

UNIVERSITY OF WYOMING BIODIVERSITY INSTITUTE ANNUAL REPORT 2023



UNIVERSITY
OF WYOMING

Biodiversity Institute

MISSION:

The Biodiversity Institute fosters the understanding, appreciation and conservation of biological diversity through innovative research, education, and outreach, and by engaging a broad audience in the scientific process.

The Institute works with scientists, resource managers, educators, and the public to further the understanding and conservation of biodiversity. We seek to provide a unique service to Wyoming, our nation and the world by facilitating collaborative research projects, synthesizing and disseminating research, distributing grants, and providing educational, outreach, and community science programs for students and the public.

FOLLOW US:

-  Facebook: @TheBiodiversityInstitute
-  Instagram: @BiodiversityInstitute
-  Twitter: @WyoBio
-  Website: www.wyobiodiversity.org

DONATIONS:

Donations accepted at www.wyobiodiversity.org

ON THE COVER:

Tana Verzuh (right of the bison, Ph.D. candidate in PiEE) and others take vital information from a bison before releasing it as a part of Banff National Park's bison reintroduction program. Photo by Karsten Heuer.



Pictured: Senior Project Coordinator Mason Lee leads a group of families in a Bat Walk in Sheridan in June 2023. Mason holds up equipment to hear bat calls. Photo courtesy of Sheridan Press.



BI WELCOMES NEW ASSOCIATE DIRECTOR

THE BIODIVERSITY INSTITUTE TEAM



Brent Ewers

Director



Mason Lee

Senior Project Coordinator



Brett Addis

Associate Director



Erendira Abbey Morales Eggener

Communications & Marketing Specialist



Dr. Brett Addis became the new Associate Director of the Biodiversity Institute (BI) following Dr. Dorothy Tuthill’s retirement in June 2023. Brett completed her master’s degree and Ph.D. at the University of Montana, studying population genetics of boreal toads and dispersal in spring salamanders. She moved to Laramie in January 2021 for a postdoctoral research position at the University of Wyoming, where she worked to analyze amphibian population trends using data from the BI’s Rocky Mountain Amphibian Project.

“I am thrilled to have the opportunity to work at the BI, to help carry on its legacy of impactful science communication, research, outreach, and community engagement.”

Brett Addis

Brett is also excited to advance the mission of the BI in new ways, including developing programs to increase the quantitative literacy of the public. “I want folks to realize that data models aren’t scary, but instead incredibly useful – and necessary – for understanding relationships in science.” Brett hopes that increased quantitative literacy will empower people to speak out on local conservation and management policies. Brett will also serve as an assistant lecturer in the Haub School of Environment and Natural Resources at UW. She is also looking forward to co-instructing the upcoming spring 2024 session of the Wyoming Naturalist Program!



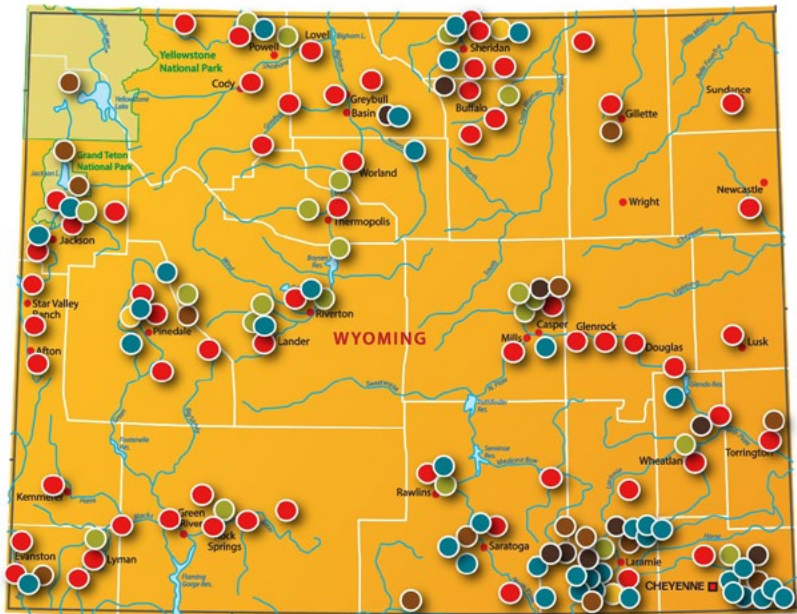
ONLINE GIFT SHOP

Visit our online store for books, field guides, original stickers, coloring books, plant flashcards, and more - each purchase supports Wyoming biodiversity research and outreach.

 www.wyobiodiversity.org

BIODIVERSITY INSTITUTE CONNECTS WITH WYOMING COMMUNITIES

In 2023, the Biodiversity Institute has continued to expand its footprint, reaching beyond the borders of Wyoming and making meaningful connections with communities across the U.S. and worldwide. BI-funded research, community science, and educational outreach took place throughout Wyoming, with many BI-funded projects extending beyond state lines, including the Lake Clark region of Alaska, Mpala Research Center in Kenya, and the tropical rainforests of Panama. Through these endeavors, we're not just exploring the wonders of the natural world; we're building a diverse and interconnected network of individuals dedicated to conserving and appreciating Wyoming and the world's biodiversity.



- Community Science
- K-12 Education
- Wyoming Naturalist Program
- Educational Outreach
- BI-Funded Research
- Biodiversity Institute Friends



2023 Wyoming BioBlitz participants during a bird walk. Photo by Evan Barrientos.

2023 YEAR IN REVIEW

- 7** Graduate student grants awarded
- 41** Public events hosted
- 14** Wyoming communities visited
- 89** Project and agency partners
- 26** New Wyoming Naturalists trained
- 800** New social media followers
- 3,000+** People engaged at in-person events

At the Biodiversity Institute, we track our impact and assess our programs to ensure we're fulfilling our mission. All community science projects and outreach events are funded by passionate donors like you.

Visit our website to donate.

www.wyobiodiversity.org



WYOMING NATURALIST PROGRAM

Since the launch of the Wyoming Naturalist Program (WNP) in 2021, 61 naturalists across 15 Wyoming counties have graduated from the program. WNP, coordinated by a committee of state agencies and non-profits that includes the Biodiversity Institute, Audubon Rockies, Wyoming State Parks, Wyoming Game and Fish Department, and UW Extension, provides education and training to participants in biodiversity, ecology, conservation, management, and interpretation so that naturalists can become leaders protecting our natural resources in the special place where we live. Collectively, the naturalists have volunteered over 2,000 hours to conservation education and service projects. Learn more about the Wyoming Naturalist Program at <https://bit.ly/WyoNP>



Wyoming Naturalists tag and remove invasive Russian Olive trees along the North Platte River.

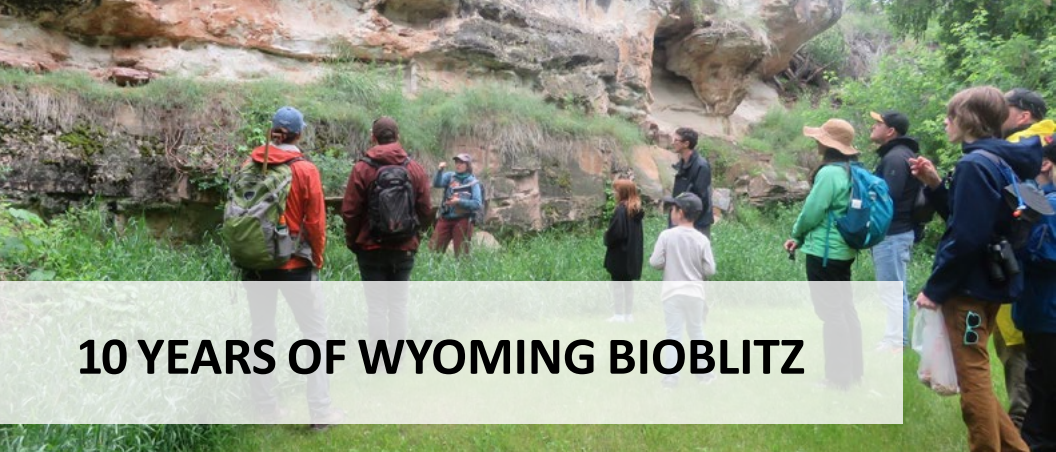
MAKING BIODIVERSITY RESEARCH RESULTS MORE ACCESSIBLE

In a significant stride toward inclusivity, we organized our inaugural Spanish language Science Cafe in Jackson, WY. This event marked the second instance where we've conducted outreach entirely in Spanish. The Science Cafe served as an informal opportunity for the local community to delve into the research of three University of Wyoming graduate students, from using DNA for fish conservation to bird tagging in Wyoming. Our efforts are resonating, with teachers and K-12 students in Jackson expressing they were inspired by the diverse conservation career possibilities.

We look forward to hosting another Science Cafe in Laramie at the start of 2024. If you're interested in bringing a Spanish outreach event to your community, email us at biodiversity@uwyo.edu. Together, we aim to create a more inclusive and accessible platform for biodiversity science engagement and learning.



UW graduate Reina Galvan speaks at the Jackson Science Cafe about UW's new initiative WYOBIRD.



10 YEARS OF WYOMING BIOBLITZ

Nearly 130 community members and experts gathered in June at the Medicine Lodge State Archaeological Site in Hyattville, WY, for the largest in-person Wyoming BioBlitz ever! Together, we inventoried 145 plant species, 57 bird species, and more - during the day and at night with black light! We also came together for workshops, talks, bird mist netting, and a pollinator garden service project. The Virtual BioBlitz also was larger than ever, with 282 observers and 471 identifiers documenting nearly 4,000 observations all over Wyoming in July!

10 YEARS OF BIOBLITZ

We have been partnering with Audubon Rockies and other groups to provide BioBlitzes since 2014; the Virtual BioBlitz began in 2020.

2014: Red Canyon Ranch, Lander

2015: Heart Mountain Ranch Preserve, Cody

2016: Belvoir Ranch, Cheyenne

2017: Casper Mountain, Casper

2018: Tensleep Preserve, Ten Sleep

2019: Bear River State Park, Evanston

2020: First Virtual BioBlitz

2021: Brinton Museum, Big Horn

and Virtual BioBlitz

2022: Guernsey State Park, Guernsey

and Virtual BioBlitz

2023: Medicine Lodge State Archaeological Site, Hyattville

and Virtual BioBlitz

SAVE THE DATES:

June 2024: Wind River Reservation

TBA 2024: Virtual BioBlitz,
everywhere in Wyoming



BUFFALO TALES SUCCESS

Over a hundred community members joined us for “Buffalo Tales: A Biography of This Iconic Ungulate,” a free event celebrating the history of the buffalo and its significance to Native American communities. Wyoming PBS showed a preview of Ken Burns’ new two-part documentary “The American Buffalo” and “Homecoming,” a documentary that follows Jason Baldes and the Wind River Tribal Buffalo Initiative’s efforts to restore buffalo to tribal lands. The event also featured Indian tacos, student exhibits related to bison restoration, and a Q&A with Jason Baldes, a member of the Eastern Shoshone tribe and InterTribal Buffalo Council.

Both documentaries are available for free public viewing at Wyoming PBS’ website. Learn more about buffalo rematriation at www.windriverbuffalo.org.



Pictured above: Jason Baldes and Wyoming PBS CEO Joanna Kail during the Q&A. Right: Attendees mingle and eat buffalo meat Indian tacos.

DIRECTOR'S LETTER

January 8, 2024

Dear Friends of Biodiversity,

As Director of the Biodiversity Institute (BI), it is my privilege to present the highlights of our work in the last year. Our vision is to be a world class resource for biodiversity research, education, and outreach for Wyoming, the Rocky Mountain region, and around the world. We have been fulfilling our vision through a wide range of activities such as the Wyoming Bioblitz, Wyoming Naturalist Program trainings, K-12 curriculum development and classroom visits, outdoor walks and hikes centered on biodiversity, animal conservation ambassador visits, art shows, community science programs, and support of student biodiversity research and graduate student Science Cafés. These activities reached over 3,000 people in person, and we grew our online BI friends to over 4,000 people.

The BI continues to support student training in both the science that supports biodiversity conservation and the communication of conservation science to the public. We know that this work is essential to our mission because these students are our future conservation professionals in state and federal government, private industry, non-profits and educational and research positions.

The BI said goodbye to founding Associate Director Dr. Dorothy Tuthill, who was essential to the success of the first decade of the BI. New Associate Director Dr. Brett Addis brings a passion for conservation of biodiversity through quantitative modeling of populations. Brett will be trying out new approaches to help BI

friends and the public understand the value of models for conservation biology, which is crucial for public advocacy of hunting and fishing quotas and other aspects of biodiversity conservation.

All of this work to improve the conservation of biodiversity would not be possible without the support of our BI friends, donors, and our many partners. We sincerely thank all of you who participated in our programs or gave to the BI in 2023. Together, we will continue to push biodiversity conservation forward.



Brett Ewers

UW Biodiversity Institute Director



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**OUR VISION IS TO BE A
WORLD CLASS RESOURCE
FOR BIODIVERSITY
RESEARCH, EDUCATION,
AND OUTREACH FOR
WYOMING, THE ROCKY
MOUNTAIN REGION, AND
AROUND THE WORLD.**

”

FRIENDS OF BIODIVERSITY

RECENT FUNDRAISING SUCCESS

Generous donors make it possible for us to maintain and grow our programs. We cannot say it enough - Thank you! Below are the donors from December 15, 2022 through December 13, 2023.

MAJOR GIFTS

Michael and Edith Allen
Richard and Ann Boelter
Bridget Hardy
Patrick and Nora Ivers
Donald and Judy Legerski
Charles Piersall Chapter of the Izaak Walton League of America

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Christopher Beltz	Brent & Samantha Ewers
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and several anonymous donors



OPPORTUNITIES FOR PRIVATE SUPPORT

RECENT FUNDRAISING SUCCESS

In October, BI supporters from all over the country contributed over \$47,000 on UW’s Giving Day. Thanks to over 75 generous Friends of Biodiversity, we set a personal record for the number of donations garnered in a single day.

MAJOR GIVING

Major gifts secure a strategic role for excellence in the advancement of biodiversity research, along with naming rights. Donors receive exclusive invitations and contribute to our strategic vision.

DONATIONS

Gifts, of any size, improve our ability to solve grand societal challenges of how biodiversity is generated, maintained, restored, and its impact on ecosystem services and human well-being.

To learn more about donor opportunities, please email beewers@uwyo.edu. To make a gift, please visit our website at www.wyobiodiversity.org

SUPPORT OUR CORE PRIORITY AREAS:

COMMUNITY SCIENCE, EDUCATION & PUBLICATION:

- Wyoming BioBlitz
- K-12 Programs and Tours
- Moose Day
- Rocky Mountain Amphibian Project
- Art + Biodiversity Exhibitions
- Wind River Reservation Outreach
- Stewarding Wyoming’s Landscape through Hunting and Fishing
- Laramie Salamander Migration Initiative
- Science Cafes and more

PUBLICATIONS:

Publication grants provide funds to translate research into books, field guides, and other printed material that communicate the value of biodiversity and its positive societal impacts.

GRADUATE STUDENT RESEARCH ENHANCEMENT GRANT:

Competitive grants awarded annually to multiple UW graduate students who demonstrate excellence in student-driven biodiversity research and communicate their research to diverse audiences. Since 2012, we’ve awarded 61 grants for innovative communication of biodiversity science to the public.

EARLY CAREER RESEARCH:

This post-doctoral scholar and early career researcher program accelerates biodiversity discoveries, elevates the national and international reputation of UW, and contributes critical insights to solving grand challenges in Wyoming and beyond.

UW STUDENT SPOTLIGHTS



Meet UW Ph.D. student and 2022 BI grant recipient, Annabella Helman, who is exploring human-carnivore conflict in Laikipia, Kenya. Annabella aims to build the capacity of local long-term conservation efforts and empower local young women by supporting and training three interns from Daraja Academy, a STEM magnet school for academically gifted girls with no means to continue their education. The grant was used to cover transportation and housing costs, and camera trap equipment that Annabella will donate to the school after completing data collection so students can continue wildlife monitoring. During her first field season, Annabella implemented three camera trap grids to estimate zebra density at nutrient hotspots. When zebras congregate at these hotspots, they attract lions, causing an increase in predation on nearby hartebeest antelope. Annabella hopes to understand if nutrient hotspots can instead be used to distract lions from hunting hartebeest.

"This grant is the reason I could complete my first field season and for that I am incredibly grateful," Annabella said.



Pictured: Annabella Helman, recipient of a 2022 Graduate Student Research Enhancement Grant and a Wyoming Ecosystems K-12 Education Grant.



In 2022, the BI helped send 12 UW undergraduate students to a month-long field course at Mpala Research Center in Kenya. Led by UW Professor Jake Goheen, the students gained experience with hands-on field techniques, learned from local conservation experts, explored contemporary conservation issues, and completed research projects. Less than a year later, in October '23, three students and UW alum Jesse Alston published their findings that songbirds preferentially avoid nesting in trees with highly aggressive ants.



Samantha Poratti, a UW Masters student and 2023 BI grant recipient, is investigating the California Floater and Western Pearlshell, two species of freshwater mussels that co-exist in the Bear River drainage of Wyoming and are Species of Greatest Conservation Need. Both are essential for the continuation of healthy river basins because they filter water, are a rich food source for wildlife, recycle nutrients, and provide habitat and food for aquatic invertebrates. Currently, little information is known regarding the California Floater, and only a few live juveniles have been found in the last decade. Samantha hopes to provide critical information on the distribution, abundance, and reproduction of these mussels to inform management decisions.

To learn more about student projects and how to support, visit



www.wyobiodiversity.org



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