

MPALA MEMOS

NEWS FROM THE MPALA WILDLIFE FOUNDATION

TOP STORY

A PICTURE SAYS A THOUSAND WORDS? MAYBE 30 IN THE CASE OF LEOPARDS

Margaret Kinnaird & Tim O'Brien

Across Kenya, cameras swing from tourists' necks, snapping portraits of charismatic wildlife and scenic skies during sundowners. Here on Mpala, Tiemamut and Il Motiok, camera shutters have been clicking too. Though these cameras also capture wildlife and red sunsets, there is one small difference: the photographers are the animals themselves.



This male leopard was photographed four times on Mpala

For the past year, we've been capturing wildlife on film using camera traps – automatic cameras with infrared motion

sensors packed in camouflaged boxes. As animals walk through the sensor beams, they trigger camera shutters and snap photos of themselves. The

cameras stamp each picture with the time and date so we know when every animal was photographed.

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RESEARCH

WILL MOBILE BOMAS BE A GOOD MANAGEMENT TOOL?



Mobile boma on Ol Pejeta—one of the ranches pioneering this technology. Photo by Corinna Riginos

Lauren McGeoch

Recently, many Laikipia ranch and conservancy managers have been talking about “mobile bomas” – segmented, metal versions of the traditional thorn cattle corral. Enthusiasm for this new technology is understandable: mobile bomas are virtually predator-proof and can be moved easily from place to place without the need to cut down trees. Many managers are also keen to use mobile bomas to improve degraded rangelands and to create “hotspots” that attract wildlife. But what is the best way to do this? My interest in bomas builds on research that Kari Veblen conducted on Mpala.

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CONSERVATION CLUBS GET ROLLING

Nancy Rubenstein

A student studies the slip of paper he has selected. He smiles shyly, crouches down, and begins to roll and kick in the red dirt. His classmates giggle. “A zebra dust bathing!” one girl shouts out, guessing correctly the animal and behavior that the boy has portrayed.

“THE GOAL IS FOR CHILDREN TO LEARN IN A WAY THAT IS VERY DIFFERENT FROM THE WAY IN WHICH THEY SPEND THE REST OF THEIR SCHOOL DAY.”

“Role playing” is just one of the activities that students at Mpala, Il Motiok, Naiperere, and Ewaso Primary Schools are engaging in as part of the schools’ new conservation clubs. During July and August, Dan Rubenstein and I worked with Mpala research assistant Wilson Nderitu, Mpala School head teacher John Maina, and Laikipia Wildlife Forum

Community Liason Officer Joseph Mosiany to establish the after school clubs at these four schools.

The purpose of the clubs is to get students excited about wildlife, to teach them about the world around them and how it works, and to help them understand the connections among wildlife, the landscape, and people.

To kick-start the conservation clubs, we have developed a curriculum guide full of hands-on activities for students and background information for teachers. Each of the four Laikipia schools was given a copy of the guide as well as a box of supplies needed for the various activities. The goal is for children to learn in a way that is very different from the way in which they spend the rest of their school day. For example, students from the Mpala school went on a game drive in Mpala’s new school bus. Afterwards, students each selected an animal and wrote a

diamante, a diamond-shaped poem, about their animal. These poems were then made into booklets so that students could read each others’ poems. Clubs also host visitors – Mpala scientists and research assistants – who discuss their research and wildlife conservation activities, and have access to conservation-related books that circulate among the schools in a mobile library.

Teachers are continuing to carry out club activities throughout the year with the help of Wilson and Joseph. ■

MPALA-AT-A-GLANCE

Visitors

Forty-four independent researchers representing 37 institutions around the world visited Mpala in 2008. We also hosted 134 students in groups from the University of Nairobi, Maseno University in Nairobi, University of California, LA and Cornell University in New York.

Events and Courses

Mpala offered three courses on geographic information system (GIS) software, attracting 20 participants from the Kenyan Wildlife Service, local Maasai organizations, and the local non-profit community.

Two workshops were held by Holistic Management International at Mpala, attracting 30 participants from the Laikipia Wildlife Forum, Mpala Ranch and Research Centre, regional NGOs, and neighboring ranches and communities.

Renovation of the Ewaso N’yiyo tented camp was completed, providing accommodation for groups of up to 32 people.



A “zebra” rolls in the dust while his classmates try to guess what he is doing. Photos by Nancy Rubenstein (children) and Amy Wolf (zebra).

FIVE MORE YEARS OF FUNDING FOR THE KLEE PROJECT

Truman P. Young

The US National Science Foundation has recently renewed funding for the Kenya Long-term Exclosure Experiment (KLEE) for the next five years.

The goal of the KLEE project is to understand the effects of wildlife and cattle on each other, as well as their separate and combined effects on the land they share. This unique experiment, made up of fenced wildlife and cattle exclusion or inclusion areas, has been a centerpiece at Mpala Research Centre since the Centre's inception.

The principal researchers for the next five years of the project are Truman Young, Corinna Riginos, Kari Veblen, Kelly Caylor, and Lauren McGoech (all affiliated with the

"THE KLEE PROJECT HAS ALSO SUPPORTED RESEARCH ON FIRE ECOLOGY, BOMAS AND GLADES, BUSH ENCROACHMENT, RANGELAND RESTORATION, AND SOIL DEVELOPMENT."

University of California at Davis and/or Princeton University).

However, the exclosures continue to attract many other researchers from Egerton and Nairobi Universities, Stanford University, the Smithsonian Tropical Research Institute, and the Universities of Florida, Vermont, British Columbia, and Wyoming. Over the past 12 years, the KLEE project has produced more than 30 scientific articles on the relationships among livestock, wildlife, and savanna rangeland biodiversity.

For example, Wilfred Odadi has shown that the effects of wildlife on cattle production can change from negative (com-

petition between cattle and wildlife) to positive (facilitation between cattle and wildlife) depending on the season and amount of rainfall.

The KLEE project has also supported research on fire ecology, bomas and glades, bush encroachment, rangeland restoration, and soil development. We are particularly proud of our record of having supported six Ph.D. students and five M.Sc. students from Kenya. This new grant will allow us to continue this work.

For more information on the KLEE project and a complete list of publications, please visit our website: <http://tpyoung.ucdavis.edu/KLEE> ■

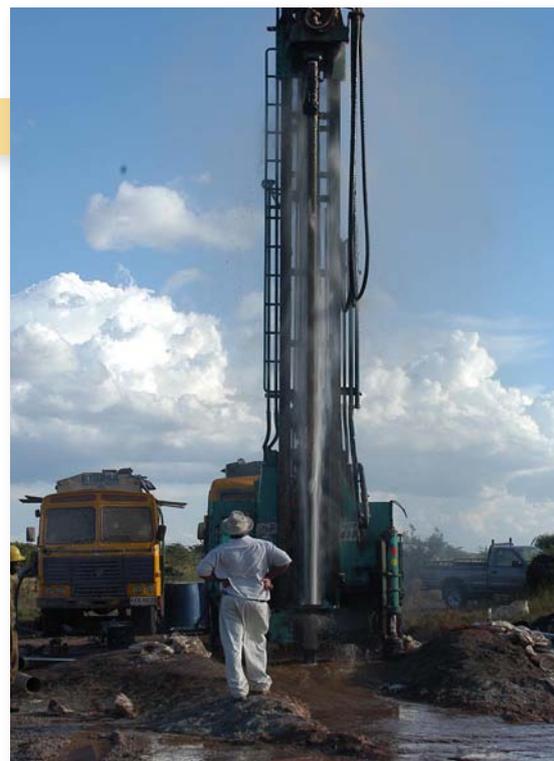
COMMUNITY

WELL WATER COMES TO MPALA

Amy Wolf

Drilling a borehole 200 meters into the ground was only the first step towards bringing clean water to the Mpala staff villages. After a pump was installed, several holding tanks put in place, and many kilometers of pipes laid down, water began to flow from the borehole to village taps in August. Though the water needs to be filtered to remove high levels of fluoride before it is safe to drink, over 100 households in the research centre and ranch villages now have access to clean water in their homes. ■

Water gushes from the borehole as Rural Focus engineers look on. Photo by Margaret Kinnaird.



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MAYBE 30 IN THE CASE OF LEOPARDS

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Because the cameras work remotely, they are an effective method for monitoring animals that might be hard to see, avoid humans, or are active mainly at night.

The information we obtain from camera trap pictures helps us track the abundance and distribution of wildlife in relation to land use practices,

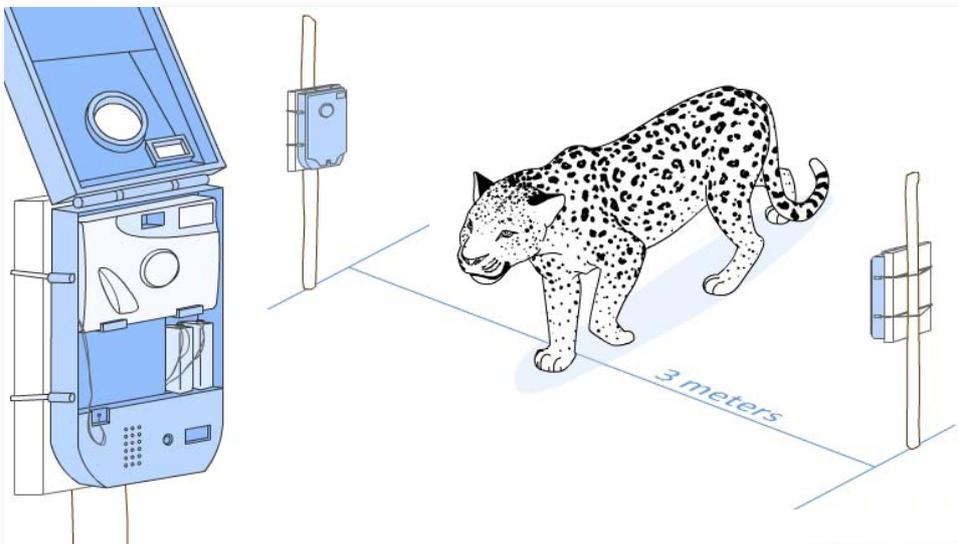
movements of livestock and people, presence of lions, and other topics of interest. For example, one question we've been able to answer is, how many leopards are there on Mpala?

Normally we place cameras on opposite sides of a road or trail. When a leopard sashays past, cameras photograph both sides of its body. Because

leopards can be identified by their distinctive coat patterns, we can use our photographs to identify individual leopards. Then we can track those same leopards as they move past

"WE IDENTIFIED 21 INDIVIDUAL LEOPARDS THAT WERE PHOTOGRAPHED 71 TIMES."

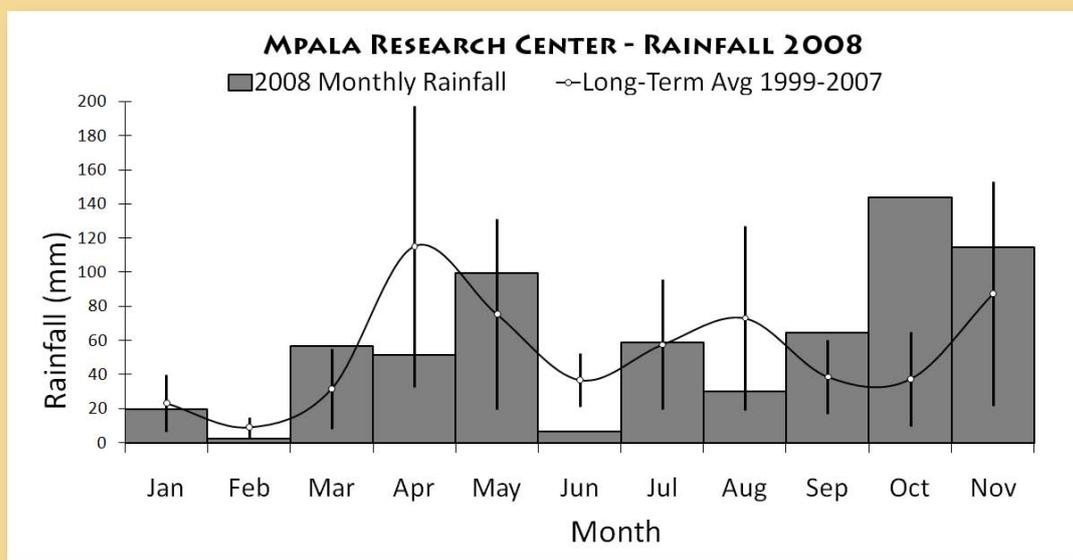
other cameras and use their capture records to estimate the size of the whole population. On Mpala, we identified 21 individual leopards that were photographed 71 times. Based on these numbers, we estimate that Mpala has a population of 30 leopards, or 9.5 leopards/100 km² – a very healthy population. As we continue to trap on neighboring ranches, we hope to address some of the bigger questions about how livestock, wildlife, and people interact. Stay tuned. ■



Schematic of a camera trap set up. Illustration by Heather Larkin.

MPALA WEATHER CORNER

Data source: Chris Odhiambo



WILL MOBILE BOMAS BE A GOOD MANAGEMENT TOOL?

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Kari showed that traditional boma sites develop into grassy, treeless “glades” after they are abandoned. These glades have highly nutritious grass and unique plant species that attract livestock and wildlife. This observation has led managers and researchers to wonder how bomas can be used to create wildlife “hotspots” – for example in areas frequently visited by tourists – or to improve grass cover in areas dominated by bare soil. My research will focus on the value of mobile bomas for achieving some of these goals. Specifically, I am asking:

- How do glades and bomas affect the surrounding wooded savanna?
- Does a boma’s size or the length of time it is used affect whether or not the site develops into a “hotspot” after the boma is abandoned?
- What determines how long these hotspots persist?
- Does the density and spacing of bomas affect how wildlife and livestock use them, what plant species live in and around them, and the forage quality of these plants?

I have already gained some insight into these questions. For example, tree density is much higher and wildlife presence much lower if glades are less than 150 m apart than if they are more than 300 m apart. These preliminary findings indicate that boma density and configuration could have important, long-term

“MANY MANAGERS ARE ALSO KEEN TO USE MOBILE BOMAS TO IMPROVE DEGRADED RANGELANDS AND TO CREATE “HOTSPOTS” THAT ATTRACT WILDLIFE. BUT WHAT IS THE BEST WAY TO DO THIS?”

impacts on plant and animal distributions in savanna landscapes.

In the next few months, I will be ramping up our boma research by starting experiments on local ranches to test the effects of boma density, spacing, and duration of use on the landscape. We are also developing a protocol that managers across the region can use to monitor the impacts of mobile bomas, with the hope of learning more about how bomas can be used to restore degraded areas. If you would like to learn more about ongoing boma research or get involved, please email me at lemcgeoch@ucdavis.edu. ■

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