

# WILD NATURE INSTITUTE

## 2023 ANNUAL REPORT



# FROM THE FOUNDERS

In 2023, the Wild Nature Institute continued our **Science, Education, and Advocacy** for wildlife in savannas of East Africa, a biologically rich region threatened by human activities.

We completed another year of the **world's largest study of giraffes** using non-invasive photographic identification and DNA sampling. Together with our research partners around the world we published 4 new scientific papers about giraffes, and shared our results with other scientists, students, government decision-makers, and the media.

Our **Celebrating Africa's Giants education program** reached ever more communities in Tanzania. Children learned about wildlife, ecology, and conservation in their classrooms; celebrated World Giraffe Week and Elephant Fun Day; nurtured and planted trees; and visited their local national parks for the first time.

**Read on to learn about our accomplishments in 2023.** We could not have met our goals without the support of our donors and partners. We are deeply grateful.

Dr. Derek E. Lee and Dr. Monica L. Bond  
Founders and Principal Scientists



# THE WILD NATURE INSTITUTE IS:



Veila Makundi, *Anne Innis Dagg Education Coordinator*  
Dr. George Lohay, *Research Scientist*  
James Madeli, *Giraffe Research Coordinator*  
Dr. Derek Lee, *Principal Scientist*  
Dr. Monica Bond, *Principal Scientist*



Jackline Mlacha  
*Education Assistant*



Emmanuel Kimaro,  
*Giraffe Research Driver*



Photo by Sonja Metzger

# MASAI GIRAFFE CONSERVATION SCIENCE

**Our Masai giraffe conservation science seeks to understand where giraffes are doing well and where they are not, and why, and to protect and connect the places most important for giraffes.**

Wild Nature Institute is conducting the world's largest individual-based study of giraffes. We use photographs of their unique spot patterns to track thousands of giraffes over their lifetimes to quantify their births, deaths, and movements. We also collect DNA for a deeper understanding of population gene flow and structure, and the evolution of their traits.



# WILD NATURE INSTITUTE'S MASAI GIRAFFE CONSERVATION SCIENCE 2011-2023

- 112 giraffe surveys completed
- 84,883 giraffe identification pictures taken
- 6,328 giraffes individually identified
- 32 peer-reviewed scientific papers published

# **IN 2023, WE PUBLISHED FOUR NEW SCIENTIFIC RESEARCH PAPERS ABOUT GIRAFFES:**

Lohay GG, DE Lee, L Wu-Cavener, DL Pearce, X Hou, ML Bond, & DR Cavener. 2023. Genetic evidence of population subdivision among Masai giraffes separated by the Gregory Rift Valley in Tanzania. *Ecology and Evolution* DOI: [10.1002/ece3.10160](https://doi.org/10.1002/ece3.10160)

Bond ML, A Ozgul, & DE Lee. 2023. Effect of local climate anomalies on giraffe survival. *Biodiversity and Conservation* 32:3179–3197. DOI: [10.1007/s10531-023-02645-4](https://doi.org/10.1007/s10531-023-02645-4)

Lee DE, Lohay GC, Madeli J, Cavener DR, Bond ML. 2023. Masai giraffe population change over 40 years in Arusha National Park. *African Journal of Ecology* 61:345-353. DOI: [10.1111/aje.13115](https://doi.org/10.1111/aje.13115)

Bond ML, DE Lee, & M Paniw. 2023. Extinction risks and mitigation for a megaherbivore, the giraffe, in a human-influenced landscape under climate change. *Global Change Biology* DOI: [10.1111/gcb.16970](https://doi.org/10.1111/gcb.16970).

**Our results inform conservation and land management and help ensure a future for giraffes.**



## **OUR RESEARCH FOUND:**

- There are significant genetic differences between Masai giraffes east and west of the Great Rift Valley in Tanzania, so they should be considered genetically distinct populations for management and conservation.
- Heavy rainfall is associated with higher mortality of giraffes, possibly due to the spread of diseases and parasites from extreme weather events.
- Giraffe numbers in Arusha National Park have declined by about 50% over the past 40 years, and conservation action is needed to protect this population.
- The best way to prevent local extinctions of giraffes is to provide them with sufficient space and protect them from being killed by poachers.

**Our partners in research are University of Zurich, Penn State University, and Estación Biologica de Doñana**

# WILD NATURE INSTITUTE IN THE NEWS

EurekaAlert!
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NEWS RELEASE 12-JUN-2023

## Masai giraffes more endangered than previously thought

Giraffe populations separated by Great Rift Valley in eastern Africa are genetically distinct, suggesting that conservation efforts should be considered separately for each population.

**Peer-Reviewed Publication**  
PENN STATE

UNIVERSITY PARK, Pa. — Giraffes in eastern Africa may be even more endangered than previously thought. A new study led by researchers at Penn State reveals that populations of Masai giraffes separated geographically by the Great Rift Valley have not interbred — or exchanged genetic material — in more than a thousand years, and in some cases hundreds of thousands of years. The researchers recommend that



Behind the Paper

## Rising Rainfall, not Temperatures, Threaten Giraffe Survival

Giraffes in the East African savannas are adapting surprisingly well to the rising temperatures caused by climate change. However, they are threatened by increasingly heavy rainfall.

Published Jul 03, 2023

**Monica Bond**  
Postdoctoral Research Associate, University of Zurich

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**Read the Paper**

**SpringerLink**

**Effect of local climate anomalies on giraffe survival - ...**

With the rapid pace of global warming, there is an urgent need to understand survival responses to climate, particularly for large mammals that are already...

Climate change is expected to cause widespread declines in wildlife populations worldwide. Climate anomalies interacting with human pressures can place additional stress on already declining populations, but little is known about the

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## Giraffes could go extinct – the 5 biggest threats they face

Published: November 1, 2023 10:37am EDT



Giraffes face survival challenges in many parts of Africa. Wikimedia Commons

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## Pourquoi les girafes ont-elles des tâches ?

Joué le 31 août 2023

▶
ÉCOUTER (4 MIN)

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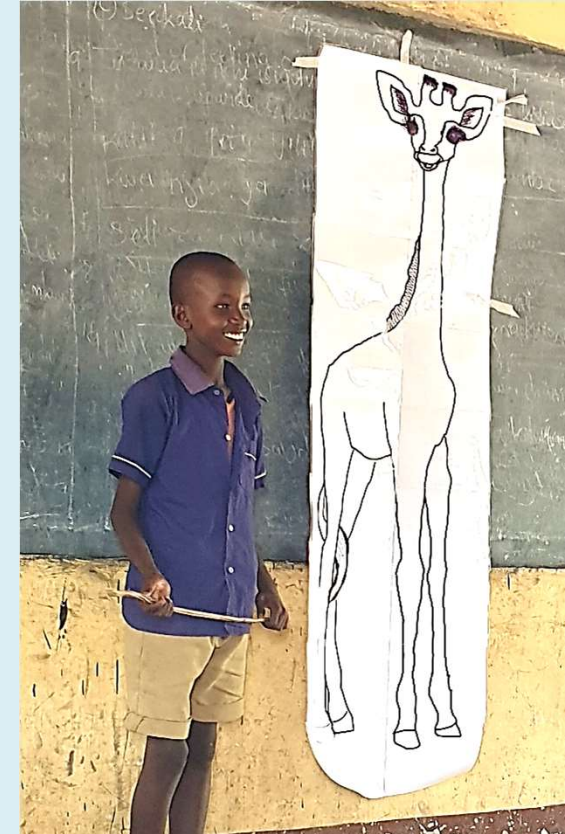
Des girafes Masai ©Getty - Digital tly



# CELEBRATING AFRICA'S GIANTS EDUCATION PROGRAM 2013-2023

- 28,408 Children Reached in Tanzania
- 7,400 Swahili Activity Books Printed
- 16,500 Multilingual Story Books Printed
- 3,200 Educational Posters Printed

***In 2023 we made 151 classroom visits at 17 schools to teach ecology and conservation to a total of 1,375 children.***



# CELEBRATING AFRICA'S GIANTS EDUCATION PROGRAM 2013-2023

- 17 national park visits with 454 different kids
- 20,000 tree seedlings planted
- 8 Fun Days (including World Giraffe Week)

*In 2023 we did 6 trips to Tarangire National Park with 218 kids and held 2 Fun Days for 2,220 people.*



# WORLD GIRAFFE WEEK 2023

Wild Nature Institute celebrated World Giraffe Week on 21 June with an event involving more than **200 primary school students and Maasai women** from the village of Esilalei. Students made giraffe-themed artwork, and the women designed giraffe-themed handicrafts to sell to tourists, with materials provided by Wild Nature Institute. Officers from nearby Lake Manyara National Park shared how locals can alert authorities when poachers are seen. The event ended with singing of traditional songs, and with drinks and food for all.



**Our education coordinators work with Maasai women in 3 villages to discuss and promote conservation.**



Our partners in World Giraffe Week are Save the Giraffes, Mongabay Kids, and Anne Innis Dagg Foundation

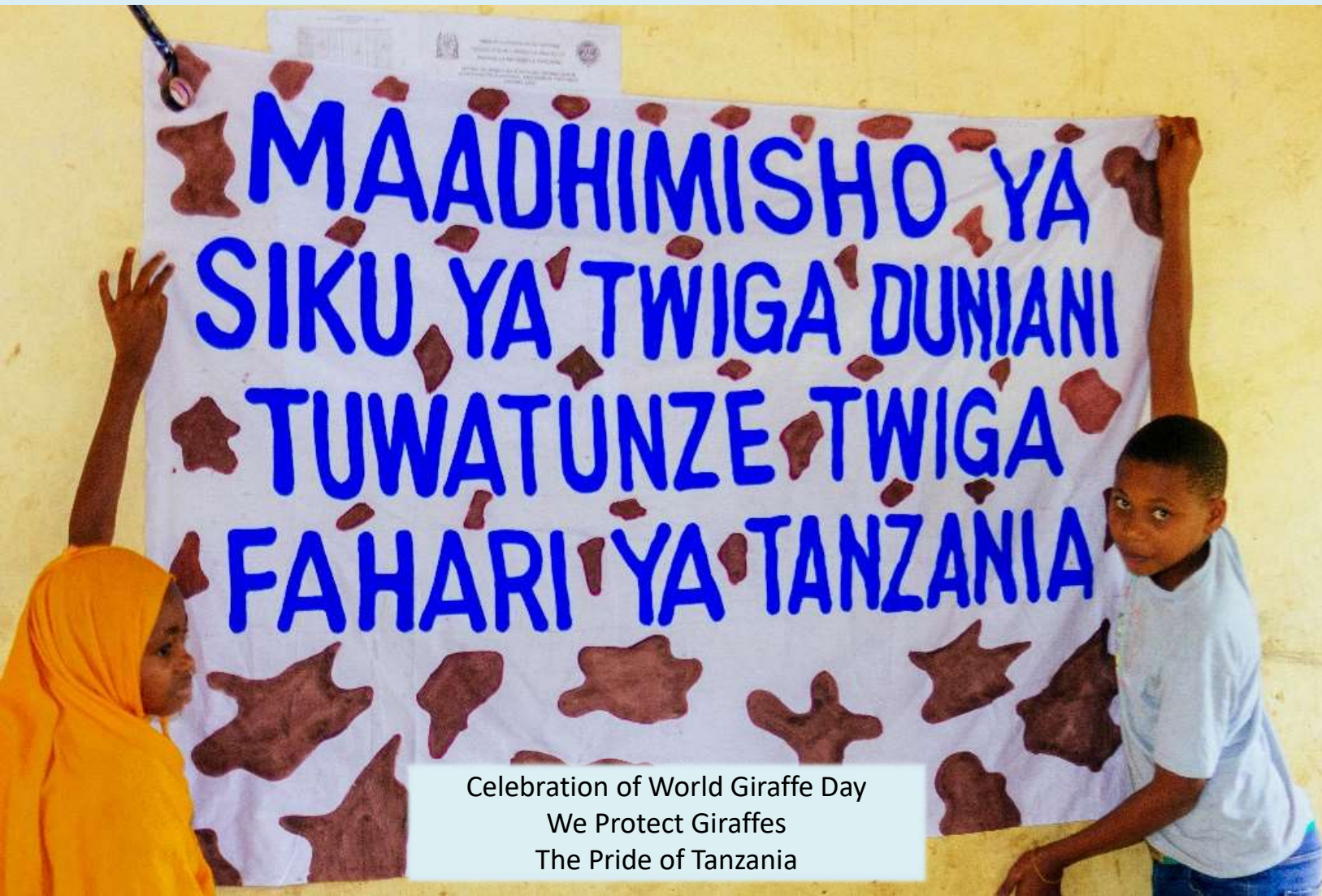
# WORLD GIRAFFE WEEK 2023

Wild Nature Institute's motto is:

Tuwatunze Twiga, Fahari ya Tanzania

*(We Protect Giraffes, the Pride of Tanzania)*

We print our motto on t-shirts and event banners



Celebration of World Giraffe Day  
We Protect Giraffes  
The Pride of Tanzania



# WE WERE HONORED WITH A MULTI-DAY VISIT FROM THE EXTRAORDINARY DR. ANNE INNIS DAGG!

Dr. Dagg visited one of our participating schools and tree nurseries, and went to Tarangire National Park with a group of our students. Everyone is wearing our Tuwatuze Twiga t-shirts!

Photo by Paul Zimic



# MIGHTY ELEPHANT FUN DAY

Two thousand kids in our education program paraded through the streets of Mtwambu to support saving elephants! The Fun Day ended with lunch and a sports tournament involving 5 schools.



# ASSESSING THE IMPACT OF CELEBRATING AFRICA'S GIANTS

Dr. James Danoff-Burg and Katie Shaw from The Living Desert held a workshop in Arusha for our Tanzanian education staff and our education partners from Kenya. Our aim is to scientifically evaluate the impact of our Celebrating Africa's Giants program on knowledge gains, attitudes, and behavior of participating children. We use this information to refine what we teach, so we can be more effective.



Top row: Derek Lee, Veila Makundi, Jackline Mlacha, Mim Grooms, James Danoff-Burg, James Madeli, Katie Shaw  
Bottom row: Monica Bond, Mirthe Aarts

# OUTREACH AND ADVOCACY

We presented an online webinar about our giraffe conservation to 50 people at Cincinnati Zoo

We shared our giraffe programs online with Miami Zoo staff

We gave a plenary talk about our giraffe research to 200 scientists at the German Society for Mammalian Biology

We shared our research results at the Tanzania Wildlife Research Institute's Biennial Conference in Arusha, Tanzania

February

April

June

July

August

September

December

We spoke to 60 Penn State Animal Behavior students about our giraffe work

We presented our giraffe research and education to 150 people at the Penn State Forum

We spoke about our giraffe research to 25 Tanzanian staff of Grumeti Fund in Serengeti, Tanzania

We presented 4 of our scientific studies at the International Congress for Conservation Biology in Kigali, Rwanda, which had more than 1,500 attendees

We read *Helping Brother Rhino* to 20 Junior Giraffe Club kids online

We shared our work with 40 staff of Tierpark Berlin in Germany

Our collaborator, Dr. Doug Cavener from Penn State, presented our giraffe genetic research to 50 scientists at the University of Zurich





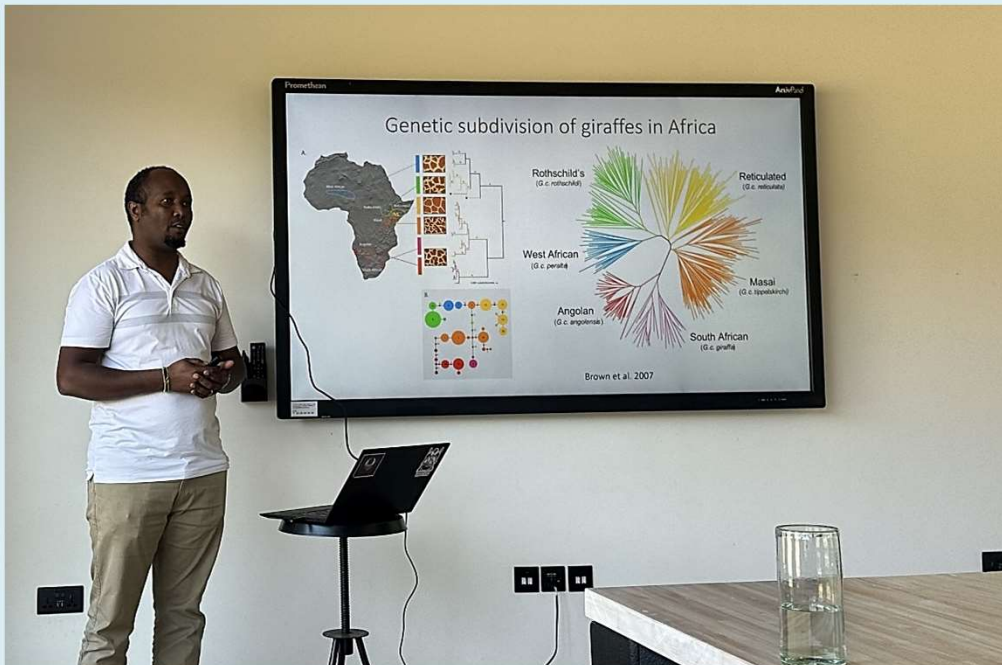
# SHARING OUR GIRAFFE CONSERVATION RESEARCH AROUND THE WORLD



Wild Nature Institute at the International Congress for Conservation Biology in Kigali, Rwanda



Dr. Monica Bond at the German Society for Mammalian Biology in Zurich, Switzerland



Dr. George Lohay at Grumeti Fund, Serengeti, Tanzania



James Madeli at the TAWIRI conference in Arusha, Tanzania

# OUR MAJOR DONORS AND SUPPORTERS

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**Tierpark Berlin · Anne Innis Dagg Foundation**

**Cincinnati Zoo · Sacramento Zoo · The Living Desert**

Save the Giraffes · Columbus Zoo · Tulsa Zoo · Zoo Miami · Quetzales Fund

Como Park Zoo · Roger Williams Park Zoo · Toronto Zoo · Roosevelt Park Zoo

&Beyond Nomad Tanzania Matembezi

*Plus a big thank-you to all Wild Nature Institute's wonderful individual donors*

## OUR PARTNERS

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**Penn State University**

Estación Biologica de Doñana

PAMS Foundation

Mongabay Kids

Nelson Mandela African Institute for Science  
and Technology

**University of Zurich**

Manyara Ranch Conservancy

Ngorongoro Conservation Area Authority

Tanzania National Parks

Tanzania Wildlife Authority

Tanzania Wildlife Research Institute

# STATEMENT OF ACTIVITIES 2023

## INCOME

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Grants from Foundations	\$ 128,036
Individual Donations/Family Trusts	\$ 15,193
Contracts	\$ 14,000
<b>Total Income</b>	<b>\$ 157,229</b>

## EXPENSES

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Field Research (Permits, Vehicles, Equipment, Fuel)	\$ 71,968
Travel	\$ 34,546
Conferences/Meetings/Membership Fees/Workshops	\$ 12,405
Services (Graphic Design, Printing, Statistical Analysis)	\$ 10,579
Mailing and Office Expenses (Rent, Phone, Utilities)	\$ 19,826
<b>Total Expenses</b>	<b>\$ 149,324</b>

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Starting Balance (carryover from 2022)	\$ 150,411
Income - Expenses	\$ 7,906
<b>Ending Balance</b>	<b>\$ 158,317</b>



### Officers

Dr. Derek Lee,  
Board President

Dr. Monica Bond,  
Secretary-Treasurer

### Board of Directors

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