



**WILD  
NATURE  
INSTITUTE**

**2014**

**ANNUAL REPORT**



TREES R

Utafiti  
wa  
Twiga

www.WildNatureInstitute.org



Giraffe  
Research

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Cover : Wildebeest and zebra in Tarangire National Park / Inside cover: Monica Bond in Serengeti National Park

# From the Founders

The Wild Nature Institute works in two regions of biological significance: savannas of the Tarangire Ecosystem in northern Tanzania and conifer forests of the western U.S. Both regions are rich in biological diversity but highly threatened by human impacts. We study imperiled wildlife and their habitats in these regions, and use our results to develop and implement protective measures so these wondrous wild places can survive and thrive.

In 2014 we broadened our efforts to safeguard African savannas and American forests. We expanded our hoofed mammal surveys into new areas of the Tarangire Ecosystem to conserve threatened rangelands for Masai pastoralists, their livestock, and migratory wildlife, and we distributed thousands of multi-lingual children's books about wildebeest migration to underprivileged schoolchildren in the area. We challenged logging in habitat critical for California Spotted Owls and requested federal protection for this imperiled subspecies.

We continued work in our four program areas: Masai Giraffe Conservation, Tarangire Ungulate Observatory, Northern Plains Campaign, and Snag Forest Campaign. Read on to learn about our accomplishments in 2014.

In all of this, we depended on your support.

Our heartfelt thanks,

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



# Masai Giraffe Conservation

The goal of the Masai Giraffe Conservation Project is to estimate population size, survival, reproductive success, and movement within the Tarangire Ecosystem so places with high survival and reproduction can be identified, protected, and connected.

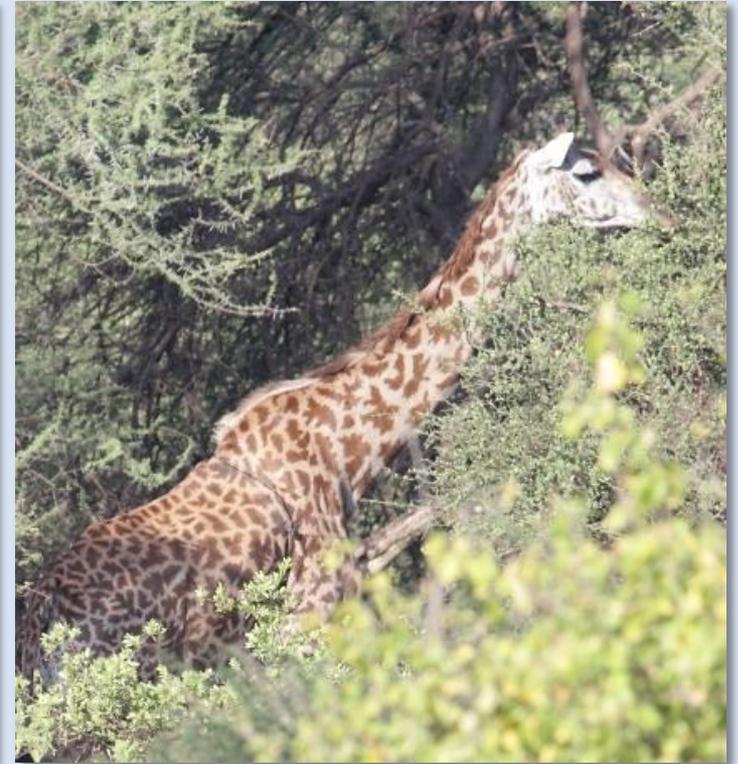
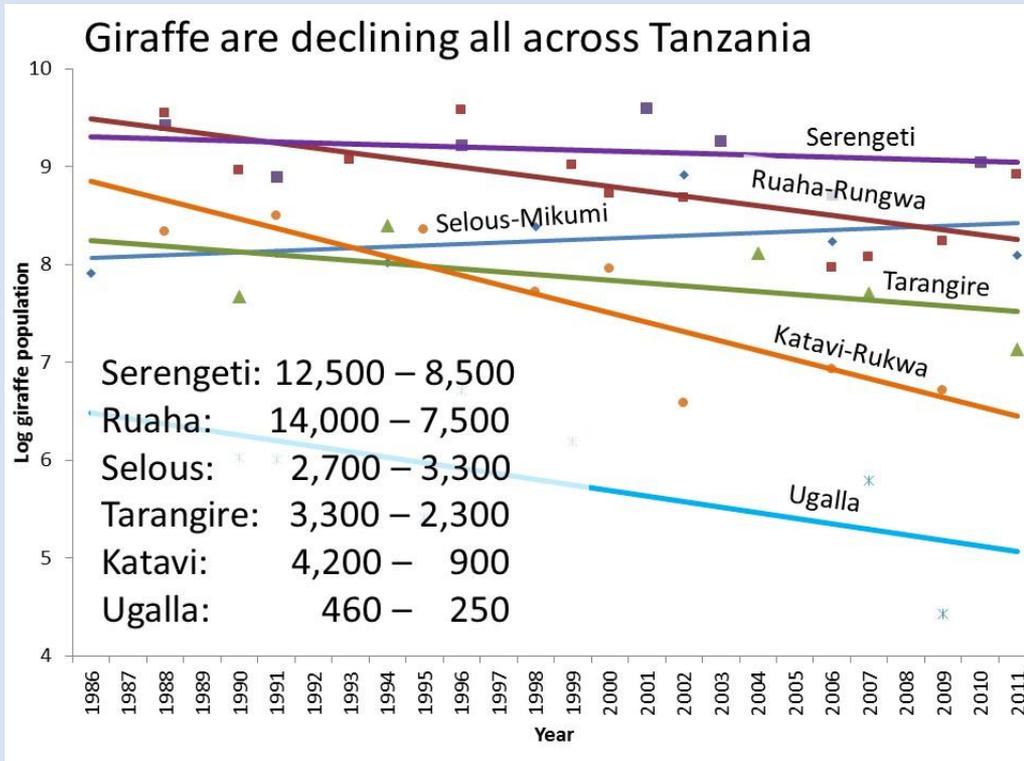


The Wild Nature Institute, with Dartmouth College, is conducting a major study of Masai giraffe, the national animal of Tanzania and an indicator species for the health of savanna ecosystems.

Giraffe populations have declined throughout Africa by 30% in recent years. We use pattern-recognition software to track >1,800 individuals in a 1,300-km<sup>2</sup> area to understand births, deaths, and movements in this fragmented system.

This is one of the largest individual-based demographic studies of a large mammal ever undertaken. We are also assisting with the IUCN Red List Assessment for giraffe.

Data we compiled from the Tanzanian Wildlife Research Institute indicate that giraffe are declining in five out of six protected areas in Tanzania.



Our demographic research found adult survival was lowest near the town of Mtowambu, where illegal poaching of giraffe is rampant. Adult survival is critical to population growth, so curtailing poaching could help reverse the Tarangire population decline. The photo above right shows a female giraffe with a poacher's snare around her neck (she was lucky to escape).

# Masai Giraffe Environmental Education

In October, we published a story about giraffe conservation and our research in Tanzania, in *Ujumbe* magazine about tourism and the environment.



{ "Tanzania is the world's stronghold for giraffe..." }

## STANDING TALL FOR TANZANIA'S NATIONAL ANIMAL

### Research and Conservation of Giraffe

The lanky, lovable goliath we all know as a giraffe is unlikely to be mistaken for any other animal on the planet. But how and why did this enthralling creature get to be so tall? The story starts many millions of years ago, when the first ancestors of modern giraffe called 'giraffids' evolved in the northern forests of Eurasia and eventually spread southwards into Africa

Giraffids were browsers that specialized in eating the leaves of trees – but many other kinds of browsers also competed for those same leaves. It is likely that rivalry for the most nutritious leaves meant that early giraffids with longer necks and legs could reach leaves higher in the canopy than their competitors, and thus survived better. These traits were passed on to their offspring, resulting in taller and taller individuals over time. About one million years ago, the modern, extremely long-necked giraffe arose. Towering more than five meters high with a nearly two-meter-long neck, it is the tallest animal on the planet: a classic example of the wonders of the evolutionary process.

Prehistoric environmental changes caused the extinction of all but two types of giraffids: the okapi (found only in the Congo Basin) and the modern, long-necked giraffe. The modern giraffe is restricted to sub-Saharan Africa, yet is undoubtedly one of the most beloved and recognizable animals to people around the world. Its unique shape and extreme height, the beautiful coat patterns, and its elegant, unhurried stride and mild nature make this gentle giant an immensely popular safari and zoo attraction.

Unfortunately, despite its popularity, the wild giraffe is becoming increasingly endangered throughout Africa due to deforestation for charcoal, conversion of savanna woodland habitat to agriculture, and a troubling surge in bush meat poaching. The Giraffe Conservation Foundation estimates that giraffe numbers throughout Africa have plummeted by forty percent in the last decade to less than 80,000 individuals—far fewer than the current number of African elephants.

Tanzania is the world's stronghold for giraffe, supporting more than any other country. Although the Masai giraffe is the national animal of Tanzania, populations have declined here since the 1980s. Aerial surveys conducted by the Tanzanian Wildlife Research Institute

(TAWIRI) indicate population losses in the Katavi-Rukwa and Ruaha-Kungwa regions since 1986. Yet few people in Africa and elsewhere are aware of the plight of our beloved giraffe. A group of determined giraffe enthusiasts are aiming to change that, by raising world-wide awareness and increasing local conservation efforts.

#### The Need for Research

On-the-ground field research can reveal where giraffe are faring well and where they are doing poorly, help wildlife authorities understand the reasons for population declines, and provide science-based recommendations on where and how to focus conservation efforts. Research on ecology of wild giraffe began in the 1950s, but tapered off after the 1970s. In ensuing years, little work had been conducted, leaving scientists with no strong information about the ecological causes of the recent population declines observed from aerial surveys, and few data to guide conservation efforts. Demographic studies that examine individual survival and reproduction are particularly important, but previous studies were too small-scale and too short-term to provide much useful data. ☺

By Monica Bond

# Tarangire Ungulate Observatory

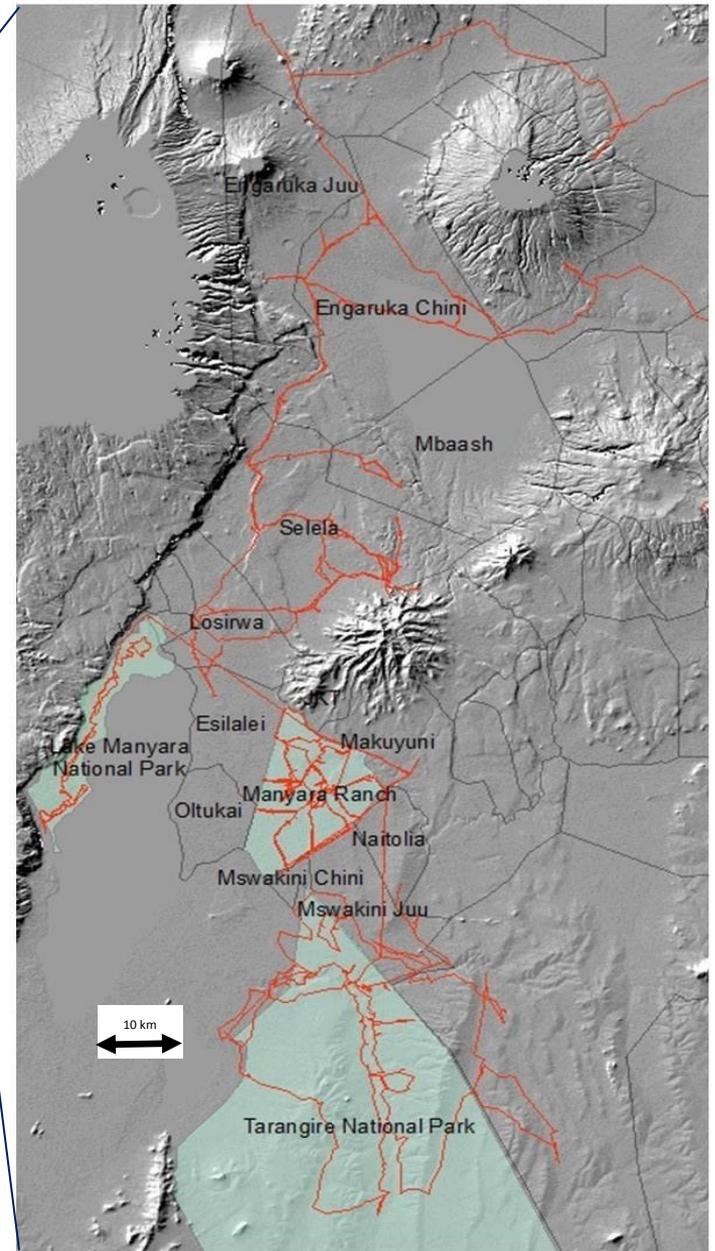
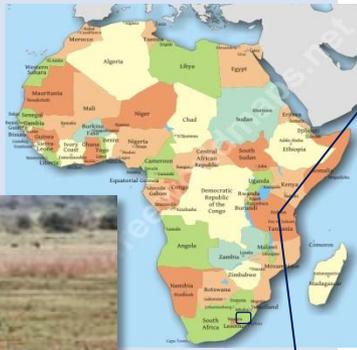
## “TUNGO”



The Wild Nature Institute’s TUNGO Project is a landscape-level population research program for 22 species of ungulates (hoofed mammals) in the Tarangire Ecosystem.

The savanna habitat of the Tarangire Ecosystem is one of the richest areas on the planet for large mammal diversity and abundance, and is a global hotspot for ungulates. The goal of TUNGO is to gather population parameters for all ungulates in this ecosystem, and to provide the scientific means to reverse population declines.

Our TUNGO surveys provide reliable data for scientific management, land-use planning, anti-poaching enforcement, and conservation. With nine surveys from the past three years, we can now estimate population trends, which we will make available in 2015.



We record the following species in our TUNGO surveys:

- |                   |                                  |              |
|-------------------|----------------------------------|--------------|
| Masai Giraffe     | Greater Kudu                     | Gerenuk      |
| Eland             | Lesser Kudu                      | Bush Duiker  |
| African Buffalo   | Steenbok                         | Klipspringer |
| Fringe-eared Oryx | Bushbuck                         | Impala       |
| Coke's Hartebeest | Thomson's Gazelle                | Cow          |
| Burchell's Zebra  | Grant's Gazelle                  | Goat         |
| Bohor Reedbuck    | Common Waterbuck                 |              |
| Kirk's Dik-Dik    | Eastern White-bearded Wildebeest |              |

Red roads indicate survey routes, gray lines delineate village boundaries, and green is protected areas.

# Northern Plains Campaign



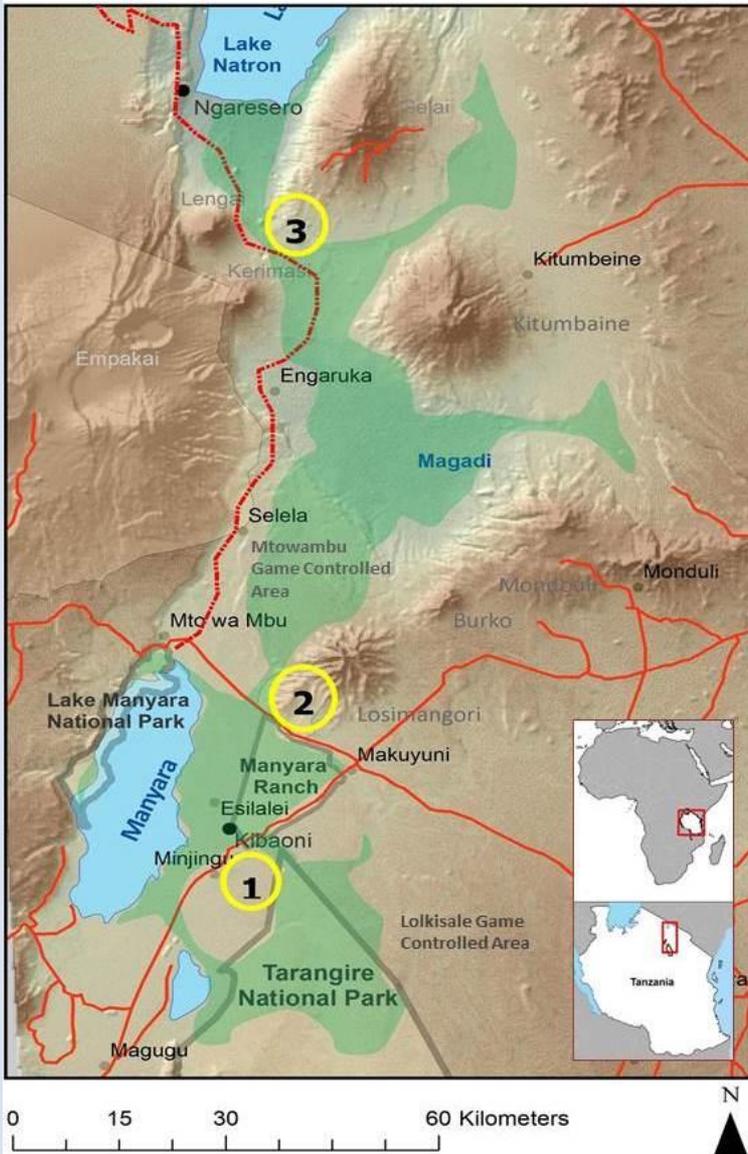
The Wild Nature Institute is not only collecting scientific data on African ungulates—we are putting our results into action to conserve savanna wildlife. Our Northern Plains Campaign is an integrated research, education, and advocacy initiative to catalyze community conservation of threatened wildlife in the Tarangire Ecosystem of Tanzania.

Due to severe poaching and lack of land management, the wildebeest population in the Tarangire Ecosystem has declined by 88% in the last 20 years. Eight migratory corridors for wildebeest, zebra, gazelle, eland, and oryx in the Ecosystem have been lost due to habitat conversion and permanent settlements. Only two linkages remain and neither are protected. A timely intervention over the next few years will make a huge difference in saving Tarangire's genetically unique population of wildebeest and other savanna wildlife, and will allow continued access to forage and water for traditional Masai pastoralists as they roam this landscape with their cattle.

# Northern Plains Land-Use Planning

With our partners, we are implementing land-use planning in 10 Masai villages in the migration linkage between Tarangire National Park and the Northern Plains near Lake Natron. This community-based conservation will protect wildlife populations and pastoralist culture, and create a grassroots ecotourism economy.

The aim of this campaign is to give control over tourism and wildlife protection to the local villagers, and the villagers in turn earn money from the ecotourism businesses. Otherwise the local people receive no economic benefit from the wildlife on their lands. We are helping the Masai people, whose traditional livelihoods are threatened by the same forces that are causing the disappearance of the great wildlife herds. Our goal is for them to benefit economically by protecting livestock and wildlife grazing lands from outside poachers and unscrupulous land-grabs.



Green area depicts potential migratory linkage between Tarangire National Park and the Northern Plains. Circled numbers are pinch-points. Map courtesy of Tom Morrison.

# Northern Plains Land-Use Planning

In July, we began an exciting new partnership supporting community-based land-use planning in the Northern Plains. This is a two-year program with Trias, The Nature Conservancy, Wildlife Conservation Society, Dorobo Fund, Maliasili Initiatives, Honeyguide Foundation, and several other organizations. Land-use plans are now being developed in two villages, along with human-wildlife conflict reduction. We are continuing to help the remaining eight villages to begin the land-use planning process, and our TUNGO data will inform this process. In October 2014, we expanded our TUNGO surveys north into the Engaruka region.

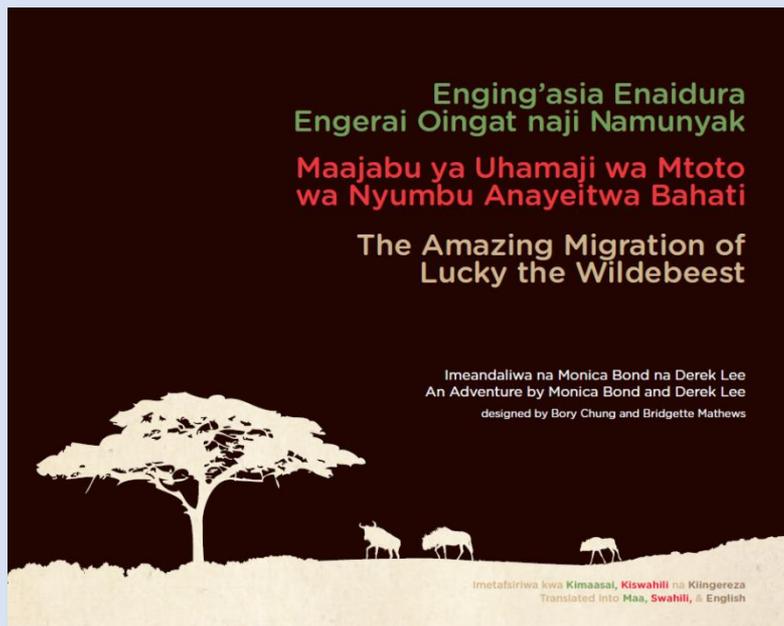
From top right: (1) traditional Masai warriors; (2 and 3) forum to discuss land-use planning; (4) WNI's Derek Lee plots a TUNGO survey route with Bashiri, a local guide from Engaruka. The sacred mountain Oldoinyo Lengai is seen in the distance.



## Northern Plains Environmental Education

As part of our Northern Plains Campaign, we published a tri-lingual children's book educating young and old about migration, wildlife, and the ecological and economic benefits of conservation in the Tarangire Ecosystem. In 2014, our partners from Inyua e MAA helped us distribute 2,500 books to rural schools and villages in the Northern Plains! Teachers also received training on teaching the ecological concepts presented in the book.

By presenting a fun story simultaneously in Masai, Swahili, and English, *The Amazing Migration of Lucky the Wildebeest* promotes literacy and instills conservation values in a generation of Masai people to provide greater understanding of the linkages between ecology, economy, and culture.



# Snag Forest Campaign



Wild Nature Institute scientists continued studying fire impacts to Spotted Owls in California, and applying the findings to prevent harmful and unnecessary commercial logging in habitat for this imperiled raptor.

Spotted Owls are icons of dense, old-growth forests in the western United States. But, these birds of prey evolved with hot fires occasionally burning through their territories. The Wild Nature Institute's research has revealed that severe fire usually does not cause California Spotted Owls to abandon their territories or reduce their reproduction as previously believed, and we found owls prefer to hunt in the severely burned forests when it is available to them. Problems arise for the Spotted Owl when people cut down the trees, living or dead, that owls need for nesting, roosting, and perching while hunting.

We provide scientific data to help scientists, land managers, the media, and the public to embrace the ecological value and necessity of severely burned forests.

In 2014, Wild Nature Institute scientists co-authored the following scientific articles, petitions, and expert declarations:

- Odion et al (2014) Effects of fire and commercial thinning on future habitat of the Northern Spotted Owl. *Open Journal of Ecology* 7:37-51.
- DellaSala et al (2014) Complex early seral forests of the Sierra Nevada: What are they and how can they be managed for ecological integrity? *Natural Areas Journal* 34:310-324.
- Two chapters for a forthcoming academic book about mixed and high-severity fire: fire and mammals (Bond), and fire and birds (Hutto et al.).
- A petition to list the California Spotted Owl (*Strix occidentalis occidentalis*) as a threatened or endangered species under the Endangered Species Act (with John Muir Project).
- Expert declarations to help stop logging of Spotted Owl and Black-backed Woodpecker habitat in the Rim Fire, American Fire, and Aspen Fire in the Sierra Nevada of California.



## Snag Forests Environmental Education

Hundreds of media outlets covered the story of our petition asking the U.S. Fish and Wildlife Service to list the California Spotted Owl as endangered or threatened. The petition describes numerous scientific studies showing the subspecies is declining and that logging—including post-fire logging of burned trees—is the primary problem.



**BEFORE THE SECRETARY OF THE INTERIOR**

**PETITION TO LIST THE CALIFORNIA SPOTTED OWL (*STRIX OCCIDENTALIS OCCIDENTALIS*) AS THREATENED OR ENDANGERED UNDER THE FEDERAL ENDANGERED SPECIES ACT**

The California Spotted Owl

(*Strix occidentalis occidentalis*)



Photo by Monica Bond

December 2014

We also published opinion pieces explaining why large fires are ecologically necessary in *CounterPunch*, *The Ecologist*, *Green Social Thought*, and the *Sonoma Index-Tribune*.

# Our Donors, Supporters, and Partners

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*Thanks also to all the wonderful private donors who supported our work!*

# Statement of Activities 2014

## INCOME

	Grants	\$52,070
	Individual Donations	\$8,961
Total Income		\$61,031

## EXPENSES

	Field Research	\$12,957
	Travel (to Tanzania)	\$7,785
	Meetings	\$973
	Services	\$23,535
	Office and Mailing	\$6,674
	Conferences	\$0
Total Expenses		\$51,925
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Starting Balance (carryover from 2013)		\$16,889
Income - Expenses		\$9,107
Ending Balance		\$25,996



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