

# MPALA MEMOS

NEWS FROM MPALA

TOP STORY

## BEHAVIOR AND INFECTIOUS DISEASE: THE GRANT'S GAZELLE PROJECT

*Vanessa Ezenwa*

Bird flu, swine flu, Ebola, SARS – all names that invoke fear and wonder. Over the last few decades we've seen alarming rises in both human and animal infectious diseases worldwide. Although we don't yet fully understand why diseases are on the rise, we do know that there are close links among human, livestock and wildlife diseases: over 60% of human infectious diseases probably started as animal diseases, and livestock share over 50% of their parasites and pathogens ("germs") with wildlife. Given these connections, a better understanding of what determines infection levels in wildlife is critical to predicting when, where and how the next disease threats to livestock and humans may arise.



*An aggressive tagged Grant's gazelle (left).  
Photo by Stephanie Hauver.*

In Laikipia, the diversity of wildlife living in proximity with humans and livestock provides an excellent setting for studying infectious diseases. Among Laikipia's wildlife, Grant's gazelle stand out as particularly interesting because of their extremely

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OUTREACH

## MONITORING MADE EASY



*Participants in the monitoring workshop.  
Photo by Corinna Riginos.*

*Corinna Riginos*

On a sunny morning in early December, fifteen people, representing various

organizations and communities in Kenya, huddled around a couple of sticks on the ground. Each took his or her turn counting the number of times each stick encountered a tree or blade of grass or fell entirely within a bare patch. Within a few minutes everyone began to nod and smile. "Is this it?" a couple of people asked.

The group had come to participate in a workshop that my colleagues and I hosted on Mpala, during which we rolled out the first draft of a manual entitled *Monitoring Rangeland Health*. The workshop was a critical first test of this new approach to monitoring rangelands – one that will, we

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## STAFF PROFILE: LAWRENCE NAYARA

*Allison Williams*

If you have ever eaten a meal at the Mpala Research Centre, chances are you have met one of Mpala's well-known staff members, Lawrence Nayara. At first, his serious expression and towering stature may appear intimidating, but that impression is short-lived; as soon as Lawrence breaks into one of his wide smiles one immediately feels at home.

Lawrence has been working at Mpala since the Research Centre's establishment in 1994, making him one of the longest-serving members of staff. A new arrival from his home near Lake Turkana, Lawrence was employed as a waiter in the Centre's dining hall, where he has worked ever since.

A typical day for Lawrence begins at 6:30 AM in the kitchens. As Head Waiter, his first task is to make sure the food, dishes, and silverware are placed out for breakfast – an early meal since many researchers are eager to head off to the field. As the lunchtime hour approaches and the mass of hungry researchers returns, Lawrence again gears up and sets the lunch table and brings out the large serving platters containing the hot meal. Throughout the day, assisted by two other waiters, he is busy refreshing the hot tea and coffee supply, cleaning and sweeping the dining hall to a point of perfection, and at times assisting the kitchen staff with preparing some meals. Lawrence also has a knack for slicing fruit and organizing it in artful ways; his displays give *Bon Appetit's* featured fruit dishes a run for their money!

**"LAWRENCE HAS BEEN WORKING AT MPALA SINCE THE RESEARCH CENTRE'S ESTABLISHMENT IN 1994..."**

Lawrence speaks fondly of Mpala when asked about his experiences and really



*Lawrence Nayara. Photo by Allison Williams.*

enjoys working at the Centre. "Mpala has given me a chance to give my family opportunities that I would have been unable to give them," he says. Lawrence's son, Mark, currently attends Kenyatta University in Nairobi, from which he will graduate in early 2010. Mark is the first child of one of Mpala's staff to attend and graduate from a university, a feat of which Lawrence and Mpala are very proud.

In the evening, Lawrence's day concludes by clearing the dinner table and cleaning the dining hall in preparation for the next day. He then heads home to eat dinner and relax or on some occasions, take part in one of his favorite pastimes, traditional Turkana dancing. As a young child, Lawrence learned many traditional dances and songs from his parents. His talent and zeal when it comes to dancing has endeared him to many at Mpala as he often leads group performances for Mpala researchers and visitors. Members of staff and researchers alike join in the lively dances and songs, which usually tell tales about cattle, courtship, wildlife, or war.

Lawrence brings a wonderful personality and spirit to the dining area. With his many stories and experiences, you won't want to miss the chance to sit down with him and chat (or practice your Kiswahili) over a hot cup of *chai*. ■

## HOW HEALTHY ARE MPALA'S KORI BUSTARDS?

*Rhea Hanselmann*

A large brown and white bird wanders across an open glade. It stops once in a while to peck at a tasty morsel it has discovered or sample the ants or caterpillars on a tree trunk. Occasionally, it turns to chase a fly or investigate some other potential fare, then resumes its march. Gradually, unsuspectingly, the bird approaches the net that stretches between the acacia bushes on the far side of the glade. The tension inside me rises as I follow the bird with the car, gently herding it closer and closer to the net. But, just as I am about to accelerate, the bird has a change of heart. It suddenly leaps into the air and, as if in slow motion, flies away, flapping its large wings majestically.

The bird is a Kori Bustard (*Ardeotis kori*), the world's heaviest flying bird. Male Koris weigh up to 20 kilograms and boast a wingspan of up to two meters. These huge birds inhabit dry African savannas and are common in Kenya's Laikipia District. Although impressive in size and strength, I have learned that these subtly camouflaged birds, with their long legs and beautiful bright yellow eyes, have an inconspicuous nature and are remarkably gentle.

As a joint Mpala/Smithsonian Institution post-doctoral fellow, I am working with the



*Kori Bustard on Mpala.  
Photo by Natasha Godard.*



*Antony and Rhea with a captured Kori Bustard.  
Photo by Natasha Godard.*

Smithsonian's National Zoo biologist and Kori Bustard expert Sara Hallager, National Zoo veterinarians Suzan Murray and Katharine Hope, and National Museums of Kenya (NMK) ornithologist Ronald Mulwa to learn more about the general health and physiology of Kori Bustards in the wild. By examining them for parasites, diseases, and exposure to heavy metals, we hope to determine what threats may be facing Koris in the wild.

**"MALE KORIS WEIGH UP TO 20 KILOGRAMS AND BOAST A WINGSPAN OF UP TO TWO METERS."**

Kori Bustard populations are generally considered stable throughout their range. However, researchers in Namibia and Botswana have noticed that their numbers are declining and attribute this to a loss of habitat, the birds' sensitivity to environmental changes, their slow reproductive rate, and illegal hunting for meat. Even at Mpala, the number of Kori Bustards I am currently seeing is low compared to population estimates from a few years ago. It is possible that this is directly related to the severe 2009 drought. By learning more about the health and normal physiology of these birds, we hope

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# MPALA-AT-A-GLANCE

## 2009: The Year in Review

### Visitors

Mpala hosted 121 independent researchers and graduate students representing 40 different institutions and organizations from around the world in 2009. We also hosted over 180 students in groups from several universities including McGill University, Cornell University, Leeds University, University of Nairobi, and Princeton University.

### Bed Nights

2009 was our busiest year yet with 6,883 bed nights at the research centre and 2,760 bed nights at the camp site.

## November Through January at-a-Glance



*Conservation Club field trip at Ol Jogi.  
Photo by Stephanie Hauver.*

### Workshops

- In early November, the Enhanced Livelihoods in the Mander Triangle Project and the Savory Institute hosted a four-day workshop at Mpala on Holistic Management. The workshop was attended by twenty participants from around Kenya and Ethiopia.

- In early December, Mpala researchers hosted a workshop on monitoring rangeland health, which was attended by 15 participants from around Kenya. The workshop is discussed in more detail in this month's article entitled "Monitoring Made Easy" (see page 1).

### Courses

- In January an undergraduate student group

from Cornell University participated in a behavioral ecology and conservation field course. The course was taught by Professor Irby Lovette of Cornell University and Professor Dustin Rubenstein of Columbia University.

- Also in January, 20 Ecology and Evolutionary Biology graduate students from Princeton University and Computer Science graduate students from the University of Illinois participated in a population biology field course. The course was taught by Professor Dan Rubenstein of Princeton University and Professor Tanya Berger-Wolf of University of Illinois.

### Events

- Mpala researchers and staff alike enjoyed the rare annular eclipse of the sun that was clearly visible from Mpala on the morning of January 15th. Everybody was well-equipped with pieces of film negative, through which they could clearly see the ring of sunlight shining around the edge of the moon. The eclipse lasted 11 minutes, making it the longest annular eclipse of the millennium. The eclipse was only visible in a 300 km band across Africa and Asia.

- Mpala Primary School's Conservation Club visited Ol Jogi's Pyramid Game Reserve where they saw numerous wildlife including a brown bear, cheetahs, cockatoos, and two trained Asian elephants. Everyone learned a good amount about wildlife and conservation and had a terrific time! ■



*The red-orange glow of the solar eclipse.  
Photo by Corinna Riginos.*

## DENNIS AND CONNIE KELLER

*Margaret Kinnaird*

At nearly two meters tall with a lanky athletic build, Dennis Keller might seem intimidating. But as soon as he speaks, initial impressions quickly fade and one is simply aware of being in the presence of a very warm and thoughtful man – just the sort to be dispensing sage advice as Vice Chairman of the Mpala Wildlife Foundation. Next to him, Dennis' wife, Connie, is a perfect partner – tall and graceful with a keen curiosity about nature and a long-time advocate for conservation.

The Kellers became involved with Mpala in 1993 when Dennis met Mpala's owner, George Small, while visiting their mutual alma mater, Princeton University. The two men found they shared a deep passion for Africa – not only for its wildlife but also for its people. George wisely asked Dennis to sit on the Board of Trustees of the Mpala Wildlife Foundation, which led to a long and collaborative friendship. Since George's death in 2001, Dennis has remained committed to preserving George's vision for Mpala.

Dennis and Connie's contributions to Mpala over the years have been extensive and their generosity enormous. Their unrestricted annual gifts and their propensity to nudge others by matching raised funds have been crucial in allowing Mpala to extend educational opportunities to our employees, invest in much-needed infrastructure, and more generally, ensure that Mpala's wildlife and wildlands endure.

In 2008, the Kellers gave the largest single gift to the Mpala Research Trust since its establishment by George Small. They simultaneously endowed Princeton University's Keller Center for Innovation in Engineering Education and provided extensive support to the Nature



*Dennis and Connie Keller.  
Photo provided by Princeton University.*

Conservancy and the African Wildlife Foundation for joint land-conservation projects in Africa. Mpala benefits greatly from these initiatives. One of the Keller Center's many activities includes supporting collaborations among Princeton engineers

and scientists to tackle problems on Mpala related to the sustainable use of land, water and natural resources. Joint land-conservation efforts between the Nature Conservancy, the African Wildlife Foundation and the Mpala Research Centre are being undertaken to conserve and monitor the efficacy of management regimes on newly purchased lands in Laikipia District.

Dennis' career has been dedicated to improving education and providing learning opportunities around the world. In 1973, he co-founded the Keller Graduate School of Management. Now widely known as DeVry University, the institution serves nearly 100,000 students in 37 countries with programs leading to professional certifications, baccalaureate and master's degrees, and doctors of medicine and veterinary sciences. Today, he continues his involvement as Director Emeritus.

In addition to his work at DeVry and Mpala, Dennis serves as a trustee of Princeton University, the University of Chicago (where he earned his master's degree in business administration), and is the Chairman of Board of the African Wildlife Foundation. Connie is a past chair of the board of trustees of the Nature Conservancy of Illinois and the current chair of its comprehensive fund raising campaign. The Kellers are residents of Oak Brook, Illinois, where they provide "home base" for their three children and a growing number of grandchildren. ■

## AARDVARK (*ORYCTEROPUS AFER*): CARS BEWARE!

*Tim O'Brien*

When we think about human-wildlife conflict in Africa, we usually think of crop losses to elephants and livestock losses to big cats. On Mpala, however, we have conflict of another sort: car collisions with aardvark holes. These encounters often result in broken shocks and springs, bent rims and the occasional catapulting of a researcher into the windshield.

Despite these inconveniences, we all get excited on the rare occasion when we see an aardvark. The aardvark is the sole species of the sole genus of the sole family of the order Tubulidentata. In fact, according to the Zoological Society of London, the aardvark is the second most distinctive mammal on earth, next to the duck-billed platypus of Australia. The closest living relative of the aardvark is the elephant shrew, and more distantly the manatees, hyraxes and elephants.

The aardvark is a solitary mammal that is active only at night, when it emerges from its burrow to feed on ants and termites. It is large, weighing up to 60 kilograms, and can grow to a length of two meters. Its most distinctive features are its teeth – it has only cheek teeth at the back of the jaw – and its toe nails, which are large and shovel-like, intermediate between a claw and a hoof. Its head is long and slender, and its snout ends in a flat disk where its nostrils are found. Aardvarks have a keen sense of smell. They have small, tubular mouths that are typical of species that feed on termites, and the tongue is long, sticky, and very flexible.

Aardvarks move slowly but can cover a surprisingly large area in an evening. As an aardvark walks, it swings its long nose from side to side to pick up the scent of food. When it finds a nest of ants or termites, it rapidly digs into it with its powerful front feet, which can easily cut through the hard crust of the



*An aardvark at night.  
Photo provided by Tim O'Brien.*

termite or ant mound. It then laps up ants or termites using its sticky tongue; aardvarks have been known to eat 50,000 termites in a night, impervious to the bites and stings of its prey – all the while it keeps its long ears alert for predators, especially lions, leopards and hyenas.

In African folklore the aardvark is much admired because of its diligent quest for food and its fearless consumption of soldier ants. The Hausa people of Nigeria and Niger make a charm from the heart, skin, forehead, and nails of the aardvark, which gives the owner the ability to pass through walls at night. The charm is said to be used by burglars and those seeking to visit young girls without their parents' knowledge.

Because of the aardvark's nocturnal behavior, it's extremely hard to get a good look at these creatures. Reports of aardvark sightings at Mpala always elicit groans of envy. Our camera trap surveys across Mpala show that aardvarks are widespread on the transitional soils of the escarpment (especially around the airstrip and spray race) and red clay soils with sparse vegetation. They start their evening at 7 pm sharp and continue foraging until around 4 am and are rarely observed after 5:30 am. So stay up late or get up early to glimpse one of Mpala's elusive aardvarks! Just remember to watch out for holes on the road. ■

## MPALA MEMORIES, PART III: ESTABLISHING THE FIRST RESEARCH CAMP, 1992

*Truman Young*

Until 1995, the Mpala Research Centre did not exist except on paper; there were no buildings, no cooks, no administrators, no research assistants, no water or fuel supplies. There was only the camp that my wife, Lynne Isbell, and I created from a beautiful patch of bush.



*Ammo-box bush oven. Photo by Lynne Isbell.*

In 1992, Lynne and I were newly married and in Kenya starting new field projects. I was looking for sites on Mpala to set up a large-mammal exclusion experiment (which eventually came to be named the KLEE project); Lynne was looking for a place to do a comparative study of patas and vervet monkeys. We were the first researchers at the newly founded “Mpala Research Centre.”

We spent our first days on Mpala driving over the rough roads in Lynne’s brand new tiny Suzuki, completely packed with gear inside and on the roof, looking for a suitable campsite. John Wreford-Smith, who was then the manager of Mpala Ranch, was a gracious host. He offered us a long-term campsite at the southeast corner of Mpala, which is now the site of the Ewaso N’giro River Camp. The area around the camp was teeming with birds, reptiles, mammals and butterflies. It was rich in trees, shrubs, grasses and flowering herbs, and full of the sounds, scents and rhythms of the African bush.

We were lucky early on to engage the services of research assistant Bernard Musyoka and cook Mzee (Antony) Ndiritu. Bernard probably knew more about vervet monkeys than anyone in the world and was a superb observer – as well as a wonderful storyteller. He also had experience as a builder, which came in handy as we established our camp.

Mzee Ndiritu seemed ancient when we hired him, but he was still with us ten years later. His cooking repertoire was somewhat limited, but he was a joy. One Thanksgiving at the camp, he amazed us by roasting to perfection a large turkey in an ammo tin over hot coals. Our watchman was Sumat Sumbale, and we hired two young men as day laborers, Patrick Elimlim Peto and Julius Nakalonyo. Both Sumat and Julius are now well-known figures around Mpala, having risen to become Assistant Head and Head of Security, respectively. Patrick has stayed on at the Ranch, working as a Clerk.

**“...HE AMAZED US BY ROASTING TO PERFECTION A LARGE TURKEY IN AN AMMO TIN OVER HOT COALS.”**

The camp was supplied with 24-hour solar electricity. We had a large bedroom tent as well as an office tent, which contained hundreds of herbarium specimens and dozens of maps and books that were later donated to the Mpala Library collections. The only wooden building at the camp was a small two-room kitchen area. Rain collected from its tin roof was the source of our drinking water, and the river water supplied our cleaning and outdoor hot shower. One of our most prized possessions was an old kerosene refrigerator. The evening wind (especially in July-August) battered our tents so much that we erected wind barriers on their windward sides.

Over the next three years, this was home to us and our students. ■



## LIES, CHEATING, AND DECEPTION ON THE LAIKIPIA PLAINS

*Dino Martins*

One of the most abundant species of trees on the high plains of Laikipia is the whistling thorn acacia (*Acacia drepanolobium*).

These remarkable trees have been the subject of much research and discovery by students, visitors and scientists at Mpala. Several different types of ants live on the whistling thorn acacias, and it doesn't take long to find out that some of the ants pack a powerful and painful bite.

Scientists are not the only ones who need to tell the ants apart on the trees. Many other species interact with these acacias – from lanky giraffes to tiny mites. The same ants that bother researchers also harass other animals: at the slightest disturbance of the tree, ants come rushing out to defend their home.

One particular species of ant that is very aggressive and an extremely good partner for the tree is a cocktail ant (*Crematogaster mimosae*).

But even the most harmonious relationship can be infiltrated with lies and deception. While the ant and the tree each benefit from their relationship, other creatures exploit the ant-plant mutualism for their own selfish ends. During the course of my research on Mpala and

around Laikipia, I have found at least two examples of these remarkable creatures.

While watching the ants on the young shoots of an acacia one day, I noticed a bright green form moving among them. At first I thought I was



*A Hodson's Ciliate Blue butterfly.  
Photo by Dino Martins.*

seeing things – perhaps the result of spending too much time in the hot Kenyan sun?

A closer look revealed that this little green creature was an alien intruder in the form of a beetle. This beetle lives among the ants as a total freeloader. It cons them through a mixture of tactile and no doubt chemical communication into thinking that it is one of them. It even taps them on the head in the right way and the hapless ants regurgitate food for it! The beetle makes its way through the veritable army of ants totally unmolested.

On another day, I was just going about my work when I happened to notice some flashes of blue whizzing past me. When this brilliant blue creature settled down, I found it was a lovely lycaenid butterfly, Hodson's Ciliate Blue (*Anthene hodsoni*). This butterfly is another of the 'hangers-on' of the ant-Whistling Thorn partnership. The caterpillars live inside the swollen thorns where the ants also live and are lovingly tended by ant workers throughout their caterpillar-hood. They keep the ants drugged with sugars and amino acids secreted from an organ on their backs. Females of this butterfly can tell apart the different ants and only lay eggs on trees with the "right" ant – the aggressive ones.

These strange creatures have truly infiltrated the whistling thorn ant society and show us that looking deeper into these kinds of natural relationships reveals undercover webs of partnership and deception that rival any soap opera. ■



*Cocktail ants on a whistling thorn acacia.*

*Photo by Dino Martins.*

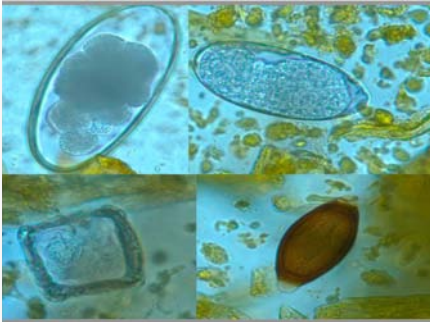


## BEHAVIOR AND INFECTIOUS DISEASE:

## THE GRANT'S GAZELLE PROJECT

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high levels of parasites and infections. Indeed, it's common knowledge among Laikipians that Grant's gazelle meat is often riddled with parasites.



*Eggs of some of the intestinal worms infecting Grant's gazelle.*  
Photo by Vanessa Ezenwa.

I'm interested in what it is about Grant's gazelle that makes them an excellent host for such a large number and variety of parasites. How do these

parasites affect gazelle behavior and reproduction? More importantly for local ranches and conservancies, are gazelles important sources of infection for livestock and other wild herbivores?

To answer these questions, I have initiated a long-term study on gazelle behavior and disease ecology. In August 2009, my team and I captured over 60 Grant's gazelles on Mpala, Jessel and Segera Ranches with the help of a professional capture crew from New Zealand and the Kenya Wildlife Service game-capture team. We marked each gazelle with a unique pair of colored ear-tags and collected information on each individual's infection status so that we can track changes in parasite and disease levels through time.

So far, we have found that gazelles are infected with a variety of intestinal worms,

lungworms, ticks and tick-borne infections, including many types also known to infect cattle and other wild herbivores. This information suggests that there is potential for gazelles to spread infections to other species. That's where behavior comes in.

As in many species, male gazelles have substantially higher infection levels than females. We are closely tracking males to determine whether behavioral differences make some males more vulnerable to infection – and more likely to spread infection – than others. For example, male gazelles that defend territories to attract females often place their territories in sites heavily used by other herbivores, like old boma (cattle corral) sites. By spending most of their time in these sites, territorial males may be more likely get new infections and to spread them to other species. We are also examining how parasite levels might affect the ability of territorial males to successfully attract females and sire offspring.

Over the next few years, we will continue to investigate the connections between gazelle behavior and parasite infection. Our hope is that this work will improve our general understanding of the role that species like Grant's gazelles play in parasite and pathogen transmission in savannah herbivore communities. Our work may also tell us a bit more about why some wildlife species pose a greater disease threat to livestock, and potentially humans, than others. ■



*The gazelle capture team.*  
Photo by Karen Ekernas.

## MONITORING MADE EASY

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hope, be easy to use and widely adopted by land managers in the Horn of Africa. Over two days, workshop participants from Laikipia, Samburu, East Pokot, the Maasai Mara and Nairobi learned about designing a monitoring program that managers can use to determine whether they are meeting their long-term management objectives, such as maximizing forage production or minimizing risk of erosion. We are already incorporating the feedback from this and a second workshop held in Yabello, Ethiopia into an updated version of the manual that will be available in April.

The core of the manual is a set of four simple methods for collecting monitoring data. These four methods can be used by managers to monitor changes in risk of erosion, plant cover (including grasses, trees, and shrubs), and tree and shrub density – all of which are excellent indicators of rangeland health. The data can be collected using only a stick, pencil, and a simple, picture-based datasheet. All of the data can be collected in only 20 to 40 minutes per site, and the data can be summarized in just a few minutes using simple calculations or, in some cases, just by counting.

**“THE CORE OF THE MANUAL IS A SET OF FOUR SIMPLE METHODS FOR COLLECTING MONITORING DATA.”**

What sets these methods apart from other methods for monitoring rangelands is that they are simple and rapid, while at the same time they provide quantitative (numbers-based) data that can be compared across sites and years, regardless of who collects the data.



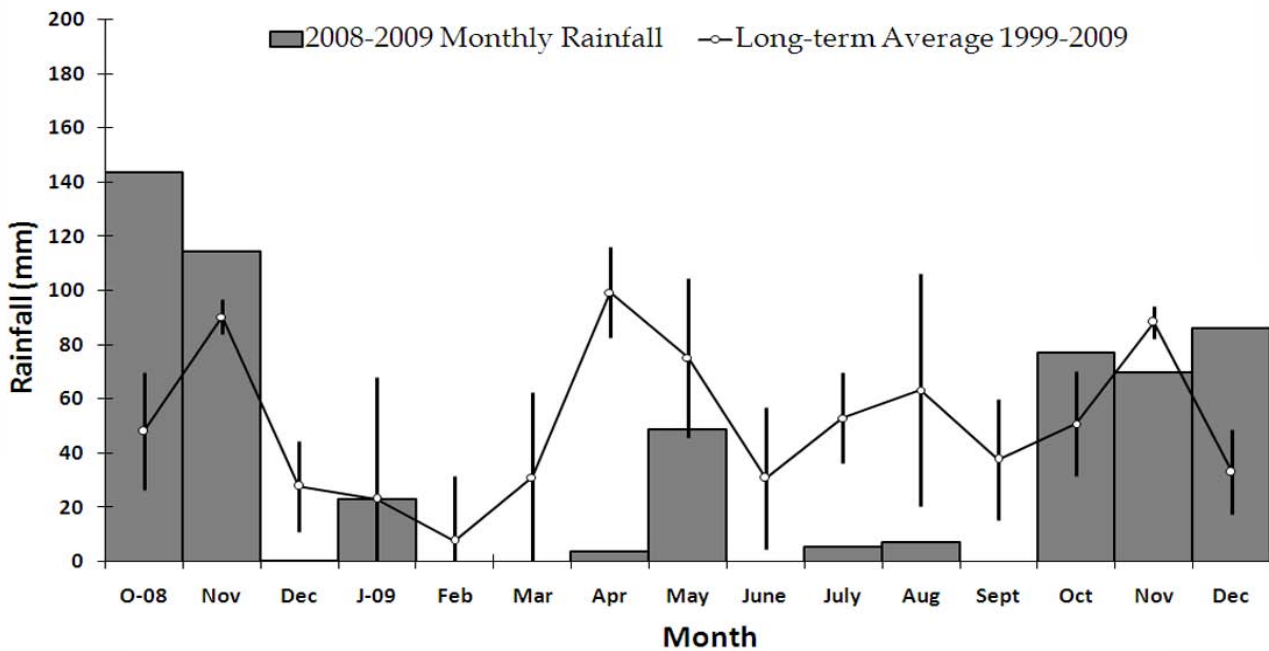
*Monitoring Rangeland Health manual.  
Photo by Corinna Riginos.*

The manual also highlights the opportunities for – and importance of – engaging all stakeholders in the monitoring process. Designing and carrying out a monitoring program is not just something that scientists and researchers do; it can and should be driven by the people managing the land – by ranchers, pastoralist community members, conservancy managers, and any other stewards of the land.

Monitoring and evaluation is an often-overlooked but critical step in land management. In many cases, monitoring is perceived as too time-consuming or technical. We hope that the methods presented in *Monitoring Rangeland Health* will demonstrate that quick, efficient, informative, (and perhaps even fun) monitoring is indeed possible.

For more information or to request a copy of the manual, please contact me at [criginos@gmail.com](mailto:criginos@gmail.com). ■

**MRC RAINFALL 2008 - 2009**



RESEARCH

**HOW HEALTHY ARE MPALA'S KORI BUSTARDS?**

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to inform and improve management of this species in its natural environment and in captivity.



*Alex setting up the capture netting.  
Photo by Natasha Godard.*

On Mpala, I have been working with an NMK intern, Alex Mutati Syingi, and Mpala field

assistant Antony Eshwa. Alex has a keen interest in ornithology and has worked with various research groups and many different bird species throughout Kenya. Antony contributes to the project by using his hawk-like eyes and excellent knowledge of the Mpala ecosystem to find the often-elusive Kori Bustards amongst the dense savanna vegetation. It is my hope that together, our "Kori team" will continue to gather new insights into this handsome and intriguing bird.

If you wish to learn more about my work, you can follow my Field Notes on the Smithsonian's National Zoo website:

<http://nationalzoo.si.edu/ConservationAndScience/TropicalEcosystems/KoriBustards/fieldnotes>. ■



# MPALA'S NEW ADOPT-AN-ELEPHANT PROGRAM

Over 7,000 elephants migrate annually through Laikipia, many of them crossing Mpala. With our new Adopt-an-Elephant Program, you can become involved with the life of one of these majestic leviathans.

Thanks to student projects that focus on the Mpala elephant populations, the Mpala Research Centre has a rich database of elephant photos, identification facts, behavior, and population data. The Adopt-an-Elephant Program offers three different packages. The basic package includes a photo of your adopted elephant, an adoption certificate, and an elephant fact sheet. Other packages offer an elephant hand-painted pillow cover and naming your adopted elephant!

Contributions will go towards Mpala's patrolling and monitoring of the large elephant populations and will also support elephant student projects being conducted at Mpala.



*A carefree elephant calf.  
Photo by Margaret Kinnaird.*

For more information or to adopt an elephant contact Allison Williams at [aewilliams@mpala.org](mailto:aewilliams@mpala.org). ■

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MPALA WILDLIFE FOUNDATION & MPALA RESEARCH TRUST

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