AUDUBON OF KANSAS

2024-25

25th Anniversary Edition

PRAIRIE WINGS

Advancing Conservation in the Great Plains

MOTUS TOWERS CONNECT PEOPLE AND PLACES THROUGH BIRDS

KANSAS PRAIRIES IMPERILED

JAN GARTON: WETLAND WARRIOR

BIRDS THAT AUDUBON MISSED

BUG'S LIFE AT HUTTON RANCH

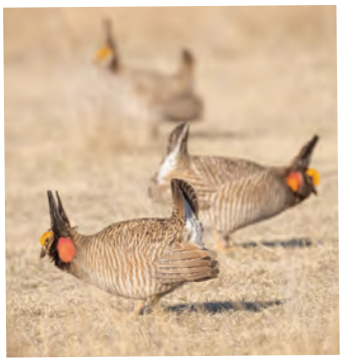
AOK OFFERS THESE ULTIMATE BIRDWATCHING EXPERIENCES

Celebration of Cranes

is the first weekend of November

- Witness the magic of thousands of Sandhill Cranes filling the sky
- Good chance of seeing the endangered Whooping Crane
- Guided tours of Quivira National Wildlife Refuge

www.audubonofkansas.org/celebration-of-cranes



Kansas Lek Treks Prairie-Chicken Festival

is in mid-April

- Feel the excitement of prairie-chickens displaying yards in front of you
- Spaces open in December and fill quickly
- Tours depart from Hays, Kansas

www.kansaslektreks.org

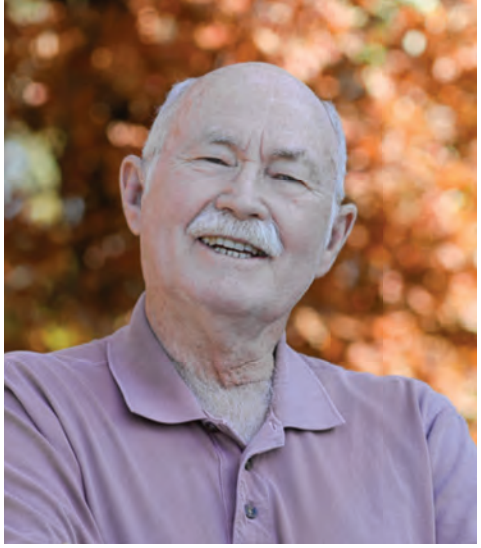
Hutton Ranch Sharp-tailed Grouse Tours

mid-March through early May

- Up close encounter the strange synchronized displays of these prairie grouse
- Tours and lodging at AOK's Hutton Niobrara Ranch Wildlife Sanctuary near Bassett, Nebraska

www.audubonofkansas.org/grousetours

Cover image and middle inset above of Lesser Prairie-Chickens by Alyce Bender of A. Bender Photography LLC. The fighting prairie-chickens on the cover were selected to celebrate AOK's fight for wildlife over the past 25 years. Above: Photo of bird watchers at Celebration of Cranes by Amy Meyer. Inset of Whooping Cranes by David Rintoul. Inset of Sharp-tailed Grouse by Scott Schupe.
Back cover of Snowy Egret by Kenn Kaufman.



Letter from the Chair

Gary Haden

Dear AOK Supporters,

Good news abounds at Audubon of Kansas during our 25th anniversary year. We continue to be surprised by unexpected bequests from board members and others who have passed. It is a sad way for AOK to increase its endowments but a great way for donors to be remembered by those of us who care about the environment and strive to protect it through education, advocacy and legal actions as a last resort. We greatly appreciate being remembered in wills or trusts and we will do everything we can to use the funds to promote responsible stewardship of the natural environment in Kansas and the Great Plains.

In addition to increasing our potential influence through utilization of unexpected income, one of our points of emphasis during the coming year will be to solicit more involvement from individuals who might be interested in joining our board or who might become involved with one of our events or various committees. The opportunities opened by the increased income also mean more work for unpaid board members as well as more pressure on our three staff members. We are always on the lookout for writers and photographers who can contribute to *Prairie Wings*, but there are also many other areas where we would welcome volunteers.

In the coming months we will advertise through our monthly digital newsletter to find individuals whose talents might fill various needs. We seek supporters who not only have interest, experience and energy, but also varied perspectives due to youth, age, religion, ethnicity, race, sexual identity or orientation or any other lived experiences. We will always have a place for individuals who want to be involved with environmental issues, whether they involve working outdoors, using your intellect and experience to help with technical issues, or employing your personal skills as a volunteer at our Kansas Lek Treks Prairie-Chicken Festival, Celebration of Cranes or other public events.

AOK's Protected Areas Initiative progresses, as we continue to receive expressions of interest from individuals who are considering AOK as a permanent home for their land. An agreement was recently signed with a couple who wishes to donate their property to AOK, though they wish their plans to be held confidential for now. Another individual is making donations toward an endowment that will be used for management of his property, and other gifts of land are in the discussion stage.

On a personal basis my wife Carolyn and I continue to make annual donations to AOK toward the endowment that will accompany the gifting of our land along Clarks Creek in Morris County. The current plan is to have a public event signing of a management agreement with AOK in 2025, with the transfer of the deed from us to AOK about December 1, 2025. The event will be advertised, and anyone interested will be able to join us for a tour, a walk along our nature trail, witness a brief ceremony, and enjoy the company of environmentally conscious individuals along with some food and drink. Meanwhile, if you are interested in possibly learning from me about our

Sunrise on Far West Farm, the property which will be gifted to AOK by Gary and Carolyn Haden. Photo by JK Augustine

personal experiences with the land-donation process (or any other issues associated with AOK) inquiries are welcomed at gary.haden@audoubonofkansas.org.

P.S.: I discovered during a review of what I wrote in last year's Letter from the Chair that my fingers had for reasons unknown typed that it was my fifth Message from the Chair, when this is only my fourth time of addressing *Prairie Wings* readers as AOK's Board Chair. I don't know why my fingers sometimes generate mental typos—something different from what I am thinking. I have done this a couple times in the past—including during my 11 years in the newspaper business. I hope no one but me was confused.

Prairie Wings is a publication of Audubon of Kansas, Inc. — the only widely distributed magazine devoted specifically to statewide conservation and wildlife advocacy initiatives. It is made possible by your generous support and contributions. We encourage you to share this publication with friends, family, and other organizations. Please feel free to leave copies in reception areas, hospitals and other business locations to help spread awareness about critical wildlife issues.

To learn more about AOK or ways to support our mission, please contact (785) 537-4385 or aok@audubonofkansas.org. Audubon of Kansas, Inc. is an independent 501(c)(3) organization that is neither administered nor funded by the National Audubon Society. Contributions are fully tax-deductible to the extent allowable by the IRS. Contributions can be sent to Audubon of Kansas, PO Box 1106, Manhattan, KS 66505 or visit our secure website: www.audubonofkansas.org

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The Mission of Audubon of Kansas includes promoting the enjoyment, understanding, protection, and restoration of natural ecosystems. We seek to establish a culture of conservation and an environmental ethic.

Prairie Wings is a publication of Audubon of Kansas, Inc. Electronic newsletters are published monthly at https://www.audubonofkansas.org/newsletters. See our website at www.audubonofkansas.org.

AOK is an independent grassroots organization that is not administered or funded by the National Audubon Society. All funding is dedicated to defending wildlife in Kansas and the Great Plains through advocacy, conservation, and education.

Board Editorial Committee:
Elizabeth Dodd and Jackie Augustine, Editors, Copy Editors
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Message from the Executive Director

Dr. Jackie Augustine

BIG FISH IN A SMALL POND

This 25th Anniversary edition of *Prairie Wings* gives me an opportunity to reflect on the history of Audubon of Kansas (AOK), how it informs what we are doing today, and provides a vision for the future.

AOK was established in 1999 when the Kansas Audubon Council, a consortium of representatives from the local Audubon chapters in the state, decided to rebrand and expand its mission and reach by hiring Executive Director, Ron Klataske. Almost immediately, AOK's influence grew. Our conservation mission was supported through Harold and Lucille Hutton's donation of the Hutton Niobrara Ranch Wildlife Sanctuary to AOK. This exquisite property continues to be a cattle ranch that supports diverse wildlife including elk, mountain lion, sharp-tailed grouse, porcupine, and countless other flora and fauna. Achterberg Wildlife-Friendly Demonstration Farm was added to AOK's properties in 2005, and Mount Mitchell Heritage Prairie Park in 2006. Today, we continue to demonstrate conservation best practices on these properties while providing opportunities for the public to enjoy the wildlife they support.

AOK properties are pockets of wildness in an increasingly manicured world.

Environmental Education has always been the second pillar of our mission (see sidebar). *Prairie Wings* started in 2001 to help communicate the conservation issues facing Kansas and the work the AOK is undertaking. The first *Prairie Wings* gives an update on the work of the Education Committee, whose goal was to spread environmental education materials throughout the state. Subsequent newsletters follow the development and distribution of the "Kansas Birding and Prairie Flora Trail" or "Prairie Passage" materials. *Prairie Wings* also promoted the "Wings N' Wetlands" Festival at Cheyenne Bottoms and Quivira National Wildlife Refuge. Today, AOK's Celebration of Cranes and Kansas Lek Treks Prairie-Chicken Festival are the only two birding festivals in the state. Additionally, our Nature Adventurepack program continues to expand. A Spirit Aerosystems grant will bring backpacks with binoculars and field guides to the Wichita Public Library and adjacent libraries.

These educational efforts are so important because people will not preserve what they don't understand and appreciate.

Preserving land and providing environmental education has always been a part of AOK's mission, but we are best known for our advocacy. We have fearlessly tackled difficult issues over the years including legal battles to conserve endangered and declining species like black-footed ferrets, whooping cranes, prairie dogs, and prairie-chickens; siting wind and solar energy developments in areas that do not harm or fragment our declining grassland landscapes; managing roadsides to enhance

Members of the public visiting AOK's Mount Mitchell Heritage Prairie Park in July for an evening spider walk with guest speaker Dr. Dustin Wilgers from McPherson College.

Executive Director Jackie Augustine (center) with Board Members Rex Buchanan (left) and Vanessa Avara (right) at the Kansas Statehouse promoting a dedicated source of funding for conservation in Kansas.

wildlife habitat; and sounding the alarm when invasive and noxious species threaten to turn our diverse, native habitats into monocultures of Old World Bluestem, Sericea lespedeza, and others.

AOK is the most vocal voice for wildlife in the region.

In some ways, what we are doing today is not all that much different than what we have always done: we are still doggedly advancing environmental advocacy, conservation, and education in Kansas and the Great Plains. Our mission has not changed despite changes in threats to our environment, technological advancements, and people involved in AOK. We are still advocating for wildlife at county, state, and federal levels. We are still protecting land in accordance with our conservation mission. We are still educating others through *Prairie Wings* and other publications, and through our Celebration of Cranes and Kansas Lek Treks birding festivals.

So, what is in AOK's future? I believe AOK will continue to grow and become an even larger part of environmental advocacy, conservation, and education in Kansas. How do I know AOK will continue to grow? Because I have already seen so much growth in the past three years. Our Celebration of Cranes festival had a record number of participants in 2023. Our Kansas Lek Treks Prairie-Chicken Festival fills to capacity each year. Our newsletter readership has quadrupled since 2001. In advocacy, our lawsuits against the US Fish and Wildlife Service have brought a sense of urgency to water conservation in the Rattlesnake Creek watershed. Rattlesnake Creek supplies Quivira National Wildlife Refuge with water to sustain a unique inland saltwater wetland. These wetlands are used by many species, including endangered Whooping Cranes, for refueling during migration. We are also active across the state testifying for smart wind, solar, and transmission energy siting that does not destroy or fragment our remaining prairie and wetland ecosystems. Our conservation properties will be expanding. In previous issues of *Prairie Wings*, Gary Haden has described why he and his wife, Carolyn, have decided to donate their land to AOK. There are also other properties in the pipeline for becoming an AOK property, such as Howell and Carmen Johnson's property described later in this edition of *Prairie Wings* and Gary and Carolyn Haden's 'Far West Farm' described in the previous edition.

Not only has the mission of AOK advanced, AOK has also grown as an organization. Three years ago, we had one full time staff member (Executive Director), a part-time Director of Philanthropy, and an hourly

SOMETIMES THE IMPACT OF THESE ENVIRONMENTAL EDUCATION EFFORTS IS NOT IMMEDIATE OR APPARENT.

One of my personal summer projects has been entering all my bird sightings into eBird. I have diligently recorded checklists of birds for 20 years. By entering the data, I not only hope to contribute to community science, but I am curious as to what my life list total is (the number of species I have observed anywhere in the world). My early journals record not only lists of birds, but also key experiences and observations. I was surprised to see Ron Klataske and Audubon of Kansas in my journal under the title "Wind Energy Forum 10/15/2002". My notes for Ron's talk include, "[power] lines over prairie cheaper, but endangers grasslands" and "60% of Kansas is cultivated" and "Why sacrifice prairies?"

I would like to think that the talk given by Ron and others during the Wind Energy Forum instilled in me the first spark of the love of Kansas landscapes and the threats facing them. That spark was kindled by my 20 years of working prairie-chickens, and primed me to be open to the possibility of being the Executive Director of AOK when the opportunity arose. Now, I am honored to be able to pass on my knowledge and appreciation of Kansas wildlife and habitats through AOK's education initiatives.

employee to conduct maintenance at our Hutton Sanctuary. Now, we have full-time staff filling each of those positions. We still have strong connections with our Audubon chapters throughout the state, with a new 'Sunflower' chapter forming in Hays. I really appreciate what they do to connect people and nature in their local communities. During and since COVID, many nonprofits have seen giving to their organization decline. AOK has bucked that trend – the number of donors and the amount given has increased. There are also more people donating their time to AOK by volunteering to serve on our board or on our committees, by helping out planning and implementing our events, and by performing trail and habitat maintenance on our properties.

Why are so many people contributing in so many ways to AOK? The answer to this question is different for different people. Some appreciate the events that we organize. Others understand the importance of land protected from development. Others value how we proudly stand up for wildlife in public hearings all over the state, or how we advocate for wildlife through targeted litigation. But all of these answers boil down to one thing: We are a small but mighty organization with a big impact throughout our region. Our impact exceeds our size.

However, I was not thinking about the impact of AOK when I titled my letter, "Big Fish in a Small Pond." The analogy is not appropriate as I see AOK as a little fish in a big pond that makes big waves despite its size. No, when I think about "Big Fish in a Small Pond," I think about AOK's supporters. We are a small organization – a small pond. Each of our donors, volunteers, and followers is critically necessary to help us be effective. Everything you do to support us makes an outsized difference in advancing our mission. Your support matters. Your support has helped us make big waves in our first 25 years. How will you support AOK in the next 25 years?

On the next page are some ways to become a "big fish" in AOK's small but mighty pond.

Support AOK now:

- If you're not already, become an AOK member. For as little as $20/year you can add your voice to those defending wildlife in the Great Plains. You will also receive the next *Prairie Wings* delivered to your door.
- Donate equipment. AOK is in need of reliable transportation for its staff and farm equipment (skid steer, open and enclosed trailers, side-by-side UTV) for sanctuary management. If the equipment is not suited for AOK work, they could also be sold with the funds supporting AOK's mission.
- Donate a required distribution of your IRA. This contribution can be made without accruing any tax obligation from the distribution.
- Make a gift of stock or bonds. Contributions of appreciated stock or bonds provide support for AOK's mission while you avoid capital gains liability.

Include AOK in your planned giving:

- Create a charitable gift annuity. Work with your financial planner to create a charitable gift annuity or charitable remainder trust. You will continue to receive fixed payments for the rest of your life and receive a charitable deduction. You also have the satisfaction of knowing that the remainder of your gift will benefit wildlife through AOK.
- Include a bequest to AOK in your will or trust. Simply bequeath a fixed dollar amount or a percentage of your residual estate to Audubon of Kansas, Inc.

Create a legacy sanctuary:

- Donate a property to AOK to be included in our sanctuary program through outright donation, bequest, or life estate. Our hope is that one day, all people in Kansas can have access within an hour's drive to wildlife and wild places through AOK. In collaboration with the donor, AOK prepares a management plan which outlines how funding will be established to support ongoing care and maintenance of the property. Contact Jackie to learn more about this program at 785-537-4385 or jackie@audubonofkansas.org.
- Property that is not suitable for a sanctuary would also be accepted as "trade lands." The properties would be sold to support AOK's area of greatest need, or could be designated for a specific aspect of our mission, such as advocacy, conservation, or education.

Audubon of Kansas, Inc., is a not-for-profit 501(c)(3) conservation organization incorporated in the State of Kansas with its address at PO Box 1106, Manhattan KS 66505-1106. AOK's federal identification number is 48-0849282. Contact 785-537-4385 or giving@audubonofkansas.org for more information about giving options.

Message from the Director of Philanthropy

Kathryn Chambers

Dear Friends of AOK,

I am thrilled to introduce myself as the new Director of Philanthropy at Audubon of Kansas. I am so grateful to have the opportunity to join a deeply passionate and intelligent team making wonderful strides towards protecting and preserving Kansas' natural ecosystems.

As an (almost) lifelong Kansan, there's no better sight to be seen than the serene sunsets over the tallgrass prairies, where the sky transforms into a canvas of colors, reminding us of the incredible natural heritage we are dedicated to conserving at Audubon of Kansas.

I grew up in Wichita but have since crossed the border into Kansas City, MO, and honed my skills at Union Station Kansas City, where I managed current and prospective grants and sponsorships, conducted donor cultivation and stewardship, and helped close our Now & Forever Endowment campaign. These experiences have equipped me with the skills to develop and implement effective strategies for cultivating donor relationships and ensuring sustainable revenue for AOK.

As I step into this role, I am committed to exemplifying AOK's mission and values. Fostering trust and open communication with our supporters (you!) is key to building a strong community of advocates for conservation.

I am so looking forward to collaborating closely with our Executive Director, Board of Trustees, and each of you to advance our shared goals for environmental conservation in Kansas.

Thank you for welcoming me into this vibrant community. AOK and the Kansas conservation scene is poised for immense growth, and I can't wait to be your partner and advocate amongst it all.

With gratitude,

Kathryn Chambers
Director of Philanthropy
Audubon of Kansas

AUDUBON OF KANSAS
BOARD MEMBERS

Coneflower and cottonwoods at Achterberg Wildlife-Friendly Demonstration Farm. Photo by JK Augustine.

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Amy Meyer, Protected Areas Manager

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Robert "Bob" Gaskill
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Larry Haverfield
Jan Meyers
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Bob Robel
Ruth E. Stewart Boles

2024 Tributes

Lucia Johnson
Catherine Crockett Sanders
Elizabeth Schultz

AOK WELCOMES
NEW BOARD MEMBERS

HEIDI EATON
LEAVENWORTH

Heidi is a lifelong nature-lover and some of her earliest memories include seeing a Snowy Owl perched on a sign and fields full of what are now called Tundra Swans in rural Michigan. She moved to Kansas when she was six, and her family regularly took drives on back roads or to wildlife refuges with her mom pointing out Indigo Buntings and Dickcissels. She didn't keep a life list until she took ornithology at Kansas State University, on the way to her degree in Biology.

Heidi's degree and love of animals led her to a 26-year career as a great ape keeper at Cheyenne Mountain Zoo in Colorado Springs, Colorado. Heidi and her husband moved to Leavenworth, Kansas in 2021. She considers herself an all-around naturalist, as there really aren't any taxa she doesn't like, and she believes everything needs to be considered when conserving an area, because it is all connected.

DAVID KIRSCH
OVERLAND PARK

Dave grew up in Johnson County and returned to his roots in 2008. He took up birding a few years after that, and through this grew a love for both the tallgrass and shortgrass prairies. He currently works in energy transition consulting on issues related to decarbonization and future energy systems. He had previously worked for the US Department of State where he provided analytic support to policymakers on international energy policy, economic crises, and Middle East political dynamics.

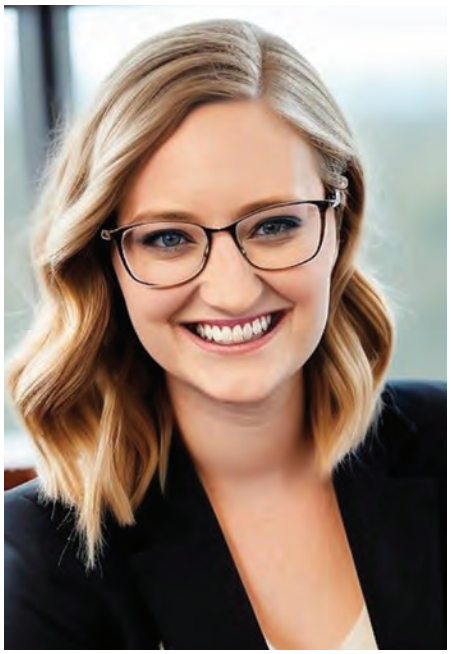
SIL PEMBLETON

MANHATTAN

After moving to Kansas about 40 years ago Sil taught science at Manhattan High, earned a Master's degree at KSU and also served as president of Northern Flint Hills Audubon Chapter. Sil enjoyed the friendship and camaraderie of members and was active in conservation issues including "Saving Cheyenne Bottoms."

Moving to the Washington, D.C. area, she worked at the Smithsonian Institution/National Academy of Science creating science curricula. For 10 years, as Director of Environmental Studies at Hard Bargain Farm located on the Potomac River, Sil taught everything from ecology to canoeing to cow milking. As a board member of Jeffers Foundation in Minnesota, Sil created Team Teaching with Mother Nature, a professional development workshop encouraging teachers to take learning outdoors. She also wrote several publications for teachers as well as two natural history books for children.

She is excited to be living in the Flint Hills again.



DIANA STANLEY

WICHITA

Diana Stanley graduated with her law degree from the University of Kansas where she earned the Environmental and Natural Resources Law certificate. While in law school she received the Hershberger Energy Law Award and came in second at the National Environmental Moot Court Competition. She's published several scholarly articles on environmental and natural resources law related topics. On the weekends, she can be found hitting the trails at one of Kansas's state parks.

All photos by Heidi Eaton

IT'S A BUG'S LIFE AT HUTTON NIOBRARA RANCH

BY ERIC EATON

12-spotted Skimmer Dragonfly, male

Giant Robberfly, female

Two days spent in any natural area is hardly enough time to learn much about the place, so when my partner, Heidi Eaton, and myself were invited to make a casual survey of insects at Hutton Niobrara Ranch Wildlife Sanctuary, my expectations were low. Further, the primary goals on that July weekend in 2022 were to clear cedars from some of the rangeland and paint the interior of the Lazy Easy house. We were part of a team carrying out those duties.

Insects, and other invertebrates like spiders, are usually neglected in habitat-level conservation initiatives, so it was refreshing to learn that Audubon of Kansas values all organisms on lands that they acquire. To be sure, "bugs" are more than "bird food," performing additional critical ecosystem services like pollination, seed dispersal, organic waste disposal, soil aeration, and control of troublesome pest species. Yes, some insects are vectors of pathogens that affect public health and the health of livestock and crops, consume crops outright, and infest our human infrastructure. Those villains, however, are in the minority, and many of them are of our own creation. More on that later.

Dr. Jackie Augustine toured us over much of the ranch, demonstrating the diversity of habitats contained within its boundaries. Rangeland there is punctuated with pockets of woodland, and woven with riparian corridors. This is not what I expected from my admittedly stereotypic vision of northern Nebraska. Even the sandy roads were buzzing with insect activity.

On the day of our arrival, we spent part of the evening along the banks of the Niobrara River itself, a lush greenway with dense vegetation. As the sun set, with only a light breeze breaking the quiet, it was easy to believe that no other people existed on the planet. Insects settled down in the dimming light, many of them roosting among the cattails, Big Bur-reed, Soft-stemmed Bulrush, and other emergent plants. Insulated in a warm micro-climate, they were not easily flushed by our movements or our flashlights.

Tributaries of the river offered different flora and fauna, in narrower paths through the surrounding prairie. Tiger beetles, swift-running predators that fly a short distance if you get too close, dashed across the sandy banks in pursuit of smaller insects and potential mates. Clad in bronze-brown with ivory hieroglyphics, they are charismatic animals. Up close,

Regal Fritallary

Spider Wasp

they have bulging eyes and fierce jaws. Above them, dragonflies like Twelve-spotted Skimmer and Widow Skimmer flew up and down the creek, pausing to perch on a twig now and then. Male Purplish Copper butterflies, diminutive but durable, discreetly fluttered low among the taller vegetation. Water Hemlock flowers brought wasps, bees, flies, and beetles to the party. The white, flat umbels offer one-stop shopping where insects can walk from tiny blossom to tiny blossom, without expending the energy that flying demands. The shallow flowers allow insects with short mouthparts to easily reach nectar. Composite flowers are popular for the same reason: a shallow corolla.

Roadsides are their own special niche. Like the streams, they link habitats. Because they are often flanked by drainage ditches, they foster plants that would otherwise not grow in the arid prairie, or at least not as vigorously. Walking the shoulder, we noticed some intrusive weeds, like White Sweetclover, but even those undesirables were magnets for bees, wasps, flies, and other insects. White Prairie Clover is native, and also drew many pollinators. Sunflowers flourish here, growing tall and bright. Even before they bloom, extrafloral nectaries on the bracts around the buds and at the base of leaves secrete sweet liquids that insects love. It is thought that the purpose of these honey holes is to recruit insects that can defend the sunflower plant from herbivores. Indeed, ants, well known for their pugnacious personalities, flock to the nectaries and drive off competing insects. They also guard aphid colonies since those sap-sucking insects expel copious amounts of sugary liquid waste (honeydew) that the ants crave.

Scurrying across the ground were different kinds of solitary wasps. The female Steel Blue Cricket Hunter seeks crickets that she paralyzes with her sting, and drags back to a burrow where they will serve as food for her larval offspring. A big, black *Prionyx* wasp has the same routine, but hunts grasshoppers instead. Sand wasps in the genus *Bembix* dig nest burrows in sand, and practice progressive provisioning like birds, bringing flies to their hungry offspring as needed. Bright orange velvet ants, which are actually wingless female wasps, seek the nests of other solitary wasps, into which they can deposit their own eggs. Larval velvet ants kill the host wasp egg or larva, then feed on whatever the host wasp's mother provided for it.

After a long day, you might think the work of a

Prairie is where the rural economy meets Indigenous ecosystems. Balancing the prosperity of the two is an ongoing challenge.

bugwatcher is done, but not so. One of the best ways of seeing the most insect diversity is to turn on a light at night. We turned on the front porch light at the ranch house, but also set up a blacklight in front of a sheet behind the house. Insects are partial to light in the UV spectrum, and tend to hang around longer than they do for conventional lights. Numerous moths, beetles, true bugs, katydids, various flies, and even some aquatic insects like caddisflies, water boatmen, and diving beetles showed up at both locations. This exercise offered a mere snapshot of what is certainly a vast diversity of species across the warm seasons.

Ironically, perhaps, light pollution is a serious and overlooked threat to insects and other wildlife. Nocturnal species are obviously affected, but the activity period of diurnal species is extended, too, shortening their lifespan. The reproductive capacity of insects, especially aquatic species, is seriously compromised. Even the "sky glow" of a distant metropolis can be harmful. The Niobrara National Scenic River enjoys the distinction of being a certifiable "dark sky" sanctuary where light pollution barely intrudes.

One section of the ranch that stood out was a winter-grazed plot behind the Lazy Easy. In sharp contrast to adjacent properties, it was vibrant with insect life. The highlight was seeing Regal Fritillary butterflies, as large and orange as Monarchs, but arguably more spectacular, with iridescent blue on the hindwings of males, and shimmering silver spots on the underside of both sexes. These are now scarce butterflies, dependent as caterpillars on the leaves of violets to complete their development. You will not find Regal Fritillaries in a cornfield, a wheat field, or a soybean field, but you apparently can find them on carefully managed rangeland.

Prairie is where the rural economy meets Indigenous ecosystems. Balancing the prosperity of the two is an ongoing challenge. It is all about scale. The prairie is defined by its vastness, and ceases to function when fragmented. Meanwhile, industrial agriculture, corporation-based, demands its own enormous acreage. The only way to sustain crops at that scale is to apply fertilizers and other synthetic chemical treatments to control pest insects, fungi, and competing vegetation. It is a recipe that is not working for anyone, save perhaps majority shareholders. We grow not just for raw veggies, but processed foods, livestock feed, biodiesel fuel, and other products.

"Pests" are mostly ones we create. Plant acre upon acre of corn, and you invite Corn Earworm, for example. The only place this insect is a pest is in an agricultural setting. We covet exotic plants and wildlife, and import them, knowing their potential to become invasive escapees. They may also harbor fugitive insects and other organisms that could become invasive in their own right. The global economy externalizes these "costs of doing business" to us, the taxpayer and consumer. More important than your ballot votes are your daily votes with your dollars in the marketplace. Please support local agriculture where and when you can, and be mindful of your purchasing habits in general.

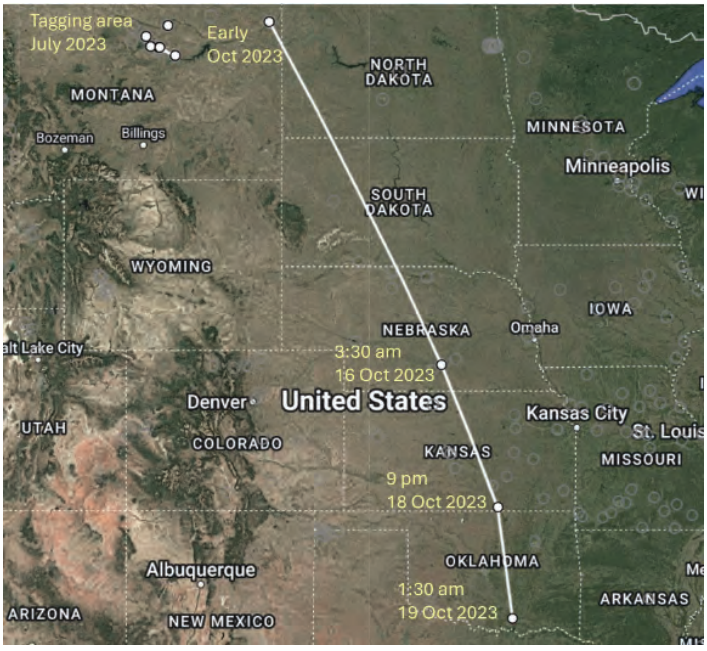
By the end of our time at Hutton Niobrara Ranch, we had documented well over 100 kinds of insects, spiders, and related arthropods. Many still defy species identification, but our records, along with previous and later observations, can be found on iNaturalist.org at this link: https://www.inaturalist.org/observations?project_id=hutton-niobrara-ranch-wildlife-sanctuary&iconic_taxa=Arachnida,Insecta. Please consider adding your own observations when you visit the ranch. We will do our best to properly curate your discoveries.

Kansas Motus—*connecting networks of people and places through birds*

By Alice Boyle

15 October 2023: A north breeze, cooled by the first bite of autumn, ruffled his feathers as the orange evening light washed over a weedy corner of southern South Dakota. Far from the distant farmhouse, unseen by any creature, an elegant, wide-eyed bird, cryptic in streaky beige and browns, finally stopped his foraging and walked to a dense patch of grasses. He rested, as if mentally preparing himself for what lay ahead. (Who knows what he really was thinking?) The setting sun created a pattern of polarized light visible to his eyes that acted like a big compass in the sky. The humidity rose as the temperature dropped, and soon the skies of the Great Plains were filled with stars. Calibrating his star map with his sunset compass made his path clear; it was a good night to migrate.

An hour or two after dark, with not even a hint of fanfare, this little Sprague's Pipit took to the air and gained altitude steadily. Although he had made a similar journey last year, the land below lay unknown, unimportant to him except that by following this route, he was adhering to ancient instructions, a lesson coded in his genes. It told him the times and places to start and stop migrating, the directions and distances he should fly, and it fueled his ability to eat and eat and eat during the day. It told him to fly at night—so unlike anything he was normally accustomed to do! But the nights afforded the safety of darkness and just the right conditions to avoid dehydration or over-heating. As he settled into a steady rhythm of flaps punctuated by little glides, he heard other small birds making their own night flights through the huge void. He uttered a few calls in response and flew on. The dark open spaces of the Sand Hills unfolded below him. Still he flew. Only a few hours before dawn, a thin curl of moon rose. The moonlight caught a glint on his back and a slender wire extending behind his tail. The device rose and fell with each flap but the slight pressure of the loops around his legs holding this little backpack made no difference to his mission. After several hours of unbroken flight, it was all over for the night. He could see a line of trees below, but instead, he descended to land in a wide-open pasture. He had traveled at about 50 mph for a total of roughly 400 miles. Little did he know, but he had landed in eastern Kansas. He would rest a few days, continuing his journey down the spine of the Flint Hills three nights later and clear across Oklahoma. Only a couple of night flights over the next week or so and he'd make it to the place where he was called to pass the winter, the desert grasslands of Texas and in the Mexican state of Chihuahua.



Sprague's Pipit, tag#74482 was banded and tagged on July 17th, 2023 in north central Montana. He moved to eastern Montana between initiating his fall southward migration in early October. Between October 15th and 19th 2023, he moved across Nebraska, Kansas, and Oklahoma. He hasn't been heard of since.

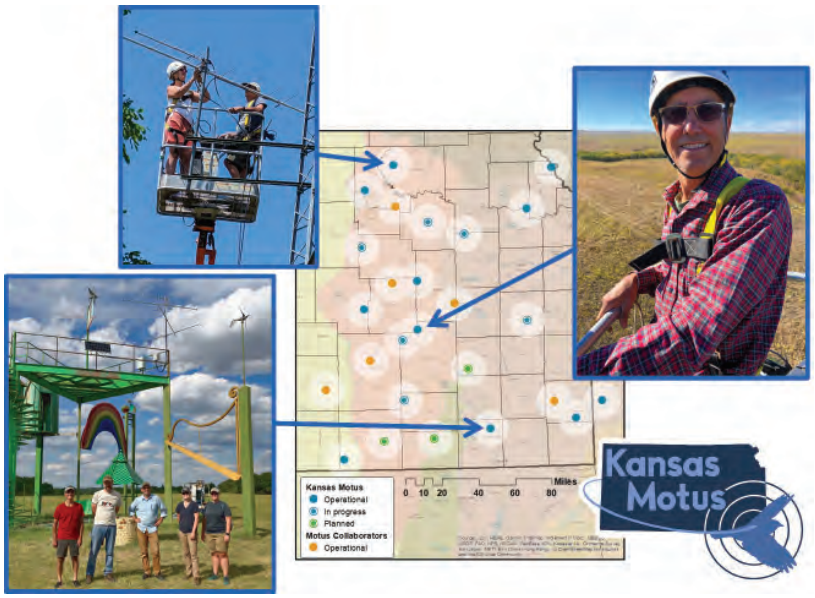
Another thing that our protagonist didn't know was that twice during his night flights, the device on his back reported his progress. The radio transmitter (the device he was wearing) emitted high frequency beeps that could be decoded by any one of hundreds of stationary receiving stations. Our Pipit flew within range of the station at the Rowe Sanctuary, Nebraska at about 3:30 am early on the 16th, and then at the Chaplin Nature Center shortly after 9 pm on the evening of the 18th. While scientists have used radios to track animal movements for decades, we used to be limited to studying animal movements within the confines of our study sites—movements we could physically follow with hand-held equipment. Folks studying large animals could outfit them with bigger, heavier satellite transmitters so long as they could afford the hefty purchase price. However, most birds are small; passerines or "perching birds" account for half of the world's bird species, and most passerines weigh somewhere between an Oreo cookie and a hot dog. With this new network of stationary receivers, we can finally track small, mobile animals after they leave our study sites to sites continent-wide and beyond. Technology has pulled back the curtain on a world of natural history discovery and is permitting tests of long-standing theories about the movements of sparrows, warblers, thrushes, even bats and butterflies, and many other small animals.

This new network is as much a network of people as it is of technology. Named Motus, which is the Lain word for movement, it breaks two typical molds for scientific endeavors. Much of what we learn comes from researcher-specific, short-term projects that are usually limited in geographic scale. Another model is that of big top-down endeavors that organize and fund common data collection across larger geographic scales. But Motus is different—it is inherently grassroots, collaborative, and unlimited in its geographic or temporal scales. It links over 2,600 biologists, conservation professionals, birding associations, business partners, zoos, private landowners, and other nature enthusiasts across 34 countries. Each entity brings some combination of energy, enthusiasm, expertise, time, and/or funding to add to the network of receiver stations. The stations can detect and transmit information about any animal tagged anywhere in the network. That means that all researchers can benefit from the detections of their tagged animals at stations installed by others in the network, and all those who install stations can learn about the animals using their area that have been tagged by others. Funding is piecemeal, and the location of stations has mostly been driven by individual researcher goals. The only centralization lies is the data curation and sharing. Every time a tagged animal "pings" a station, that detection is automatically transferred via the internet to the database at Birds Canada in Long Point on the shores of Lake Erie, Ontario and shared with the world.

Motus was born at the University of Western Ontario just over decade ago in the lab where I was a post-doc. At first, the geographic scope was limited to the North Shore of Lake Erie and southern Ontario. Before long, researchers saw the potential of this technology and started to light up Pennsylvania and on down the eastern seaboard. By 2017, bright spots blinked on along the Gulf of Mexico. By 2020, Missouri had installed an impressive number of stations with more appearing in states east of the Mississippi and in British Columbia. By 2021, stations began appearing in the west. However, most of the Great Plains remained a blank area. Then, thanks to the efforts of Bird Conservancy of the Rockies and Birds Canada, nine new stations were installed across Kansas including three in eastern Kansas—at the Konza Prairie Biological Station, the Tallgrass Prairie National Preserve, and Greenbush (near Pittsburg).

I quickly realized the opportunities that the new stations in our state provided. Recruiting collaborators Bill Jensen (Emporia State), Andrew George (Pittsburg State), and our chief installer (Robert Rosenberg), we created the Kansas Motus network, aiming to build upon the seeds of a local network to further understanding of Kansas birds

and other animals. Since then, we've become skilled at installing and maintaining stations, we've raised interest, awareness, and much-needed $$ from a wide variety of sources (including AOK and local chapters), we've installed 13 of our own stations (with at least six more in progress and planned for coming months), and initiated tagging projects. Our goals are to install a dense network of receivers across the state (roughly one per county) focusing initially on eastern Kansas, and to then use that network to understand regional movements of Kansas birds and bats, especially our declining grassland-dependent species.



The current map of Motus installations in eastern Kansas. Shown here are those installed by collaborators (orange dots), operational stations installed by Kansas Motus partners (solid blue dots), stations in the process of being installed (blue dots with circles), and planned future locations (green dots with circles). Bottom L; members of Kansas Motus and Bird Conservancy of the Rockies following installation training workshop and deployment of our first station at the "Emerald City". Top L; Alice Boyle and Robert Rosenberg install the Clo-Aves station. Top R; Robert Rosenberg high above beautiful Flint Hills grasslands installing at the Browning Ranch. Map: Andrew George. Photo credits: Alice Boyle and Cindy Jeffrey

Why do we want such a dense receiver network in Kansas? Let's go back to the Sprague's Pipit for a moment. During the summer of 2023, a freshly-minted graduate of K-State named Natalie Miller landed a summer field technician position in Montana. Natalie had taken some of my courses and learned how to safely capture and band birds. Her new boss, Dr. Andy

On Left; Natalie Miller holding a tagged Sprague's Pipit in Montana. On Right; Sprague's Pipit from the back showing its solar-powered radio tag. Photo credits: Natalie Miller

Boyce of the Smithsonian Conservation Biology, is also a friend and colleague—part of a human network of passionate bird researchers. Like all grassland avian ecologists, Andy is really worried about the alarming declines of this special avifauna, including Sprague's Pipits. Pipits are one of the so-called "tipping point" species; they have lost over two-thirds of their population in the last 50 years and are on track to lose another 50% in the next 50 years. We know little about where they travel to and stop during winter and migration, and what kinds of threats affect them outside of breeding areas. If you don't know where a population of birds go, you can't do anything to protect them. So Andy, Natalie, and their team were the biologists that lured our little Sprague's Pipit (and over 200 of his buddies) out of joyful, musical, sky dance displays, and outfitted them with Motus tags. They aimed to use the growing Great Plains Motus network to understand their annual, cyclical north-south migrations.

But migration isn't the only kind of movement that grassland birds commonly make. One lesson from the work my students and I have conducted over the past decade is that grassland birds seem to be distinct from birds living in places with more stable environments in being highly dispersive. Dispersal is different from migration because it doesn't involve a round-trip journey—just a one-way ticket from your study site to who-knows-where. To a researcher, dispersal really complicates matters; as fascinating as it is, learning

even the basic patterns such as how far birds travel and what direction they move is really tough. What we want to know is why some (but not all) individuals disperse, what shapes where they settle after dispersing, and why grassland birds seem to engage in these movements more than most other species. These are tough questions to answer! However, answering them also fills crucial pieces of the urgent, five-thousand-piece puzzle of how to save grassland birds before it is too late. Enter Kansas Motus. If we could somehow manage to get enough receiver stations on the landscape to be able to track not only the long migratory movements, but the shorter dispersal movements, then we would be on track to getting the answers we need. Thanks to an amazing human network of Kansans, that dream is becoming a reality.

22 May 2024; dawn on the Konza Prairie, a morning when all is right with the world and everything is possible. Logan Anderson takes me to the territory of the first Grasshopper Sparrow who will be part of his master's research. We locate the bird's favorite perch and set up a 12-meter mist net next to it. I am in autopilot as my hands reach for the right piece of gear at the right time, tying off the net with knots etched into my sub-conscious through decades of catching birds. This is my twelfth year of capturing Grasshopper Sparrows in Kansas; collectively my students and I have captured, banded, weighed, and measured over 3200 sparrows. I remember that for Logan, this is his first Grasshopper Sparrow capture, so I walk him through each step of the process. We place a small speaker on the ground at the middle of net and turn on the familiar audio track of a male's territorial song. As we walk away from the net, our target sparrow responds, flying nearer to the net and the speaker. He sees the net of course—how could anyone miss it? But it is the breeding season and hormones coursing through his body mean he can't possibly tolerate the idea of another male singing in the middle of his territory. He circles a few times and then retreats to a knee-high forb in classic Grasshopper Sparrow pose; pointing toward the speaker with flat back, legs grasping a vertical stem, and a wobbly wing flick display. We retreat a bit further and he makes a few more forays towards the speaker. Soon, he flutters toward the net, gets a bit too close, and plops into the lower levels of the net.

We run toward the net, remove him from the minor tangle he's gotten himself into, slip him into a soft cloth bag, and withdraw to our banding spot. He first gets bling; a uniquely-numbered aluminum band and a distinct combination of three colored leg bands so that sight of his legs will tell us who he is. This guy is yellow over pink on the left leg, and "silver" (the numbered band) over green on the right leg; YP-SG for short. We place him in the weighing cup—will he be heavy enough to fit with a transmitter? To minimize risks to birds, we can only outfit him with a total of 3% of his weight in hardware. Luckily, he is comfortably over the minimum and we outfit him with a radio tag complete with tiny solar panel. Carefully we work a loop of stretch-magic right up to his body, making sure it sits above the thigh, then thread the device under the wing and over his back, working the other loop up the other leg. When it we are happy with the tag's position, we pull the stretch magic tight, check the fit again, and snug it up just a bit more. Crimping, knots, crazy glue, trimming; we don't want this thing to come undone! In about 20 minutes, he is ready to go. The release goes well. He flies low and direct over the edge of the hill and out of sight. But within the time it takes to pack up our gear and get ready to find the next bird, we see and hear him singing back on territory. One down, 39 to go!

With the help of a small but mighty team of technicians, Logan is studying how the rising tide of trees and shrubs influence the behavior of these birds. We know they avoid trees and shrubs and that they disperse both within and between years. What we don't know is why they avoid trees and the consequences of tree encroachment for those dispersal movements. In addition to the main receiver stations, Motus tags can be detected by so-called "nodes." Nodes are about the size of a hefty paperback book.

On Left; Logan Anderson holding one of his first Grasshopper Sparrows. On Right; a male Grasshopper Sparrow in a territorial pose showing off his color bands at the Konza Prairie. Photo credits: Alice Boyle and Dave Rintoul.

Logan mounted several of these around the study site; the joint signal from three or more nodes permitting triangulation of the bird's locations as he moves around his home range. By experimentally adding cut cedars to territories, Logan is determining the mechanisms leading to tree avoidance, and the ways that trees influence local movements and dispersal.

September 2024. We know a few of the Grasshopper Sparrows in our experiments have lingered at Konza during their annual molt, because the main Konza motus station has been receiving their signals. I imagine one cool evening when the skies are dark, those same birds that we cradled in our hands are checking out the setting sun and the starry skies. They are pulled by the same ancient instructions to spend the winter in Northern Mexico, sharing space with the Montana Sprague's Pipits. Perhaps they will visit areas where our friend Matt Webb from the Bird Conservancy of the Rockies and our Mexican partners work, installing Motus stations and tagging birds in prime wintering areas. Although we have detected some of "Matt's" sparrows, we have yet to detect one of "our" birds on the larger Motus network; it is a day I eagerly await. YP-SG will probably not return to this site next year because on average, only about 20% of the sparrows that breed at Konza return to breed there again the next year. As our Kansas Motus network fills in to cover more of the intact grasslands in the region, my hope is that YP-SG and his neighbors will finally tell us where they go when they don't come back. Those answers will be proof of the power of connections between birds, people, and places and how relatively small, local actions can address big, global problems.

LEARN MORE:

Kansas Motus: www.kansasmotus.net

Read about Logan's research and other research in the Boyle Lab at K-State: www.aliceboyle.net

Explore stations, detection, and bird tracks at www.motus.org

See an interactive version of map of the travels of the Sprague's Pipit mentioned above: https://motus.org/data/track?tagDeploymentId=48268

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HOWELL AND CARMEN JOHNSON DONATE NEW PROTECTED AREA TO AOK

BY ELIZABETH DODD

Howell and Carmen Johnson are the latest donors of land to AOK's protected areas program—their gift of 340 acres near Auburn, Kansas will comprise the Howell and Carmen Johnson Wildlife Preserve. This donation joins the Connie Achterberg Wildlife-Friendly Demonstration Farm in Lincoln County, Kansas; the Hutton Niobrara Ranch Wildlife Sanctuary near Bassett, Nebraska; the Mount Mitchell Heritage Prairie near Wamego, Kansas; and the Gary and Carolyn Haden Far West Farm in Morris County, Kansas. Containing prairie uplands, wooded draws with patches of old-growth forest, several small ponds, and bisected by the south fork of the Wakarusa River, the Johnsons' preserve—ranchland that has been managed for wildlife for more than two decades—offers a rich mix of native plant species that is home to many native species and provides stopover habitat for migratory birds. This generous addition to AOK's system of protected areas will help AOK meet our mission to promote the enjoyment, understanding, protection, and restoration of the state's natural ecosystems with a focus on birds, other wildlife, and their habitat for the benefit of humanity and the earth's biological diversity.

During the first of AOK's planned annual bird surveys on the property, AOK Executive Director Jackie Augustine identified 45 different species. Some of the sightings Howell has enjoyed over the years include, Upland Sandpipers, Pileated Woodpeckers, Wood Ducks, and once, a Loggerhead Shrike. A neighbor has even seen Greater Prairie Chickens fly into the Johnson pasture on two rare occasions.

> ***"I shot my first bird with a 410 single shot shotgun. I was so happy that I hit the target until I watched the dove die in my hand. I began to realize that they were more important to me alive than dead."***

Listening to Howell talk, one quickly learns that his care for wildlife spans a lifetime. "Growing up in Junction City," he recounts, "I worked on farms, hunted and fished, and in the process developed an interest and appreciation for the natural world." Another word comes to mind as well: ethics. "In my youth," Howell says, "I shot my first bird with a .410 single shot shotgun. I was so happy that I hit the target until I watched the dove die in my hand. I began to realize that they were more important to me alive than dead."

During their careers, both Howell and Carmen were devoted to caring for people's health. The couple met while he was attending University of Kansas Medical School and she was working in the medical library. Following completion of his residency at Kansas City hospitals, they moved to Dodge City. There Howell specialized in geriatrics and internal medicine for 29 years, moving to Topeka in 2003, to take a position as medical director with an insurance company, which offered him a simpler, 40-hour work week. "I loved Dodge City, the people and my practice except for the long hours," he says. In addition to caring for their two daughters and a granddaughter, Carmen worked as an EKG technician and a volunteer for Court Appointed Special Advocate and hospice programs. However, they also devoted attention to the health of habitat and wildlife.

Howell and Carmen first visited the farm that would become their gift to AOK when they made their move

Goldenrod (left) and prairie milkweed (right) at the Howell and Carmen Johnson Wildlife Preserve. Photos by JK Augustine

Burning the prairie in late summer helps control the spread of invasive Sericia lespediza. *Photos by Howell Johnson.*

from Dodge City to Topeka; the original listing was for 211 acres. "When we arrived at the property," he remembers, "it was scenic, a turkey flew across the road, and I was sold." Over time, they added to the original farmstead, resulting in 340 contiguous acres.

Howell says the years in western Kansas had made clear to him the contrast between monoculture, "mile after mile of lifeless cropland except for the single plants in the fields," and the "beauty in the relatively preserved natural world such as the Flint Hills." The Johnsons lived on their new property for five years while commuting to Topeka, ultimately moving to town and, year by year, diversifying their country place.

Howell credits the help and guidance of many individuals in developing his management plan. "After we first acquired the property I told a neighbor that I didn't think we had any *sericea*. He had never been on the property but responded, 'yes, you do,' and later showed me the infestation. My work was cut out for me," he remembers. The Kansas Natural Resources and Conservation Service gave both advice and assistance, sharing costs for removing trees from the grassland. He began exploring installation of a Motus tower, suggested by The Nature Conservancy and implemented through Kansas State University Biology Professor Alice Boyle. The Ranchland Trust of Kansas assisted him in donating a Conservation Easement to assist in keeping the property "in its natural state, in perpetuity." Wildlife Biologists from Kansas Department of Wildlife and Parks have visited the land to make habitat management recommendations. One agent advised stocking the pasture so as to graze no more than half the grasses annually. "Leaving half the grass sustains a healthier pasture, leaves enough fuel for a more effective burn, and provides nesting cover," Howell explains. He had previous experience in controlled burning from maintaining family prairieland near Milford reservoir. That had been a learning experience. "I was on a first-name basis with the fire department as I had to call them on at least

four different burns. I'm sure they were relieved when I sold the property." Those experiences taught him well. Today neighbors often assist, and "with yearly burns for 20 years, I have called the fire department twice but had the fires extinguished by the time they arrived." Howell has become a kind of neighborhood resource for fellow landowners, assisting neighbors with the suppression of invasive species.

Despite experience, advice, and a whole lot of diligence, Howell explains drily, "Management challenges have been greater than expected. There is a relentless encroachment of both native (cedar, locust, Osage orange, dogwood, sumac, etc.) and nonnative (musk thistle, sericea, etc.) species into the grasslands and bush honeysuckle into the timberland. Sericea," he continues, "while easy to kill, is very difficult to control and impossible to eradicate. Honeysuckle is everywhere and removal is labor intensive. As these plants overtake the surrounding countryside an ever-greater seed source is provided for invasion." Further, he cautions, "I've learned that some ticks ignore repellents including both permethrin to the clothing and 40% DEET to the skin." Dr. Johnson can readily list a number of tick-borne diseases but assures that he hasn't contracted any of them.

Protecting native plants from sericea invasion requires a careful protocol, perfected over the past 15 years, with hand spraying and patiently destroying the reservoir of seeds. "To effectively search and spot spay the entire pastures takes about two full days," he says. This treatment needs to be repeated three times or more during the summer: early- to mid-June, early August, and mid-September. This latter is the most important time: "the sericea is easiest to see because it is taller and there is a greater color contrast with the surrounding vegetation," he explains.

Even so, Howell notes the importance of "weedy" landscapes. "I once had a wildlife biologist tell me that we have been taught to hate weeds but if we want quail we need to learn to love them. I have made an effort to add patches of native annual weeds to provide habitat for insects which in turn benefit quail and other birds." The key here is that the so-called weeds are native, not invasive. They enrich the diversity of the entire landscape.

Several members of the AOK board of trustees visited the property on a chilly spring day in March. Along the Wakarusa we walked among some of the old-growth hardwoods—mostly oaks and sycamores—where the river elbowed its current between agricultural land and a tree-clad hillside. Elsewhere, we admired one of the old, 19th-century stone walls, both a remnant from the Civil War veteran Frank Stahl's work. In a pickup and a side-by-side, we bumped out into the hilltop prairie to examine native grasses and small islands of sandhill plums and chokecherry which Howell had planted to provide food and shelter. The healthy prairie extended beyond the Johnsons' fence, rolling across a neighbor's ample pasture toward the equinoctial horizon. From the grassland slope above the largest of the seven ponds, we watched a small flock of wood ducks take flight.

Trustee George Leroux recalls his reaction to the visit admiringly. "What struck me," he says, "was this location is a near perfect slice of Flint Hills prairie. It has complete elevation and depth. It starts on the top of a hill and ends at the lowest point in that area, at the Wakarusa River Basin. The water catalyst of that ravine/valley is a lifegiving dynamic during hard times…. This place has it all."

Howell describes himself as "obsessed with wildlife conservation." His vision has led him to near-encounters with bison while eliminating musk thistle on a friendly neighbor's pasture, the aforementioned contention with ticks, a lot of hard work on the land, and, eventually, brought him to AOK. He explains simply, "I wanted a permanent owner that shared a commitment to conservation and that would provide the necessary stewardship."

Diverse prairies include native forbs such as Baptisia australis (left). Photo credit: Renae Giefer. Field consisting entirely of Old World Bluestem (right). Photo credit: JK Augustine.

KANSAS PRAIRIES IMPERILED

Renae Giefer

Almost a decade ago, while living on the East Coast, I came across an article about a rancher in the Flint Hills who was fighting an invasive grass that was decimating his native pasture. I remember feeling a sense of dread for my home state. But after my initial online discovery of the invasive grass, life went on for me out east. However, growing up on a farm in Kansas, that almost indescribable connection to the land and the endless sky was pulling me back to my roots.

Last summer as I was riding my bike through our local state park here in south central Kansas, it hit me that along both sides of the road was a monocrop of grass I didn't recognize. Acres and acres of one grass where there once was a mixture of various native grasses. My heart sank. I knew almost immediately what I was seeing. And sure enough, this grass was even closer to home. After inspecting our land which borders this state property, I identified it on the fence line of our native pasture, in our south field, and in the adjacent ditch. The park is currently taking active measures to attack the issue, for which I am hopeful.

Old World Bluestem (OWB), both Caucasian and Yellow, are grasses that were brought to this country over one hundred years ago from Asia, Africa, and Europe for erosion control along roadsides and as forage grass for cattle. Turns out, it has become an invasive grass battling with native prairie species. Cattle often prefer our native warm season grasses, as they are more nutritious and better tasting, making room for OWB to invade. Spreading both by seed and rhizomes, these aggressive perennial grasses will choke out surrounding native plant species, as they give off a toxin in the soil, preventing native plants from co-existing. Crucial habitat is lost for pollinators with little to no flowering plants and fewer pollinators means fewer birds. Quail, prairie-chickens, and other ground-nesting birds struggle to find adequate caterpillars and other insects to feed their young. They also lose nesting

sites and cover from predators due to the plant's bunching qualities and mat-like root systems.

Very difficult to eradicate once established, OWB has unfortunately not yet been listed as noxious by the state of Kansas. Responsibility is still on private landowners to control the species, even though OWB is spreading in ditches throughout the state by mowing and construction equipment, silently taking over our native flora. It then creeps into adjacent private land and when an area being swathed for hay contains OWB grass seed, it is yet another method in which it is spread throughout the state. The cost to landowners to battle it year after year becomes enormously expensive, both monetarily and in actual labor, not to mention the cost of losing precious native prairie in the battle. On our property, it has been almost a continuous vigil of monitoring fence lines and either digging out the clumps by hand in the native pasture or using herbicide in field areas with larger infestations. The results of removal are shocking, large diameters of vegetation completely gone around the OWB clumps.

For thousands of years, the prairie ecosystem has existed and evolved to perfection, every detail fine-tuned with each participant playing a key role to sustain the balance. If swift action isn't taken to try and stop the spread of OWB, the unique plants that define our prairies will be destroyed, creating a wasteland that normally only a horror movie could portray. Our prairie is intricately woven, as one species declines, it drastically affects every other part of the ecosystem. Barren of diversity and devoid of life, opposite of the prairie as we know it, the continued invasion of OWB could cause an ecological disaster in which there will be no turning back.

Growing up on a small farm, between work and play, there was a significant amount of time spent outside as a kid. My two sisters and I once bottle-fed a calf we lovingly named Snowflake. My Dad enjoyed planting a big garden each spring, always a bounty of fresh produce that his green thumb provided. My Grandma would help us pick strawberries and then we would all sit together in the kitchen to stem, what seemed as a kid, an unending amount. During the winter, Mom would bundle my sisters and I up to go play in the snow or she would help us get our little bicycles out to ride during the warmer months. When we played in the trees, we called it "exploring". When I got older, I remember feeling so proud when I learned to drive our old John Deere tractor and to be able to help each summer out in the wheat field. Perhaps, somewhere along the way between work and play, unbeknownst to me at the time, my heart and soul became enduringly attached to this land.

Old World Bluestem after being treated along our south fenceline. Photo credits: Renae Giefer

My passion for the prairie in our part of Kansas has led me to create a small nursery business that propagates and grows native plants from seed, many of them hand-collected on our land.

My passion for the prairie in our part of Kansas has led me to create a small nursery business that propagates and grows native plants from seed, many of them hand-collected on our land. After learning native plant propagation from a few brilliant plantswomen in Colorado many years ago, growing plants from the Rocky Mountains and the desert of southern Utah, I decided it was time to utilize those skills here in south central Kansas, bringing awareness, interest, and curiosity to the native plants of our prairie ecosystems throughout the state. I know the importance of saving our native spaces, even a small 20-acre parcel such as ours. Our little native pasture has over 50 species of native plants. At least that was my count thus far, but it is ever changing in this harmonious landscape! There are still buffalo wallows in the pasture, evidence of the great bison herds that once roamed here. When I take the time to wander this land, my feelings are those of belonging, being welcomed to a place by our non-human friends who are extraordinarily kind, curious, and trusting.

Meadowlarks perch on the barbed-wire fence, tilting their heads back as they sing. Eastern Phoebes arrive in the spring like clockwork when insect activity in the air increases. Killdeer nest on our more open field areas, diverting your attention with a "broken wing" in the hopes you'll not notice their nest. Quail appear from time to time, with their humorous, yet

Renae in the pasture, looking north.
Photo credit: Renae Giefer.

Close up of Old World Bluestem seed head by JK Augustine.

endearing waddly run. Turkeys routinely walk the property hunting for insects together, bobbing their heads and stopping to gobble in sync. Vultures coast over so low that it feels as though you can almost reach up and touch them, but then in the next moment, they dramatically rise and soar up to great heights. Barred Owls reside here, calling back and forth from their perches in the cottonwood trees. Walking along the creek, the frogs squeak in surprise as they leap into the water and Red-winged Blackbirds startle from the cattails. Colorful dragonflies and damselflies dart around and hover, little acrobats with the sun shining brilliantly on their gossamer wings. Butterflies and native bees of all shapes and sizes happily and methodically visit each flower for the sweet nectar. Various fuzzy jumping spiders curiously peek out from behind milkweeds and orb weavers start creating their intricate webs later in the season between the dried grass or plant stalks.

The aforementioned are merely a handful of our non-human neighbors. The diversity of the creatures that reside here is astounding, as so many precious lives and their instinctual tasks are happening before our very eyes if we remember to look and listen more closely. This land and its dear inhabitants have given me endless joy and taught me so much in a multitude of ways. I want so badly to protect them and their home. I worry for their future.

Kansans are increasingly realizing how invaluable and irreplaceable our native spaces are. We are coming together in communities to talk about the issues that threaten our livelihoods and those of the prairie creatures and plant life that we share this complex existence with. My hopes are that as Kansas citizens we can make our voices and concerns heard by the state so that action will be taken to finally place these grasses on the noxious weed list. If not soon, OWB will continue silently spreading on grassland properties of unsuspecting landowners until it's too late and will destroy our roadside flora by choking out our native flowers and grasses that exist along our roadways.

We learn so much from the prairie, patience and resilience to name a few. My Grandma used to say that in Kansas, regarding living on a farm and the many frustrating aspects of Mother Nature, "you have to fight for everything you've got!" Yet, despite the challenges of life on the prairie, we can also recognize and appreciate the countless benefits of what it provides. I think Grandma would have agreed that her exclamation applies to this situation, as well. Old World Bluestem is an ominous threat to all who call the heartland their home and we must fight to protect this cherished land that has given us so much.

Kansans are increasingly realizing how invaluable and irreplaceable our native spaces are.

JAN GARTON: WETLAND WARRIOR

BY ALLISON MEERIAN

American White Pelicans. Photo by Allison Meerian

Situated in the grassland prairie of central Kansas, resting below an endless blanket of sky sits a critical wetland where hundreds of thousands of migratory birds find reprieve along the Central Flyway. Cheyenne Bottoms Wildlife Area is a 41,000-acre basin where hundreds of different species of birds can be spotted, including ducks, larks, pelicans, owls, falcons, herons, cranes, and more. The basin was slowly acquired by the state of Kansas throughout the 1940s and 1950s, and around 20,000 acres is currently managed by the Kansas Department of Wildlife and Parks. Overlooking Cheyenne Bottoms sits the Kansas Wetland Education Center which features interactive exhibits, hosts educational outreach programs, and fosters partnerships with cooperating organizations and stakeholders. The very existence of the Education Center and the health of Cheyenne Bottoms came to fruition due to the efforts of Kansas environmentalist Jan Garton. It is a popular destination for birdwatching – as at least 356 of the known 482 species of birds to occur in Kansas have been spotted at the wetland – but also for hunting and fishing. Enjoyed by a wide variety of people for differing reasons, Cheyenne Bottoms is more than a beloved spot amongst individuals, it is a vital ecosystem that supports life of all kinds.

However, through the absence of protective legislation to ensure its survival, coupled along with unhealthy agricultural practices, amongst the backdrop of drought and other environmental factors, the condition of Cheyenne Bottoms in the 1970s and 1980s was a cause for great concern and many worried it would dry up completely. Deep-well irrigation, a new form of agriculture, arose in the 1960s. Farmers pumped water from groundwater supplies, and the rivers that relied heavily on the groundwater for their source dried up. One river of great concern for the vitality of Cheyenne Bottoms was the Arkansas River, which feeds into the wetland, amongst other smaller surrounding water sources, such as Walnut Creek, began to run dry due to these practices. The lack of water was threatening to destroy the wetland.

Despite this, a coalition of individuals in the 1980s coordinated and formed together in a great effort to save Cheyenne Bottoms by spreading awareness and advocating for legislation of the wetland and thus, the protection of hundreds of thousands of birds that make a stop to replenish themselves, breed, and nest in the critical migratory stopover. While the conservation efforts to save Cheyenne Bottoms were the result of a coordinated cooperative, one woman

and her endeavors come into focus when discussion of the protection of Cheyenne Bottoms occurs. Jan Garton's decade-long commitment with Cheyenne Bottoms started in 1983 when she volunteered to be the Conservation Committee Chair for the Northern Flint Hills Audubon Society (NFHAS) – only if the organization had the conservation of Cheyenne Bottoms as their mission. But that's not where Jan's story begins.

Jan Garton was born November 30, 1949, in Chapman, Kansas. She received her Bachelor of Science in History with a minor in Biology in 1973 from Kansas State University. Later, she got her Master of Science in Journalism and Mass Communications from Kansas State University in 1976. In her collegiate years, she worked for The Collegian, Kansas State University's newspaper.

She also conducted research as a seasonal intern in 1973 at the Manomet Bird Observatory in Plymouth, Massachusetts, a nonprofit that specialized in shorebird and landbird conservation, fisheries, forestry and social science through research and education.

Her educational background seems to be almost prophetic of her future career in conservation, as her activism combined with her passion for nature and birding were tied together in her academic pursuits and laid out her future before her in perfect symmetry. Karen McCulloh, the current Mayor Pro Temp for the city of Manhattan, Kansas and co-member of the NFHAS contemporaneous with Jan said, "I don't know anybody who is truly as green as she was. She was a vegetarian, maybe even a vegan. But she really talked about walking lightly on the Earth, and she lived it."

"I don't know anybody who is truly as green as she was. She was a vegetarian, maybe even a vegan. But she really talked about walking lightly on the Earth, and she lived it."

American Coots at Cheyenne Bottoms. Photo by Allison Meerian

After assuming the role of the Conservation Committee Chair for the NFHAS, a chapter of the National Audubon Society, is when Jan's work with Cheyenne Bottoms took off. In 1983, Jan Garton and Seliesa 'Sil' Pembleton, NFHAS President at the time and current Trustee for Audubon of Kansas, traveled to Pratt, Kansas to meet with the Fish and Game Department. They wanted to obtain a copy of an old restoration plan of the basin. After a disappointing and dismissive encounter with the agency, Garton and Pembleton were motivated more than ever. "We were totally disrespected. We had a good drive from Pratt back to Manhattan, and when we got back, we had a list, and a plan. Our plan was to pull together as many partners as we could," Pembleton said.

A grassroots initiative was born out of the perfunctory encounter, and Jan rallied as many people as she could. Her tactic for attention was simple yet powerful: writing letters to state representatives, senators, and others in positions of authority throughout Kansas. The most important step to achieve this was establishing a Council with all the Audubon chapters within Kansas. The letters written by the members of the Kansas Audubon Council conveyed the importance of Cheyenne Bottoms and its significance not only for the local ecosystem and community, but its global impact. Garton and Pembleton then received a message from the Fish and Game Department out of Pratt, Kansas, asking to meet. They didn't know what to expect, but when Garton and Pembleton arrived at the office in Pratt, Kansas, and were ushered into a room, they were met with the Director of the agency amongst other top administrators. These administrators were utterly shocked by the number of letters they have

At a press conference in 1985, Jan notoriously said with a smirk, "If we save your bottoms, will you please save ours?" Her wit, determination, and passion for Cheyenne Bottoms led to every legislator being unable to ignore the issue.

received advocating for the protection of the wetland. Cheyenne Bottoms officially had their attention.

Garton knew that this was the time to push even further and expand the issue far beyond the reaches of just the Kansas Audubon Council, but to everyone who had a partiality for the survival of the marsh. Birders, hunters, fishers, scientists, local businesses and organizations, education and school groups were just a few of the potential recruits in their partnership, and soon a major public awareness crusade began. Their principal calling was for the state to fund a study that developed possible rehabilitation plans for the dried out wetland along with determining problems that led to the depletion. Several initiatives were contrived to keep the support strong and assertive. Merchandising such as T-shirts, mugs, posters, pamphlets, and booths at public events were just a few of the approaches taken to spread awareness of the issue.

In 1984, Save Cheyenne Bottoms Conference was held in the fall, where several speakers from state agencies, legislature, and the National Wildlife Federation spoke. Attendees of the conference met after the speakers to discuss future strategies, and the Kansas Audubon Council formed the Cheynne Bottoms Task Force of eight state conservation and wildlife organizations to carry the legislative proposal for funding of a feasibility study.

Amongst these efforts, the most legendary proposal was the stadium cushions. Bright orange seat cushions with a logo of a duck and the words "Save the Bottoms" were created. Funding was raised by asking citizens to sponsor a seat cushion for their representative. The cushions were placed on the chairs in the legislative chamber at the statehouse. At a press conference in 1985, Jan notoriously said with a smirk, "*If we save your bottoms, will you please save ours*?" Her wit, determination, and passion for Cheyenne Bottoms led to every legislator being unable to ignore the issue. The result of her ferocity was not to be in vain, as she spent hours upon hours sending letters to officials and rallying the rest of the public in their mission.

In 1985, the Kansas Legislature approved funding for a study to assess the problems that led to the depletion of Cheyenne Bottoms and possible resolutions to explore in order

Legislators holding the infamous 'Save our Bottoms' seat cushions. Pictured from left to right are Representative Ron Fox, Vice-Chair House Energy and Natural Resources Committee; Senator Joe Norvell; Jan Garton; and Mike Hayden, Speaker of the House. Photo provided by Ed Pembleton.

Jan Garton being interviewed by Dale Goter, reporter, following the distribution of the "Save the Bottoms" seat cushions. Photo provided by Ed Pembleton.

to conserve the wetland. Save Cheyenne Bottoms II Conference was held in the fall of 1986 concerning the completion of the study and to discuss their next steps. The Cheyenne Bottoms task force met with Kansas Fish and Game Department officials to determine the direction of the Cheyenne Bottoms Restoration. The Kansas Audubon Council also pushed The Kansas Fish and Game Department to apply for designation of Cheyenne Bottoms as a Western Hemisphere Shorebird Reserve and Wetland of International Importance under the Ramsar Convention. Thus, Cheyenne Bottoms was designated a Ramsar Wetland of International Importance on October 19, 1988, an important step in helping the validity of protection.

In 1987, Mike Hayden was elected governor, and his administration fought for permanent financial sources for the State Water Plan – which was passed in 1989, including funding that led to the eventual restoration of Cheyenne Bottoms. Throughout the 1990s, the battle to save the wetland continued onward as selection of management and processes were being discussed and in 1992, the Kansas legislature agreed to the $1 million funding for the restoration. Additionally, in 1992, the Kansas Division of Water Resources reduced the amount of water farmers could pump from groundwater surrounding the creeks and rivers that feed into Cheyenne Bottoms. The conservation fight concluded in 1999.

In 1987, Jan was named Conservationist of the Year by the Kansas Wildlife Federation and in 1990 she was one of 20 individuals from across the country chosen for the Chevron Conservation Awards Program, making her the third Kansan chosen to be a recipient for the country's oldest private conservation award (established in 1954 by sportsman Ed Zern and sponsored by various companies and organizations). Garton worked the night shift at the United States Postal Service and often wrote little messages and smiley faces on the packages addressed to her friends. This allowed her to dedicate time throughout the day to activism. She also had a little cat named Dickens. After her retirement from the UPS, Jan worked on the

congressional campaign with representative Nancy Boyda and worked with Rep. Boyda's office for a year. Jan passed away in 2009, and her fight for the conservation of Cheyenne Bottoms continues to be admired. She was well known for her wit and her tenacity, for her resilience and spirit. Margy Stewart, a close friend of Jan, recalls the message on her answering machine, which said, "This is Jan. I've asked this machine for answers, and I get nothing. Why don't you try?"

This October I visited Cheyenne Bottoms for the first time, and it is easy to see why it was worth decades of dedication and millions of dollars of funding. Red-winged Blackbirds soared through the sky, and others like the American White Pelican and American Coot lazily enjoyed floating on the water, basking in the heat of the sun. It was almost otherworldly to be a witness to this haven for so many, animals and humans alike. Walking along the pathways that were previously worn down by hunters, fishers, and birders was a visual manifestation of the people that were affected by the wetland. The memories that were made and those yet to be formed at Cheyenne Bottoms are the direct result of Jan Garton's efforts as not only a conservationist, but a friend to nature. While the wetland stretches across thousands of acres, Jan Garton's legacy is immeasurable.

Allison Meerian
Photo By Libby Fox

Allison Meerian is from Gretna, Nebraska and currently in her third year at Kansas State University, where she is majoring in English and history. She is actively involved on campus, serving as a student ambassador for the College of Arts and Sciences, has held leadership positions within her sorority, Kappa Alpha Theta, and is a member of the Judicial Branch through K-State's Student Governing Association.

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Bald Eagle

Merlin. All photos by Dave Rintoul.

Student interns working with AOK enrich their own studies—and contribute to AOK's ongoing commitment to wild Kansas. Working with Executive Director Jackie Augustine and Trustee Elizabeth Dodd (University Distinguished Professor of English at Kansas State University), student interns engage broadly in AOK's mission, learning about conservation efforts in Kansas and the region, pursuing field or scholarly research, and writing for the wide audience that AOK seeks to serve. (See previous intern Emily Burnett's stories in *Prairie Wings* 2023-24 and watch for more stories in future editions.) The publications our interns produce contribute to the three-pronged efforts of AOK—Advocacy, Conservation, and Education—and allow students to develop their professional portfolio and gain experience in our nonprofit setting. If you wish to directly support AOK's internship program, please contact Kathryn Chambers, Director of Philanthropy, at giving@audubonofkansas.org.

If you are interested in participating in our internship program, please contact Jackie at jackie@audubonofkansas.org or call/text 785-537-4385.

Yellow-headed Blackbird

Word Search Wetland Key

Gordon & Martha Barnhardt

GORDON BARNHARDT REMEMBERED FOR BLACK-FOOTED FERRETS AND CONSERVATION LEGACY

BY JACKIE AUGUSTINE

Black-footed Ferret by Bob Gress.

The Black-footed Ferret is the rarest mammal in North America, and three amazing families have welcomed the species and their primary food source, prairie dogs, onto their properties. Although both black-footed ferrets and prairie dogs now thrive on the Haverfield, Barnhardt, and Blank properties, the families had to endure legal battles and setbacks as the county tried to enforce their legal right to kill prairie dogs on private land under a 1901 Kansas statute (See the 2012/2013 issue of *Prairie Wings* at audubonofkansas.org/prairiewings). Audubon of Kansas supported these families during the lawsuits and provided legal testimony to the benefits of prairie dog and Black-footed Ferret conservation. In our last *Prairie Wings* (2023-2024 issue), we remembered Calvin Haverfield and Martha Barnhardt. Since the publishing of that issue, another leader in the 'Black-footed Ferret Wars' has passed: Gordon Barnhardt.

Robert Gordon Barnhardt, Jr. is remembered for his keen intellect, curiosity and knowledge about nature, and his love for his family and community. He was born on November 25, 1936 in Leavenworth, Kansas. He attended elementary and high school in Jarbalo, Kansas. He then attended Baker University earning a bachelor's degree in chemistry. Gordon married Martha Collingwood in Johnson, Kansas on July 20, 1958. That fall he began his pursuit of a doctorate at the University of Kansas and subsequently followed his PhD thesis research director to the University of Massachusetts where he earned his PhD in organic chemistry in 1964. After teaching chemistry at Kansas State Teachers College, now known as Emporia State University, and Southwestern College, he moved his family to Bucklin, Kansas in 1971 to take over management of the Farmers State Bank of Bucklin, a family-owned bank. He worked there for 50 years serving as president and chairman of the board. He cared deeply about his customers, employees and the Bucklin community. He often wore Hawaiian shirts, even in the middle of winter.

Gordon was a brilliant yet humble and quiet man who served as the family's Google before Google existed. He believed virtue is its own reward and in working hard. He was an avid conservationist and birdwatcher, instilling in his children and grandchildren a love of nature and the outdoors.

Gordon arranged many family picnics and nature hikes at his ranches, and he especially held dear the home place in Leavenworth County.

At his Celebration of Life gathering, Gordon's children, grandchildren, and friends all had fond memories associated with the outdoors. He was extremely observant and knowledgeable about what he saw. Gordon's children described how their dad would be quick to point out herons, jackrabbits, pronghorn, badgers, dung beetles, and prairie-chickens and return from walks with snakes and tarantulas, and once with an icy great horned owl. He thawed the owl in the barn and named it 'rubber neck' before releasing it back to the wild. They also appreciated the lessons about how native flora and fauna contribute to the whole so that if a keystone species, like prairie dogs, is removed, the ecosystem changes and collapses.

Because of her grandfather, a granddaughter feeds the birds, plants native flowers and grasses, tells her sons about birds, and gets her sons out in nature. She reminisced about going out with her grandfather for snake/lizard/horned toad catching, rock and fossil hunting, and bird watching. Gordon would tell her, "You'll never catch that" both to encourage her to catch it and to enjoy watching her pursuit of the creature. The granddaughter claimed that she always caught what she was after. He taught her that creepy crawly things are not scary by digging out antlions. A particular essay in a collection of 39 essays by C.K. Chesterton called Tremendous Trifles reminded her of her grandpa. There were two boys who were granted wishes by a passerby. One wished to become enormous and the other to become tiny. The giant got bored because he quickly saw everything. The boy who became smaller noticed all the things he had never noticed before, developed a fascination with nature, and never got bored.

A colleague and friend of Gordon's admired his keen eye for birds. He recollected a time when they were "going down the road and there would be a bird on a fencepost. I could barely see the bird. [Gordon] had it identified and was telling me everything about it that would make Peterson Bird Guide look like amateur hour." He also recalled a time when he accompanied Gordon to see endangered Whooping Cranes and arrived to see them flying right over, and another time when he had to hang over the lip of a cliff to see a golden eagle nest.

The memorial ended with a grandson reading "When All the World is Young, Lad." It is a song by Ethelbert Nevin with text by Charles Kingsley.

When all the world is young, lad,
And all the trees are green;
And every goose a swan, lad,
And every lass a queen;
Then hey for boot and horse, lad,
And round the world away!
Young blood must have its course, lad,
And every dog his day.

When all the world is old, lad,
And all the trees are brown;
And all the sport is stale, lad,
And all the wheels run down;
Creep home, and take your place there,
The spent and maimed among;
God grant you find one face there,
You loved when all was young.

Gordon memorized this poem when he was in elementary school. He spontaneously recited it again at the age of 87, no doubt because he was contemplating his stage in life's journey. What a brilliant mind!

My Experiences on the Haverfield/ Barnhardt/Blank ranches

I had the opportunity to join the Topeka Zoo, Sedgwick County Zoo, and other volunteers during the final night of black-footed ferret surveys on the Haverfield, Barnhardt, and Blank Ranches in October of this year. The evening started with dinner at IHOP where everyone reminisced about their favorite ferret moment. One volunteer returns

to Kansas every year from out of state, paying for airfare and hotels out-of-pocket, to help out with the surveys. They all talked about that special feeling you get when you are able to witness a rare (and cute!) ferret in its native habitat, and the knowledge that without continued conservation efforts, this species would be doomed to extinction.

After receiving our final instructions, we split into separate vehicles and headed to the field headquarters. My ratchet strap skills were utilized as we affixed spotlights to the top of the vehicle.

The driver of the vehicle I was in announced that this vehicle stops to appreciate all wildlife. On the road, we saw three Prairie Rattlesnakes and a Speckled Kingsnake. As I watched the rattlesnake curl in a tight circle to protect itself (the first time I had seen a live prairie rattlesnake), I wondered why this snake is so often villainized. It was obvious that it would only strike if provoked, and would much rather we left it alone. The first animal we saw when we arrived at our assigned pasture was a badger. The striped face was clearly inquisitive about our presence. After a few minutes, it waddled to another hole and disappeared. While looking for eye shine from the ferrets, we were distracted by a 3-inch wolf spider (which also has eye shine) and numerous deer.

Finally, we saw the telltale sign we were looking for: green eyes shining back at us. My first ferret!! Those eyes were connected to a long body that would periscope out of the hole to look at us, and then sink back in. A large number 5 was painted on the ferret's neck. This particular female was captured on one of the first nights of the survey, tagged with a chip under the skin so she can be identified as a particular individual in the future, given routine veterinary care, and released where she was captured. The painted number lets us know that she was tagged this year, so we do not have to catch her again.

As we sat and watched, the ferret became accustomed to our presence and started sniffing the air in various directions. She must have been hunting. She would bound between various holes in a way that made it look like she was playing as much as searching for a meal.

Number 5 was a wild-born female who showed signs that she had successfully reared offspring. Now she was about 3 years old and reaching the end of her short life. All of us in the vehicle took a moment to acknowledge what an honor it was to bear witness to the success of her life, and the success of the reintroduction program we were participating in.

Survey Results and Current Threats

The Black-footed Ferret Survey is conducted not to get an accurate count on the number of ferrets present, but rather to see if reproduction is occurring and to document how the ferrets are using the habitat. I am happy to report that ferrets were found throughout the area and showing signs of reproduction. These are both signs that the ferrets in this location are thriving.

I wish I could end this essay on a happy note. However, the threats to Black-footed Ferret conservation are constant and one victory is closely followed by another battle. On September 16, 2024, Logan County and neighboring landowners sued the U.S. Department of Interior and the Fish and Wildlife Service over the Black-footed Ferret Conservation efforts. The primary complaint is the alleged failure to notify the county and neighboring landowners of reintroduction efforts. The litigation also claims that prairie dogs, the ferrets' primary food source, pose a potential health hazard to humans as carriers of bubonic plague. Although this is true (and extremely rare) for locations outside of Kansas, the Kansas site is the only ferret reintroduction location that has never been affected by a bubonic plague outbreak. Audubon of Kansas is watching this case closely and is ready to act on behalf of the Black-footed Ferrets and the families that protect them.

AOK CELEBRATES 25 YEARS OF PRAIRIE-CHICKEN CONSERVATION

BY JACKIE AUGUSTINE

Greater Prairie-Chicken. All photos by Woody Wheeler

Lesser Prairie-Chicken leaps into the air while fighting with a neighbor

Audubon of Kansas is celebrating our 25th anniversary this year. Prairie-Chickens have always been central to Audubon of Kansas' identity and mission. Even though our logo has changed over the years, the prairie-chicken has been a prominent part of our logo. It was even a part of the Kansas Audubon Council's logo, the precursor to AOK.

Two of AOK's early board members had an inordinate fondness for prairie-chickens. Robert 'Bob' Robel was a Professor at Kansas State University, and the foremost authority on prairie grouse. His research examined the management and behavior of many species including prairie-chickens, quail, and deer in Kansas, and Black Grouse and Red Deer in the United Kingdom. He was also an avid hunter and accomplished taxidermist. As an AOK Trustee, he was successful in advising big wind energy companies to move the proposed location for a major industrial wind development in the Flint Hills from their first three choices to an area with less impact on prairie-chickens.

Bill Browning was another board member with a passion for prairie grouse and contributed several articles to *Prairie Wings* about managing his property for prairie-chickens. He is a rancher in the Flint Hills who has implemented numerous initiatives for improving habitat including removing woody vegetation manually and with prescribed fire, implementing a patch-burn/patch-graze operation for grazing cattle, and spot spraying *Sericea lespedeza*, an invasive plant.

Under former Executive Director Ron Klataske's leadership, AOK continued to be a strong voice for prairie-chicken conservation. AOK is among several organizations that advocate for Environmental Quality Incentive Program (EQIP) funding for patch-burn grazing practices, and special Conservation Reserve Program and EQIP initiatives for Lesser Prairie-Chickens. AOK was the only organization that publicly challenged the claim made by the former Kansas governor that the answer to Lesser Prairie-Chicken conservation was to raise them in captivity

Fighting aerobatics of Lesser Prairie-Chickens on a lek.

Greater Prairie-Chicken female with Lesser Prairie-Chicken male in the background.

(thus, eliminating the need to protect habitat from various developments), and to strongly denounce the legislation promoted by former Secretary of State Kris Kobach that would have made it a crime for agency personnel in Kansas to assist the US Fish and Wildlife Service to conserve the species if it was designated as a federally threatened species!

Today, AOK is still active in prairie-chicken conservation. AOK's current Executive Director, Jackie Augustine, has spent over 20 years studying prairie-chicken behavior, first for her doctorate degree in biology, and then as an Associate Professor at The Ohio State University - Lima. Her expertise is instrumental in allowing AOK to host the Kansas Lek Treks Prairie-Chicken Festival. The festival draws positive attention to prairie-chickens in western Kansas. AOK supported the listing of the Lesser Prairie-Chicken as a threatened species in Kansas and provides oral and written testimony throughout the state when solar and wind energy developments threaten prairie-chicken habitat.

The Kansas Lek Treks Prairie-Chicken Festival started in 2022. Around 130 people from throughout the United States and internationally travel to Hays, KS, each year to see both Greater and Lesser Prairie-Chickens. Western Kansas is the only place where the ranges of these two species overlap. Seeing male prairie-chickens dance and fight to attract mates only a couple dozen feet in front of a blind is an experience that will forever change how you view Kansas' extraordinary prairies. This is often the first time our participants have visited Kansas, so we also offer tours to Cheyenne Bottoms Wildlife Area and Quivira National Wildlife Refuge, Smoky Valley Ranch, Monument Rocks and Castle Rock, and other nearby areas. Participants routinely comment about how they had no idea how beautiful Kansas is with the wide open prairies and unique wetlands.

LESSER PRAIRIE-CHICKEN ENCOUNTER: GREATER THAN ANTICIPATED

BY WOODY WHEELER

At 3:45 AM on April 14th, a quiet, amiable group gathered on this cold dark morning outside their Hays, Kansas hotel. Why at this crazy hour? Because Lesser Prairie-Chickens start their spectacular mating dance at their lek at dawn. We were about to depart to witness this event. A neon Sleep Inn sign reminded us of what we were sacrificing to watch prairie-chickens instead. To the person, we were fine with this choice. That is why 130+ of us came from across the U.S. to participate in the Kansas Lek Treks birding festival.

Armed with binoculars and long-lens cameras and bundled up in winter clothes to stay warm in our blinds, this group was ready to experience an increasingly rare phenomenon: Greater and Lesser Prairie-Chickens dancing at their leks. They are so rare that Woodward, Oklahoma had to cancel its festival: "We regret to report that as of 2021 we have cancelled the Lesser Prairie-Chicken Festival. This is because there are not enough of the birds to ensure we can get them for our participants. However, Kansas still has a good population of Lesser Prairie-Chickens, and they have begun a festival we encourage you to attend instead."

At 4 AM, we filed into our respective vans and rode for an hour in darkness to several lek sites in western Kansas. En route to the lek site, our driver and guide, Rachel, spoke eloquently about prairie-chicken biology and their habitat management issues. A recent Wildlife Biology graduate of Kansas State University, Rachel has found her niche as interpreter, educator and ecotour guide. She is articulate, well-informed, and respectful of the ranchers and farmers who manage most of the lands in western Kansas. More than 90% of Kansas is privately-owned.

As Audubon of Kansas explains on its website: "The presence of prairie-chickens indicates healthy prairie landscapes. Their mating rituals are at the same time entertaining and uplifting. Every spring, generally from mid-March through mid-May, males gather in slightly elevated areas with sparse vegetation. They vigorously defend territories that seem hardly

It became a wild, rowdy, colorful scene with 18 feathered participants, augmented by loud vocalizations.

worth defending – each territory's valuable resource is neither food nor nesting sites, but the males themselves."

We were headed to a private ranch with an active Lesser Prairie-Chicken lek to witness this spectacle. AOK received permission from this rancher and compensated him for allowing us to visit. Following our amazing three-hour lek experience, we signed a thank you card to express our gratitude to the rancher. This kind of collaboration is not only key to the survival of the prairie-chickens, but also an enlightened approach toward conservation.

At 5 AM, Rachel pulled over on the side of a remote gravel road. We filed out onto the dark prairie in pitch darkness, save for the brilliant star-studded sky including the best look in recent memory at the Milky Way. It was totally silent, except for the raspy, resonant call of a Ring-necked Pheasant.

Using our headlamps, we assisted Rachel in setting up three small tents that served as blinds. We introduced ourselves to our two tent/blind mates, zipped our tent closed and sat down on camp chairs facing the lek.

The stars shone brightly. Bird songs and calls soon penetrated the silence. First the harsh Ring-necked Pheasant calls, then the melodic, warbling song of the Western Meadowlark, and finally, the tinkling tones of the Horned Lark. At 6:15 AM, these calls and songs were drowned out by the weird booms, bubbling sounds, cackles, and shrieks of prairie-chickens. Some even resembled mocking laughter: a descending HA, HA ha ha ha ha…perhaps a form of prairie-chicken trash talk. One particularly eerie sound came from behind our tent: the deep, resonant booming sound of a male Greater Prairie-Chicken. David Sibley, renowned author/artist of the Sibley Bird Guides describes it well: "…a low hooting moan like air blown across a bottle."

At daybreak, shadowy forms appeared just outside our tent openings. The forms moved quickly, sometimes leaping into the air, making short aggressive flights. Soon, at least a dozen birds were in sight only 10-20 yards distant. As daylight intensified, so did the activity level at the lek. It became a wild, rowdy, colorful scene with 18 feathered participants, augmented by loud vocalizations.

Two males came close enough in the improving daylight to display their bright yellow raised eyebrows, or combs, and their inflated plum-colored air sacs. Their white tails and rabbit-like plumes erect, and feet stomping at a rapid, sewing machine pace, they motored around smoothly like the flashy, sex machines that they are, hoping to find a willing female companion. We humans with our flashy clothes, dance moves and live or recorded music blaring, are not so different when we dance on bar room dance floors. One tavern in Seattle was appropriately named "The Lek."

The impressive, choreographed dance often led to clashes, leaping, flying, biting, and clawing. Blood was drawn. The dance sorts out eligible males, leading to pairing and copulation, which occurred at least once this morning – for about two seconds – until a competing male intervened, flying in, and knocking the first male off the female.

Meanwhile the females appeared to be blasé about the frenzied activity of the males, although they positioned themselves in the center of the lek and often had their yellow eyebrows/combs raised. When interested, they laid down with wings arched downward in a receptive pose, which elicited the

We were spellbound during the entire dance concert, alternately staring in disbelief, watching with binoculars, and snapping photos. Although talking was forbidden in the blinds, we did a fair amount of whispering, poking, and pointing. It was hard curbing our enthusiasm.

one copulation we witnessed. On another occasion, a female attacked a male who did not respond appropriately to her overture.

A lone Greater Prairie-Chicken staked out one side, towering above the smaller Lesser with his orange eye combs, large orange air sac, and loud, sonorous vocals. He attempted to proposition a Lesser female who seemed receptive. Hybridization does occur and may have this morning. According to Cornell Lab of Ornithology "Few performances in the bird world are more memorable than the dawn display of Greater Prairie-Chickens at their booming ground, or lek—the traditional spot where males dance, call, and try to impress females with their vigor."

After several hours of energetic, showy, combative dance displays, the prairie-chickens dispersed into the tall grass behind the trampled lek. The few who remained paired up with other males, laying down face-to-face to engage in stare downs. Raising eyebrows was an understatement for these male grouse. They reminded me of Groucho Marks with yellow-orange eyebrows, literally sizing up their competition. Their heads bobbed and tilted, often leading to sudden leaps and aerial combat before resuming their stare-downs on the ground.

By 9 AM, peace was restored to the prairie. The exhausted prairie-chickens retreated to deeper grasses, some nursing war wounds. We were spellbound during the entire dance concert, alternately staring in disbelief, watching with binoculars, and snapping photos. Although talking was forbidden in the blinds, we did a fair amount of whispering, poking, and pointing. It was hard curbing our enthusiasm.

Only 28,000 Lesser Prairie-Chickens still exist. Their northern population in Kansas and Oklahoma is considered threatened; their southern population in Texas and New Mexico is endangered. Collectively, their populations and habitats have been decimated by hunting, grazing, habitat conversion to agriculture, energy, and other forms of development. While Greater Prairie-Chickens face similar threats, they are not as rare; their estimated population is 360,000 in the U.S. Great Plains and Canada. To put these numbers into perspective, millions of prairie-chickens once populated North America.

Audubon, The Nature Conservancy, the US Bureau of Land Management, The US Forest Service, state and federal wildlife agencies and many other nonprofits are among the partners working to save these species and their mixed grassland habitat. Larkin Powell, a University of Nebraska professor, said at the festival's banquet that any solution must respect and engage the farmers, ranchers, and other private landowners in prairie-chicken habitat. It must address, he said, their legitimate needs to make a living, then provide incentives for them "to do the right thing" by allowing prairie-chickens to coexist on their lands. Unfortunately, the politics surrounding this issue in Kansas are contentious. Several high-ranking state officials oppose listing and conservation efforts. On the other hand, Audubon of Kansas has developed a science-based position regarding Lesser Prairie-Chicken listing, which you can find on their website.

Me, Lesser Prairie-Chicken Mascot and Lori at Kansas Lek Treks Festival Photo credit: Woody Wheeler.

Restoring cropland to grassland under the successful Conservation Reserve Program has benefited some populations of Lesser Prairie-Chickens. So have grazing practices, such as patch-burn patch-graze, which results in diverse habitat with different grass heights. Prairie-chickens require short grass for displaying, taller grass for nesting, and grass of intermediate height for raising chicks. For further information on prairie-chicken conservation efforts visit this site: https://www.audubonofkansas.org/conserving-prairie-chickens-and-their-habitat.cfm

Traveling through Kansas, you often see signs, billboards, and marquis at restaurants proclaiming belief in God and Christianity. These birds and their prairie habitat are a part of God's creation. As Pope Francis reminded us, "Each year sees the disappearance of thousands of plant and animal species which we will never know, which our children will never see, because they have been lost forever. The great majority become extinct for reasons related to human activity. Because of us, thousands of species will no longer give glory to God by their very existence, nor convey their message to us. We have no such right."

Encounters with these rare birds are inspiring. As Pete Dunne wrote about the prairie-chicken's booming sound in his book Prairie Spring, "Once it reverberated across High Plains, with leks scattered a mile apart. Today it is a privilege and a thrill to hear it at all." I could not agree more.

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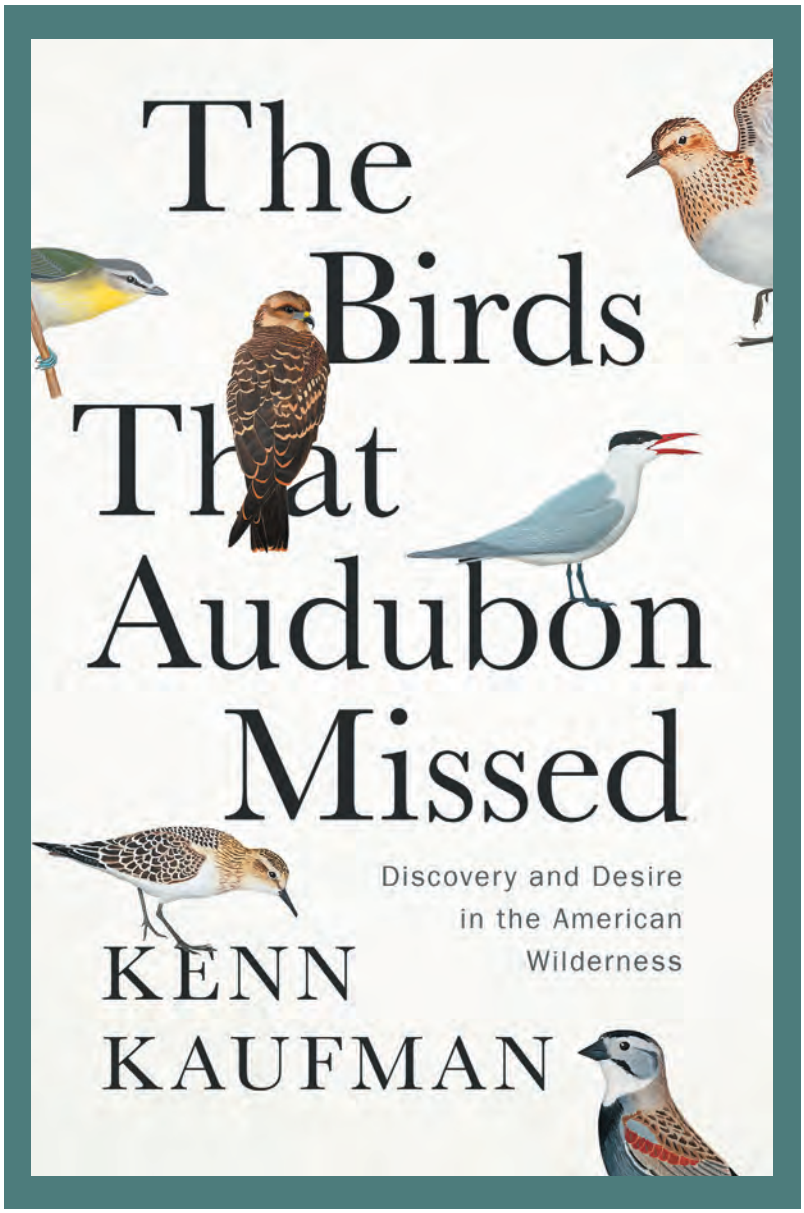


The Birds That Audubon Missed: ***Discovery and Desire in the American Wilderness***

Reviewed by Dave Rintoul

This book's genesis comes from Kenn Kaufman's realization, after looking through the 435 bird portraits that Audubon completed, that there were quite a few species that Audubon probably saw, but did not recognize them as a different species. Given the tools of the ornithologist trade in those days (just shotguns, no binoculars, no audio recordings or playback, minimal knowledge of migration and phenology, etc.) that may not be surprising. It would be easy to miss lots of species, especially if they were not common. But even with those handicaps, Audubon named at least one species (Carbonated Warbler) that doesn't seem to exist, from specimens that he allegedly shot in Kentucky. Those specimens cannot be located today.

It's hard to explain misses when there are phantoms who were not missed. So that can't be the whole story.

Another partial explanation for the missing species is that some of them are very similar to other, previously named species. Many are similar enough to give even excellent birders some pause these days, so it is likely that these subtle differences escaped Audubon's attention when he was examining shotgunned specimens and mounting them for their portraits. However, in several cases Audubon was able to use plumage details to identify species that earlier describers had misidentified. He was clearly a keen observer, so this can't be the whole story either.

We may never know the reasons that particular species, found in areas that Audubon frequented at the times of the year that he would be there to see them, were overlooked. Kaufman was able to discern that there are at least fifteen species that Audubon missed, so he set out to paint their portraits in the style of John James Audubon. Kaufman is an excellent artist, and includes some of these paintings in the book, but even he would tell you the level of watercolor bird portraiture that Audubon mastered is still unmatched.

Kaufman also touches briefly on the complicated persona of John James Audubon, who was a slave-owner and racist, shotgunner of birds, liar and fabulist with overweening ambition, as well as an unmatched artist. That is not the main focus of the book, but it is timely, as the ornithological world and the birding community both are struggling with how to deal with the legacy of this complex figure. There are no easy answers, but the recounting of details and stories of Audubon's life will give the reader plenty to think about in that vein.

If that were the entire scope of the book, it would probably still be worth a quick read, and then would end up at the back of the bookshelf. But Kaufman is also a skilled writer and storyteller, so he has a lot more to say about these missing birds. It would be hard to sum up all the threads in this narrative (you need to read it for yourself), but to me it is ultimately a long and insightful reflection on discovery.

When we think about the word "discovery," it usually conjures up images of the solo explorer in a trackless wilderness, or a lone scientist hunkered down in the lab late at night. Tales of discoverers and discoveries have seemingly always emphasized solitary individuals. And it is true that discovery is an individual process in all cases. That Eureka! moment comes to us one at a time, even if the discovery is something as mundane as a new route around a familiar birding area, or a new bird in an unexpected spot.

The era of discovery in American ornithology is no exception. For most of the 17th and 18th centuries, the competition to be the first person to find a new species of bird was a dream and goal of many Americans and European-Americans. And in a competition, only one person is the winner, and usually only one person is remembered. Names like Bartram, Wilson, Audubon and Bonaparte are linked with solo journeys into parts of the New World to collect new and undescribed species. Their notes and journals, as well as their biographers, emphasize their rugged individual forays into the wilderness. But of course, that was not the whole discovery story then, and it certainly is not the story now.

For one thing, indigenous peoples were familiar with these birds, had names for them, and almost certainly knew more about their habits and habitats than any European or American explorer. Bartram, Wilson,

Kansas Limpkin. Photo credit: Dave Rintoul

More so than ever, discovery is a shared experience, and this book not only can rekindle the individual joy of discovery, but it can also tap into what it means to be both a social animal and a fellow traveler with the birds.

or Audubon may have been the first non-native people to describe a bird for a wider audience, but they did not discover them. The Age of Description, however, does not roll off the tongue or captivate the mind quite as much as the Age of Discovery.

Secondly, all of these early American ornithologists had many colleagues and collaborators, as well as rivals, who directly or indirectly aided in the "discovery" of new species. Audubon had a network of collectors who sent him specimens, collected in places where he might never set foot. Moreover, he rarely, if ever, traveled truly alone. In some cases (e.g., Bachman) their names are remembered and recognized today. In most cases, their names are buried in dusty footnotes and museum specimen tags. But even then, the solo nature of discovery was really a myth. Without those other collectors and observers, many of the species that the famous discoverers named would have remained undiscovered for a while longer.

That history is only one of many things that can be learned from reading this excellent book. Kaufman may not be a trained historian, but his ability to dive deep into the literature and letters of the era and, at the same time, make the characters come alive, is on a par with the best historians writing today. That is a strength of this book, and standing alone, would reward anyone who reads it.

But the thread of discovery is not limited to the past. Even though some ornithologists might bemoan the fact that they were born too late to compete in this race to describe the birds of North America, the reality is that discovery continues today. That can be the discovery of new species, aided by incredible advances in our knowledge of the life histories of birds, bird vocalizations, migration routes and breeding areas, as well as the advent of genomic sequencing technology. That sort of discovery continues, and the collaborative networks needed to describe a new species today are explicit, not submerged as they were in Audubon's day. Discovering and naming of new species is ongoing, but each of us can also have smaller day-to-day discoveries of our own.

I have often remarked, now that I am retired and have a lot more time to spend with the birds and the natural world, that on every day that I am out, I see something that I have not seen before. Not necessarily a new species, and certainly not the discovery of a species previously unknown to science, but new behaviors, associations, vocalizations, phenologies, etc. Observation is the base of knowledge, and simply observing the world, particularly as the climate changes relentlessly in our times, not only adds to your individual knowledge, but also (with the aid of networks and tools like eBird) to the accreted knowledge of the ornithological community. That is not hyperbole; if you spend a few hours daily exploring the world of birds and their environs, you will find that it is true for you as well.

More so than ever, discovery is a shared experience, and this book not only can rekindle the individual joy of discovery, but it can also tap into what it means to be both a social animal and a fellow traveler with the birds. I always learn something from reading Kaufman's books, and from this one I learned that discovery is a gift of joy as well as a gift of knowledge. A true gift. Thanks, Kenn!

Families & Friends Outdoors – *a guide for adventures with your children*

Audubon of Kansas fosters a culture of conservation and an environmental ethic.

As parents or grandparents, YOU are an important link in this process.

Why getting outdoors with children is important.

Research reveals that the primary reason people tend to become environmentally responsible citizens is because, as children they had frequent experiences in nature with family and friends. Hiking, camping, picnicking, hunting and fishing, messing around in the creek, all are mentioned as vital influences. In addition, we have learned that children who spend time outdoors tend to be healthier, happier and do better in school.

Rintoul Kids with Dad
Photo by Beth Dager

So, there you have it. Rural folks tend to encounter nature on a daily basis, but they may or may not have time to enjoy it. City dwellers are too often insulated in their air-conditioned homes, cars, work sites -- and they walk on asphalt and concrete. They may be uncomfortable or even fearful of what nature provides. Richard Louv, author of Last Child in the Woods, coined the phrase "denatured children." But there are "denatured" parents, too.

If you have not been raised with a childhood immersed in nature and are unsure how to begin with your children, here are some ideas to help you.

Getting Ready to Go:

- Start with a spirit of adventure and fun.
- Establish an ethic of respect for living things and their surroundings.
- Create a "small treasures" box for a collection of rocks, leaves or other small things.
- All learning begins with observation, so using all your senses is important. A sharp eye and curiosity are your most important tools. A magnifier is helpful.
- Create a family nature journal to keep memories of special moments. Write, draw, press leaves or photos on the pages. At the top of the page, note the date, location and describe the day as hot/sunny, cool/cloudy, etc. Older children may enjoy their own journal. Quantify:

How many? How big? How much time?

- Dress for the weather. Carry water.

Simple Adventures: Games, Challenges & Magic Moments

Sensory Hikes can offer fun challenges:

- Play "I Spy." Take turns being the spy.
  - Challenge: Who can find the softest natural object? The hardest? The roughest texture? Something spikey? (Be careful!)

Poison ivy Photo by JK Augustine

- Stop and listen for two minutes. What do you hear? How many different sounds? Who made the sounds? Where do the sounds come from?
- Smell the pines, flowers, soil, the marsh. To smell a leaf, rub it between your fingers and then sniff your fingers. What is your favorite odor? Least favorite?
- For a tasty treat, go to a farmers' market or "pick your own" farm. Think about all the good things you get from plants. (From the clothes you wear, the house you live in, toilet paper, even the air you breathe, be thankful.) Challenge your children to list all the ways they have used a plant today. Help them make a large list. (Even think about your automobile.) And of course, what is their favorite food?
- Stop and watch the sunset or moonrise. What colors will be in your drawings? What did wildlife or birds do at dusk? Is it your bedtime, too?
- Watching the Wind. No wait, wind is invisible -- but we can watch what it does. A new challenge: List all the ways you notice the wind. Use more than just sense of sight. Blow bubbles. Think, if you were the wind, where would you go and what would you do? ("Kansas" means land of the south wind.)
- Puddle Jumping, stream splashing, playing with a hose in the yard. Everybody loves water! It's okay to get wet and a bit dirty as you notice what water does. Where does it flow? How does it feel? On a hot day, do birds come to your lawn sprinkler or birdbath?

Now that your senses are sharp, you may want more tools.

AOK is busy providing public libraries across the state with **Nature Adventurepacks**, a backpack containing one adult pair of binoculars, two child-sized binoculars, and guides to help identify birds and butterflies. There are also tips on where to explore in your part of the state and helpful YouTube videos. Call your library or go to this link https://www.audubonofkansas.org/aok-nature-adventurepacks.cfm to see if your town or county has the backpacks available for checkout.

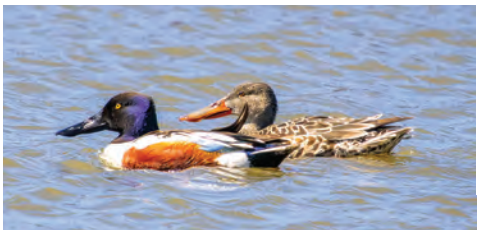
Big Adventures: Expeditions to the woods, prairies or wetlands.

Wetlands are wonderful for beginning birders because the birds are generally larger, move a bit slower and are easier to observe over water than thru tree leaves.

Kansas has two very important and internationally famous wetlands: *Cheyenne Bottoms* and *Quivira National Wildlife Refuge*. If you visit, you can see some waterbirds, frogs, maybe a muskrat swimming, and if you are lucky, a Bald Eagle soaring overhead.

Nature Adventurepacks

Little boy with binoculars. Photo by Kelley Hurst. All thumbnails by Dave Rintoul



American Avocet – This bird loves a mud pudding! It uses the upcurved bill to slosh in the muddy water catching worms, aquatic insects, little crawdads and other tasty treats. Several avocets may march together, sloshing side-by-side. In winter they live in the Gulf Coast or tropics. In summer, they may stay in Kansas, or merely stop over on their way to Canada.

Mallard – Do you wish you had bright orange feet? Look closely to see them when this duck sticks its head underwater to find food in the mud. Unlike the avocet, ducks don't have long beaks, necks or legs. They have a small "shovel" for a mouth.

Great Blue Heron – Standing tall, motionless and silent, the heron watches the water. Wait, maybe you can see it jab for a fish. If its aim is good, the heron tosses and catches the fish to swallow it headfirst. Why headfirst? (Think about fish spines.) Watch. How does a fat fish slide down that slender neck? Some herons migrate. Some spend their whole lives in Kansas.

American Bittern – In the summer you may be lucky enough to see a heron peeking out of the cattails, eyes on the water, bill pointed upward. Perfect camouflage. Bitterns may stop in Kansas to nest, or migrate all the way to Canada, then in fall migrate back warm southern wetlands.

Word Search Wetland

Z I W E T L A N D S S I J M S
Q F N T A F R X Z D E K Z I J
Z O L V A A B Z I F C P K G T
T S A O E M H R M R R H M R E
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E V T E R R E S T R I A L S H
C S K H Y U P P S H E E E H C

invertebrates
ecosystem
wetlands
habitat
cranes
terrestrial
muskrats
mudflats
kansas
quivira
shorebirds
migration
turtles
journey
aquatic
frog

Key on Page 32

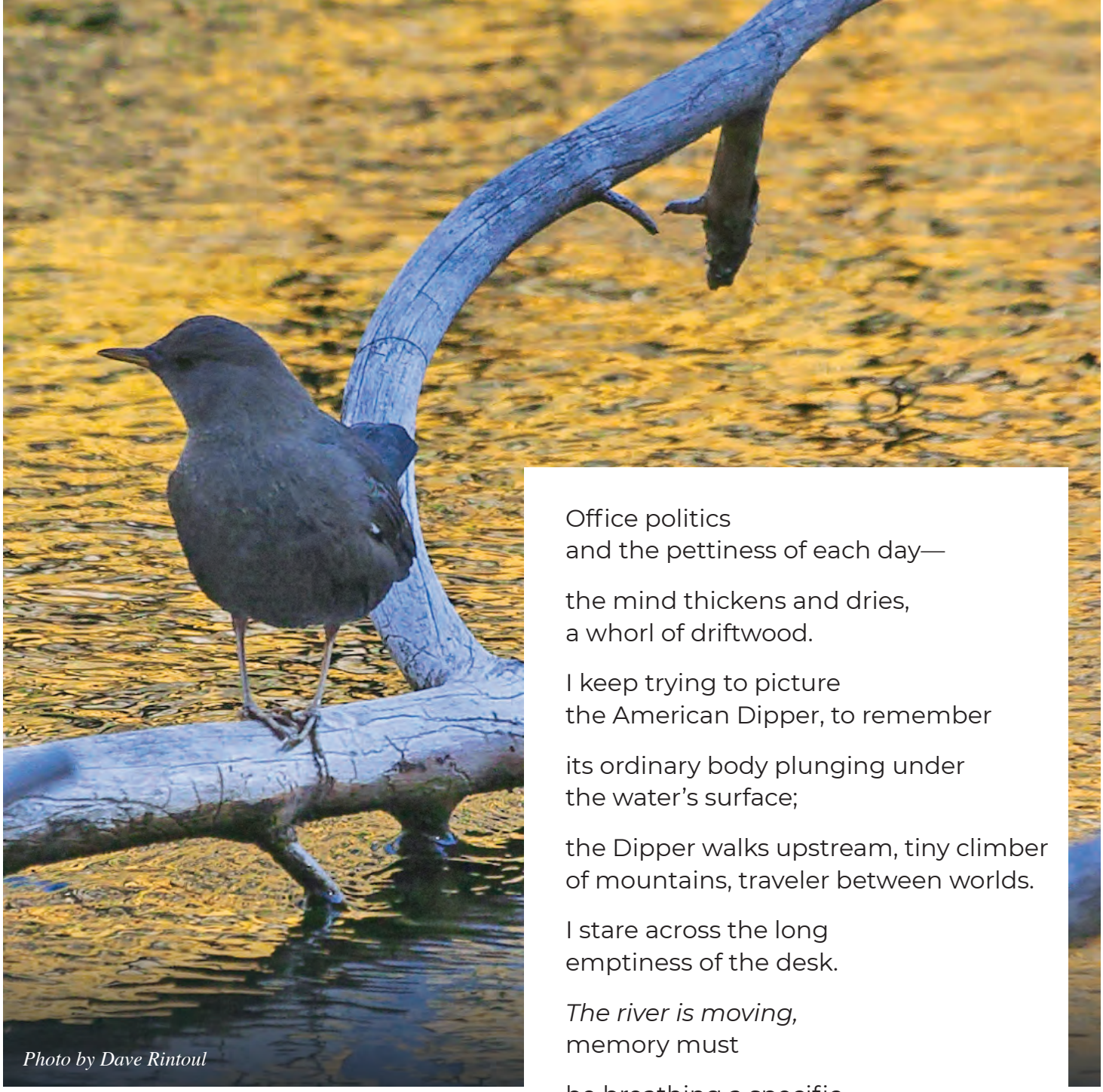

Photo by Dave Rintoul

AMERICAN DIPPER

BY ELIZABETH DODD

Office politics
and the pettiness of each day—

the mind thickens and dries,
a whorl of driftwood.

I keep trying to picture
the American Dipper, to remember

its ordinary body plunging under
the water's surface;

the Dipper walks upstream, tiny climber
of mountains, traveler between worlds.

I stare across the long
emptiness of the desk.

The river is moving,
memory must

be breathing a specific
afternoon of alpine

light, the Rio Hondo all motion

and matter—the battered stones'
slow stumble seaward,

and the nondescript, unmistakable bird
who dives into the cold

factual current, eyes open.

(from *Archetypal Light*, University
of Nevada Press, 2001)

VOLUNTEER FOR AOK COMMITTEES

Care deeply about Audubon of Kansas' mission? Want to help AOK do more to defend wildlife in Kansas and the Great Plains? We want YOU to join an AOK Committee!

AOK welcomes members to volunteer on various committees, including: Advocacy, Protected Areas, Education, Finance, and others. This is a way to get involved directly in the aspects of AOK's work that you feel drawn to! Committee members must be able to attend virtual meetings.
If interested, please inquire at jackie@audubonofkansas.org

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