employed by the Kalamazoo Nature Center, have banded more than 600,000 birds since the early 1970s. This makes theirs one of the longest continuous operations of its kind in North America. But as with any record of longevity, it's not only the numbers that impress, but the ironclad commitment of those who show up daily for the work.

On this February morning at Pitsfield, the walnut and cottonwood trees glitter with hoar frost. It's the kind of damp cold that makes every human nose red and drippy. And out here, it becomes clear that while Rich, KVBO's Director, loves birds, they don't always return the favor.

"The chickadees and titmice are little devils," he says, gingerly plucking one from the net. "They'll get hold of your cuticle, and it hurts like hell. The Downy Woodpeckers will peck holes in your fingernails. And cardinals, with their nut-cracking beaks, they're the worst."

Rich keeps the banding process brief, because recent research shows that stressed out birds produce the same hormones that stressed out humans do.

The mist nets are mounted on vertical posts, like flimsy versions of badminton nets. The birds fly into them, bemused and befuddled, and dangle there in Christmas tree ornament fashion. Rich, working alongside John Brenneman, a Senior Avian Biologist at KNC, gently removes and tucks the birds into colored bags that a volunteer made on her sewing machine from thrift store nylon jackets. For the birds' sake, they quickly lower the nets before the weather turns rainy. "A bird hanging upside down in the rain can't protect itself from hypothermia [abnormally low body temperature]," Rich says.

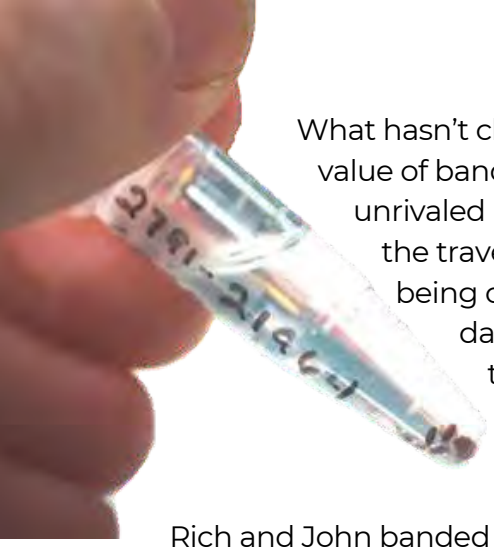
The banding takes place inside Rich's spacious garage during the winter. It has a long work bench, and a hole in the wall concealed by a rubber flap where they release the birds after they've been examined. It feels colder in here than it does outside: 36 degrees Fahrenheit. While that's chilly for a human, too much warmth could lead to hyperthermia for the birds.

"If birds could talk, this one would say 'unhand me, you cad!'" says Rich, who turns this particular Song Sparrow loose in about 90 seconds. It takes about five seconds to fasten an aluminum band with a federal serial number around its leg. Then they weigh and measure the birds on a scale. As Rich inspects each one, he calls out data points to John in staccato fashion: species, sex, age, wing span, weight, body fat, body mass and more. John jots it all down by hand on a paper spreadsheet. They're not Luddites; they say it's easier to log in the data later (in a warm house) on a computer spreadsheet.

The steely logic of scale and ruler impose the standardized rigor necessary for accurate data collection. But to the uninitiated, what Rich did next looked pre-scientific, perhaps even pre-Columbian.

As the bird lay still on its back in Rich's hand, he cradled its head between thumb and forefinger. Then, he lowered his face to the bird, and with his own breath parted the downy feathers on its breast. If you've watched too many Indiana Jones movies, it brings to mind a Mesoamerican temple rite performed by an avian priest. Rich wouldn't have looked amiss in feathered vestments and a beaked headdress. Yet scientifically, it's all legit. A column in the data chart requires the bander to assess the bird's level of subcutaneous fat. If the skin beneath the feathers appears pink, the bird's fat reserves may be too low. If it's chicken-fat yellow, the bird likely has enough fat to survive migration. This one, by Rich's reckoning, had ample fat reserves and would make it.

While there's much to learn about the field craft of handling wild birds, there isn't any high-tech wizardry to master here. Banding hasn't changed much since John James Audubon began to band birds with scientific regularity in the early 1800s. Even then, banding was nothing new. In the Punic wars of 218-201 B.C.E., Roman army officers sent messages to soldiers afield by tying thread on birds' legs. Royal falconers in the middle ages affixed leg bands on their majesty's raptors to denote ownership, much as we moderns do with dog collar name tags.



What hasn't changed is the value of banding as an unrivaled means to track the travels and well-being of birds. Accurate data collection is the lingua franca of all scientific research.

That morning, Rich and John banded about 16 birds. On warmer days they'll band 100 and once did 300. While each bird matters, it's the larger mosaic of avian evidence that matters more. Year after year, decade after decade, the KVBO team has built a massive data chronology that's in its own way as biologically revealing as core samples drilled from the strata of a glacier or ancient sea bed. The value of the KVBO's longitudinal record grows with each passing year and banding is only the half of it.

If displayed on a U.S. map, the KVBO's findings would resemble a digital data flyway with arrows flung from coast to coast. Along with banding, they monitor bird-borne ticks and collect fecal and blood samples for universities such as Michigan State, Missouri, Texas A&M, UC Davis, as well as Calvin University (Michigan) and Canisius University (New York). Scientists in academe and government use their data for studies on human diseases such as Eastern equine encephalitis, West Nile disease, Lyme disease, malaria, and Avian influenza.

As if data collection weren't enough, Rich also makes his own tools for the job. Which, by extension, extends KVBO's impact even farther. Rich's small business, Michigan Banding Pliers, furnishes most of the pliers used for bird banding in North America. It's part hobby, part side gig, as no one gets rich working for a nature center. "I just buy inexpensive pliers and rework them with a surface grinder and milling machine," he says, making to the tune of 500 pairs per year.

The KVBO team has a combined total of more than 100 years of bird banding experience. For all three, it's not only a vocation, but something they do on vacation. The Keiths say they're involved with birds every day of the year. (Even when indoors, they pipe birdsong into their house nonstop from an outdoor microphone.) But of the KVBO staff, it was John who launched his career with the biggest public flap.

Birding: From Uncool to Mystically Good

John grew up in Omaha, "where you're a 24-hour drive from anywhere in the U.S." In summers, his dad took John and his sister on backpacking trips in the Rockies. He assigned them field guides on nature, and John preferred birds over trees and wildflowers, if only because birds seemed easier. That grew into a semi-friendly competition with his stepmom to find the most species. Birding trips to Arizona, California, Nova Scotia and Texas ensued. With that, the fire of his lifelong passion was lit. Although John – who studied earth science and joined a teen club for outdoor activities – kept a low-profile at first "because birding was uncool."

Then, as it must for any prodigy, his talents were discovered and the world took notice. In this case, it was an Omaha newspaper; he still has the yellowed clipping to prove it. His big break came at the 1,500-acre Fontenelle Forest, a nature center in Sarpy County, Nebraska.

"I was down in a lagoon, when I saw an Anhinga," John said. This wayward Anhinga, a tropical denizen of everglades, bayous and rainforests, had for reasons unknown made landfall in the Cornhusker state. "It was a rare bird and only six had been spotted in Nebraska since the 1800s. I ran to find the ranger, who had to call a naturalist on the radio to come confirm it. He kept saying, 'it's a *what*?' When you're a teenager, adults don't always believe you. But then they had to eat crow (or Anhinga) later."

After that, Fontenelle became his workplace and home. He worked there for 13 years as a naturalist, custodian, wood cutter and caretaker of an austere A-frame cabin. The quiet winters, the woodstove simplicity, the allure of a wild forest out his backdoor made it hard to leave.

(John Brenneman) plays 3-D avian chess, an ornithological polymath with all senses poised and firing to detect any sign — visual, aural, preternatural — that will confirm a given bird's species or sex.

Yet after marriage, his then-wife took a job at KNC in 2000, and their move to Michigan became a package deal. "It was the easiest job interview ever," John said. "Ray Adams was looking for someone to help with KNC's banding over the summer. So he asked my wife, 'Does he know birds? She said, 'oh, yeah' and that was it."

While John can identify hundreds of birds by sight, it's eerie how many he knows by sound alone. On a birding hike at Kleinstuck Preserve in Kalamazoo, he'll be holding forth with his audience about habitat or migration, when blip, out of nowhere, he interrupts himself and pivots to another dimension. "Oh listen to that, there's a (something) warbler … there's a thrush, cuckoo, wren, tanager, flycatcher, ovenbird …"

He doesn't miss a beat, his guided tour spiel never lags. He's playing 3-D avian chess, an ornithological polymath with all senses poised and firing to detect any sign — visual, aural, preternatural — that will confirm a given bird's species or sex. He can walk, talk and track seven or eight calls simultaneously. He's good, even mystically Tom Bombadil good (the red beard helps). But he acquired this skill not through incantation, but long hours of study and practice. First, he listens endlessly to bird calls on tape. Like the Keiths, they're the soundtrack of John's life. All this neural preparation pays off once he encounters a live specimen in the field.

"Nothing cements that sound in your brain more than tracking that bird, and seeing it sing its notes in the field," John says. "After that you don't have to track it or see it to enjoy it. You hear the song and it's right there with you."

Making Good Data Count

Rich, Brenda, and John log long hours banding birds on cold spring mornings and steamy late summer days. They work not only at Pitsfield, but at Fort Custer Training Center in Battle Creek and the banding barn on KNC's 1,200-acre campus. They chronicle each bird's story in weights and measures, all in service of someone else's research.

Yet it's all so many sparrow tracks on a page until Brenda enters their data into an Excel spreadsheet. Only then can researchers readily share the data, and analyze it for trends and findings to further humanity's knowledge of scourges such as Lyme disease, malaria and Eastern equine encephalitis. Their published, peer-reviewed research — based on KVBO's data — can inform government policy in natural resources protection, disease spread and public health. That's crucial, since many of the disease pathogens tracked by KVBO will mutate and spread due to climate change.

None of which Brenda wants to discuss while standing on the cement floor of a cold, clammy garage. So, we repair to the kitchen table inside the Keiths' home. It's a new house, appointed in warm earth tones, that meets various gold-star sustainable design standards: insulation-dense walls as thick as a New Mexico adobe; roof-mounted solar panels that produce more energy than the home uses; a high-efficiency soapstone woodstove that radiates steady warmth like a private sun. On the wall behind the kitchen counter and the custom hickory cabinets, there's a 3' x 5' wooden tableau of a cattail marsh carved by Kalamazoo carpenter and muralist Conrad Kaufmann.

Complete, of course, with hand-hewn birds such as a canvasback duck and yellow-crowned night heron. In the living room, two large, languorous, long-haired cats doze in lemony shafts of sun. Per the home's passive solar design, the south-facing windows catch the low-angled winter light. Outside, the woods around the home are both refuge and nursery for birds and mammals alike. "We've got a five-star hotel for birds here," Brenda says. "We give them food, cover and water. This isn't a cornfield desert. They can stay and put on some fat."

"Some banding stations operate mist nets only a few weeks of the year. Well, unless you put in as much ongoing effort as the KVBO, it's hard to draw reliable conclusions from your data. It's not enough to collaborate with researchers. You need an enduring partnership.

Dr. Jean Tsau,
Professor of Ecology,
Michigan State University

In winter, Brenda backs off on banding duties. She's not the "banding nut" Rich is, and there's always a paper mountain of data to key in for the Institute for Bird Populations. Not until summer does her rare manual dexterity serve a purpose impossibly small and delicate. She's a licensed hummingbird bander, one of only three in Michigan and only 150 in the United States. She fashions the bands from a straight length of aluminum, as skinny as a toothpick. With pliers (one winces at the thought) she cinches the band around a hummer's spider web ankle. It takes 5,500 bands to make an ounce!

Brenda also uses a syringe to draw blood samples from a bird's jugular vein or capillary tubes from the brachial vein. Researchers then analyze these samples for tick pathogens. She doesn't mention how miniscule the margin of error must be for such a frightfully delicate maneuver. Not only does Brenda practice such avian arts, she teaches them to doctoral students, often from Michigan State University. This has included Dr. Sara Hamer, now a leading veterinary ecologist who specializes in zoonotic disease ecology at Texas A&M. Although, with undue humility, Brenda and Rich are quick to point out that neither of them has a college degree in ornithology. "While we understand the science," she says, "we don't write the big reports. We're just the field crew."

True enough, although Dr. Jean Tsao would disagree with the "just" part. Jean is professor of disease ecology at Michigan State in the Department of Fisheries and Wildlife. Sara Hamer was Jean's protégé, and she sent her to learn from the Keiths because Pitsfield was the best place to do it. In 2022, Jean was part of a research team that landed a $4.4 million grant from the Department of Defense Threat Reduction program to establish an Avian Zoonotic Disease network. With that much money and prestige on the line, a scientist's career can depend on whether or not they can deliver. And Jean, who has worked with KVBO for 20 years, says there's no field crew she trusts more to gather her data than Brenda Keith, Rich Keith and John Brenneman.

"To have the Keiths teach and mentor our students is amazing," she said. "The students learn the craft of how to set up mist nets [and] extract birds in a careful, responsible, dedicated way. They learn the right way to collect data on birds. The things the Keiths do, like looking at the bones on a birds' skull to determine their age, takes a long time to learn. They don't give out these federal banding permits to [just] anyone."

“Some banding stations operate mist nets only a few weeks of the year,” Jean continued. “Well, unless you put in as much ongoing effort as the KVBO, it’s hard to draw reliable conclusions from your data. It’s not enough to collaborate with researchers. You need an enduring partnership. The Keiths are interested and curious about tick research. The quality of their work shows that.” Jean and Michigan State have published two major papers with data gathered by the KVBO, with another on the way.

When you meet someone who can, without flinching, stick a hypodermic needle into a living vein about the diameter of fishing line, and retrieve it with no harm done to a creature that weighs one-half ounce (the weight of a nickel), it’s reasonable to ask how they became that person. Brenda says she was “always interested in nature.” She played outside with bugs, filled the family birdfeeder and delighted in her Mom’s spring wildflowers.

She was enthralled by the shimmering rainbow wings of a neighbor’s butterfly collection, the stilled glory of summer days encased in midflight under the glass lid of a specimen box. These backyard encounters kept nature close at hand — and as safely domestic as a warm slice of coffee cake. Yet to move from a child’s fleeting interest in birds to an impassioned, almost fierce urgency that propels you to live as if few things matter as much as birds? To end up there, you need an awakening.

Brenda was six or seven years old when the visitation came. She was on a family vacation at Tahquamenon Falls State Park in Michigan’s Upper Peninsula, where the tannin-stained waters rush like a root beer river over a precipice 50 feet high and 200 feet wide. There, through the

gaze of pink plastic binoculars newly purchased from the park’s gift shop, she felt the first stirrings of her life’s vocation. What she saw wasn’t really a bird in the greeting-card way that she’d come to know cardinals and chickadees. No, this was nature red in tooth and claw; an apex predator that soared with regal authority above the mist-wreathed falls and white pine snags below. It was, unmistakably, an American Bald Eagle. “I don’t remember much,” Brenda said, “except that I’d never seen anything like it and that it stayed with me.”

While there was no overnight transformation, the eagle had done its work. At age 15, Brenda channeled her budding passion for birds into a richly detailed 4-H feather collection that took first place and earned her an invitation to the Michigan State Fair in Detroit. “They told us to walk down the road and collect feathers from road-killed birds,” she recalls. “It’s against federal law to do that now!”

By high school, she "loved biology, plants, birds, mammals, and being outside more than anything." She was smart and college-bound, with dreams of becoming a wildlife scientist. Which she may have done, except for one thing: she had no mentor, no Linda Tsao to illumine the way. Absent that, her high school guidance counselor laid out the only two acceptable careers for a young woman in the 1970s: nurse or teacher. Since Brenda wasn't particularly fond of hospitals or bodily fluids, she put herself through Western Michigan University and earned a bachelor's degree in elementary education. "Unfortunately, or fortunately, the teaching degree didn't pay off," Brenda said. "Teaching jobs were hard to find and my substitute teaching gig wasn't working out."

Despite these obstacles — or perhaps because of them — Brenda has quietly become an elder stateswoman for her distinct role in avian research. She has grown into her title as a Senior Avian Biologist at KVBO. She's contributed to dozens of studies about birds from snowy owls to purple martins. One could argue that she deserves an honorary Ph.D., as she's done more to further her field than some who hold one.

It seems normal now, but notoriety wasn't on her mind when she started working for KNC "permanent part-time" in 1987. And certainly not in 1983, when she was working at Wedel's

> *To me, this is just our everyday life until I think about how much we've contributed. Sometimes you think, 'is this worth it?' But it is."*
>
> BRENDA KEITH,
> KVBO SENIOR AVIAN BIOLOGIST

Nursery, and was "pretty much done with relationships," until she agreed to date a guy known around the store as … Mr. Mole Trap. Yes, Rich owned and operated Nash Mole Trap, a nationally known company that sold its goods at chain stores and at Wedel's. Granted, the nickname Mr. Mole Trap wasn't exactly dating profile gold, but Rich visited Wedel's often as a sales rep, so he came by it honestly.

By then, birds had already led Rich to adopt a sort of reverse Persephone work schedule. Persephone, goddess of the harvest in Greek mythology, was tricked by Hades into spending six months each year in the underworld, which the Greeks called fall and winter. Well, Rich spent his summers banging out mole traps in a gritty Quonset hut, but would end his self-imposed exile to follow the spring and fall bird migrations, wherever it took him.

"Rich had become an avid bird watcher, and after we started dating, my own passion for birds came rushing back," Brenda says. "The rest, as they say, is history." After the two married in 1984, they spent six weeks birding in Alaska, and the open road and feathered skies have beckoned ever since. And, as it turns out, that WMU education degree has proved valuable after all. Even if she never intended it that way.

"I've used my teaching skills to teach hundreds of people about birds, from school kids and volunteers to Ph.D. students," Brenda says. "To me, this is just our everyday life until I think about how much we've contributed. Sometimes you think, 'is this worth it?' But it is."

Vicksburg to Vietnam – and back again

When Rich was growing up in Vicksburg, Michigan, he wasn't much for the outdoors. Much like Brenda, he had no mentor to teach him about hunting or fishing. He shot a rabbit once, but winged it and couldn't deliver the coup de grace. That was enough hunting for him.

Instead, he became an Icarus of sorts, although instead of feathered wings he rode the wingless steel carcass of a custom motorcycle. At age 17, he started racing at hill climbs on his 750cc custom Harley Davidson. These were basically uphill motorcycle drag races where the lone rider who reaches the top in the fastest time wins. In black and white photos of Rich from the late 1960s, you can see the vertiginous extremes that he pitted himself against. In one, he climbs a treacherous hill made from the spoils of a landfill moonscape in York, Pennsylvania.

"What you're doing," Rich says, "is defying gravity."

There's also a photo of the time he slipped off backwards at a hill climb in Chillicothe, Ohio. Death grip on the handlebars, hanging off the seat, both feet dragging right like a side-saddle rodeo rider. He's wearing black leather pants of 1960s Jim Morrison vintage, with a bulbous white helmet (no face shields then) that looks like something from Disney's "Herbie and the Love Bug." Except unlike Herbie, who had magical powers of flight, hill climb riders never reach escape velocity; they must always retreat downslope to from whence they came. Or, fall back in a mortal tangle of handlebars and scorching-hot exhaust manifolds, banged-up and cussing all the way to the bottom.

"It sounds crazy now, but I'd drive 20,000 miles over the summer, from May to Canadian Thanksgiving to race

motorcycles," Rich said. "Then I'd work at a motorcycle repair shop, save a little money and go race some more."

This was 1967-68, a precarious time for a teenage American boy from Vicksburg, Michigan, to plan his future. Particularly if he wasn't college-bound. Sure, you could vagabond from race to race, sleep in a van, stay skinny and immortal on cheap beer and junk food as only a teenage demigod in dirty jeans can do. But no matter what, the future had your number. And, inevitably, Rich Keith's number arrived in a letter from President Nixon himself that stopped him full throttle: "Greetings: You are hereby ordered for induction in the Armed Forces of the United States."

Forced Migration

Vietnam, March 1970. He's now Sgt. Rich Keith, his duty station a combat firebase 100 miles north of Saigon. (He was quickly

promoted from private after attending a “shake and bake” course that churned out non-commissioned officers.) In Army parlance, he’s an indirect fire infantryman. In practice, that means foot patrols in the sweltering jungle, lugging a rucksack of 81mm mortar rounds in search of an enemy you hope to never see. The 81mm mortar, a four-foot steel tube with a bipod and baseplate, launches a finned explosive projectile that can fly up to three miles on a parabolic arc that ends in hot smoke and shrapnel. A fluttering woodcock it is not.

Rich and his unit winged from firebase to firebase, exposed to constant peril in thin-skinned helicopters. On these bare hilltops, carved from jungles, surrounded by Viet Cong and NVA troops, U.S. Army howitzers boomed and rained shells on the battlefields below. They were fortress islands in a hostile human storm, ecological dead zones except for rats, ants and scorpions. They were the very opposite of the verdant island of wildlife habitat that the Keiths would later nurture at Pitsfield among the barren cornfields.

“I stayed in my bunker, read Tolkien and because of that and my size they called me ‘Hobbit,’” Rich said. “I’d say we were ‘action-adjacent.’ There was enough occasional sniper and incoming mortar fire to make you pay attention.”

A remote firebase could go a month without resupply. There was little fresh water to bathe or shave with; cotton fatigues rotted away in the humid heat. When supplies came, there were few creature comforts, save some warm, rusty cans of Falstaff beer that Rich traded for cocoa and cream packets. Rich endured 18 trips in

and out of hostile landing zones, but escaped physical harm. For these trials, the Army awarded him a Bronze Star, Combat Infantryman’s Badge and Air Medal. The latter features a bronze eagle,diving with fierce intensity, lightning bolts clenched in its talons.

The day after Christmas, 1970, Rich was back home in Vicksburg. Some things were the same, others forever changed. He’d lost a high school friend in Vietnam, but retained his love for motorcycles. Ever the machinist and mechanic, he started his own motorcycle repair shop. Yet neither the Sisyphean hill climbs, nor white-knuckle Army chopper rides, had connected him to the heavens like what came next.

It’s a summer afternoon, 1976. Rich is wrenching away at his motorcycle shop, up the street from where he lives now. It’s all routine — until the future comes screeching in.

“I was running a spark plug test on a motorcycle,” Rich said. “I’d take it up to 45 MPH, coast to a stop, listen to how it ran. Only this time, a guy in a pickup made a U-turn right in front of me. Right where my great-great grandpa planted this big row of maple trees.”

Vietnam didn't claim Rich, but this crash nearly did. As Rich and the truck collided, he suffered a compound fracture to his left thigh: "It was raining and I was losing a lot of blood. Someone came and held a blue tarp over me like they do at a grave site. I knew from the war that a femoral artery wound is very serious. I screamed at this guy, 'Unless you take off your belt and put a tourniquet around my leg now, I am going to die!" Thus convinced, the reluctant bystander took action.

After receiving seven units of blood, Rich settled in for a lengthy recuperation at a hospital in Kalamazoo. In those days, that meant six weeks in traction, immobilized by tension lines and counterweights. Enough time to read "Dune" by Frank Herbert and "The Foundation Trilogy" by Isaac Asimov.

Then, the epiphany.

"They sent me home in a walking cast," Rich said. "I really needed some fresh air, so one day I hobbled over to my family farm and there it was: an immense bird, black as a crow with a big red crest and a long, white-black bill. It was so astonishing that I had to find out what it was. From a bird book in the Portage library, I learned that I'd seen a Pileated Woodpecker. It had been 40 years since the last one was spotted in Kalamazoo!"

His love and fascination with birds grew non-stop after that. He'd spend six weeks each year birding in California, Big Bend, Texas, Yucatan, Mexico, and later Alaska with Brenda. As his passion grew, so did his birding circles. And in Kalamazoo, in the early 1980s, any serious birder would eventually meet the legendary Ray Adams, avian researcher and author at KNC.

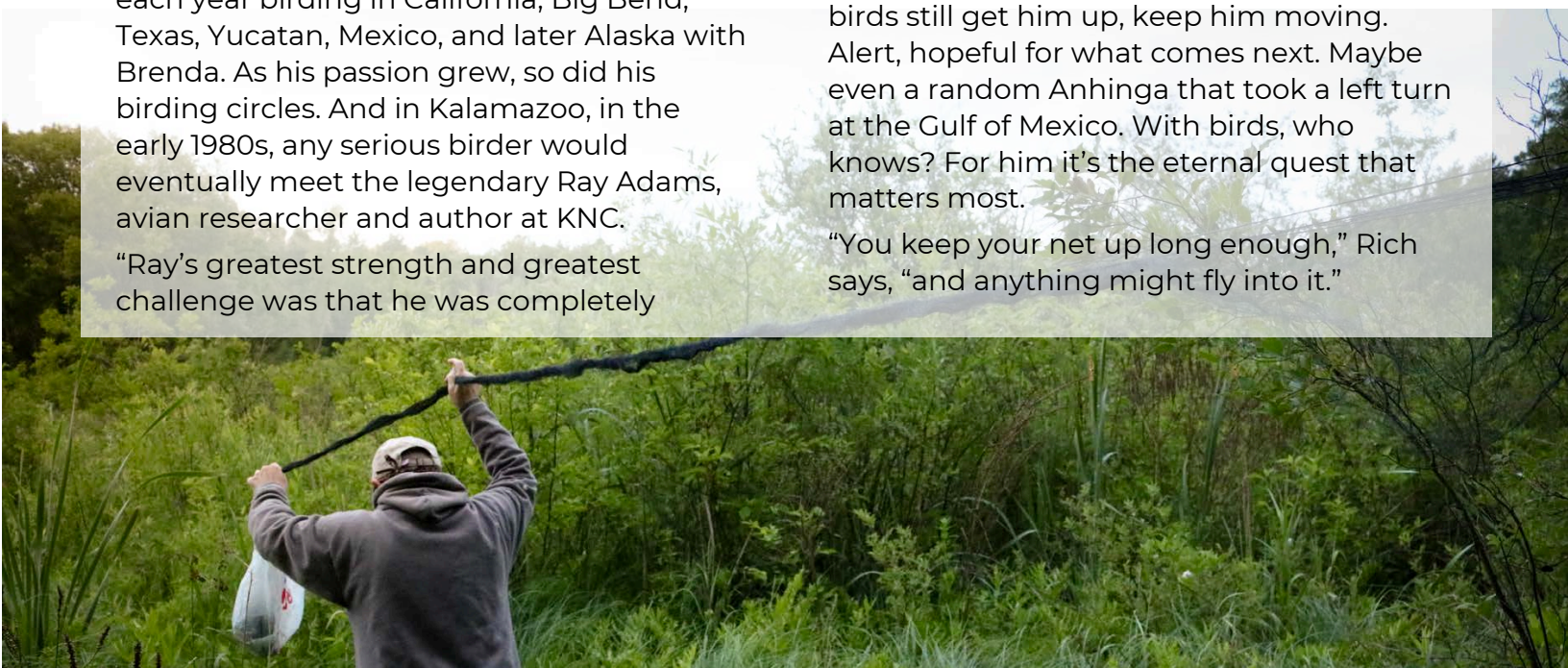
"Ray's greatest strength and greatest challenge was that he was completely accessible to anyone about birding," Rich said. Ray was so well-regarded and well-connected that his desk phone (no email then) rang constantly. One KNC intern who sat near Ray said she learned more from overhearing his phone calls than she did in graduate school. Later, as director of the KVBO, Rich took over Ray's banding license in 2007.

"Ray taught me bird-banding and that led to the best job I've ever had. What's most rewarding is the research we've done through KVBO. We share bird count data with eBird, the USGS Bird Banding Laboratory and the Avian Knowledge Network. And birds still make me repeat what I said when I saw that pileated 48 years ago: 'they're cooler than I ever thought, and have colors that I don't even have a name for.'"

Now in his mid-70s it doesn't appear that Rich will retire in the usual pickle ball sense of the word. He can't quit his work any more than a fish can retire from swimming — or a bird from flying. A detectable energy still thrums through his septuagenarian bones. You hear it in his voice, a clipped tenor that gets to the point with precise clarity. You see it in the latent, coiled strength of his fireplug physique: barrel-chested with Popeye arms and a strong, workman's grip. (All those hand-made banding pliers and mole traps.)

At an age when dreams and motivation falter against the headwinds of age, the birds still get him up, keep him moving. Alert, hopeful for what comes next. Maybe even a random Anhinga that took a left turn at the Gulf of Mexico. With birds, who knows? For him it's the eternal quest that matters most.

"You keep your net up long enough," Rich says, "and anything might fly into it."



Monica Evans:

Farewell to a Bird Lover and Good Friend

On January 15, 2024, KNC lost one of its stalwarts: Monica Evans, 89, who passed away at Borgess Place in Kalamazoo. For generations of members, staff and visitors, Monica was synonymous with the Nature Center.
Monica served KNC as an executive assistant, archivist, writer, treasurer and avid birder, and she left an indelible mark on the organization. Along with Renee Kivikko and good friend and former KNC co-worker Connie Ferguson, Monica co-authored "Glimpsing the Whole," the authoritative history of KNC. The Monica A. Evans Arboretum at KNC was named in her honor.

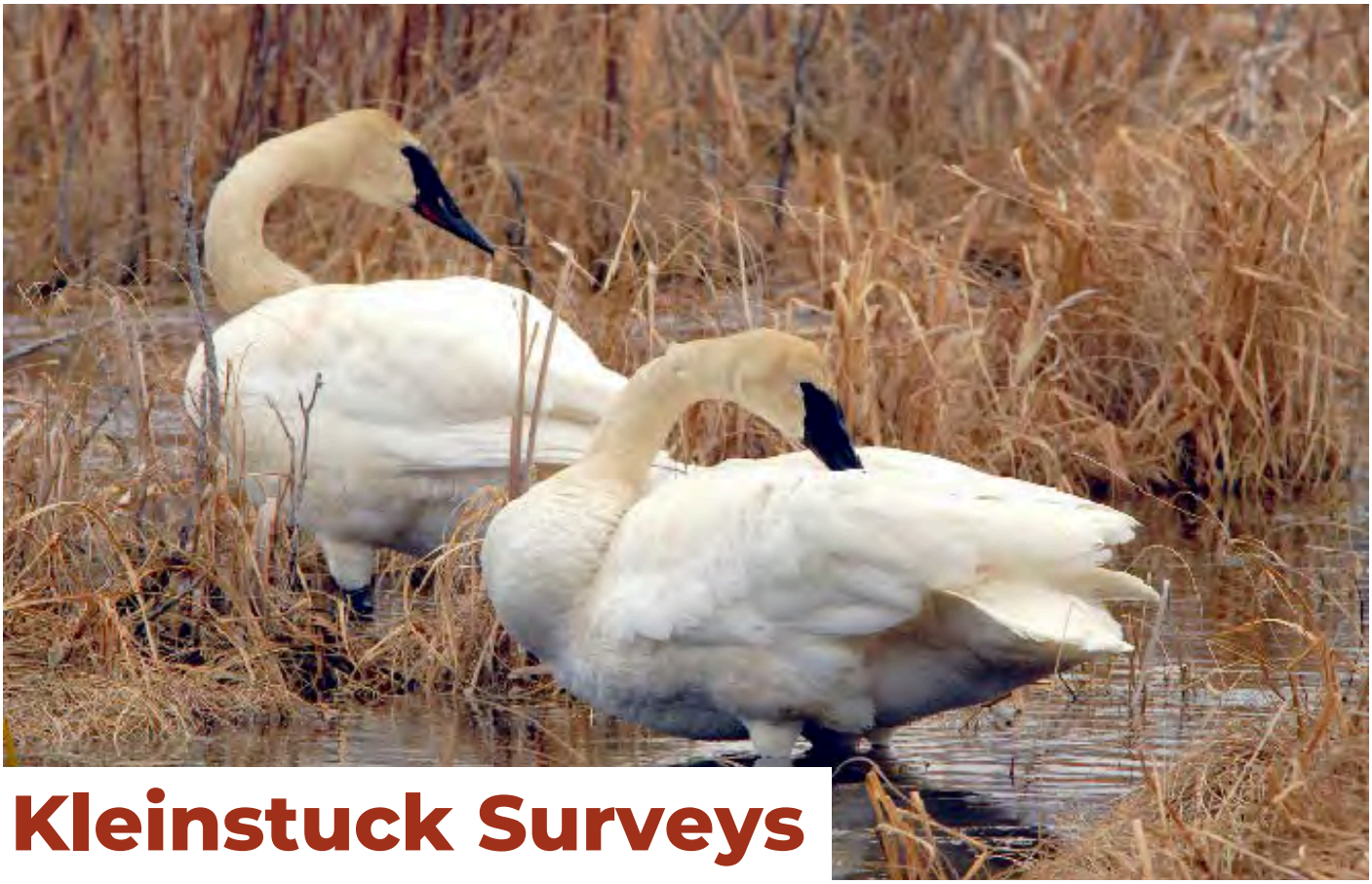
Monica was born and raised in Boston, but in the early 1950s she saw a flyer from Kalamazoo College which sought to recruit students from outside of Michigan. Monica applied and received one of K-College's first out-of-state scholarships — a decision that set her adult life on a new course. While studying for her bachelor's in biological sciences, she met Dr. Lewis Batts, then a professor and later her mentor and supervisor at KNC. After graduating from K-College, she went onto earn a Master's of Science in zoology at Northwestern University.

Throughout her career, Monica was a passionate advocate for birding and bird conservation. After her studies at Northwestern, she returned to Kalamazoo and worked in membership operations for the Michigan Audubon Society (MAS). Then in 1960, she began a career at KNC that spanned 39 years. As KNC's first employee, she served as administrative assistant for Lew Batts (always "Dr. Batts" to Monica). She was later promoted to executive assistant and went onto to hold the positions of secretary and treasurer. Monica also served for 10 years as board secretary for MAS, and held lifetime memberships in MAS and the Wilson Ornithological Society.

Monica held herself and those around her to high standards, but was kind and empathetic to the people and creatures in her care. An adept record-keeper and archivist, she always took part in winter feeder counts and entered data into KNC's database as a volunteer. Even as she lost mobility, Monica faithfully supplied copious amounts of feed to the songbirds and turkeys that visited her condo at Parkview Hills in Kalamazoo. At the last, her favorite gift was a KNC plush toy Blue Jay that she received from Lisa Panich at KNC. While the KVBO staff mourns her loss, the love she had for her friends and wild creatures continues to inspire the Nature Center's work.

Migration Report

< **American Goldfinch**
(Spinus tristis)



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. The 2023 season, which lasted from March 21 – May 28, started out very wet with rain and showers the norm for the first ten days of surveys. One of the early season surprises was a pair of Trumpeter Swans landing in the small wetland at the center of Kleinstuck. Normally this species is seen flying over.

April was a month of extremes, with above-average temperatures as high as 80 degrees for the first two weeks of April, followed by snow and very cold temperatures for the last two weeks of the month. This variation seemed to impact migration with some birds like the Blue-Gray Gnatcatcher, Lincoln's Sparrow, and Palm Warbler arriving 10-12 days earlier than normal. Migration then stalled when the cold temperatures arrived later in the month; very few new migrants arrived until the first week of May. Most of May had beautiful weather for migrating birds with warm days and nights and lots of southerly winds. Major pushes of new birds arrived in the area every week when migration peaked around May 7-22.

May also marked a day to honor Ray Adams who passed away in November, 2022. Ray was a lifelong bird watcher and longtime employee at the Kalamazoo Nature Center. In 1973, Ray established the daily spring bird surveys that continue today at Kleinstuck. Over the 40 years that Ray surveyed at Kleinstuck, he contributed almost 70,000 records representing close to 300,000 birds. A memorial walk with friends and family was done on May 19, 2023 during perfect weather conditions. Perhaps blessed by good luck from Ray, the participants were able to tally 70 species that day, which was one of the highest tallies for this season.

> Follow along with the annual Kleinstuck Surveys each spring at NatureCenter.org/Kleinstuck

A note from John Brenneman:

A personal highlight for me was finding a Merlin on April 26. It was being harassed by a bunch Blue Jays along the trail entering in from Chevy Chase Street. This is the first time I have sighted this species at Kleinstuck and only the third time it has been documented there. Merlin populations are on the increase all across the state so maybe more will be found in the future.

Most of the warbler species during this spring were below or at near average numbers except for the Northern Parula, which doubled its normal average. Another highlight was finding the Connecticut Warbler on May 18. This species is notoriously hard to get a good look at. It also has one the smallest windows of time it can be found at Kleinstuck, with most individuals passing through between May 15 and May 25. It prefers to stay hidden in thickets and underbrush and will sing sporadically.

2023 Kleinstuck Bird Survey Observations

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

Want to know when to expect Parulas or other migratory songbirds near you? Information on migration timelines 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 birdcast.info/migration-tools/migration-forecast-maps/.

CELEBRATING 50 YEARS OF FALL BANDING

Since 1973, the Kalamazoo Valley Bird Observatory has surveyed and banded migratory birds each fall. Over the years, the team estimates that KVBO has banded nearly 600,000 birds with over 150,000 birds recaptured.

All banding, marking, and sampling is conducted under a federally authorized Bird Banding Permit issued by the U.S. Geological Survey's Bird Banding Lab.

2023 TEAM

LEAD BANDERS: Rich Keith, Brenda Keith, and John Brenneman
BANDING ASSISTANTS: Belinda Wilson and Ashlyn Rogers
VOLUNTEERS: Pam Woodruff, Bob Nixon, Seth Chapman, Amy Vida, Daniel Sullivan, Liam Brenneman, Pamela Rups, Jean Lundberg, Stacy Burton, Talus Rutgers, Karen Kolbasa, Liz Kuras, Margaret Hahn, Mary Cook, Bree Leighton, Mary Benjamin, and Hannah Fischer

Total Days in Operation: 55
Total Net Hours for Season: 4,247
Largest Daily Catch: 86 on 8/28/2023
Most species on any day: 30 on 9/25/2023
Number of birds banded: 2,102
Number of species banded: 79

Kalamazoo Nature Center
Banding Station
Kalamazoo, Michigan

Top Ten Most Commonly Banded Species

Species	Number
1 American Goldfinch	275
2 White-throated Sparrow	156
3 Magnolia Warbler	138
4 Ruby-crowned Kinglet	136
5 Gray Catbird	127
6 Tennessee Warbler	125
7 Nashville Warbler	77
8 Golden-crowned Kinglet	72
9 Bay-breasted Warbler	66
10 American Redstart	56

CELEBRATING 50 YEARS OF FALL BANDING

Total Days in Operation: 63
Total Net Hours for Season: 10,321
Largest Daily Catch: 118 on 8/27/2023
Most species on any day: 31 on 8/26/2023
Number of birds banded: 3,057
Number of species banded: 81

Pitsfield Banding Station
Vicksburg, Michigan

Top Ten Most Commonly Banded Species

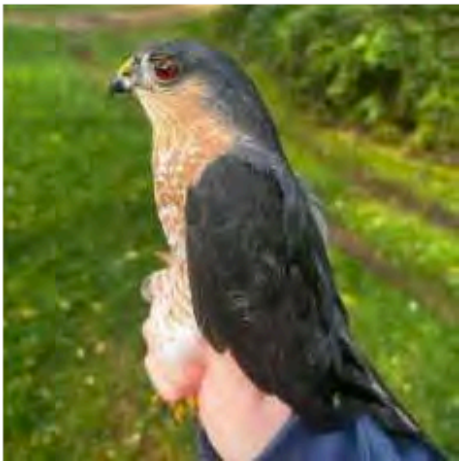
Species	Number
1 Myrtle Warbler	263
2 Tennessee Warbler	226
3 Swainson's Thrush	199
4 Gray Catbird	192
5 Magnolia Warbler	178
6 Ruby-throated Hummingbird	176
7 White-throated Sparrow	175
8 Nashville Warbler	114
9 Ruby-crowned Kinglet	102
10 Ovenbird	94

CELEBRATING 50 YEARS OF FALL BANDING

2023 Banding Assistants


Belinda Wilson


Ashlyn Rogers



"I was very honored to come back to the KVBO for a second banding season this fall, and I could not have asked for a better season! I spent the season learning more about birds and talking with volunteers and the public about them, too. I will never grow tired of sharing our wealth of information and excitement about birds. The most exciting part about this season was that I had the opportunity to handle and band not only a Sharp-shinned Hawk, but also a Pileated Woodpecker, which we don't catch often! I hope to keep banding birds and educating the public about the importance of birds and their conservation like the KVBO does in my future career."
–Belinda Wilson

Hummingbird Banding

KVBO staff banded 145 new hummingbirds between Pitsfield, KNC and Fort Custer. At a site near Constantine, staff banded 188 new hummingbirds. Total recaptured hummingbirds for all locations was 175.

CELEBRATING 50 YEARS OF FALL BANDING

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 amazing birds and the banding process. In the fall banding season of 2023, bird banding staff visited and shared the beauty of birds with the students in eight different Nature's Way Preschool classes, along with their teachers and families. Having 120 little learners at the banding station is such a joy for everyone!

Research & Special Programs

Wood Thrush >
(Hylocichla mustelina)

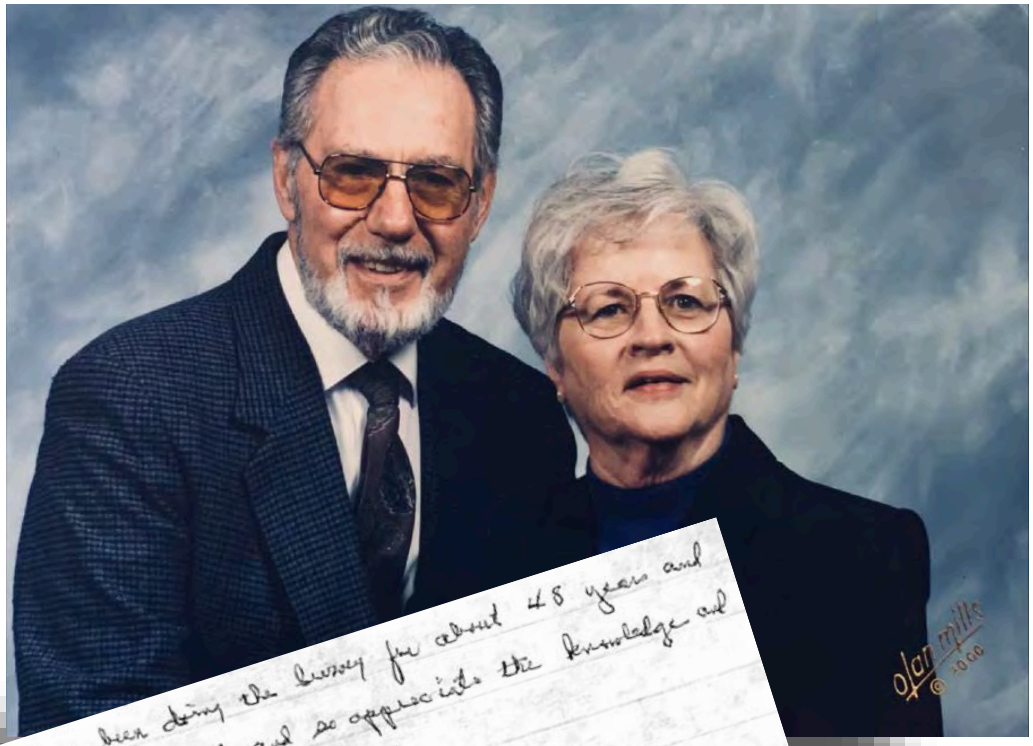
Winter Feeder Count

The 47th annual count took place from November 1, 2022-April 30, 2023. A total of 239 participants conducted 1,157 feeder counts and together identified 66,348 birds and 115 species in the feeder count areas.

Counts showed a below-average number of Common Redpolls and Pine Siskins reported. There was plenty of food in Canada for the Pine Siskins, so many stayed up north. The Redpoll's food source was predicted to be scarce; that was not the case, so they did not venture south as much as anticipated.

Pileated Woodpeckers were reported on over half of the feeders, reaching a new high count. Their increased numbers is likely due to forest maturation, especially across the southern half of the state. For the last 15 years, the Black-capped Chickadee has been the most widespread species found at feeders, and it was surprising to see it nudged out of that top spot by the White-breasted Nuthatch.

KNC's Winter Feeder Count has brought together hundreds of Michigan's birdwatchers for over four decades, creating an incredibly valuable dataset for tracking bird populations over time. The KVBO team would like to recognize volunteer **Jacolyn Adams** for her distinguished contributions and service for the entire history of the Winter Feeder Count. Jacolyn, we appreciate all that you have done for bird conservation in Michigan!



I've been doing the census for about 45 years and have loved doing it and so appreciate the knowledge and appreciation of the bird world.

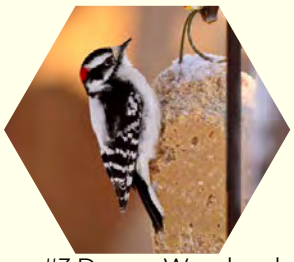
With sincere admiration for your work,

Jacolyn Adams RN (Ret.)

Top Five Species

#1 White-breasted Nuthatch

#2 Black-capped Chickadee



#3 Downy Woodpecker

#4 Dark-eyed Junco

#5 Blue Jay

Thanks to all 239 Winter Feeder Count participants for contributing data for the 2022-23 season!

MAPS operators help reveal where genetically distinct bird populations live year round

by Jacob Job, Associate Director, Bird Genoscape Project

Tucked away in the southwest corner of Michigan near Vicksburg is a 100ish acre plot of land surrounded by many, many more acres of farmland and urban development. Beneath the stands of oak and hickory trees is 'Pittsfield' migratory bird banding station. Run by Rich and Brenda Keith since 1989, many thousands of migratory birds have been caught and banded at Pittsfield as they make their way to and from their breeding and wintering grounds.

I first found my way to Pittsfield in 2010 shortly after I enrolled in a PhD program at Western Michigan University. I was just beginning to study human impacts on migratory birds and thought "what better to understand migratory birds than to volunteer at a local banding station". I ended up spending a half decade volunteering at Pittsfield, learning how to catch and band birds, and slowly began to understand the importance of banding stations like theirs.

Fast forward 13 years and I now find myself in northern Colorado as Associate Director of the Bird Genoscape Project (BGP) at Colorado State University. The BGP works to create maps of genetically distinct breeding populations of some of the most threatened migratory birds in the Western Hemisphere. These maps are called genoscapes (Figure 1). After building a genoscape, we can track individuals from each unique population across the Hemisphere throughout their full annual cycle (Figure 1). The individual unit that allows us to do our work? A plucked tail feather with trace amounts of DNA.

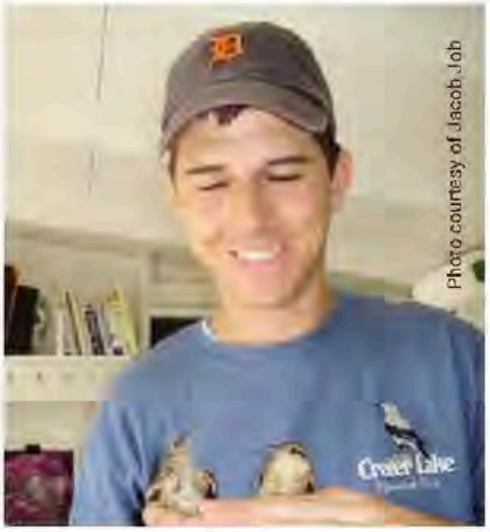


Photo courtesy of Jacob Job

As I familiarized myself with the BGP's feather collection, something stood out. Written on some of the envelopes containing tail feathers were the words 'Vicksburg', 'Pitt', 'B. Keith', and 'R. Keith'. My past was meeting my present. I knew that Rich and Brenda actively helped collect biological samples from caught birds for other research projects. In fact, I helped them pluck ticks from birds on occasion. But I wasn't aware they were also plucking tail feathers for the BGP. I dug a little into our database and found that, to date, the Keiths have contributed over 2,000 feather samples from over 100 bird species, and from as far back as 2002. It's possible that I was standing next to Rich and Brenda as they plucked feathers that I would work with years later!

Figure 1. Map shows where Yellow Warblers breeding in the Yosemite region and the Pittsfield region overwinter.

Feathers the Keiths have collected at Pittsfield and their other MAPS banding stations nearby have directly been used to build genoscapes for several species: Willow Flycatcher, Common Yellowthroat, American Redstart, and Yellow Warbler. We've learned which populations of these species travel through Vicksburg during migration and where they spend the winter. And we now know that Yellow Warblers that breed in Southwest Michigan and are part of a genetically distinct 'Central' breeding population are known to winter anywhere from southern Mexico in Veracruz and Oaxaca south to coastal Venezuela near Caracas. Pretty cool!

But the BGP gets a lot of feathers from places other than Pittsfield. Our feather collection now stands at over 200,000 and growing, with contributions from hundreds of individuals running migratory, MAPS, and MoSI (Monitoreo de Sobrevivencia Invernal/Winter survival monitoring) banding stations across the country and Hemisphere. Much of this work is done in conjunction with The Institute for Bird Populations (IBP) and their vast network. For instance, numerous bird banders operating MAPS stations on the other side of the country in or near Yosemite National Park have contributed nearly 6,000 feather samples from 88 species to the BGP since the 1990s. These samples have been used to construct genoscapes for three species: Anna's Hummingbird, Wilson's Warbler, and Yellow Warbler. And like we did with Yellow Warblers from southwest Michigan, we discovered that breeding Yellow Warblers around Yosemite are part of a genetically distinct 'Southwest' breeding population, and winter anywhere from Sonora, Mexico down to the Costa Rica/Panama border, overlapping slightly with birds caught at the Pittsfield banding station.

Our collection of feathers has taught us a lot more than just where migratory birds live. Data from banding stations like Pittsfield and those in Yosemite have given us a better understanding of how bird populations adapt to local climactic conditions. Combining Yellow Warbler genetic data with climate data and demographic data from the Breeding Bird Survey, we found that Yellow Warbler populations have climate-related associations throughout their full annual cycle3. In other words, birds that winter in the driest regions of the tropics breed in the driest regions in North America. We also found that year-to-year variation in annual precipitation is linked to changes in relative abundance across the breeding range. Of course, these findings have direct implications for predicting climate change-related population impacts.

To help communicate the results of these

A Yellow Warbler banded at the MAPS station on the Chaparral Wildlife Management Area in South Texas. Photo by Nicole Alonso-Leach

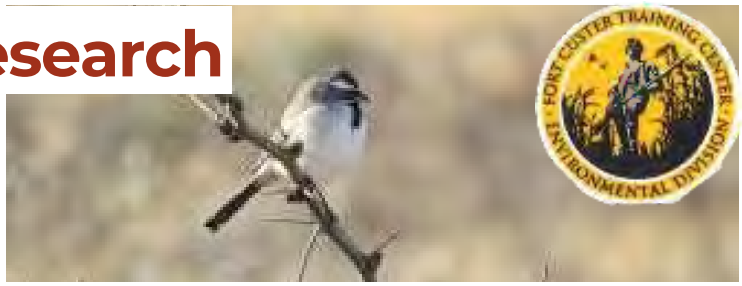
collaborative efforts, in 2022 we partnered with eight organizations and the National Audubon Society to launch the 'Bird Migration Explorer'. The Explorer combines migratory data for 458 species found in the United States and Canada. Data were collected over decades using a multitude of tools and then combined into a single interactive platform. This platform allows users to explore the routes of migratory birds in their backyards and the threats they face along their way.

The impact of the BGP has grown as our network of contributing bird banders has grown. For every feather that is sent our way, we can better help land managers and agencies develop more pointed and cost-effective conservation plans moving forward. To date we've completed genoscapes for 14 species and are in progress of completing another 37. All of this as we work towards our goal of completing genoscapes for 100 of the most threatened migratory bird species in the Western Hemisphere.

We'd like to extend a heartfelt thank you to those who have contributed samples to the Bird Genoscape Project. If you want to become a contributor and/or learn more about our work, visit www.birdgenoscape.org. Here you can learn how we construct genoscapes, browse completed genoscapes, discover applications for our work, and maybe most importantly, find out how you can get involved and help us meet our goals.

Fort Custer Avian Research

A Trip to New Mexico for the Data Birds



In January 2023, John Brenneman, Senior Avian Biologist, and Stephanie Diep, Conservation Analyst, travelled to New Mexico for an in-person training on entering point count data collected for the Army into the Avian Knowledge Network (AKN) database. John said, "I loved this training being in-person because, with that many people, questions were asked that we might not have thought to ask, and I really loved the practice of conducting actual point counts and entering the data. I was also excited because I found a rare bird for New Mexico, a Common Ground Dove."

The Department of Defense holds large swaths of land that are not as impacted by development and human recreation, and policies are in place to protect these natural features and the animals and plants that reside there. Fort Custer Training Center is a Michigan Army National Guard installation composed of 7,500 acres of land, much of which is forest, prairie, and wetland/fen habitat. KNC has been collecting point count data and other avian surveys for Fort Custer Training Center since 1997.

John said, "Having such an old data set is beneficial because quite a few bird projects want historical records to compare with what is trending now, and it will be much easier to access this data in AKN."

Avian surveys are important in measuring the quality of habitat and broader trends such as migration patterns and climate change. The Department of Defense has mandated that all of the United States armed forces submit their avian data into the AKN database so that it is compiled into one place in a compatible format for cross analysis with help from Point Blue Conservation Science and Klamath Bird Observatory. Other organizations beyond the armed forces have also entered data into this database including the U.S. Fish and Wildlife Service, Klamath Bird Observatory, eBird, and others.

Specific studies in the database can be shared and accessed publicly through the Data Catalog or Observation Map. Data that is shared publicly also informs the Rapid Avian Information Locator (RAIL) web tool where the user can draw an area on the map and get a list of all species observed in that area. Each species includes global and continental population estimates, conservation status, biological facts, maps of ranges, and a phenology graph. Stephanie said, "These tools are user-friendly for everyone and provide information that can help inform many projects even beyond bird science."

Due to the diligent record keeping and standard procedures for point counts, John and Stephanie were able to bulk upload all of the Fort Custer point count data this year making Fort Custer the first installation to get all of their data into the AKN system. There is still bird banding data that needs to go into the system once it is calibrated to accept that kind of data.

National Audubon Society Christmas Bird Counts

Every year, thousands of volunteers count birds as part of the Christmas Bird Counts. These counts are held between December 14 and January 5 each year. Each count takes place inside a 15-mile diameter circle where observers identify and count all the bird species they can find in one day. The Kalamazoo Valley Bird Observatory staff help with six 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. As a result, 25 counts by 27 individuals were performed that first year. Since then, the tradition has grown to include over 2,600 counts across 17 countries involving over 75,000 people annually.

This year, the six area counts that KVBO staff participated in resulted in 50,000 individual birds of 104 species observed by 74 participating birders. Highlights from 2023 include a Common Raven, Golden Eagle, Gray Catbird, Marsh Wren, Virginia Rail, Common Yellowthroat, Ruby-crowned Kinglet, Long-eared Owl, and Northern Saw-whet Owl.

BIRDATHON

Birdathon

"The Catbirders" completed yet another annual SW Michigan Team Birdathon event in 2023 observing 124 species throughout the day in friendly competition with other teams working to raise money for local conservation efforts.

Species highlight:
Summer Tanager

2023 Christmas Bird Count Species List

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

American Black Duck	28	Common Yellowthroat	1	Long-eared Owl	1	Ring-billed Gull	120
American Coot	5	Cooper's Hawk	16	Mallard	2015	Ring-necked Duck	104
American Crow	1920	Dark-eyed Junco	1837	Merlin	3	Ring-necked Pheasant	4
American Goldfinch	620	Downy Woodpecker	406	Mourning Dove	1002	Rock Pigeon	1190
American Kestrel	27	Eastern Bluebird	589	Mute Swan	312	Rough-legged Hawk	14
American Robin	1227	Eastern Screech-Owl	16	Northern Cardinal	815	Ruby-crowned Kinglet	2
American Tree Sparrow	1385	Eastern Towhee	2	Northern Flicker	230	Ruddy Duck	19
American Wigeon	4	European Starling	9025	Northern Harrier	5	Sandhill Crane	4609
Bald Eagle	29	Fox Sparrow	2	Northern Pintail	10	Sharp-shinned Hawk	1
Barred Owl	6	Gadwall	325	Northern Saw-whet Owl	3	Short-eared Owl	3
Belted Kingfisher	29	Golden Eagle	1	Northern Shoveler	10	Snow Bunting	43
Black-capped Chickadee	1050	Golden-crowned Kinglet	87	Northern Shrike	2	Song Sparrow	92
Blue Jay	1335	Gray Catbird	1	Peregrine Falcon	3	Swamp Sparrow	11
Blue-winged Teal	6	Great Blue Heron	37	Pied-billed Grebe	2	Trumpeter Swan	229
Bonaparte's Gull	64	Great Horned Owl	10	Pileated Woodpecker	72	Tufted Titmouse	534
Brown Creeper	57	Greater White-fronted Goose	1	Pine Siskin	28	Tundra Swan	12
Brown-headed Cowbird	254	Hairy Woodpecker	121	Purple Finch	33	Turkey Vulture	2
Bu ffl eh ea d	381	Hermit Thrush	5	Red-bellied Woodpecker	344	Virginia Rail	1
Cackling Goose	2	Herring Gull	507	Red-breasted Merganser	3	White-breasted Nuthatch	688
Canada Goose	6571	Hooded Merganser	282	Red-breasted Nuthatch	10	White-crowned Sparrow	15
Canvasback	4	Horned Grebe	5	Redhead	1	White-throated Sparrow	55
Carolina Wren	69	Horned Lark	108	Red-headed Woodpecker	52	Wild Turkey	236
Cedar Waxwing	586	House Finch	613	Red-shouldered Hawk	32	Winter Wren	8
Common Goldeneye	137	House Sparrow	1930	Red-tailed Hawk	119	Wood Duck	13
Common Loon	1	Lesser Black-backed Gull	3	Red-winged Blackbird	4	Yellow-bellied Sapsucker	9
Common Merganser	72	Lesser Scaup	31	Ring-billed Gull	3161	Yellow-rumped Warbler	53

Motus Wildlife Tracking System

The Kalamazoo Valley Bird Observatory 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 19 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 has provided 205 confirmed bird observations, contributing to at least twenty-five different research projects. Records from 2023 provided the most observations received in one year yet, with 95 confirmed signals helping researchers across North America to better understand important questions about species of conservation concern and public interest.

The most recent addition to the Michigan Motus Array was completed on September 22, 2023 with the launch of a new Motus tower in Ann Arbor. The Kalamazoo Nature Center, Ann Arbor Parks and Recreation, and the Kalamazoo Valley Bird Observatory installed the 19th receiver in the Michigan Motus Array at the Huron Hills Golf Course. The addition of this tower closes the final coverage gap of Motus detection

connectivity spanning east to west in Michigan's Lower Peninsula. This now enables tracking of all tagged birds and other wildlife that travel north and south through the state. On a global scale, Motus data helps researchers better understand migratory paths and timing, stopover locations, habitat use, breeding, nesting, and overwintering locations, etc. On a local scale, this information helps land managers make species-informed decisions when working in wildlife habitat. Becky Hand, Stewardship Supervisor at the Natural Area Preservation of Ann Arbor Parks and Recreation, says "the data collected by our tower will help inform our management of Ann Arbor's natural areas, so that we may provide high quality habitat for all manner of local wildlife."

With five bird detections since its launch in September, we are eager to see how subsequent detections from this tower may inform conservation efforts of tagged wildlife traveling through and residing in Michigan.

LEARN MORE

See the 2023 Michigan Motus Array Report: naturecenter.org/motus

See live updates: motus.org/dashboard ==> home > projects > Michigan motus array

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, at any level, makes this work possible.

Seasonal bird banding assistant	$3,675
Annual Motus cellular service	$2,400
Postage for annual mailings	$1,500
Zeiss 10x40 binoculars	$1,300
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 one bird	$7
Staff time to band one bird	$2

KALAMAZOO VALLEY BIRD OBSERVATORY
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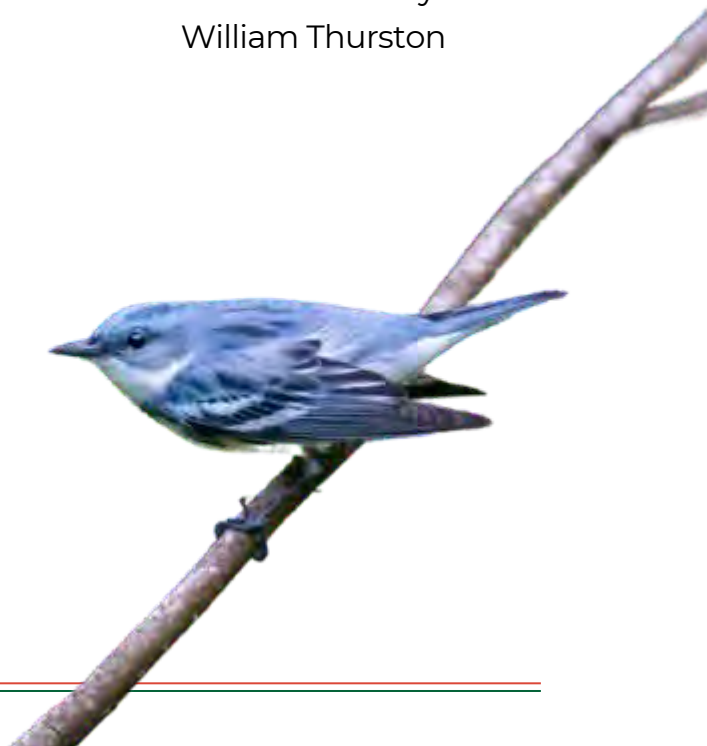

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Learn more about other bird-related events and programs at KNC:
naturecenter.org/birding

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