

MPALA MEMOS

NEWS FROM MPALA

TOP STORY

A TOXIC SURPRISE

Margaret Kinnaird and Tim O'Brien

The laundry room is not the most romantic place for a major discovery, but that is where, among the piles of un-ironed clothes, we unraveled the toxic secret of the African crested rat (*Lophiomys imhausi*). This two-pound rodent is not your normal street rat—it has a reputation for fearlessly facing down predators and offering them a bite they'll never forget—if they survive. More than a few of Laikipia's inquisitive canine pets who touselled with crested rats have ended up paralyzed or dead.

Crested rats are found in woodlands and montane forests from Ethiopia to Tanzania. This one was trapped along the Nanyuki River and delivered to Mpala curled in a furry, grey ball at one end of a large, wire cage. For several days we gingerly filled a water



*African crested rat applying a toxic goo to its fur.
Photo by Margaret Kinnaird.*

dish and pushed vegetable peels and bananas into the cage while anxiously awaiting the arrival of Jonathan Kingdon an African mammal expert and renowned wildlife artist.

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RESEARCH

IMPALA ABOVE MPALA: A TRUE STORY OF FLYING ANTELOPE



Adam Ford

A small, white helicopter thumps its way through the red, equatorial morning as the moment of truth is about to arrive. After months of frantic planning and organizing—and most recently, sleepless nights of anticipation—our hope is that the approaching helicopter is carrying a healthy female impala (*Aepyceros melampus*). The thumping grows louder and my research assistant, Simon Lima, and I look at each other in amazement: dangling 3m beneath the helicopter is a blue bag with a small brown head poking out. Success!

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*An impala arrives by helicopter.
Photo by Theresa Laverty.*

CAMELS: COMING OF AGE

Margaret Kinnaird

Long legs, dense eyelashes, and full lips are highly desirable features. But throw them together with big, flat feet, a periscoping neck, prominent nose, and hairy lips—top it all off with a big hump—and you have a dromedary camel. Across much of the world, camels are viewed as comical-looking desert creatures and are known for carrying their own water bottles on their back. That image is about to change.

The camel is claiming a strong position in the face of East Africa's changing climate. As droughts increase in frequency and severity, camels, with their ability to go days without water and their capacity for plentiful, dry-season milk production, are increasingly important for food security and human welfare. In Laikipia alone, the camel population has grown fourfold since 1980 as pastoralists turn to camels to supplement their dwindling, drought-susceptible cattle herds. Nationally, camels now number 5 million compared to 7 million cattle.

In northern Kenya, charities and NGOs interested in pastoralist well-being are focusing on camels as a critical component



*Two calves nurse while their mother waits to be milked.
Photo by Laura Budd.*



*One of Mpala's camels poses for the camera.
Photo by Laura Budd.*

of climate adaptation strategies. Save the Children, the Gates Foundation, Biovision, and the Dutch Development Organization are among the many organizations that recognize camels as having a vital role in the future of pastoralist economies. But because camel milk—and other camel products—have only recently begun to enter formal marketing systems, their economic importance has been grossly underestimated. As a consequence, there have been few practical studies to improve camel husbandry and market sustainability. With this in mind, Mpala is taking advantage of its underexploited, 81-strong camel herd to explore ways of improving productivity of camels and address what we see as a highly relevant regional issue.

Camel's milk, long-cherished by northern pastoralists, is enjoying a renaissance in Kenya's urban areas. Optimists claim that camels' milk could become an internationally popular health food product worth 10 billion dollars a year: with proper marketing and improved management, they might not be far off base.

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SCHWARZENBERG I

Truman Young & Margaret Kinnaird

Perhaps some have heard old-timers refer to the bridge across the Ewaso Ng'iro River as "Princess Hilda's Bridge". The bridge—which is now little more than crumbling cement pillars—was named after Princess Hilda of Luxemburg and Nassau (1897-1979). Princess Hilda was the wife of the Czech aristocrat, Adolph Schwarzenberg (1890-1950) who owned Mpala Farm from 1933 to 1950. Below is the first of two fascinating installments extracted from Schwarzenberg's 1946 essay, "A Kenya farmer looks at his colony", which describes the farm during Shwarzenberg's time.

At the beginning of 1933 the writer [Schwarzenberg] and his wife, believing that a time of conflict lay ahead in Europe, acquired a 999-year leasehold on a 3,500-acre farm on the banks of the ever-flowing Uasho-Nyiro river. This farm, now known as "Mpala"—Mpala is the name of an antelope (Aepicerus [Aepyceros] melampus) which abounds in this region—lies on the Laikipia plateau, twenty-eight miles due northwest of Nanyuki, at the foot of Mount Kenya, the nearest township, which is also the terminus of the railway from Nairobi. The altitude of the farm is from 5,500 to 6,000 feet high, and Mpala is cold at night, when the temperature is sometimes as low as 45° above zero. From September to February it is very warm indeed, the mean temperature being about 90° during the day—but the thermometer climbs as high as 130°.

The bedrock in this part of Kenya consists partly of granite and partly of lava covered by a shallow layer of poor, sandy soil. Crops, mainly maize, lucern (alfalfa), and fruit trees, could be grown only near the river, the rest of the property being suitable only

for cattle raising and dairy farming. But food for stock was always scarce during the dry season. And during the rainy season—when it was advisable for Europeans to go away—there often was little if any rain. Catastrophic droughts have been the result in the past three years. If the farm was to survive, something had to be done—Mpala had to be irrigated. My caretaker, Mr. Roy Home, began constructing a concrete dam across the river to store water in a large pond that lay upstream. From this pond we had a lined canal about 2,500 feet long



*The dam and the top of the canal today.
Photo by Laura Budd.*

built downstream to a point where the water would drop twenty feet back into the riverbed. Here a Czechoslovakian engineer, Mr. Cibulka, with machinery, tools, switches, and so forth, shipped from his country, installed a turbine. Though the granite had to be blasted to make room for the building, the machinery and the setup proved satisfactory and comparatively cheap. The results obtained more than repaid the cost and effort. An electric power plant now operates a generator and several electric pumps. These force water to higher levels, where gravitation makes the water useable for irrigation, and for supplying water and light to the many houses and buildings erected in the past few years. Some of

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MIKE LITTLEWOOD: MPALA'S LOCAL HISTORIAN

Laura Budd

With a gruff exterior, Michael Littlewood's poker face conceals a passion for Laikipia and its people that emerges as he delves into the area's history. As Mpala's Conservancy Manager, Mike is in charge of the 2,500 cattle as well the security of the people and wildlife residing on the property. Beyond these duties, Mike has a wealth of knowledge on local history, which comes from calling Laikipia home most of his life. He's even rumored to know the detailed lineages of every European settler in Laikipia. True or not, Mike has certainly witnessed many changes in Laikipia since his childhood.

Mike Littlewood's father was a Laikipia rancher, so Mike grew up around cattle and has continued working with them his whole life. At age 18, Mike began his career as an Assistant Ranch Manager for Lady Delamere on the Delamere estate near Nakuru. He first came to Mpala in the 1970's to lease grazing land from George Small and in 1980 was hired as ranch manager. He stayed on until 1987, after which he spent the next 20 years exporting cattle to Bahrain.

Mike returned to Mpala in 2007 as the Conservancy Manager and found that Mpala had changed considerably since the 1980's. Mike remarks that in the 1980s "Mpala was a simple place to run." Mpala was a cattle ranch and a British army training ground, "and that was it." Livestock-killing predators



Mike Littlewood participating in a game of "What Animal am I?" at Community Conservation Day. Photo by Laura Budd.



Mike Littlewood (right) at last year's Community Conservation Day. Photo by Theresa Laverty.

were shot, and there was no relationship with neighboring communities. "The boundary was the boundary." Mike admits that managing the ranch today is much more complex and challenging. The new mission to protect wildlife demands a larger security force to prevent poaching. With the addition of the research center, Mpala's resident population has greatly expanded. One of his greatest concerns now, Mike insists, is providing water for everyone and ensuring ample water in the future. Mike is also well known for getting along exceedingly well with Mpala's pastoralist neighbors, though Mike credits Mpala's good relations with the surrounding communities to the efforts of the Laikipia Wildlife Forum.

When asked his opinion on the co-existence of cattle and wildlife, Mike describes it as necessary, and that "it is essential people see that it works, so it can be copied." Mike claims that it's no longer possible to survive here with only cattle. Mike is delighted that there is a growing interest from researchers in his work. He now uses mobile bomas and alters grazing rotations in conjunction with research projects that seek to understand how livestock and wildlife influence one another. Even though Mpala's mission has broadened, Mike's lifetime spent working with cattle and his great knowledge of Laikipia's history and its people still serve him well in his role as Conservancy Manager. ■

COMMUNITY CONSERVATION DAY - 2011

Alex Kasdin & Nancy Rubenstein

The sound of over one hundred Kenyan students rehearsing Maasai dances and sing-songy conservation poems filled the air at Kimanjo Primary School on Saturday July 9, 2011. Students from five Laikipia primary schools gathered to celebrate the third annual Community Conservation Day.



Students from Naiperere school perform a traditional song and dance.

Photo by Dan Rubenstein.

Community Conservation Day is a year-end festivity for the five schools that participate in the Northern Kenya Conservation Club (NKCC). NKCC is an afterschool program that teaches Kenyan students about their country's wildlife and the importance of conserving biodiversity. The program began four years ago when Dan and Nancy Rubenstein secured start-up funds from the St. Louis and San Diego Zoos. Today, the success of the program has attracted support from Princeton University Grand Challenges, Princeton University Press, Denver Zoo, Mpala Research Trust, and private donors.

Each participating school has a staff member who teaches the club year round. Nancy Rubenstein and Wilson Nderitu, an Mpala Research Centre field technician, provide additional instruction. The clubs

also benefit from visits from volunteers such as Princeton in Africa Fellows Theresa Laverty and Laura Budd, and Princeton Environmental Institute Grand Challenges intern Alex Kasdin.

The conservation clubs highlight experiential learning and interactive activities to convey environmental conservation lessons. Students leave their desks, go outside, and see their environment through their own eyes – a completely new way of learning for Kenyan students.

Community Conservation Day began as a way to share what the students learned in the clubs with fellow participants and community members. Each school selects a topic from the club curriculum and prepares an interactive, fun presentation that demonstrates concepts learned during the year. This year, presentations ranged from building a grasslands food web to a play about



Students from Mpala school create a foodweb with their teacher, Hezron.

Photo by Dan Rubenstein.

beekeeping. Laughter filled the schoolyard when Chief Jacob Loiyangere attempted to guess the identity of an animal photo on his back in a game called, "What Animal Am I?"

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"KELLY'S ANGELS": THREE SUMMER INTERNS TAKE OVER THE CAYLOR LAB

Hannah Safford

For several years, Princeton professor Kelly Caylor's research group has been studying water and the role that it plays in dryland ecosystems. This summer, the Caylor Ecohydrology Lab at Mpala was flooded by a new resource—interns!

I was lucky to be one of three undergraduates on the Princeton Environmental Institute internship, along with Alice Suh and Kathleen Ryan. Representing three different Princeton departments and classes, Alice, Kathleen, and I brought a range of skill sets and academic backgrounds to tackle various projects.

Alice assessed photosynthesis, water potential, and biomass of vegetation, while Kathleen calibrated 19 rain gauges, organized a 40-yr rainfall database, and worked with a



Alice uses a sensor to measure photosynthetic potential of sunlight beneath trees.

Photo by Hannah Safford.



Kathleen and Hannah work on calibrating a soil moisture sensor in the Caylor Lab.

Photo by Alice Suh.

model that shows where Mpala's rainstorms originate. I ran an experiment that tracked the movement of water—including liquid and vapor phases—through soil with the aim of better understanding water evaporation.

I learned that many environmental engineering devices are complicated and finicky. Although, it must be said that there are few things quite as satisfying as getting a soil moisture probe to work the way it is supposed to after a week of tweaking.

Ultimately, our results will help the Caylor lab model the way that water moves through the atmosphere, soils, and vegetation in dryland ecosystems. Models like these are critical if we are to improve water efficiency as we face a changing climate.

Although Kathleen, Alice, and I left Mpala at the end of August, we are still involved in our projects. I speak for all of us when I say that we had fantastic summers, and that we hope to continue to be connected with the Caylor lab and the Mpala community for years to come. ■

THE MENTORSHIP CONNECTION: EMPOWERING YOUNG WOMEN THROUGH EXPLORING SCIENCE

Sarada Eastham & Kathleen Rudolph

“At first, I hardly noticed the eight uniformed schoolgirls sitting behind me. They were not giggling like many girls that age do, and they seemed so excited to be involved with learning about research at Mpala.” Grace Charles, an Mpala researcher, then remembers that one student asked a question to the Director of the Kenyan Wildlife Services. “I was floored, the question was so well thought out and articulate.”

The school group was from the Daraja Academy, a neighbor to Mpala, about half way to Nanyuki. Since that initial visit during the Mpala-Denver Zoo Discovery Day in 2010, the partnership between research and education for girls at Daraja has entered an exciting new phase.

Recently, Corinna Riginos and Siva Sundaresan, long time Mpala researchers, visited the Daraja campus. They helped the students learn about monitoring land health and conservation principles. Later in the year, University of Florida PhD students Kathleen Rudolph and Megan Gittinger visited Daraja and led the students through the scientific process.

“It was exciting to see their love for knowledge and confidence in speaking with us about science,” says Kathleen. “I also think they appreciated seeing women scientists, which is not common in many parts of the world.”

Daraja Academy, named after the Kiswahili word for “bridge,” provides an education for talented girls who face severe challenges early in life, such as poverty and violence. The girls are selected from across the country, effectively “bridging” the best qualities from Kenya’s many unique

cultures. Now there is a new bridge in the lives of these gifted students: the scientific research community at Mpala Research Center.

Twice in the last two months, eight Daraja students traveled to Mpala and spent a day working with biologists. With Kathleen Rudolph, the students experimented with ant colonies to investigate what happens to their offspring after “wars of attrition” that are fought to gain new tree territories.



Daraja students in the field with Kathleen Rudolph. Photo courtesy of Kathleen Rudolph.

“I think they were a bit surprised that there were so many questions to ask about ants. Starting there, it wasn’t long before they were creating potential experiments for a wide variety of things they saw here at Mpala,” says Kathleen. “Their creativity and passion for learning was inspiring.”

With generous support from donor Fred Kittler, the students at Daraja Academy will continue to have unique access to one of the world’s foremost field research stations.

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MPALA-AT-A-GLANCE

Upcoming events

• On November 3rd & 4th, Mpala will host an elephant conservation working group. The goal of the meeting will be to develop coordinated databases for elephants across the Ewaso region to help chart population trends, threats, and assist KWS in Monitoring the Illegal Killing of Elephants (MIKE).

• On November 5th Lauren Porensky, a UC Davis PhD student, will be holding a workshop at Ol Pejeta Conservancy entitled "Using Livestock to Improve Rangelands." Email Lauren (lemcgeoch@ucdavis.edu) for more information.

• On November 18th Corinna Riginos, a Princeton postdoc, will be holding

a rangeland monitoring workshop at Mpala. Email Corinna (criginos@gmail.com) for more information.

Workshops & Student Groups

• In August, 15 University of Michigan undergraduates joined 8 University of Nairobi students and a Tanzanian student for a three-week field course entitled, "Sustainability Challenges and Opportunities in East Africa."

• This October, An Earthwatch "Business Skills for World Heritage" workshop brought together World Heritage Site managers from all over Africa, with Shell Oil Company business executives. Shell executive partnered with managers from each World Heritage site to help develop

business plans for the next year.

• Two groups of Spanish students spent a week on Mpala this October studying mammalogy with the Institut de Biodiversitat Tropical.

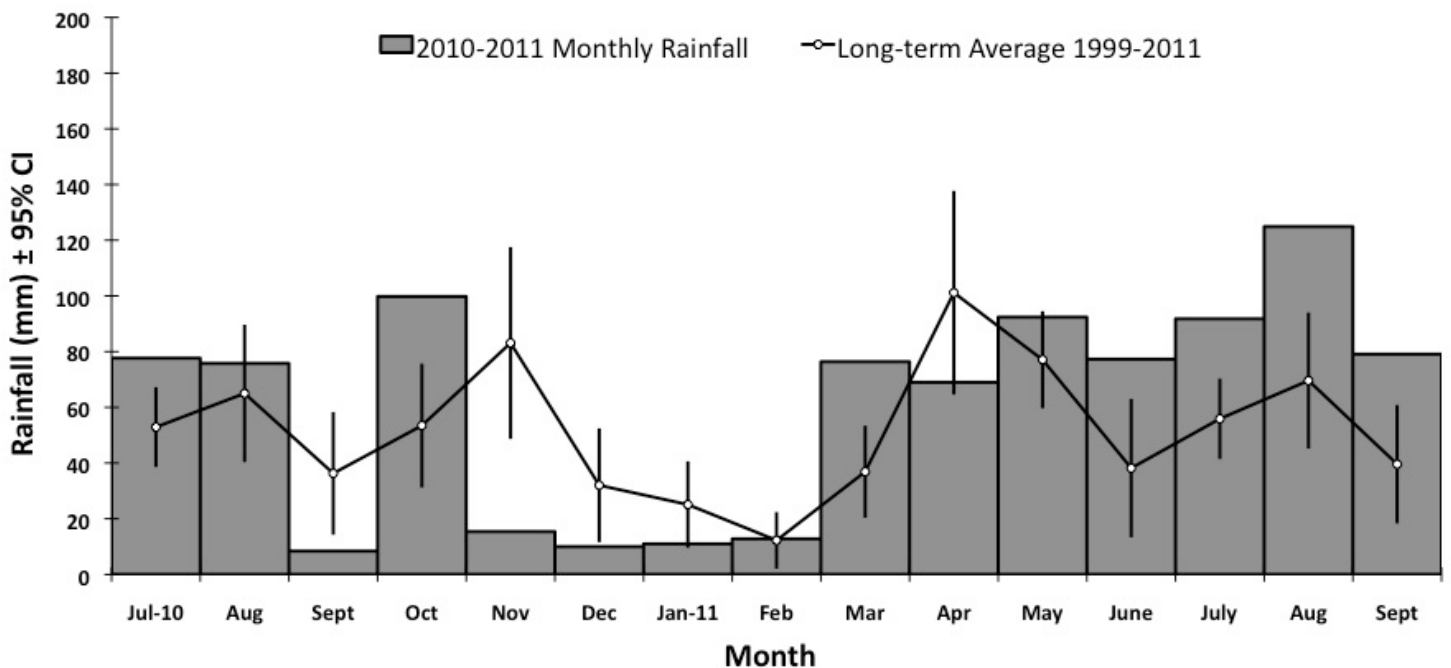
Welcomes

• Mpala welcomes Gikenye Chege as our new finance officer. Gikenye has a wealth of experience in accounting and finance, most recently coming from Inoorero University in Nairobi where he was an audit manager.

• Mpala also welcomes Andrew Atuka as a new administrative assistant. Andrew is a graduate of Utalii College of Hospitality. He will be working alongside Joseph Leting and will be in charge of all reservations.

MPALA WEATHER CORNER

MRC RAINFALL 2010 - 2011



A TOXIC SURPRISE

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Jonathan had been intrigued with the crested rat and its toxic nature since he was a boy in Tanzania. He had a hunch that the critter's toxicity was related to the Acokanthera tree, also used by East African hunters to poison their arrows and spears.

Once Jonathan arrived, we procured root and bark from a nearby Acokanthera tree, and offered it to the rat. Within seconds, we were witnessing some amazing—and revealing—behavior. The rodent began munching the bark, then stood on its hind legs and exposed a bold, black-and-white-striped tract of hairs. The performance continued as it arched backwards and slathered the masticated goo on the spiky, once hidden hairs—working meticulously from the left shoulder down to the base of the tail, before shifting to the right. Our rat was anointing itself with a batch of lethal toxin extracted from the poison-arrow root!

"OUR RAT WAS ANOINTING ITSELF WITH A BATCH OF LETHAL TOXIN EXTRACTED FROM POISON-ARROW ROOT!"

Working with colleagues from the National Museums of Kenya and Oxford University, we pieced together other bits of the puzzle. Electron microscopy of the flank hairs revealed perforated, wick-like structures that facilitate the rapid absorption of saliva and ensure that each hair remains saturated with as large a dose of poison as possible. We also discovered that the Acokanthera tree contains ouabain, an organic poison that is used as a clinical treatment for congestive heart failure. At low doses, ouabain stimulates a weak heart but when concentrated, can cause even an elephant to have a massive heart attack.

PROF. STEVEN TOMPKINS, CAMBRIDGE UNIVERSITY REMARKED "IT IS A TRULY WONDERFUL EXAMPLE OF THE GENIUS OF EVOLUTION. IT ADDS SPLENDIDLY TO EXAMPLES OF THE USES TO WHICH PLANT TOXINS HAVE BEEN PUT. I THINK IT IS ALSO AN EXTREMELY ACCESSIBLE PAPER TO FIRST YEAR STUDENTS OF EVOLUTION AND BEHAVIOR. ITS INTERDISCIPLINARY AND INTERNATIONAL RESEARCH NATURE IS ALSO EXEMPLARY.... IT TICKS THE BOX OF PRACTICALLY EVERY BIOLOGICAL DISCIPLINE!"

When under attack, we suspect the slow moving crested rat does not attempt to run off. Instead, it freezes, hisses, exposes its boldly patterned poison-laden flank, and entices predators to bite. Besides its coloring and poisonous hairs, the crested rat has a heavily reinforced skull, thick vertebrae, and unusually tough skin—a all protection against a predator's canines.

"OUR DISCOVERY IS THE ONLY KNOWN INSTANCE OF A MAMMAL ACQUIRING A LETHAL TOXIN FROM A PLANT FOR DEFENSE."

Our discovery is the only known instance of a mammal acquiring a lethal toxin from a plant for defense. Why this has happened so rarely among mammals is unknown, but probably has to do with the complex set of adaptations required. Crested rat ancestors had to evolve not only hefty skin, which isn't easy to lug around, but a helmeted skull, and immunity to ouabain. And for Laikipia's pet dogs, that makes them a unique and unexpected sort of villain.

Our study appears online in the *Proceedings of the Royal Society B*. ■

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IMPALA ABOVE MPALA: A TRUE STORY OF FLYING ANTELOPE

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The helicopter pilot, Mark, and his net gunner, Jono, have come from New Zealand (<http://www.frontierhelicopters.com/>) to help us—along with the Kenyan Wildlife Service—capture and collar 20 female impala. The collaring effort is part of a broader study of ungulate movements that I am conducting with my PhD advisor, Dr. Jake Goheen. We are focusing on Mpala's two most abundant herbivores—impala and dik-dik—to determine how these species select habitats, avoid predators and compete for food. By attaching high resolution GPS collars to females, we can better discern the limits to population growth imposed by resources and predators. We chose to focus on females because they are the key to understanding how populations persist or decline: males care about females, while females care about resources.

As the first animal lands gently on dewy grass, my instructions to the helicopter crew are simple: catch only adult females, target one animal per herd, and spread the captures across the ranch.



Adam Ford and research assistants collar and measures an impala. Photo by Theresa Laverty.

The crew's technique is to fly to an area, locate a herd, drop down so that the helicopter skids are just above the bushes, and gently push the herd into the open. Mark swings the helicopter sideways giving Jono a clean shot with the netgun. Jono, strapped in with only a seatbelt, leans out of the door and fires the .303 powered, single shot netgun. The netgun is a marvel of technology. Equipped with four candlestick-sized weights that

spread the net out to roughly 5m square, Jono can ensnare an animal from the air, then jump out as Mark swoops to the ground, blindfold and bind the animal's legs, and be back in the air in minutes.



Making sure the collar isn't too tight. Photo by Theresa Laverty.

While we attach collars and take measurements of one animal, the helicopter crew is in the air, focusing on the next capture. Their efficiency is remarkable. On the last flight, Simon flew in the back seat to witness a capture from the air. When he landed, all Simon could say is, "Those guys are really tough." By 11am, we completed more captures than we had in two weeks with ground-based attempts.

Our early results are striking. Impala rarely cross luggas (temporary stream beds), but use open areas, like old boma sites, for resting and keeping an eye out for predators. Dik-dik rarely use these open areas, unless their territory is in a very open and grassy location. Dik-dik occupying open areas have much larger territories than those living in the bushiest areas. Although preliminary, our results suggest that body size and predator avoidance strategies help keep impala and dik-dik from competing with each other too severely.

As we follow our animals and build our database, we hope to be able to show how managing for increasing or decreasing shrub densities may help determine the fate of these two ungulate species—especially as predator populations stabilize across Laikipia. ■

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CAMELS: COMING OF AGE



*A healthy herd of Mpala youngsters.
Photo by Laura Budd.*

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Although camels are more expensive to buy than cows (even in good times, a cow is worth about 3 times less than a camel), they are cheaper to keep, and their milk fetches more on the market. Currently a liter of non-

Milky Facts

- *Camel milk is three times richer in Vitamin C than cow's milk*
- *Is rich in iron, unsaturated fatty acids and B vitamins*
- *Has a longer shelf life than other livestock milk*
- *Makes great yogurt*
- *Is professed to have healing properties*

processed camel's milk sells for KES 90-140 (\$1.00-\$1.50) while processed, packaged milk from Vital Milk (Kenya's only camel milk factory, located in Nanyuki), sells for KES 320 (\$3.50)/l. Camel meat—which has no

cholesterol and hardly any fat—fetches a handsome KES 650 (\$7.00)/kg in Nairobi markets, almost twice as much as beef.

Mpala has initiated a partnership with Dr. Ellen Dierenfeld of Novus International, a livestock feed company that designs locally-sourced feed supplements, Dr. Sharon Deem of St. Louis Zoo veterinary program, Dr. Abdi Guyile of Egerton University Department of Animal Science, Holger Marback of Vital Milk, and Chief Loiyangere of Ilmotiok.

Novus International generously provided \$10,000 worth of feed supplements and two grants to test the effects of supplementation on camel health and productivity and to investigate camel diseases that might be transmitted among humans, other livestock, and wildlife. Additional funds from Conservation Food and Health are supporting Tom Nyariki, an Egerton University MSc student, whose study focuses on whether dietary supplementation will (1) improve weight gain in pregnant dams, (2) increase milk production in lactating dams while maintaining milk quality, and (3) reduce mortality and increase weight gain among calves. Dr. Deem, who leads the disease aspect of our study, has been busy drawing blood, collecting ticks and feces and spending hours in Mpala's laboratory analyzing blood chemistry and looking for infectious diseases.

Stay tuned for our results and be on the look-out for camel's milk chai—it may soon be coming to your nearest Starbucks or Dorman's! ■

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*Dr. Sharon Deem draws blood as herders assist and collaborators look on.
Photo by Margaret Kinnaird.*

MPALA MEMORIES, PART IX: SCHWARZENBERG I

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the houses are equipped with bathrooms featuring hot and cold water—rare conveniences in East Africa! Mpala was thus made partially independent of rain. Today, a considerable part of the farm is irrigated.

Sixty-five years after Schwarzenberg's writings, a new, 10-ton bridge built by the British Army has replaced Princess Hilda's bridge. It is hard to imagine the Ewaso Ng'iro River described as "ever-flowing", or that during the dry season it could supply enough water to irrigate several hundred acres of Mpala. Due to burgeoning human populations upstream and over-extraction of water resources, the Ewaso is no longer capable of sustaining large-scale agriculture. The scheme to which Schwarzenberg refers

still stands today and can be seen along the river road on the way to the Ranch House. The concrete dam continues to maintain a large pond that is today popularly known as the "hippo pool" and is home to 25+ hippos. ■

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*Remains of Princess Hilda's bridge from atop the new bridge.
Photo by Laura Budd.*

COMMUNITY CONSERVATION DAY - 2011

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This year students entered an essay competition for the best story highlighting a personal experience they've had with wildlife. Essays were submitted two weeks prior to Community Conservation Day and judged on grammar, style, and interest. Winners were announced during the celebration and each received assorted prizes, including a grand prize of 1000 Ksh.

Each club has a unique design to its badge, along with the clubs' motto "Conservation is Key to Survival." This year the newest participating school, Kimanjo Primary School, held a contest for the design of their badge logo. The winner, a drawing of a secretary bird, was announced at the Conservation Day.

Chief Loiyangere closed the event with a speech imploring parents and community members to learn from their children's passionate presentations. He explained that, in Laikipia, conservation is truly the key to our survival. ■

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Members of the community listen to Chief Loiyangere's closing words. Photo by Dan Rubenstein.

THE MENTORSHIP CONNECTION: EMPOWERING YOUNG WOMEN THROUGH EXPLORING SCIENCE

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Our hope is to increase student visits to Mpala and to find more researchers—especially Kenyan nationals—to host the students.

On October 8th, visiting social worker Sarada Eastham helped to facilitate another visit by thirty-two students from Daraja. The day was a great success, allowing students to partner with researchers for a day in the field and learn about elephant conservation and visit the camel bomas.

“This visit supported the students in deepening their learning and opened up the potential that is available to them as women in the field of science and conservation,” Sarada says. “It is an exciting time to create connections and to bring these two wonderful organizations together. Thank you to everyone that has made this partnership possible!” If you are interested in supporting this emerging program, please contact: Sarada Eastham, c/o Mpala Research Center at saradagrace@gmail.com. ■

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Daraja students, teachers, and Mpala researchers. Photo by Laura Budd.

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