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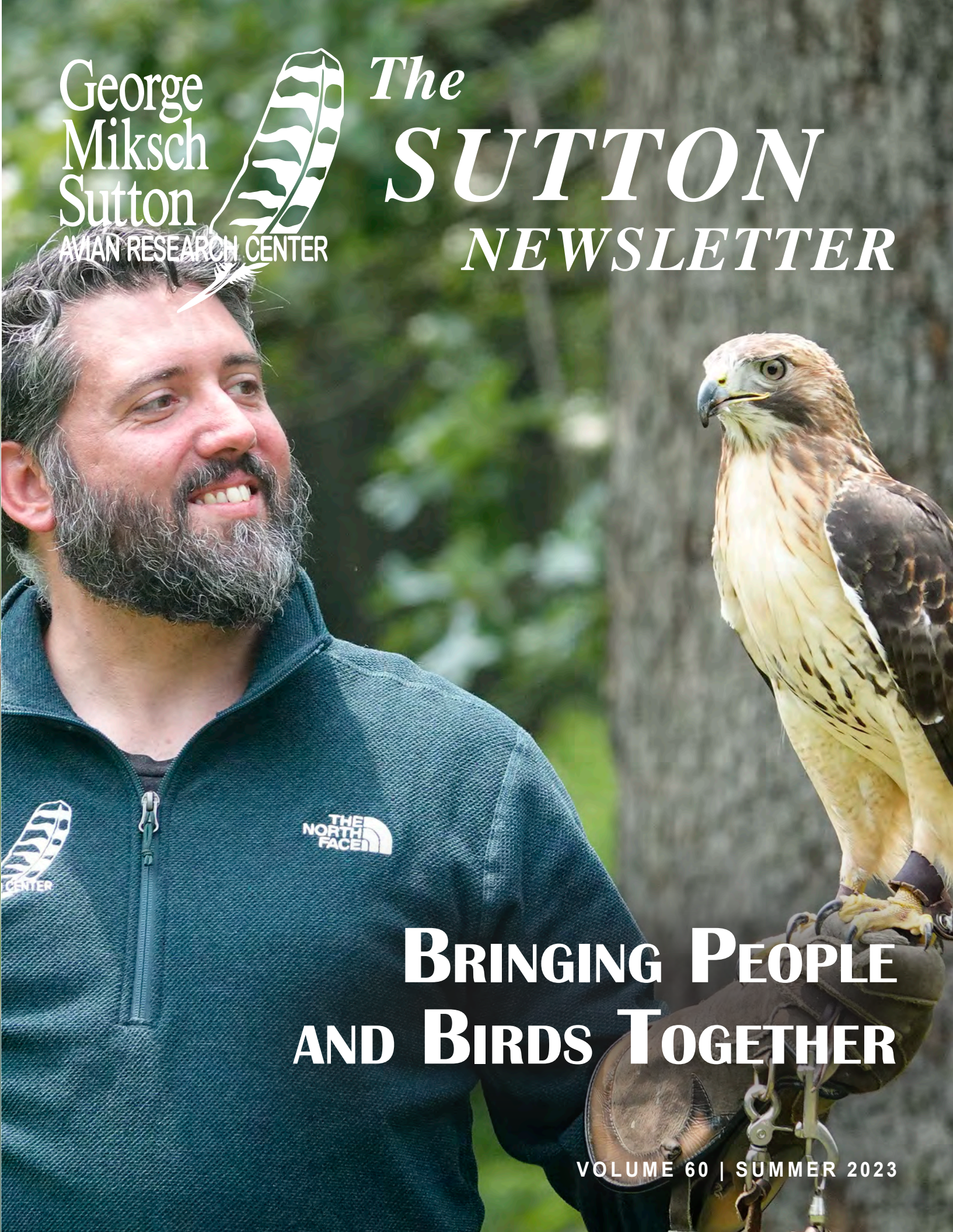
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2023 summer newsletter is generously provided by  
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Great crested flycatcher by Dan Reinking



Your generous donation helps us with our mission of “finding cooperative conservation solutions for birds and the natural world through science and education.”  
Join us in protecting our natural heritage for the next generation!





"finding cooperative conservation solutions for birds and the natural world through science and education"



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Sutton education program manager Daniel Harris shows off ambassador animal Artemis the red-tailed hawk.  
Photo by Dan Reinking

## A Letter from the Executive Director

Dear Sutton Center friends,

Another winter has passed, and the Attwater's prairie-chickens produced more eggs at the Sutton Center this spring than ever before! I travelled to Texas late May to transfer eggs from Fossil Rim Wildlife Center, for "assisted dispersal" that provides gene flow among the Attwater's prairie-chicken flocks. The masked bobwhite started laying eggs early this year, and their first chicks will be hatched by the time this newsletter is in your hands. We have welcomed five summer interns to help with the endangered species breeding efforts, while three technicians and many volunteers are busy counting birds in statewide atlas blocks for the second breeding bird atlas. It is always a concern whether the weather conditions will provide opportunity for our surveyors to get the lesser prairie-chicken routes completed in the limited time span available (15 March - 7 May), but they got it done!

Bartlesville was selected as the location for the spring meeting of the Oklahoma Ornithological Society (find out more about OOS at okbirds.org). It was a great weekend of playing Wingspan, birding, and sharing what Sutton Center does with members as well as new bird enthusiasts. We also shared about the important monitoring efforts of our Bald Eagle Survey Team citizen scientists, and we hope more volunteers will sign up to join this program. It is a travel and time commitment, as the number of bald eagle nest territories further afield are on the increase. The widespread presence of highly pathogenic avian influenza has been worrisome, although the nest reports from our volunteers look pretty good. We currently know of only one bald eagle fatality that was confirmed to be HPAI, while some of the nests failed due to destruction by high winds, something that is not uncommon in Oklahoma.

Bartlesville experienced very high winds 31 March that caused power lines to fall and start the Gap Road wildfire that destroyed many homes. Don Wolfe with help from staff and volunteers keep up on prescribed burns at our Circle Mountain facility, while Oglesby Volunteer Fire Department helps with our prairie-chicken facility. They also came up and helped contain the final flames April 1. We are so grateful for fire safety improvements since our big scare six years ago, as well as to all of you who helped fight the flames. One of our buildings actually caught fire, but our fire truck had just enough water left to douse it. Dan Reinking was our 4am hero! We do have a wish list of water tanks, and the dependability of our aging and ailing fire truck is questionable.

We are very excited about celebrating 25 years of Wild Brew 26 August, and sincerely hope you can join us for this very fun event that helps fund Sutton Center's many bird conservation efforts. If you cannot make it in person, please consider helping through donations to reach our fundraising goal for this milestone event anniversary. We all, birds, and the natural world thank you!

Lena Larsson, Ph.D.  
Executive Director



Many of the Sutton staff and interns in 2023

## Sutton Center Education Program on Track to Double Presentations

by Daniel Harris

The Sutton Center is proud to support and be supported by the local communities we serve. We feel so fortunate that local schools and public spaces have invited us to share our love of the world around us. These visits provide an exciting and engaging experience for audiences of all ages. It is the hands on, in your space, interactive opportunities that we provide; presentations in areas that would otherwise be without access to such experiences. Did you know that three-quarters of our presentations this year were in small towns and rural locations? With more than half of Oklahoma's public schools serving rural students, it is even more important to make sure that these spaces have access to STEAM focused educational opportunities and the Sutton Center is here to deliver. In fact, we are on track to double the number of visits and presentations from last year! This means a lot of time on the road for our birds, volunteers, and staff.

In order to keep this program funded, we rely on donations and partnerships with area sponsors and businesses. I would like to highlight one such location, the Dillon Rose Studio. We were contacted by Rachel Dazey, who is a former Sutton Center intern, and her husband, Seth, with an opportunity to share their space and help raise money and awareness for conservation projects. Rachel has travelled the world and lived



Cricket, the great horned owl, is a little more shy than some, but always fascinates a crowd. Photo by Dan Reinking



A live red-tailed hawk in a classroom really grabs the attention of students. Photo by Jenks High School



# Sutton Center Education Program on Track to Double Presentations (Continued)

by Daniel Harris

many adventures, carrying with her a love of nature and the birds therein. That is why the Dazeys and Dillon Rose help to support our conservation efforts and were excited to bring our story into their studio. We hope that you also feel inspired to support the work we do and share in helping us find cooperative conservation solutions for years to come.



## HS Intern Program

Each year, the Sutton Center invites selected Bartlesville High School students to gain real world experience working with endangered species, getting to know and care for our education birds, and so much more. Meaghan has been an outstanding part of this program and showed a commitment to learning and growing throughout her experience at Sutton. I was most proud when she was able to show what she knows at a presentation for the Jenks High School Ornithology class. While Jenks may have the only high school offering a class in ornithology in Oklahoma, Bartlesville students have a unique opportunity to get out of the classroom and get a head start on a wildlife career.

- Daniel Harris,  
Sutton education program manager

“My internship at Sutton was amazing. I learned so many things about the birds they care for. The people I met there were wonderful. I’ve known since I was a little kid I wanted to work with some sort of wildlife and now I have the chance. This fall, I will be heading to Colorado to pursue a degree in zoology at Colorado State University. I can’t wait to further my studies and learn more about animals. - Meaghan Gornall, Bartlesville High School intern”



# Attwater’s Prairie-Chicken Mania!

by John Hoolihan | Photos by Sutton Prairie-Chicken Crew

The 2023 Attwater’s prairie-chicken breeding season is in full swing. We started with 21 adult pairs that exhibited breeding behavior a bit earlier than usual. The first egg was laid on 21 March and we have exceeded 400 total – a new record! All 21 of our hens laid fertile eggs, another benchmark not reached in previous seasons. We are trying to surpass our success of last year by foster rearing as many chicks as possible under adult prairie-chicken hens.

We welcome JJ Smith, who hired on full time to fill the vacant maintenance position. He has proven himself quite valuable with his construction skills and completing various repairs at both the prairie-chicken facility and headquarters. Four new seasonal prairie-chicken interns are working over spring and summer. Both Bailey and Ian are local hires, while Lark and Rachel arrived from out of state. We have two new volunteers, Katie and Charlene, who are working in the greenhouse helping to ensure we have plenty of vegetation to feed the chicks. On-site production of large numbers of mealworms and crickets also supplement the chicks’ diet.

We completed renovation of prairie field one, resulting in a four-fold size increase. This will allow us to accommodate greater chick production and reduce crowding. Sutton Center was very fortunate to receive funding from TC Energy for the purchase of two additional acclimation pens that will also provide additional space for chicks. We set up a kestrel nesting box adjacent to the prairie fields with the idea that kestrels would be no threat to the prairie-chicken chicks, but would ward off other raptors that violated their nesting territory. Kestrels are now nesting in the box and keep the immediate area clear of other raptors.

Overall, the breeding center is very busy, and with the support of an enthusiastic team we are optimistic of having a very productive season.





# Transfers and Fires and Sand, OH MY!

## Updates from the Masked Bobwhite Program

by Morgan Anderson and Lily Grant



These past few months have been quite a whirlwind for the masked bobwhite program! The end of one breeding season brings preparation for the next.

This winter we transferred a total of 136 birds (42 adults and 94 juveniles) to the Buenos Aires National Wildlife Refuge. These birds are used for winter covey augmentation in order to help boost the wild population.

One of the biggest projects this past winter was the construction of the washout room at Quail Building 1.

Thanks to the Lyon Foundation grant we received, we now have a great space for fumigating incubators and cleaning. It also provides us with a double entryway for biosecurity.



It has been a very busy time preparing for this breeding season. The quail were walking on diminishing levels of dusty sand, so changing the sand was beneficial to the health of the birds and the staff. With the help of our wonderful volunteers and helpers from the Lowe Family Scholars Program, we were able to efficiently move over 30 tons of fresh sand into the chambers!

In addition to replacing our sand, we replaced the nets in our male and female surplus chambers. These new and sturdier nets are hung in front of the windows. They provide a safety barrier when the birds fly towards the windows and protect them from injuring themselves.



Performing controlled burning earlier this year was invaluable for aiding us in the fight against wildfires. Prescribed fire keeps our birds, buildings, and staff safe. It also improves habitat and decreases the amount of invasive species in the environment. A devastating wildfire in our area moved very close and impacted Quail Building 2, but fortunately there was minimal damage to the building and our birds were unharmed.



Lastly, we want to give a huge shout-out to Meaghan, our Bartlesville High School intern. She has been a great help throughout the year for the masked bobwhite and education programs. We congratulate her on her graduation, and wish her all the best in her future endeavors!



# Season 4 of Oklahoma's Second Breeding Bird Atlas Underway

by Dan Reinking



OBBA technician Kendall Van Zanten watches for nesting birds in an eastern Oklahoma woodland. Photo by Dan Reinking



Blue-gray gnatcatchers use spider silk to attach lichens to the outside of their nests. This helps camouflage the nest, and may also help make it more rain resistant. Photo by Dan Reinking

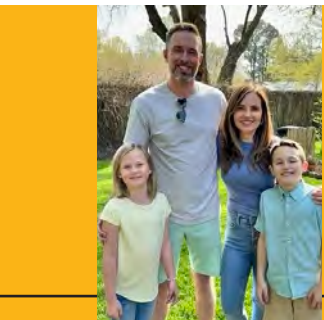
Volunteers have recently been heading out to their randomly selected blocks of land across Oklahoma to look for nesting birds in this fourth of five planned summer survey seasons for the second Oklahoma Breeding Bird Atlas (OBBA). In addition to the generous amount of time contributed to the project by volunteers, we are also fortunate to have three technicians working on the project this summer. With 2024 being the final summer of the project, we need to make as much progress as possible. Besides the normal birdwatching activities of finding as many species as possible in each atlas block, and counting numbers of birds, we are also specifically watching for bird behaviors that indicate or confirm that nesting is actually taking place in the block. A wide range of behaviors such as courtship, nest building, carrying food back to a nest or fledgling, or observing recently fledged young birds can provide the needed evidence to document nesting.

Oklahoma's first breeding bird atlas took place from 1997 to 2001. By repeating this survey about every two decades, we can document long-term changes in the distributions of breeding birds in Oklahoma. Bird populations can change and move over time. The information collected by an atlas project can provide an early warning if certain species begin showing signs of declining. It can also help document range expansions, including new birds moving into Oklahoma that have not been historically present as nesting species.

Our project technicians this summer have come from Washington state, New Hampshire and Oklahoma. Many species found here in Oklahoma are new and exciting for West Coast and New England birders to see. While most volunteers are from Oklahoma, we have also had participants from Arkansas, Kansas and Colorado. With 583 atlas blocks targeted for surveying, it is a big job to get it all done in five years. The Sutton Center is thrilled to have all of this help, and to carry on the legacy of encouraging ornithological study in Oklahoma that our namesake George Sutton accomplished over many years while living here.



This recently fledged northern cardinal provides confirmation that cardinals have nested nearby. Photo by Dan Reinking



## The Sutton Avian Research Center is pleased to announce it has elected the following to its Board of Directors

- Nate Barnes**  
Nate is a Financial Advisor, CFP with Edward Jones based in Jenks, OK serving clients all over the U.S. Nate and his wife of 14 years, Sandie, have two children and live in Jenks, Oklahoma.
- Heather Lehman-Fagan and Dr. Chris Fagan**  
Heather is the owner/manager of the Enid Tag Agency and is also of counsel with Fellers Snyder Law Firm in Oklahoma City. Dr. Fagan is the owner of Brush Pediatric and Family Dentistry in Enid. Heather and Chris have two sons and live near Enid, Oklahoma.
- Bonnie Rogers**  
Bonnie is the Chief Information Officer for the Jenks Public Schools. She began her career as a secondary math teacher and has been an administrator for JPS for the last 13 years. Bonnie lives in Tulsa and enjoys camping, hiking and being in nature as much as possible.





# CHEERS FOR 25 YEARS! ... WILD BREW CONTINUES SOARING FOR A QUARTER OF A CENTURY

The annual craft beer and restaurant crawl festival is celebrating more than two decades of keeping wild things wild.

As we hope you know, **Wild Brew** is the oldest beer crawl in Tulsa and continues to be a **one-of-a-kind** indoor event that combines first-rate beers created by artisan brewers from the U.S. and around the world with cuisine from Tulsa's best restaurants. Twenty five years ago, it was held in an airport hangar and has grown to fill two exhibit halls at the Cox Center! You'll find HUNDREDS of beers to choose from, and still have the unique opportunity to chat with brewers one-on-one. In addition to the beer, several local wineries, distilleries and artisans creating tasty non-alcoholic beverages will be there to tickle your taste buds. Live music, party pics, fun games and auction bidding wars keep the party hopping! The Sutton Center is grateful for the support of the local artist community, and guests will have an opportunity to purchase original artwork in a gallery setting at the event. With early admission at 4:00, patrons will have first dibs on the original pieces. **"For Wild Brew's 25th celebration, we're pulling out all the stops for the "Greatest Party Every Hatched" and hope to raise \$250,000 to keep Oklahoma's birds flying high," says Sutton Center's Assistant Director Audra Fogle.** Every ticket includes all-inclusive access to over 200 beers from the best breweries and samples from 50 of the Tulsa area's best restaurants. Tickets are on sale now. Don't wait, space is limited. Follow us on Facebook for updates, giveaways and 25th anniversary specials. Drink a beer, save a bird... Sponsorship opportunities are also available to highlight your business and support a great cause. **Thank you for helping the Sutton Center soar to new heights!** Get the details about tickets and sponsorships on the [wildbrew.org](http://wildbrew.org) website. For personal assistance, contact Christina at [cking@suttoncenter.org](mailto:cking@suttoncenter.org).



Photos by Dan Reinking



Wild Brew 2023:  
Benefiting the George Miksch  
Sutton Avian Research Center  
Help us meet our  
25th Wild Brew  
Anniversary goal of \$250,000



Saturday,  
August 26th, 2023  
5:00-8:00 p.m.  
COX Business Center,  
Exhibit Halls B & C



\*Patron ticket holders can  
start sipping early at 4 p.m.  
and have their own plush place  
to perch during the event.

[www.wildbrew.org](http://www.wildbrew.org) | [www.facebook.com/wildbrewtulsa](https://www.facebook.com/wildbrewtulsa) | [www.suttoncenter.org](http://www.suttoncenter.org)



## CAN'T ATTEND, BUT STILL WANT TO HELP?

Here are some easy ways that you can help make our 25th Wild Brew Anniversary successful

- **MAKE A DONATION** - If you are unable to attend, or a big event just isn't your thing...you can still help us meet our goal by donating. 100% of your gift will go towards hands-on projects or can be directed as you wish.
- **PROVIDE MATCHING FUNDS** to encourage party-goers to support special projects.
- **DONATE AN AUCTION ITEM** (or sponsor one!)- Your help to build unique auction packages, one-of-a-kind items or fun experiences will go a long way to help SAVE BIRDS!
- **NEW FOR 2023: BID ON THE ONLINE ONLY AUCTION**- Have winnings either mailed or delivered directly to your door. The ONLINE ONLY event will go live on Monday, August 21st and close BEFORE Wild Brew at 8pm on August 24th. Sign up to follow the auction on the Wild Brew website ([wildbrew.org](http://wildbrew.org)) and you will receive updates and insider info on auction items!

If you'd like more information or personal assistance, please contact the Sutton Center directly at **918.336.7778** or email Christina at [cking@suttoncenter.org](mailto:cking@suttoncenter.org)





Ann Gao, a junior at Jenks High School, used watercolor and acrylic to create this stunning painting of an owl. Photo by Jenks HS

# HELPING STUDENTS FIND THEIR VOICE: The Sutton Award Builds Confidence So Students Can Speak Up

by Audra Fogle and Alyssa Miller

A Jenks High School student takes home the top prize for her life-like painting of an owl that she painted for her mom.

High School Junior Ann Gao entered her watercolor and acrylic painting of a great-horned owl into the 2023 Sutton Award contest never thinking it would win. But it did! Ann Gao placed first in the 2D category, winning \$1,000 and the privilege to have her artwork displayed alongside internationally recognized artists at the NatureWorks Art Show and Sale. Gao grew up in China and says opportunities like this were not available to students. She moved to Jenks in middle school and said at first, she struggled with mental health and felt like she had no purpose. However, once she began to immerse herself in art class, Gao realized her passion and credits teachers like Shelley Olds for that. “I like to teach realism,” Olds said. “I show them some of my artwork and teach them how to do certain techniques. Ann really grabbed on to that and she became better, and better, and better with each piece.” Through those art classes at school, Gao said she learned the principles of creation and got to try different mediums. That is when she fell in love with painting, an outlet that also helped her gain confidence and express herself. “Art is a way for me to communicate.” She continued saying, “It is a very subtle way. It is like you may not want people to know everything you are saying, but you know you have said it, so you are satisfied and now it is up for them to interpret.”

At the Sutton Center, we as educators are ecstatic! Ann’s story of finding her voice is exactly why education programs like the Sutton Award are a priority and we put so much effort into making sure they remain free for all Oklahoma students and teachers. Since students are also required to submit a 250-word essay about their entry, teachers tell us that while students are creating their art pieces, they are also discussing the conservation issue they are trying to communicate visually in the classroom and even at home. It’s a WIN/WIN/WIN! When young people find their voices early, our natural world is bound to benefit as their understanding deepens and their voices grow stronger.



Winning students are supported by winning teachers!  
Dawn Hill, Miami HS, with her student Jaedyn Corbin and  
Heather Chenoweth, Metro Christian Academy, with her student, Ross McCoy.  
Photo by Kelly Bostian

Funding to host the Sutton Award and provide scholarships is made possible through a longstanding partnership with NatureWorks, a conservation organization committed to conserving Oklahoma’s wildlife and their habitats, and several additional partners: Oklahoma Heritage Bank, the Oklahoma Sculptor Society, Grants Frames and several individuals. For more information regarding the 2024 Award, please contact the Sutton Center.

## Blended Gifts Make Your Giving Go Further

Are you already making annual gifts to help us with our work? Consider adding a planned gift to your annual gift this year. Increase the impact of your giving, provide greater tax savings, preserve wealth for you and your family and help continue the Sutton Center’s work well into the future.

A planned gift is one of the most impactful ways you can support the Sutton Center’s critical conservation work while accommodating your own personal, financial, estate-planning, and philanthropic goals. With smart planning, you may actually increase the size of your estate and/or reduce the tax burden on your heirs and gain the satisfaction of knowing that you are helping to ensure the future of the Center and its many programs for generations to come.

Did you know? Even a gift in your will of 1% of your estate can make a difference.

Creating a legacy gift is a thoughtful process that will benefit from professional advice. A financial adviser can help you determine how best to accommodate the needs and priorities of you and your loved ones, as well as approximately how much you may be able to pass on to a charity like the Sutton Center and how best to do it. For more information or a conversation, please reach out to Assistant Director Audra Fogle, at any time via email [afogle@suttoncenter.org](mailto:afogle@suttoncenter.org) or by calling the Sutton Center at 918-336-7778.

The Sutton Center has a four-star rating with Charity Navigator and is a GuideStar Platinum participant.



THANK YOU FOR YOUR SUPPORT



# 2023 Conservation Hero Hopes to Blend International Engineering and Conservation for a Better World

The Valedictorian from Wesleyan Christian School, Matthew Marquez, has been awarded a \$1000 scholarship to help make the world a better place. He plans to attend the University of Tulsa to study in the International Engineering and Language Program. Matthew was selected from high school students across Washington, Osage and Nowata counties. Scholarship programs like the Sutton Award and the Conservation Hero Award help raise awareness about the complicated issues surrounding wildlife conservation and encourage them to take positive action. The Sutton Center is grateful for the support of donors who make these scholarships possible.



Audra Fogle, Sutton Center Assistant Director, presents the Conservation Hero Award to Matthew Marquez.  
Photo by Denise Marquez

“Conserving the resources that we have on earth is potentially one of the most important jobs that humans have. There is a limited amount of resources available, so it is important to manage them conservatively and safely. The Earth is not just a planet, it is our home and the home of all life. Many species have gone extinct or are currently severely endangered because of our actions. Since humans are the only ones capable of protecting animals, plants, and all life, it is our responsibility to do so. I believe most people want to protect life, but they are unaware of the many species that are in trouble right now.  
- Matthew Marquez”

## 15th International Grouse Symposium 11-17 September 2023

There are two species of grouse that are found across the continents in the Northern Hemisphere, but even for those found only in North America or Eurasia, many of the conservation issues are the same or similar, and regular communications between researchers and managers is important for the conservation of

grouse worldwide. Every three years, grouse experts and researchers from across Asia, Europe, and North America convene to present their research findings and to share ideas with researchers from other countries and even other continents. At each of these International Grouse Symposia, representatives from

potential host countries for the next symposium bring a proposal, often with some photos and other enticing materials to invite and convince the attendees that their country would be the best IGS host three years later, and those proposals are voted upon and the host country selected. Well, that is how it is *SUPPOSED* to work, but a lot can happen over the next 1000 days. A brief summary of the past couple of decades of IGS and the host countries is as follows: 1999 – USA; 2002 – China; 2005 – France; 2008 – Canada; 2012 – Japan; 2015 – Iceland; 2018 – USA; 2021 – Poland. But wait! A few things don’t add up here. First, what happened to 2011? A major earthquake, tsunami, and nuclear plant disaster forced a 1-year postponement of the IGS that was intended to be in Japan that year. Thus the 3-year cycle started again in 2012, but what about the 2021 IGS hosted by Poland? That ended up being another victim of the world-wide COVID pandemic, so the organizers and conference committee postponed it to 2022. And then war broke out in neighboring Ukraine, and Poland was dealing with millions of Ukrainian citizens seeking refuge, so once again, the IGS was postponed a year. Finally, it appears that some semblance of stability will allow the 15th International Grouse Symposium to happen 11-17 September 2023 in Białystok, Poland.

Sutton staff Aaron Pratt, Lena Larsson, and Don Wolfe plan to attend and present. It has now been nearly five years since many of us have seen each other in person. The long-time grouseers are likely a little more grey, a little more forgetful, and perhaps a little more cynical. Over those years, a new generation of grouse researchers and enthusiasts has emerged, and while we might recognize names, the opportunity to again meet in person and discuss grouse or other matters over dinner or beverage will be greatly welcomed, and even old colleagues can reacquaint. Especially for many of the new generation, the International Grouse Symposium will likely be the first time they have been able to put a face to a name, and for the long-timers, we welcome the opportunity to meet those who will carry things forward for the future decades.

## IN MEMORIAM



Joe Williams, Bob Lorton, Harold Price, Jack Zink, Len Eaton, and Judge Joe Morris were among the first major donors who helped establish the Sutton Center.

*The Joe Williams that I knew was a first-class act! He was a true conservationist dedicated to the WILD in wild places. He was an outdoorsman, a hunter, a fisherman, and a keen observer of the natural world. When he talked, he commanded your attention, and you just wanted to listen to the wisdom he was sharing. All in all he was a natural born leader. - Steve Sherrod*

*Joe Williams was one of the locally and nationally influential leaders who became active in environmental concerns. The Sutton Center was one of the fortunate endeavors to have been supported and led by Joe. It is an honor to have served with him. - Warren Harden*



Because of supporters like Barbara Bates, the Sutton Center is able to take care of much needed repairs like replacing our aging entry sign that welcomes all guests. When asked why she made the new sign financially possible she responded, “Because there was a need and I could do something about it!” Barbara is a longtime supporter and continues to be impressed with the professionalism of the staff and the significance of the conservation work accomplished. “It really is the canary in the coal mine situation...birds are indicators of eventual human health, and we need scientific organizations like the Sutton Center to help us conserve healthy ecosystems.”



# Grouse Movement Behavior

by Aaron Pratt

For the past few newsletters, I have been describing grouse habitat selection and how it is one of the main research objectives for studies using location data collected from transmitter-equipped individual grouse. I first introduced using transmitters to collect biological data on grouse in the summer 2021 newsletter. Besides habitat selection, I also stated that transmitters are used to investigate movement behavior. The fact that organisms move is a fundamental characteristic of all living things and a component of most ecological questions. Even sessile organisms have a mobile life stage. Consider the dandelion seed dispersing via the wind. Understanding movement is crucial to understanding the interactions of organisms with their environment and how these interactions will play out as environments change. There are numerous modes of moving (i.e., the spatial displacement of the whole organism) which include both active and passive mechanisms (e.g., walking, flying, wind, etc.). Likewise, there are several different types of movement (e.g., foraging, dispersal, migration, etc.). Because movement is a fundamental characteristic of living things the study of movement ecology (i.e., the why, when, where, and how organisms move) has been diverse with a long history.

Like habitat selection, movement occurs over several scales. When grouse are moving most of the time they are walking, which is why they are considered a ground-dwelling bird. That being said, grouse frequently fly between roosting and foraging areas, fly when evading predators, and fly when migrating between seasonal ranges for those individuals who are migratory. Sage-grouse movement on the smallest scale could be when they step over to the nearest sagebrush to take a bite. Maybe this is equivalent to me getting off the couch and going to the fridge for a snack. In this scenario, it is easiest just to walk. At some point, the distance gets far enough or the need to get there fast enough will require flight (or using a car in my example as you will see in a moment) over walking.

A frequently-used metric of movement behavior, and one of the most well-known, is the home range. This is the geographic area in which an animal typically spends its time meeting its life needs. A daily home range is the collection of all of the areas used on a given day. Within a daily range of a grouse, it usually flies from its night roost (where it typically does not move all night) to its foraging area during the morning hours. Then it may fly or walk off to day roost where it is generally less active until it forages again in the evening before flying

to the evening night roost. My daily range would be driving between my house, work, my kids' schools, and maybe the grocery store. I have a smaller home range than someone who commutes farther to work or who frequently travels for business or pleasure. The same can be true when comparing individual grouse.

The accumulation of all of the daily ranges during a specific season is considered a seasonal home range. The area used by an individual to meet its winter habitat requirements is simply known as its winter range. On a larger scale, migration is a specific movement behavior that connects seasonal ranges that do not overlap. I am non-migratory, so my winter range does not deviate much from my summer range. In contrast, "snowbirds" will migrate between their summer homes in the north and their winter homes in the south. Though not as far as people usually think of when thinking about bird migration, many grouse demonstrate migratory movements between distinct seasonal ranges. Also, on a larger scale, are exploratory movements where individuals leave their home ranges and may or may not return. One example of this is natal dispersal when animals permanently leave where they were born to breed elsewhere.

These figures show an example of greater sage-grouse movement behavior that can be described and displayed by data collected from a GPS transmitter (see Gelling et al. 2022; Wild. Soc. Bull. 46:e1293). Figure 1 shows how active (i.e., higher Y-axis value means more flying, walking, foraging) grouse are relative to the time of day. Figure 2 shows locations from one day for two hens. Figure 3 shows the sizes of daily and seasonal home ranges. From these figures, you can see how the movement behavior of hens with young chicks (0–2 weeks post-hatch) is different from the behavior of hens without a brood. Young broods get up later in the morning (Fig 1) because the hen needs to brood them more in cooler temperatures. They walk away from their night roost and walk everywhere throughout the day (Fig 2) because the chicks cannot fly. In general, they are not very mobile with their short legs and need to be brooded frequently. They also are walking and forage all day long (Fig 1 and 2) because they need to consume enough insects and other food to support fast growth. So, they cover greater distances while walking without necessarily going very far (Fig 2). This results in an overall smaller home range (Fig 3). At the end of the day they walk to their night roost and go to bed early (Fig 1 and 2). In contrast, a hen without a brood

usually flies away from her night roost (Fig 2), forages intensely during the morning and evening hours while generally being less active during the day (Fig 1 and 2), and has a larger home range (Fig 3). As the chicks get older (3–5 weeks post-hatch and older) they are more mobile, so their behavior starts looking more similar to hens without a brood (Fig 1 and 3).

Besides just being interesting, information on movement can be used for conservation. For example, in Wyoming, the timing of disturbance (from human-caused actions such as drilling natural gas wells) cannot occur between December 1st and March 14th in areas designated as sage-grouse winter concentration areas. I recently participated in an analysis that measured the average date of arrival for sage-grouse in winter range, which was November 7th; so, grouse were arriving earlier than previously thought thus suggesting that the current timing stipulations need updating. The average winter range departure date corresponded well with the timing stipulation. For this analysis, we used location data from many individual GPS-equipped sage-grouse across Wyoming to identify changes in movement behavior to identify the geographic extent of seasonal ranges and the timing of migration events to determine when grouse were using winter habitat.

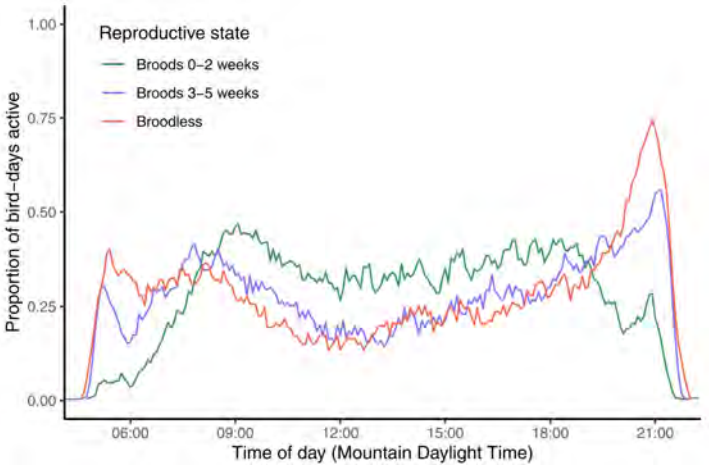
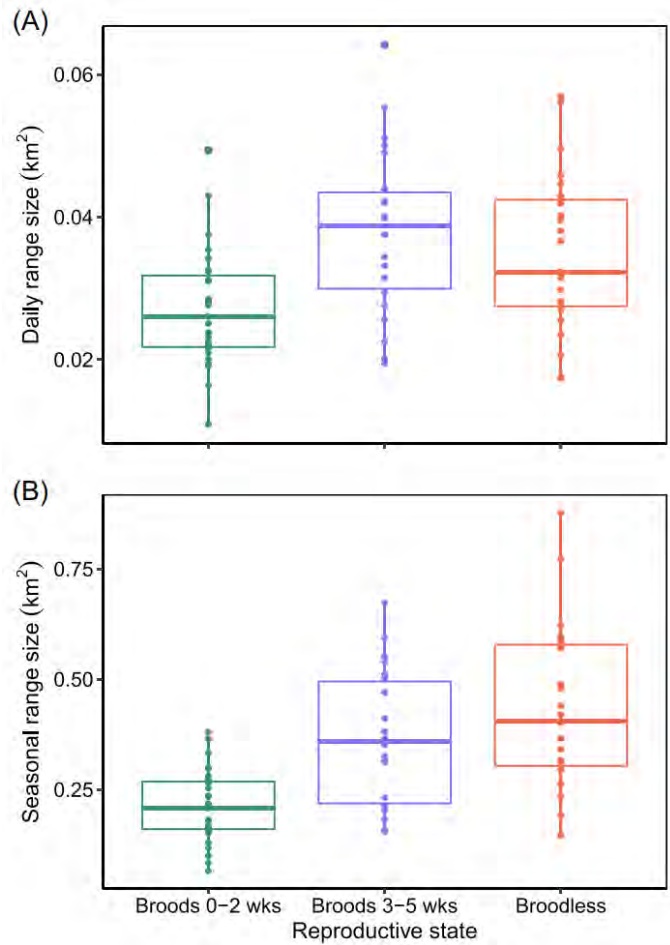


Figure 1. Pattern of greater sage-grouse activity (i.e., flying, walking, foraging) during the day for females with broods 0–2 weeks post-hatch, broods 3–5 weeks post-hatch, and broodless females.

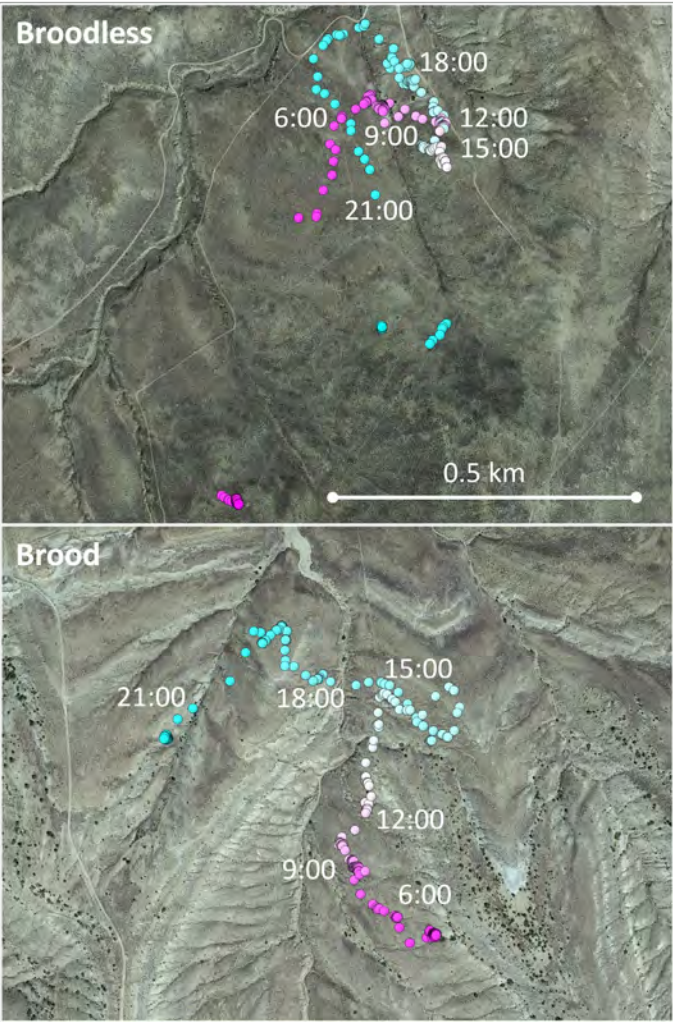
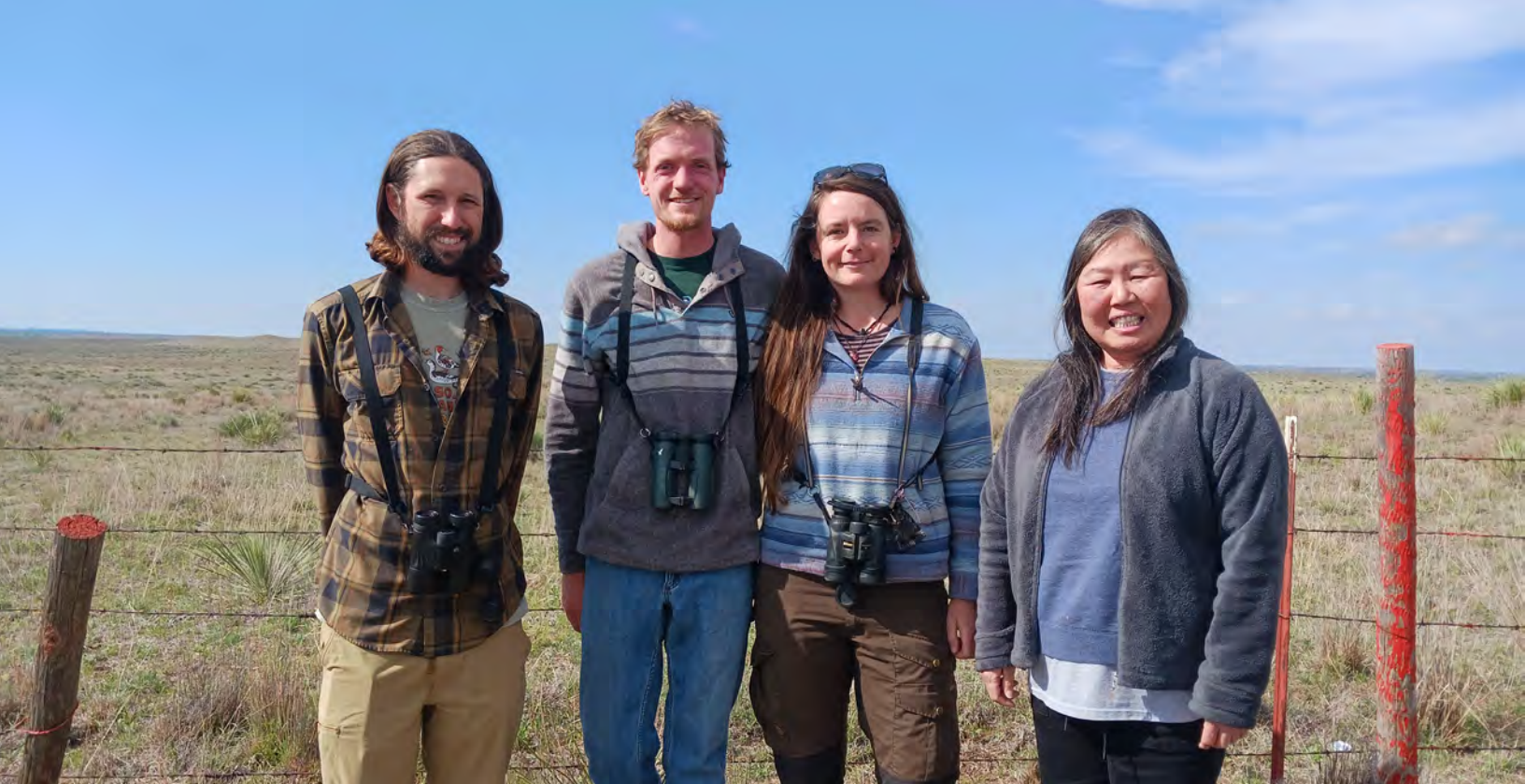


Figure 2. Broodless female and brood-rearing female (2 weeks old) movements on June 17th. Locations are every 5 minutes, starting as magenta in the morning and progressing to cyan in the evening.

Figure 3. Distribution of daily (A) and seasonal (B) range sizes for females with broods 0–2 weeks post-hatch, broods 3–5 weeks post-hatch, and broodless females. Boxes report the interquartile range (25th–75th percentile) in home range size by reproductive state while horizontal lines represent the median.





Group photo of the lesser prairie-chicken survey crew: Joshua Lefever, Vincent Weber, Rya Ruben, Fumiko Sakoda.

## 2023 Lesser Prairie-Chicken Saturation Survey

by Fumiko Sakoda

The Sutton Center returned to conduct surveys for the second season of five planned to cover the whole range of the lesser prairie-chicken in northwestern Oklahoma on behalf of Oklahoma Department of Wildlife Conservation. This year we covered the eastern half of Beaver County and a large portion of Harper County. We were four surveyors, Fumiko Sakoda, who has worked on all previous Sutton Center lesser prairie-chicken surveys, returning field technician Vincent Weber, and welcoming two new faces, Joshua Lefever and Rya Rubenthaler. We truly appreciate their hard work and dedication to complete the survey.

Along with our technicians, a dedicated volunteer, Jim Bradford, helped us by re-checking several areas where leks had been found in previous years but not during these surveys. Additionally, our own staff member, Aaron Pratt, helped us with surveying a couple of mornings when he returned from fieldwork in Montana.

Randy Soto with Oklahoma Biological Survey also joined us for a morning. Amidst a hectic work schedule he drove from Norman, OK, longing to observe displaying lesser prairie-chickens. Next morning we checked on three leks in Beaver County. Even with



cloudy skies and some breeze, he was successful in recording sounds and photo shooting of displaying birds at all three road sites.

The number of gobbling grounds and birds encountered still need to be verified by going through all the data collected. The tentative totals were 30 leks in Beaver County (including leks counted last season) and three in Harper County. The conditions have been very dry, which may be a reason why there were fewer lesser prairie-chickens this time around compared to surveys in 2015-2016. Next year we plan to survey Ellis County. We hope that some previous technicians can return and we also look forward to welcome new people to our survey team.



Digiscoped photo of an active lek in Beaver County by Joshua Lefever.



“

The Sutton Center's lesser prairie-chicken surveys are an important step in the conservation of one of Oklahoma's most imperiled birds, and it has been an eye-opening experience to spend this spring searching for them. After surveying grasslands in the far western panhandle a few years ago (without seeing any prairie-chickens) for the University of Oklahoma, I was very excited to spend this spring in the heart of lesser prairie-chicken range further east in the panhandle. Over the course of our season, the project gave us tremendous insights to the status of the specific habitat required for the prairie-chickens in this region, and the ecological and anthropogenic challenges that they are currently facing. Getting to spend so much time surveying through their native range, and being able to communicate and learn from local ranchers, state game wardens, and the Sutton Center biologists, has given me new perspectives on the management of lesser prairie-chickens, and a greater knowledge about wildlife management on the Great Plains. Not only have I learned a ton this season, the job also came through with some truly magical mornings of watching our target species displaying on leks. Hearing their bubbly hoots and squeaky calls are otherworldly, and watching multiple males run back and forth, head charging forward, only to leap up in the air and flutter back to earth, is a stunning sight that is sadly becoming only more difficult to encounter. I am deeply grateful to the Sutton Center for the work they are doing, and the opportunities they provide for wildlife technicians such as myself. I hope that the work we have done this spring will help progress the necessary efforts needed to protect lesser prairie-chickens and their remaining habitat in Oklahoma.

- Josh Lefever

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# Bartlesville's Bald Eagle Webcam Nest Successful Again!

by Daniel Harris

After the great success of this popular breeding pair in 2022, it is no surprise that there has been a lot of interest building up to this season. Viewers have been able to keep an eye on all of the drama at the nest through the lens of a webcam that was installed during the off-season in 2021. After all the wind and weather of the past year, the webcam required a tune-up and re-positioning to be ready for the eagles this breeding season. Since that service, viewers have had a near-uninterrupted view of our feathered friends' activities.

While some bald eagles will lay their eggs as early as December or early January, this pair once again waited for later in the season to lay their clutch. From the time the first egg was laid on February 22, there was at least one parent by the nest. These dutiful parents took shifts incubating and rotating the eggs over the next month. Nearing the end of March, the nest was bombarded by some torrential storms and a nearby wildfire. Despite these challenges, the chicks began to pip in the first week of April. This is right on schedule with the typical 35 day incubation cycle and gave us hope that we would witness another successful year. With weak looking frames and wet neoptile feathers at hatch, they shortly became adorable little balls of fluff. These down-covered eaglets relied on regular feedings to fuel a rapid growth; eventually replacing those natal feathers with the dark golden-brown plumage that they will need to take flight.

While activity at the nest will be sparse for the latter part of the year, viewers can start watching out for next season's nesting activity in just a few months. Thanks to generous sponsors like Duke Energy Renewables and the U.S. Fish and Wildlife Service, we are able to keep the cameras running and report on our findings. Here's hoping this fantastic pair continue to thrive and come back to roost at the same spot next year! You can check on the nest any time of the year at [suttoncenter.org](http://suttoncenter.org) or by following Sutton Center on Facebook and Instagram.



An incubating eagle looks like it is watching the watchers!



An adult eagle stands guard over its three-egg clutch.



Nestlings are fed fish while half of a recently hatched egg remains in the nest.





## It's All About Perspective, OUR FUTURE

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Did you know? Even a gift in your will of 1% of your estate can make a difference.

Creating a legacy gift is a thoughtful process that will benefit from professional advice. A financial adviser can help you determine how best to accommodate the needs and priorities of you and your loved ones, as well as approximately how much you may be able to pass on to a charity like the Sutton Center and how best to do it. For more information or a conversation, please reach out to Audra Fogle, Assistant Director, at any time via email [afogle@suttoncenter.org](mailto:afogle@suttoncenter.org) or by calling the Center at 918-336-7778.

THANK YOU FOR YOUR SUPPORT



Photo by Dan Reinking

The Sutton Center has a four-star rating with Charity Navigator and is a GuideStar Platinum participant.





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