



Smithsonian

*National Zoological Park*

*Conservation Biology Institute*



# Virginia Working Landscapes 2023 Annual Report

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## Our Mission

Virginia Working Landscapes (VWL) is a program of the Smithsonian's National Zoo and Conservation Biology Institute (NZCBI) in Front Royal, Virginia **that promotes the conservation of native biodiversity and sustainable land management through scientific research, community engagement, and education.**

## Our Approach

### Conservation Science

VWL is dedicated to advancing the science of conservation and land management by conducting innovative research on working farms. Results are used to inform best practices that promote and protect native biodiversity while supporting the goals of land managers.

### Community Engagement

Over 80% of Virginia's landscapes are held in private ownership, making landowners the primary stewards of healthy, biodiverse ecosystems. Through our landowner network and community science program, VWL strives to empower communities with tools to maximize our collective conservation impact.

### Education

VWL cultivates the next generation of conservation scientists by training and mentoring students, interns, and graduate fellows in research development and implementation, science communication, and community-based conservation.

## A Note from our Director

What an incredible year it's been! Reflecting on all that we've achieved together, I am thrilled to share our 2023 Annual Report, highlighting another big year of conservation milestones for Virginia Working Landscapes (VWL). The stories that follow would not have been possible without you—our passionate staff and steering committee, enthusiastic students, community scientists, farmers, landowners, partners, and supporters.

In 2023, our team invested some serious effort into applying for a suite of high-profile grants, which for the first time ever, resulted in VWL securing more than one million dollars in multi-year grant funding! Combined with the steadfast support of our donor community, we were able to dedicate this funding to where it was really needed - expanding the VWL team. We created three new staff positions, including a Communications and Development Assistant, a Botany Technician, and a Biodiversity Technician. These new positions will significantly elevate our outreach capacity and conservation impact.

We continue to recognize the vital role that our participating landowners and farmers play in contributing to our research. From offering property access for biodiversity surveys, to shifting grazing schedules to accommodate research, to helping refine best management practices to be as relevant and achievable as possible, we are impressed by their dedication to helping us advance our mission.

Our Virginia Grassland Bird Initiative (VGBI) continues to blossom under the tireless leadership of VWL's Justin Proctor alongside team members from our VGBI partner organizations. Together, the VGBI team worked with farmers and landowners to set aside more than 2,000 acres of prime habitat in 2023 for grassland birds to safely raise their young. Also, VGBI's new Conservation Speed-Dating Workshops are "spicing things up" in the outreach arena, bringing landowners and technical service providers together in a novel format that is really gaining momentum. Conservation successes like these are what continue to drive our team forward, demonstrating how we can achieve success by embracing the expertise of community partners and tackling complex conservation challenges together.

While we celebrate these milestones, we must also acknowledge those who got us here. In 2023, we suffered a significant loss with the passing of one of our longtime steering committee members, Jocelyn Sladen. As one of the founding landowners of VWL, Jocelyn embodied conservation in everything she did, devoting immense time, energy, and passion to ensuring a brighter future for our region's biodiversity. As such, I would like to dedicate this annual report to Jocelyn. I hope that she is looking down on us and is proud of the progress we have made with her guidance at the forefront.

On behalf of the VWL team and steering committee, thank you for continuing on this journey with us — because as you will read in the pages that follow, it's only getting better!



Amy Johnson, PhD  
Program Director, VWL



## Our 2023 Team



**Amy Johnson**  
Program Director



**Justin Proctor**  
Virginia Grassland Bird Initiative Coordinator



**Erin Shibley**  
Survey & Volunteer Coordinator



**Natalie Izlar**  
Botany Technician



**Caitlyn Dittmeier**  
Outreach Coordinator



### Research Fellows

Jordan Coscia  
Bernadette Rigley

### Interns

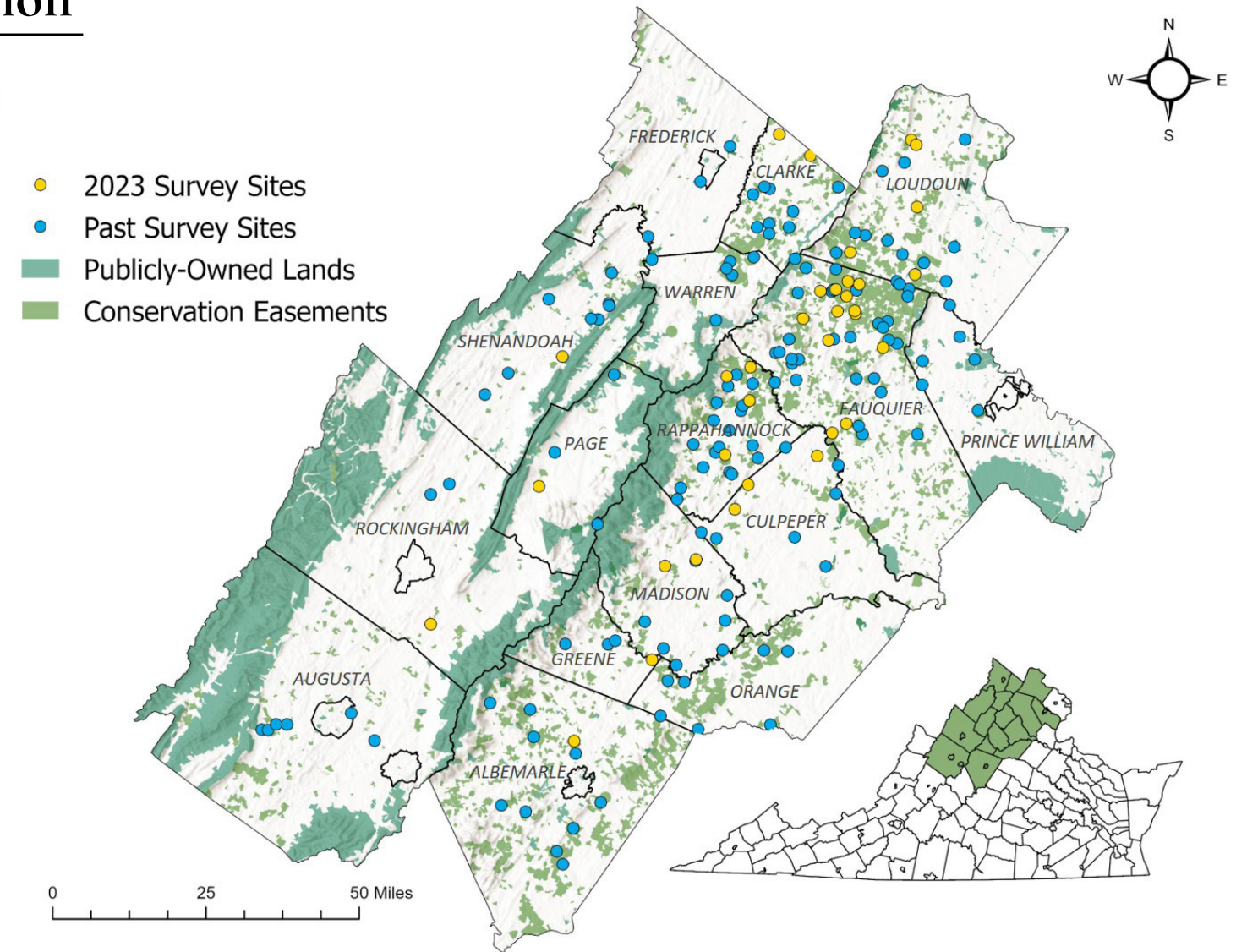
Chris Rademacher  
Nick Garnhart  
Martín Colombo  
Sophia Gilbert  
Percy Ulsamer

### Steering Committee

Beatrice Von Gontard, Chair  
George Ohrstrom II, Vice Chair  
Cary Ridder, Treasurer  
John Beardsley  
Jonathan Duffy  
John Jacquemin  
Stephanie Ridder  
Michael Sands  
Kate Wofford  
Peter Leimgruber, SCBI

## Our Survey Region

VWL collaborates with landowners who generously volunteer their properties for Grassland Biodiversity Surveys and focal research projects. Our landowner network spans across 16 counties, encompassing the Northern Shenandoah Valley, Blue Ridge, and Piedmont regions of Virginia. New sites are added each year to broaden our reach and strengthen partnerships with communities who share our commitment to research and conservation.



## 2010-2023 VWL Survey Network Acreage

**15,179** Acres Public Land

**93,894** Acres Private Land

## Property Highlight

Sue and Bob Puleo, dedicated land stewards, have greatly benefited from their partnership with Virginia Working Landscapes (VWL). Initially referred by the Clifton Institute for a biodiversity study, their property revealed a wealth of ecological treasures. “The biodiversity study was a huge help to us; we learned about things on our landscape that we had no idea about. Erin identified around 42 birds on our property, and Natalie and her crew did a plant survey, finding species we didn’t know we had,” Sue shared.



“The team’s enthusiasm is so infectious. We learned about how much biodiversity we had right here on our property.”  
- Sue Puleo

Additionally, VWL’s Conservation Speed-Dating Workshops facilitated connections with experts and technical service providers, resulting in NRCS cost-share approval to further their conservation efforts. “Virginia Working Landscapes is really responsible for us getting the cost-share money,” Sue noted. This funding supported efforts to establish native pollinator meadows and control invasive species.

Sue and Bob’s journey, supported by VWL, highlights the importance of community science and collaboration in fostering sustainable land management practices. Their story is a testament to the impactful work of Virginia Working Landscapes in furthering local conservation.



Photos by Brooke McDonough

Photo by Brooke McDonough

## Conservation Science



VWL conducts applied research that intersects conservation, agriculture, and communities. We leverage close collaborations with regional partners to integrate local knowledge and expertise into our project design and implementation. These collaborations allow us to develop science-based solutions to combat biodiversity loss, while simultaneously addressing the unique goals of farmers and landowners.

# Sowing the Seeds of Change: Cattle Farms as Pollinator Havens

**Project Overview:** Virginia Working Landscapes (VWL), in collaboration with Virginia Tech (VT) and the University of Tennessee (UT), piloted a study in 2020 to enhance cattle pastures as habitats for declining pollinators. The study explores different methods of establishing native wildflowers on active livestock pastures, with the research team quantifying impacts of grazing on pollinator communities, wildflower persistence, and livestock production. In 2023, VWL conducted its third year of surveys on six local farms that are participating in the study. In addition, VWL hosted a workshop in 2023, inviting project collaborators to Front Royal to share preliminary research results with the producer community. Workshop attendees visited one of our participating farms to demonstrate the benefits of integrating wildflowers into pastures.

**Impact:** Pollinator communities in the eastern U.S. have experienced significant population declines. In grassland ecosystems, for example, we are seeing losses up to 67%. However, through the Bee-Friendly Beef program, we now have a unique opportunity to offer pollinators critical habitat and floral resources across 37 million acres of the fescue belt in the Southeastern U.S. These types of innovative strategies are the backbone for developing regenerative agricultural practices that can simultaneously benefit wildlife conservation and farm production goals.

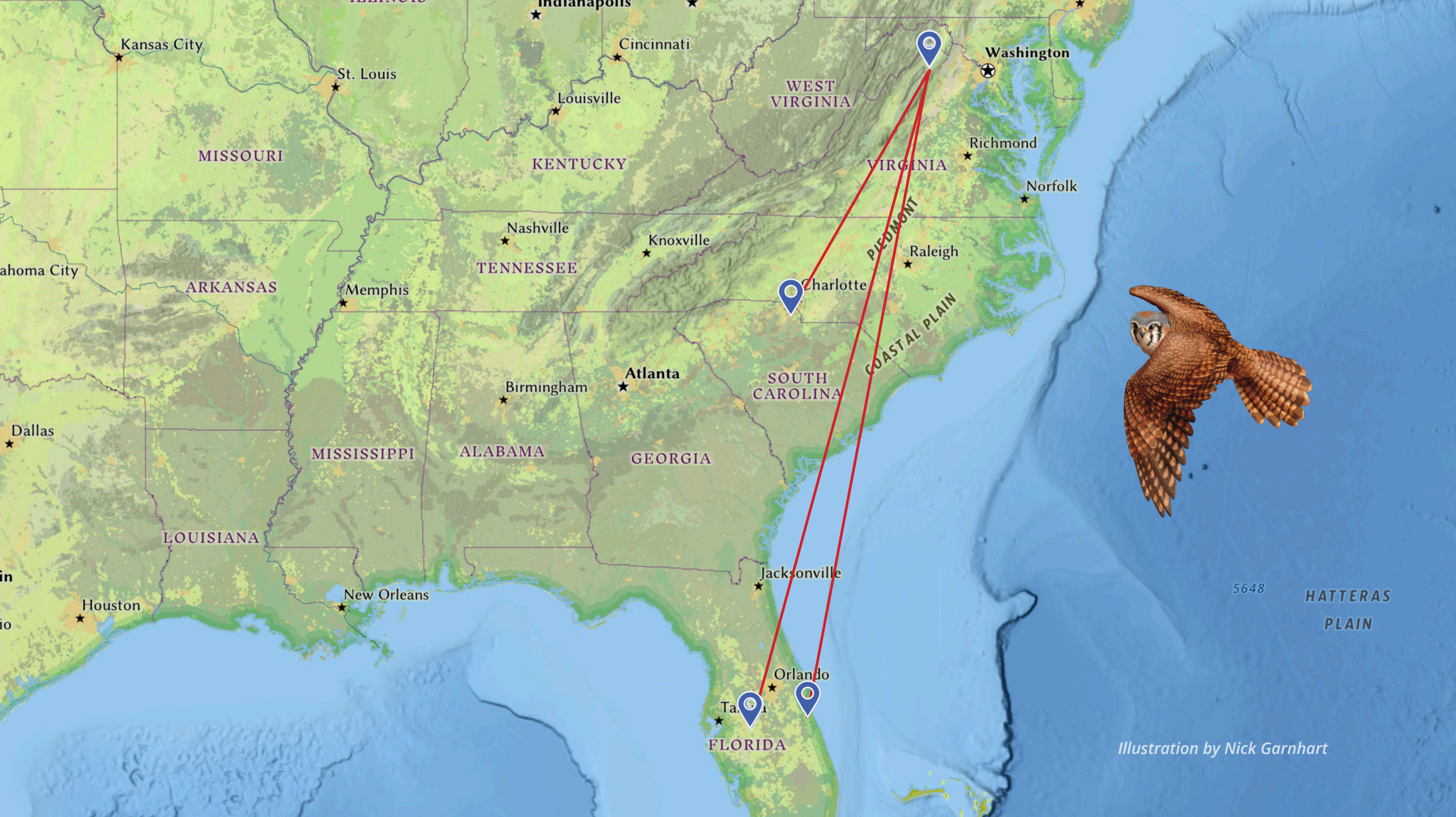
## Project Timeline

- **2020**  
Experimental trials were initiated at VT and UT sites to determine optimal methods for establishment of wildflowers in actively grazed sites.
- **2021**  
VWL established six test sites, conducted baseline vegetation surveys in the study fields at each farm, followed by field preparation to decrease cool season grass cover. A winter cover crop was planted to provide grazing forage and to control erosion within the study field.
- **2022**  
Following a second spring field preparation, the native wildflower seed mix was sown with a seed drill into the wildflower-enhanced treatments in early June 2022. The wildflower seed mix was determined based on species that are native to North America, are nontoxic to cattle and sheep, and bloom at different times of the season so that flowers will be continually available to pollinators throughout their foraging period. We continued follow-up vegetation and pollinator surveys.
- **2023**  
Follow-up vegetation surveys and pollinator surveys were conducted to compare floral resources and pollinator abundance and diversity within cattle pastures enhanced with native wildflowers vs. traditional fescue pastures.
- **Looking Ahead**  
These research findings will be combined with results from a forage analysis and an economic impact study through VT and UT to provide recommendations for bee-friendly grazing strategies.



The knowledge we gain from data collected as part of the Bee-Friendly Beef research study has broad applications across agricultural landscapes, even outside of our study region here in Virginia. The idea of supporting declining pollinator species through the introductions of regionally native plant species into traditional grazing systems can be applied on farms across the country. Working directly with our local producer community has given the research team the insight needed to assess the feasibility of this approach to pasture management on a larger and broader scale.

- Erin Shibley  
Survey & Volunteer  
Coordinator



## Technology Takes Flight: Mapping the Path of Kestrel Migration

In the summer of 2023, on a farm in Warren County, Virginia, three American Kestrel nestlings were tagged as part of Project Fledgling, a collaborative research effort that examines the post-fledging survival and movements of juvenile Eastern Meadowlarks, Bobolinks, and American Kestrels using novel tracking technology. Shortly after being banded and equipped with radio transmitters, these kestrels embarked on remarkable journeys. Two of them, to the team's amazement, were detected at different locations in Florida, each covering an incredible distance of approximately 1,300 kilometers from their nest boxes in Virginia. The third kestrel took a slightly different route, traveling to South Carolina, showcasing the diverse migratory paths these birds can take. These journeys highlight the vital role of technology, especially the Motus Wildlife Tracking System used here, in monitoring both the fine- and large-scale movements of juvenile grassland birds like American Kestrels after they leave the nest. This collaborative research effort is helping unravel the mysteries of American Kestrel dispersal from their natal habitats, providing valuable insights for conservation efforts.

Project Fledgling is a collaboration between Virginia Working Landscapes, Smithsonian-Mason School of Conservation, Smithsonian Migratory Bird Center, College of Science at George Mason University, and Smithsonian Movement of Life Initiative. It is funded by the Smithsonian Women's Committee and The BAND Foundation.

*Illustration by Nick Garnhart*



Photos by Brooke McDonough



## From Fields to Nests: Balancing Farming and Bird Conservation

**Project Overview:** Managed hayfields and pasturelands serve as crucial nesting habitats for grassland birds, a group facing significant threats in North America. However, many of these agricultural grasslands have become population sinks due to earlier and more frequent hay cuttings and overgrazing. Since 2011, VWL has studied how grassland management impacts bird communities, focusing on the relationships between conservation practices, habitat characteristics, and bird abundance. While this research initially provided important insights into bird communities using these fields, the specific influence of practices like grazing and haying on reproductive success remained unexplored. As such, VWL partnered with American Farmland Trust's (AFT) Sustainable Grazing Project to design a study that would help identify management practices that benefit both grassland bird populations and producers. The project explores two grazing treatments and two haying treatments, with reproductive success being quantified by monitoring grassland bird territories and nesting activity. Meanwhile, AFT has been collecting data on hay and forage quality to assess any loss or gains in nutritional value linked to these treatments.

**Impact:** The impact of this project has already been substantial. "Our preliminary findings have directly informed the Virginia Grassland Bird Initiative's farmer incentive program, leading to adjustments in state-level cost-share programs," says Bernadette Rigley, PhD Research Fellow and the project lead. By comparing nesting success in fields with different management practices, the research team has begun to identify local farming practices that support both producers and grassland bird recovery. "How can we support grassland bird populations while also supporting production on these lands? There's no other choice than to find that balance," Rigley emphasized, highlighting the critical role private lands play in conservation. As of 2023, data collection is complete, and the focus is now on data analysis, which is expected to yield further valuable insights.

This research is in collaboration with the American Farmland Trust and George Mason University. Funding was generously provided by the Band Foundation, Beatrice and Adie von Gontard, Kathryn and Tony Everett, the Jacquemin Family Foundation, Washington Biologist Field Club Grant, Friends of the National Zoo, Conservation Nation, and the Volgenau Foundation.







**Project Overview:** The Making of a Meadow is a collaborative study between VWL, the Clifton Institute, and the Oak Spring Garden Foundation. This research aims to elucidate the most effective methods for establishing and managing native grasslands in Virginia, which have historically harbored incredibly diverse grassland ecosystems. VWL PhD Research Fellow, Jordan Coscia, has led the vegetation surveys for her dissertation research. Coscia and her survey team have been collecting data on the response of the vegetation community post native seed planting, while partners at the Clifton Institute have been collecting data on changes in the respective soil communities. Findings from this multi-year study will help inform restoration guidelines for the establishment of native grasslands in Virginia. 2023 was the final year of data collection, and findings will be released through community engagement events and outreach efforts.

**Impact:** Native temperate grasslands stand as one of the most endangered ecosystems on the continent. Yet surprisingly little research has explored the intricate methods of restoring native plant communities in eastern grasslands. This research was initiated due to a lack of consistent protocols and knowledge specific to meadow establishment and management in eastern grasslands, as much of the existing recommendations were based on midwestern grasslands. The VWL landowner network is eager to hear the results of this research. Not only does this project fill a research gap, but it will also directly inform management techniques for landowners in Virginia who are working to restore native grasslands.

This research is in collaboration with The Clifton Institute, Oak Spring Garden Foundation, and The Restoration Ecology Lab at Virginia Tech. Funding was generously provided by the Oak Spring Garden Foundation.

## The Making of a Meadow: Restoring Grasslands & Conserving Biodiversity



## Collaborating Scientists

### Wildlife Snapshots: VWL Volunteers in Shenandoah National Park

**Project Overview:** The Shenandoah Camera Trap Survey, led by Bill McShea and Brigit Rooney with Smithsonian's Conservation Ecology Center, is a research project based in Shenandoah National Park aimed at capturing general mammal diversity, with a specific emphasis on monitoring Black Bears. The project utilizes remote cameras to collect data on species diversity, population numbers, and trends. The primary goal is to supplement existing research on a recent Sarcoptic mange outbreak affecting regional bear populations. In 2023, VWL volunteers were recruited to help deploy and maintain cameras at more than 60 locations throughout the park, providing valuable data for park officials and researchers. Excitingly, preliminary analysis of the data is showing that mange has receded in this area.

**Impact:** Mange is a skin disease stemming from an infestation of parasitic mites. It severely irritates the skin and can be contagious among mammals. Over time, a bear with mange can become so preoccupied with scratching that they lose the ability to forage and ultimately can die from starvation. Understanding the prevalence of mange within the park will be informative as to what we might expect on adjacent private lands. Rooney explains that "the more people power we get out there, the more we can survey and understand what's going on with the bears and the diversity of mammals in this region." The project highlights the importance of community science in wildlife research and the positive impact volunteers can have on conservation efforts.



"Honestly, the project would not have been possible without the VWL volunteers...they were so willing and happy to help, we were really grateful." - Brigit Rooney



## Mapping Bobcat Movements: A Study in Wildlife Habitat Connectivity

**Project Overview:** The Albemarle County Bobcat Habitat Connectivity Project, led by Virginia Tech Graduate Student, Nicole Gorman, aims to explore Bobcat (*Lynx rufus*) movement patterns, enabling researchers to map out corridors that Bobcats use to navigate working landscapes. Bobcats were chosen as a focal species due to their adaptability to various habitats, from forests to suburban areas, and can serve as an umbrella species for other wildlife that share those same landscapes. The project is now in its second year and Gorman has successfully trapped and collared 14 Bobcats, whose daily movements are now being tracked and studied. The project's collaboration with VWL's network of landowners in the region has been crucial, as the vast majority of the research is happening on private lands.

**Impact:** This project is a great example of how applied research and community engagement can work together to produce higher impact science and conservation. Understanding the movements of Bobcats leads to educating landowners on the needs of these animals and creating collaboration between neighbors to build out safe habitat corridors across larger tracts of working lands. These corridors will support Bobcat populations as well as other mammal species.

"I think that collaboration between scientists and stakeholders, landowners, and the public is really important, not just for science in general, but especially for conservation." - Nicole Gorman

# Community Engagement

Over 80% of Virginia's landscapes are held in private ownership, making landowners the primary stewards of healthy, biodiverse ecosystems. Through our landowner network and community science program, VWL strives to empower communities with tools to maximize our collective conservation impact.



Photo by Brooke McDonough

## VWL Featured on National Geographic Series!

In 2023, several members of the VWL team had the once-in-a-lifetime opportunity to be featured in a National Geographic docuseries! In National Geographic's Extraordinary Birder with Christian Cooper, life-long birder Christian Cooper took us on a journey to discover the wild, wonderful, and unpredictable world of birds. In episode 5 of this series, Cooper accompanied our team to Oxbow Farm in Front Royal, VA to track nesting grassland birds and learn more about the great work that VWL has underway. This series is available for streaming on Disney + or Hulu.



## Grassland Guardians: VGBI's Impact on Bird Conservation

**Project Overview:** The Virginia Grassland Bird Initiative (VGBI) is a collaborative effort between Smithsonian's Virginia Working Landscapes, The Piedmont Environmental Council, American Farmland Trust, and Quail Forever. VGBI aims to reverse the decline of grassland birds in the Virginia Piedmont, Blue Ridge, and Shenandoah Valley. By raising public awareness, identifying best management practices, and engaging with landowners and farmers, VGBI aims to make Virginia a national leader in grassland bird conservation.

**Impact:** VWL's Justin Proctor, coordinator of VGBI, explains the initiative's impact by stating, "What excites me most about VGBI is the tangible change that our team is making out on Virginia's landscapes, and even across state lines. We have created an extensive suite of programs and outreach that are relevant to our local farming communities and that help build a sense of shared land ethic and community around collaborative conservation goals. We are seeing thousands of acres now managed with both agricultural goals and conservation objectives in mind." The initiative's impact extends beyond habitat restoration. By drawing from partner expertise and VWL's ongoing research, VGBI is able to promote best management practices that improve conditions for grassland birds and other wildlife while also benefiting local farmers. Through workshops, field days, and one-on-one site visits, VGBI has empowered communities to build back biodiversity, fostering a sense of environmental stewardship among landowners and residents.

### VGBI 2023 Highlights

- Conducted 50+ one-on-one site visits with landowners and farmers across 16 counties
- Enrolled 18 farms across 7 counties into our incentives program, ultimately protecting nesting grassland birds across 1600+ new acres
- Hosted and/or participated in 40+ outreach events, reaching more than 2000 people
- Created 3 new grassland bird resources depicting high-impact best management practices
- Awarded \$650K+ in grants and foundation support
- Secured funding for 2 new VGBI staff positions (to be hired in 2024)

**Speed Dating for Conservation:** One exciting development in 2023 involved VGBI's creation and launch of a new style of outreach event focused on connecting landowners and farmers with local conservation practitioners and technical service providers. These Conservation Speed-Dating Workshops bring together land trust representatives, conservation NGOs, and State and Federal agencies that can introduce landowners to assistance and cost-share programs available for advancing conservation efforts on their properties. Landowners receive a large map of their property and spend 10 minutes "speed-dating" with each conservation practitioner, giving both parties an opportunity to discuss programming opportunities specific to that landowner's property and goals. The event provides individualized feedback to catalyze short- and long-term conservation action, while emphasizing the amount of free technical assistance that is readily available to help landowners conserve habitat.



## Harvesting Hope: Grassland Birds and Sustainable Agriculture



Illustration by Nick Garnhart

Building on insights from VWL's 10+ years of grassland bird research, the Virginia Grassland Bird Initiative (VGBI) has worked alongside state NRCS representatives to incorporate those findings into federal cost-share programs available to landowners and farmers across the state of Virginia. These programs have now been tailored to better conserve grassland bird populations and maintain existing regenerative agricultural practices. The two programs targeted include delayed spring hay harvest (EQIP 511), which provides funding for farmers to delay their first cutting of hay, and rotational grazing management (EQIP 528), which has been tweaked to increase pasture rest time. Both programs prioritize protection of grassland birds during their vulnerable nesting season by reducing disturbance on working grasslands during April, May, and June. Justin Proctor, Coordinator of VGBI, emphasized the significance of these programs, stating, "these revised NRCS cost-share programs are a great example of how we combine wildlife conservation and regenerative agriculture into a cohesive set of management strategies that will build healthier, more productive farms."

# Community Science

At the heart of VWL's work is our remarkable network of community scientists. These passionate volunteers play a critical role in collecting data for our annual Grassland Biodiversity Surveys, which have been ongoing since 2010. Their contributions enable VWL to grasp the intricacies influencing local grassland biodiversity and help shape the development of best management practices. Furthermore, their observations shared with landowners, serve to highlight the incredible species diversity within their surroundings, often shifting perspectives towards more conservation-minded land management. VWL is deeply appreciative of our dedicated volunteers; their enthusiasm is contagious, and their efforts are instrumental in driving our mission forward.

## 2023 Surveys by the Numbers

- 36** Volunteers
- 1,502** Hours Contributed
- 103** Bird Species Observed
- 357** Plant Species Observed



Photo by Brooke McDonough



# Continuing Education

Our community scientists are curious and seek out opportunities to be engaged with local research and conservation projects year-round. Recognizing this, the VWL team aims to support their learning journey beyond the seasonal field work and biodiversity data collection. In 2023, we hosted our second "Continuing Education Seminar," an annual training session initiated in 2022 in memory of the late VWL volunteer, Sally Cunningham. This highly anticipated annual event featured Charlotte Lorick from the Oak Spring Garden Foundation, who conducted a Grass ID Workshop. Surrounded by an eager audience of plant enthusiasts, Lorick adeptly guided participants through grass identification terminology, facilitated navigation of a dichotomous key, and highlighted distinctive features of this region's most common grass species. Through enriching experiences like these, VWL strives to empower our community scientists with ongoing educational opportunities, fostering their continuous growth and equipping them with diverse tools to further their contributions to conservation.

## Community Scientist Highlights

### George Gardner: New Community Scientist

George Gardner's journey with VWL epitomizes the profound impact of community science on conservation efforts. From his initial introduction to VWL, Gardner has wholeheartedly embraced the organization's mission, participating in habitat walks, field days, and nearly every volunteer event.

Gardner's focus has primarily been on VWL's partner project, the Virginia Grassland Bird Initiative. Here, he has taken a deep dive into learning more about farmland bird species that rely on cavities for nesting. He is now well-versed in nest box installation, monitoring techniques, and ongoing research efforts. His dedication to this project is evident, as he prepares to transition into an official volunteer community scientist role in 2024, aiming to provide even greater support to VWL's research endeavors.

But for Gardner, volunteering with VWL goes beyond mere participation—it's a source of personal fulfillment and a deep-rooted connection to nature. He finds solace and rejuvenation in spending time immersed in natural environments, describing them as soothing to his soul. His life has been enriched by these experiences, and VWL's programs offer him a platform to further deepen his understanding of natural systems. Gardner's story is a testament to the power of community science, illustrating how individuals like him can make a tangible difference in conservation efforts while finding personal fulfillment and connection along the way.



### Dana Squire: Bringing Conservation Home

Dana Squire's involvement with VWL began after completing Virginia's Master Naturalist Program in 2007, leading her to volunteer at Smithsonian's National Zoo and Conservation Biology Institute. When VWL was founded in 2010, Squire was among the first volunteers to join the team. She has been an enthusiastic and invaluable community scientist ever since.

"I just really liked Virginia Working Landscapes. The plant surveys were really challenging, which was fun," Squire recalls, highlighting her passion for learning about the environment and wildlife. This passion extended beyond her volunteer work, inspiring her to implement conservation practices on her own property. Inspired by what she learned with VWL, Squire pursued and received a Natural Resources Conservation Service (NRCS) cost-share program that would offer her technical assistance and funding to convert 5 acres of her land into a diverse meadow habitat, reflecting her commitment to sustainable land use and biodiversity conservation.

Squire now serves as a mentor to other volunteers and landowners. She uses her meadow as an educational tool, where she hosts tours to inspire others to embrace conservation practices in their own spaces. "I try to emphasize that it really doesn't even have to be as big as mine. There's really no area that's too small."

Through her enduring commitment to VWL and her personal conservation efforts, Squire exemplifies the transformative impact of community-driven conservation. Her story highlights the power of individual actions in fostering positive environmental change, illustrating the profound impact of community science on both individuals and landscapes.



# Education

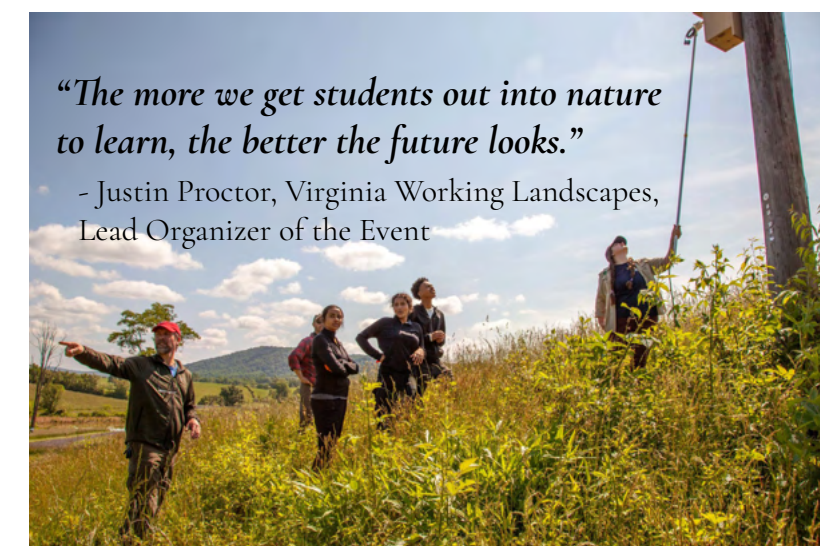
Photo by Amy Johnson

VWL cultivates the next generation of conservation professionals by training and mentoring students, interns, and graduate fellows in conservation research development and implementation, science communication, and community-based conservation.

## When a Farm Becomes a Classroom: Cultivating Conservation Leaders

At VWL, we know that engaging communities in conservation is key to improving the health and resiliency of our local landscapes. More specifically, finding new ways to involve youth in conservation and imbue them with a greater sense of land stewardship is how we ensure positive, long-lasting change. For students living in urban and suburban areas, however, stepping onto the amazing landscapes we work on is not always feasible. To bridge this gap, VWL organized a high school field day at Eldon Farms in Rappahannock County, VA, in partnership with the Smithsonian's Earth Optimism Youth Action Leadership Program, Howard EcoWorks, The Piedmont Environmental Council, Smithsonian's Turtle Conservation Ecology Lab, as well as farmers and naturalists from the local area.

Photos by Sophia Chapin for PEC



*"The more we get students out into nature to learn, the better the future looks."*

- Justin Proctor, Virginia Working Landscapes, Lead Organizer of the Event

## Graduate Research Fellows



### Bernadette Rigley: *PhD Student, George Mason University*

Bernadette Rigley's journey with VWL is a testament to her passion for applied ecology and her commitment to conservation. Starting as an intern, Rigley transitioned from a career in consulting and field biology, seeking a path more aligned with her values. "I knew I wanted to go to grad school and make a meaningful impact," she shares. During her internship she helped with the pilot season of VWL's regenerative grazing study, a project she continued to develop as a PhD student. "Working with VWL allows me to be part of research that's truly impactful and enriching," Rigley explains.

Rigley's passion extends beyond research; she finds great joy in mentoring interns each summer. "I love mentoring. Seeing the excitement and curiosity in our interns is incredibly fulfilling," she says. Rigley's work with landowners has also been a highlight, as she enjoys sharing discoveries and fostering a sense of community around conservation efforts. "Witnessing the joy in landowners when they see the results of our work in their own backyards is really special," she adds. Rigley's journey reflects her dedication to both scientific research and nurturing the next generation of conservationists.

**"To actually be a part of research that can be meaningful and be applied to the landscape is incredibly fulfilling and rewarding."** - Bernadette Rigley



### Jordan Coscia: *PhD Student, Virginia Tech*

Jordan Coscia's path to becoming a restoration ecologist was unexpected. Graduating college in 2019, she found herself working in a frog lab, unsure of her next steps. She ended up interning for VWL, where she would find her passion and her path. Coscia initially surveyed fields for a restoration project, expecting to pass the baton to a grad student. However, fate intervened, and she was offered the opportunity to lead the project and become that grad student herself.

What drew Coscia to VWL was the community-driven motivation behind the research. She finds it motivating to work on PhD research with a community eager to hear the results. Coscia's work at VWL focuses on establishing and maintaining meadows in landscapes once used as cattle pastures. She compares various methods, including organic approaches and the use of herbicides, to determine their cost-effectiveness and restoration effectiveness. Through her work, Coscia has learned the importance of adaptability and patience in ecological restoration. "Even if you're following recommendations, you have to be ready for the results to be... different," she emphasizes. "You have to adapt your plan to what shows up."

Coscia's journey from accidental restoration ecologist to passionate researcher highlights the value of community-driven research and the impact of VWL's work in the field of ecological restoration. As Jordan continues her work with VWL, she looks forward to sharing her findings and contributing to the broader conservation community.





## Growing with VWL: From Intern to Staff

A key tenant of VWL is training the next generation of scientists and conservationists. The VWL Internship program is a fantastic tool for budding researchers to get hands-on field experience, connect with mentors, and develop skillsets that will set them up for success in their careers. In 2022, VWL brought on Natalie Izlar as a seasonal Plant Intern to support our grassland plant biodiversity research. Izlar’s passion and enthusiasm were contagious, and in 2023, she was hired as a full-time Botany Technician. Izlar’s internship experience was characterized by hands-on involvement in various projects, including assisting key team members and contributing to experiments like the Making of a Meadow project. As Izlar recalls, “It was a really fun internship because I got to bounce around a lot and learn a lot of new things and meet a lot of really great people.”

Reflecting on the transition to staff, Izlar says “I felt like I could take on more responsibility and I could put more energy toward projects that interested me in my career goals.” Her journey highlights VWL’s commitment to nurturing talent and fostering a culture of continuous learning, where interns like Izlar are given the opportunity, mentorship, and resources to become long-term, effective contributors to the field of biodiversity conservation. “Since I started at VWL in an entry position, I feel like I am always continuing to learn, and now I have the capacity to build that knowledge more than I did as an intern.” As she envisions her future within VWL, she remains committed to lifelong learning and enhancing her expertise as a botanist while sharing her enthusiasm for plants with those around her.

VWL staff positions are sustained solely through grants and donations. Izlar’s transition from intern to staff would not have been possible without the invaluable support of the Raines Family Foundation and the Wrinkle in Time Foundation.

## 2024 Survey Properties

Black Dog Ridge  
Blackrock Farm  
Blake Property  
Blakely Grove  
Brooke Hill Farm  
Campbell Property  
Chancellors Rock  
Clifton Farm LLC  
Crusher Run Farm  
Eichorn Property  
Elmwood Farm  
Faire Meddow  
Frogtown Farm  
Glendale Farm  
Glenmore/Oakdale Farm  
Harlequin Farm  
Henshaw Property  
Hidden Creek Farm  
Kinloch Farm  
Lakota Ranch

Little Milan  
Maclean and MacNelly Properties  
Narrator Farm  
Oak Grove Farm  
Oak Spring Garden Foundation  
Oakham Farm  
Over Jordan Farm  
Panorama Farms  
Pickett Mountain Farm  
Raines Property  
Rapidan River Farm  
Reese Property  
River’s Bend Ranch  
Rosenberger Property  
Smith Property  
The Clifton Institute  
Upland Farm  
White Property  
Zinnia Ridge Farm



## 2023 Acknowledgements

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 Center for Species Survival, NZCBI  
 Conservation Ecology Center, NZCBI  
 George Mason University  
 Migratory Connectivity Project  
 Movement of Life Initiative, NZCBI  
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University of Maryland  
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 University of Virginia  
 Virginia Department of Wildlife Resources  
 Virginia Master Naturalists  
 Virginia Native Plant Society  
 Virginia Tech

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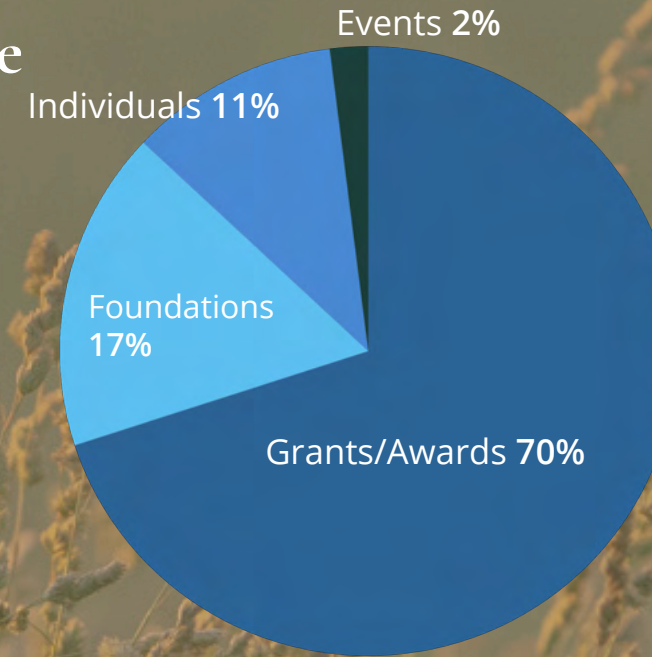
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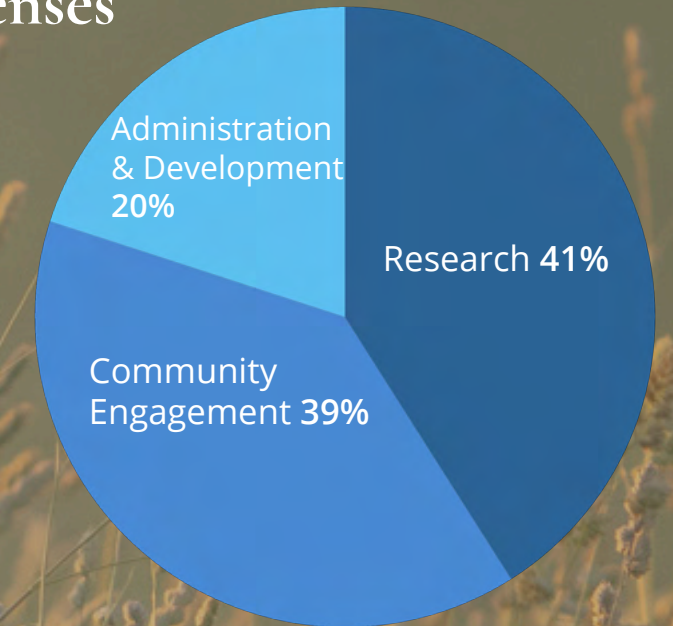
## 2023 Financials

### 2023 Operating Budget: \$517,999

#### Income



#### Expenses



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