



MPALA MEMOS

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SPECIAL EDITION:

MPALA RESEARCH CENTRE'S 20TH ANNIVERSARY

MPALA'S BEGINNINGS



Dan Rubenstein and Ira Rubinoff look back at how it all began, from a small idea born amongst colleagues to a world-renowned, multi-million dollar per year operation.

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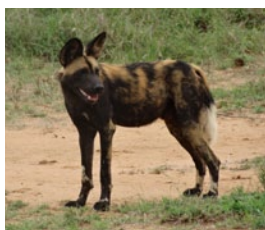
HAPPY 20TH, MPALA!



Researcher Truman Young reflects on Mpala's beginnings 20 years ago. "We have seen many changes over the years, have shared the ups and downs of the Centre, and have been pleased by its tremendous success."

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OF DOGS AND DIK-DIKS



Researcher Adam Ford considers how MRC fosters unique collaboration opportunities, allowing for diverse studies to fuse together in order to reveal more about our complex ecosystem.

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LETTER FROM THE DIRECTOR



Margaret Kinnaird, Director of the Mpala Research Centre, reviews this month's special issue of the Mpala Memos and looks forward to the future of the Research Centre.

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BACK WHEN I WAS A BOY



Laurence Frank reflects on his life's work in the African bush as a field biologist, considering how much things have changed over the past decades.

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1994

MPALA RESEARCH TRUST IS ESTABLISHED



NICK GEORGIADIS IS HIRED AS MRC DIRECTOR

MRC BREAKS GROUND



MRC'S 20TH ANNIVERSARY



1995

MRC RECEIVES NGO STATUS

KLEE PROJECT BEGINS ON MPALA

1999

JENGA HOUSE IS BUILT



LEEDS GROUP, 2004

2002

THE NSF LAB IS CONSTRUCTED



MARGARET KINNAIRD IS HIRED AS DIRECTOR OF MRC

2007

NORTHERN KENYA CONSERVATION CLUBS BEGIN

2008

THE EWASO NG'IRO RIVER CAMPSITE IS ESTABLISHED

UHURU PROJECT BEGINS



2009

PRINCETON DORM OPENS

LEVINSON OFF-GRID, SOLAR GYM IS CREATED

2010

THE HYDROFLUX TOWER IS CONSTRUCTED

SIGEO (NOW SMITHSONIAN FORESTGEO PLOT) MEASUREMENTS BEGIN

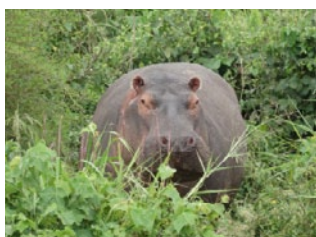


2011

SMITHSONIAN RESIDENCE IS BUILT

2014

MPALA LIVE! WEBCAM IS ERECTED



MPALA RESEARCH CENTRE CELEBRATES 20 YEARS!

A LETTER FROM THE DIRECTOR

Margaret Kinnaird

MRC'S 20TH
ANNIVERSARY



Although my 7-year tenure as Director of MRC is short relative to the 20-year life of the centre, I feel like I've been involved since its beginnings. As you will read in 'Mpala Beginnings' by Dan Rubenstein and Ira Rubinoff, it was the early 90s when George Small approached Princeton about his dream of opening a biological research centre on his property in Kenya. I was a Post Doctoral Fellow at Princeton then and remember well the excited whisperings in the halls of the biology department about a wild African landscape that might become accessible for experimental ecology. At that point in my career, I had studied only in national parks, and I was deeply intrigued by the idea of conservation on privately owned, human-occupied landscapes. But by a twist of fate, and other, equally exciting opportunities, it wasn't until 2007 that I was able to realize my long-standing desire to visit Mpala. During all the intervening years, I had kept up -albeit at a distance -with MRC's progress and continued to admire the vision of George Small - a man, who unlike his name, thought big.

In his article 'Happy 20th, Mpala!', Truman Young, the patriarch of MRC's largest academic family, reflects on the incredible opportunities that MRC has provided to tackle questions of human-wildlife coexistence. He points out the perseverance of those who believed in Mpala from its inception, and who have worked to keep it going through thick and thin. Many of the names he lists have been there for me too, providing advice and wisdom as MRC grew in scientific stature as well as bricks and mortar. Although unwritten, I imagine Truman laments some of the changes and may pine a little for the days when the centre was less crowded and no reservations were needed. Or when elephants still scratched their backsides on the dining hall poles and kept the now-prolific Sodom's apple at bay within the centre grounds.

When Laurence Frank submitted his article 'Back when I was a boy', he included me as an honorary 'greybeard' in his opening paragraph.

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A LETTER FROM THE DIRECTOR

MRC'S 20TH
ANNIVERSARY



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I evoked my editorial power to eliminate the reference but I admit that I related to the sentiment. I too disappeared into the bush for years before the time of constant communication and swift air travel. Like Laurence, I lived in a saggy tent but I had the additional, daily battle of keeping out persistent flesh-eating safari ants. I cooked my own meals, learned how to blow out my fuel filter and where to hit the carburetor to keep my vehicle going, hired my own staff and paid all my bills. I had a computer the size of a leopard tortoise that I ran off my car battery but there was no internet - not even in Malindi, which was a 4 hour, spine-jarring drive in the best of weather and a dangerously slip-sliding adventure during the rains.

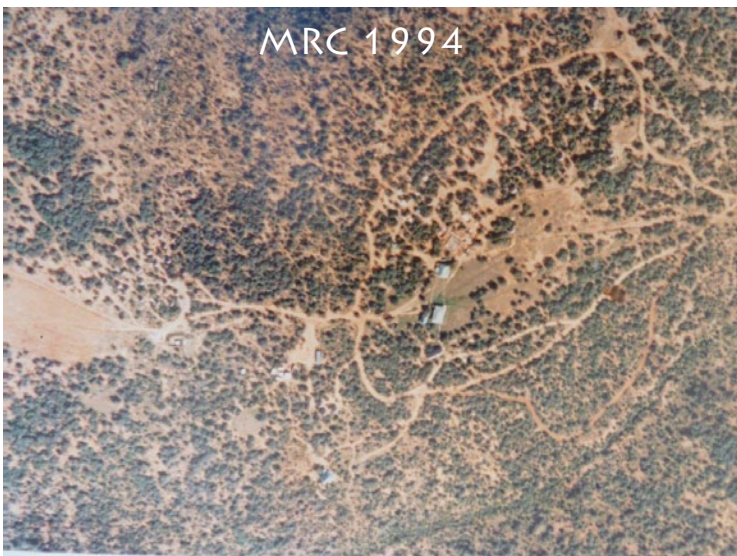
A unique characteristic of MRC - and unfortunately one that is often rare in academic circles - is the highly collaborative nature of our researchers. This is exemplified by Adam Ford's article 'Of Dogs and Dik-Diks' describing the rewards of collaborative relationships among 4 long-term research projects. The only player Adam left out was himself - having spent several years at MRC catching dik-dik (no mean feat) and weaving

together the findings of other researchers, he was able to show that the re-colonization of wild dogs has influenced the growth of Laikipia's trees. Read Adam's article to understand the role of the diminutive dik-dik!

Our special edition includes a list of long-term research projects to give the reader a flavor of the diversity of projects hosted by MRC. Over MRC's 20 years, these projects have matured and become more relevant to the lives of the people around us. But as Truman Young notes, we need to focus even more on the usefulness of our research. It takes special know-how to manage landscapes where wildlife, humans and their livestock coexist. And in our increasingly complex and ever-changing world, we require a deep time perspective on changing climate, migratory patterns, species invasions and human behavior. As we celebrate our 20th anniversary and look forward to our future, my wish is that MRC continues to provide a comfortable home base where long-term studies are possible and address not only the conservation actions needed today, but help us determine the measures that will affect conservation in the future. ■

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MRC 1994



MRC TODAY

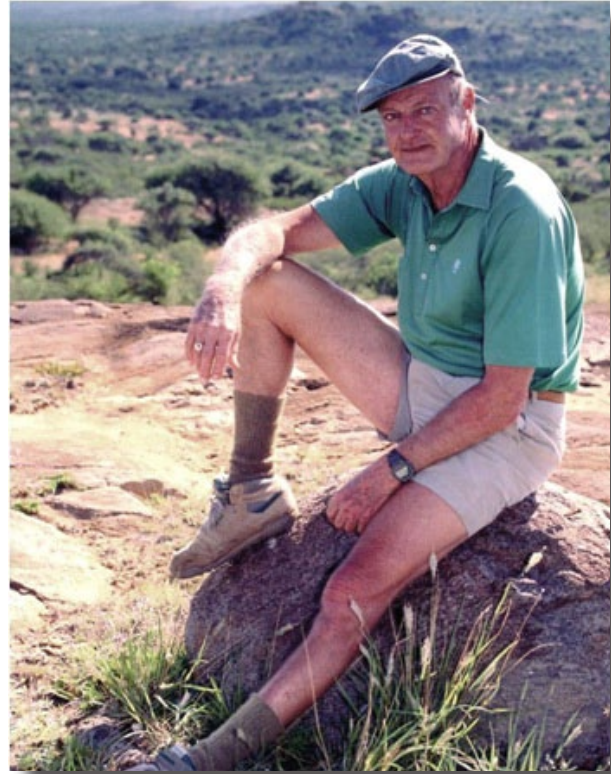


MPALA'S BEGINNINGS

Dan Rubenstein, Ira Rubinoff

MRC'S 20TH
ANNIVERSARY

Who knew that a Princeton alum of the class of 1943—George Small—owned a cattle ranch in Kenya and wanted to ensure that his brother Sam's dream of conserving elephants and supporting the people living on the land would continue? George inherited Mpala Ranch from Sam and his initial plan was to find an international conservation organization to govern the land and sustain Sam's dream. In the late 1980s, he first approached the World Wildlife Fund but they were not interested. When his close friend Bill Sloan of Princeton's development office learned of George's desires, he suggested another possibility. Why not see if faculty in Princeton's Biology Department would be interested in using the Mpala for research. Bill contacted Steve Hubbell and Dan Rubenstein - both professors in Princeton's biology department - and the rest is history.



George Small

Steve and Dan were intrigued, and over lunch with George and Bill hatched a plan to bring the Smithsonian Institution (SI) on board since Steve had strong ties to the Smithsonian Tropical Research Institute (STRI) and the Smithsonian had strong connections with museums and field stations all over the world. The Smithsonian suggested working with the National Museums of Kenya (NMK) and Princeton suggested bringing Richard Leakey and the Kenya Wildlife Service (KWS) into the partnership to balance representation between Kenyan and US partners. At that

time Leakey was not only the director of KWS, but also board chair of NMK.

All of these machinations about governance were contingent on Mpala being a good place to do research. Since Dan was about to embark on teaching his graduate field course in Kenya on 'Tropical Ecology', he decided to camp on Mpala to explore the ecosystem and see what types of research could be done. What he saw amazed him.

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Since I stepped onto Mpala in 2009, I have developed from a nascent dreamer into a real life scientist, primarily as a result of invaluable mentorship and guidance from senior researchers, and the nurturing and inspiring atmosphere of MRC. Over the years I have made many friends who have become part of my family. Whether I am 10,000 miles away in the deserts of New Mexico, or 25 miles away in the bustle of Nanyuki, I am always thinking of the expansive savannas, majestic escarpments, breathtaking sunsets, and wonderful people. I cannot help but keep coming back, even if for a brief visit. Mpala is more than just a research station to me; it is home.

-David Kimiti

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The freedom to do large scale manipulative experiments on a multiple use landscape where people, their herds and wildlife mingle was special and offered impressive opportunities to carry out fundamental research that could have 'real world' applications.

With that endorsement, the process of drawing up agreements, forming trusts and boards began. In the early 1990s, a large delegation from Princeton and SI along with George Small and his lawyers met with Leakey and proposed the cooperative venture to establish a conservancy and a research and education center. At first, Leakey was quite negative, citing many nationalistic arguments about why he would be reluctant to cooperate. The delegation returned to the U.S. charging Ira Rubinoff, STRI's director, to meet with him again the following week after Ira returned from a visit to the Masai Mara with his 10 year old son Andres. Much to his surprise, Leakey after a few days of consideration was much more amenable to the idea and an agreement was made to make Mpala a dry-lands research, education and conservation center.. By 1994 with the help of Dennis Keller, a Princeton Trustee and Howard Ende, Princeton's General Counsel, all the agreements were signed and generous funding from the Smithsonian's Women's Fund and Princeton's trustees and alumni made the research center a reality.

Nick Georgiadis was Mpala's first director

and his edited volume entitled "Conserving Wildlife in African Landscapes: Kenya's Ewaso Ecosystem" summarizes the first few decades of research on and around Mpala. Truman Young of UC Davis was the first researcher to establish a long-term experimental study at Mpala even before any buildings were constructed. And three graduate students, Felicia Keesing, Steve Takata and Philip Muruthi (now chief scientist of the African Wildlife Foundation and long-time Mpala supporter), began projects on rodent, mongoose and baboon behavior and ecology. What started small has now grown to become a multi-million dollar per year operation that accommodates over 100 researchers and students at time.

Today Mpala is home to a myriad of projects ranging from understanding ecosystem function, to the population biology of individual species, to species interactions and community dynamics, including those among wildlife and livestock as well as the overarching impacts of disease vectors and climate change on all aspects of the ecosystem. And in the spirit of 'learning by doing' Mpala hosts courses from Kenyan and international universities and organizations. During its first 20 years Mpala has become to the hub of research and learning in Kenya and as it moves forward looks to become the preeminent tropical drylands research center in the world. ■

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Almost every Kenyan ecology student - especially at advanced levels - hears about MRC during their course of study. It is regarded as ' the living laboratory' and everyone wants a chance to visit, even for a day. MRC leaves a lasting impression on students who return telling stories of the high quality scientists and variety of research projects. Having worked at MRC for a couple of years, I have had the opportunity to meet many new people as well as former colleagues and students from my university and high school days. I have amassed a lot of knowledge from discussions, established a network of contacts, and expanded my views in many things. Most importantly, I can support the aspirations of my fellow Kenyans and beyond. MRC feels like the model for ecological research.

-Kimani Ndung'u

HAPPY 20TH, MPALA!

Truman Young

MRC'S 20TH
ANNIVERSARY



*Back row (left to right): John Wreford-Smith, George Small, Jeff Gonya, Dan Rubenstein
Front row (left to right): Howard Ende, Norma Ende, Ira Rubinoff, Ross Simons*

Has it really been that long? I first came to Mpala 25 years ago on a reconnaissance visit with Alan Smith, and Lynne Isbell and I started our research a couple years later, but those were mere preludes to the dynamic growth of Mpala Research Centre that began 20 years ago. We have seen many changes over the years, have shared the ups and downs of the Centre, and have been pleased by its tremendous success.

That MRC would succeed was by no means a sure thing twenty years ago. It took the vision, generosity, hard work, and skill sets of founders like George Small, Don Graham, John Wreford-Smith, Alan Smith, Dan Rubenstein, and Jeff Gonya. Although I never lost faith in the underlying vision, there were a couple of moments where all hung in the balance, and we held our breaths. These will not

be the last crises, but I have increasing confidence that MRC can weather the storms.

There are echoes from those early days. Although I spent two years exploring the area around the current Centre for sites for the KLEE exclosures, I eventually decided to put them up in the black cotton, where the acacia ants were fortuitously waiting. These two ecological magnets (KLEE and acacia ants) became focal points of Mpala research. Although the black cotton represented only a small fraction of Mpala, it got the lion's share of early research attention. It took a decade or more, but finally the red soils caught on, and now a broad array of research takes advantage of the broader ecosystem.

A different KLEE precedent only partly caught on. One of the themes that I thought would be a driving difference for researchers between Mpala and traditional parks and reserves was the human element. One of the most dramatic changes in ecology over my career (35 years, and counting) had been the shift toward applied ecology and problem-solving in the context of human-dominated environments. When I started out in the late 1970s, virtually all graduate students studied purely conceptual ecology (and animal behaviour). Across the globe, this approach has become a minority, as a new generation looks to apply ecological ideas to real-world issues. Curiously, although Mpala is uniquely poised to ride this new wave, as a working cattle ranch embedded in a complex mosaic of land uses, only a minority of the research projects so far have fully embraced the human element.

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MRC is a great place to do research and the perfect setting to train undergraduate students. Students are able to get into the field and learn how to collect data on a diversity of organisms from plants to large mammals. At the end of a long day, it's not uncommon to be rewarded with views of cheetah or wild dogs on the drive back to camp. Visiting MRC has been a life changing event for most of the 200 students that I have taught over the past decade.

-Dustin Rubenstein

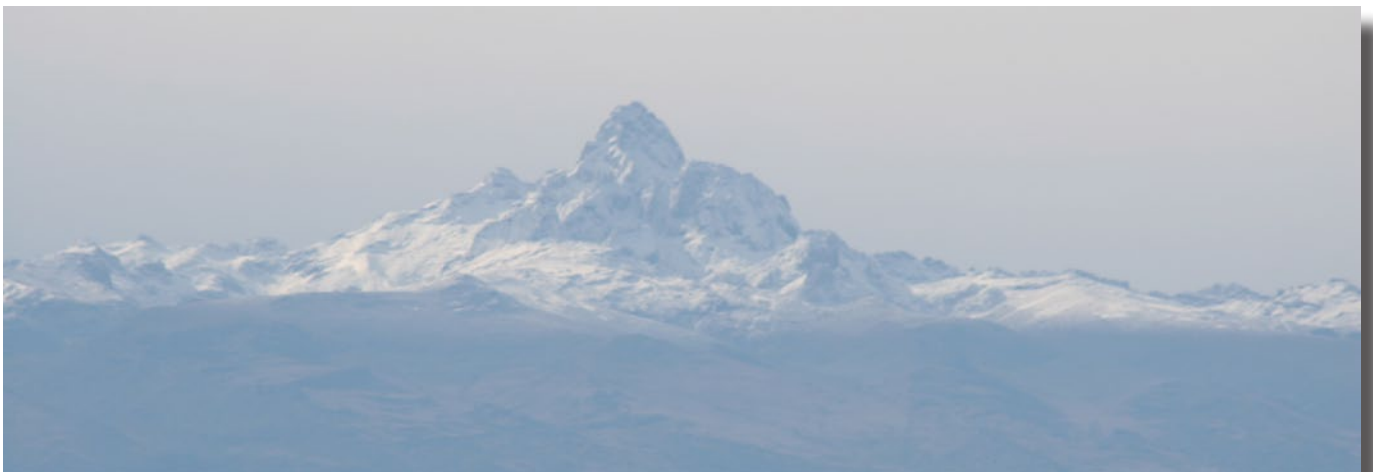
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Of course, the biggest change over the years has been the growth of the Centre. Mpala Research Centre is now considered one of the world's premier tropical research institutions. Some interesting statistics: The list of peer-reviewed publications associated with MRC is well over 300, with more than a quarter of these just in the last three years. This includes nine papers in Science, Nature, and PNAS. Over 40 masters and doctoral dissertations have been carried out at Mpala, and at least 15 of these have been by Kenyan nationals. Over 40 grants from the National Science Foundation have been awarded for work at Mpala. And MRC has hosted innumerable field courses, class visits, Discovery Days, guest lectures, and stakeholder field days.

But the driving force behind Mpala Research Centre's tremendous success has been the incredible cadre of graduate students who cut their teeth here, did amazing research,

and often returned as established scientists. A partial list includes such stars as Philip Muruthi, Jill Pruetz, Bell Okello, Felicia Keesing, David Augustine, David Kinyua, Todd Palmer, Charles Warui, Jake Goheen, Rob Pringle, Kari Veblen, Corinna Riginos, Vanessa Enzenwa, Siva Sundaresan, Lizzie King, Wilfred Odadi, Doug McCauley, Lauren Porensky, and Hillary Young. You would be hard pressed to find a university, a graduate program, or a research center anywhere in the world with such a high percentage of extraordinary people. And right behind them are coming another generation of equally impressive graduate students and young scientists. It has been my greatest privilege and a joy to work with them, and to see their endless generosity of spirit in collaborating with each other and 'giving back' to Kenya. One cannot help but be optimistic about the future after spending time with them. ■

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Over the past year, I've had the distinct pleasure of calling MRC my home. As a budding scientist, I can think of few better settings in which to immerse myself. Living, working and learning in this spectacular landscape has provided an optimal lens through which to observe Laikipia's ecology and develop the intellectual approaches to understand this complex system. MRC's diverse, high caliber research community provides a marvelously stimulating environment. I truly value my time working at MRC and look forward to applying new perspectives to contemporary conservation science issues. If nothing else, it's also pretty awesome to see giraffes every day.

-Michael Butler Brown

"BACK WHEN I WAS A BOY": AN MPALA APPRECIATION

Laurence Frank



It is an old man's prerogative to exaggerate the hardships of his youth and harangue today's about the ease of theirs. I do not claim to have carried pails from the well before dawn or walked to school barefoot through the snow. However, I am forever amazed at the changes that Mpala Research Centre has brought to our lives as researchers, and beg your indulgence as a cranky old greybeard reminisces on African field work back when he was a boy.



Talek Camp, 1982

I first came to Kenya in 1967 and moved here in 1971, when the national population was less than 10 million, and everything that mattered was in downtown Nairobi, a small friendly town with no traffic and easy parking in front of every shop and office. For 19 years after starting my PhD work in the Mara in 1978, home was three tattered, sagging tents under a fig tree on Talek River. It took two days to break camp and store it at a lodge each time I went home to the US, and two days to rebuild it upon my return. Some nights there were buffaloes between the tents and the outhouse, some days there was a cobra inside it. One day I sat down and both seat and I collapsed into the hole. I bathed every afternoon at a rocky spot in the river too shallow to conceal crocs. During the dry season the river turned into puddles of

fetid broth, more cow dung than water, but I still emerged cleaner than when I entered. Much worse were the passing Masai morans, who would collapse in helpless giggles at the pathetic inadequacy of the naked "mzungu".

Groceries were a rough six hour drive away in Nairobi; one memorable night, I nearly died four different times during the drive up the Rift Valley escarpment. My cook Julius lived in a two man tent, eventually moving his wife and two small children into it, too. That only became a real problem when a group of young male lions moved into camp for two days, and learned that tents made entertaining noises when leaped upon at night. When Julius went on leave, meals would consist of a spoon and a 5 kg tin of peanut butter. Then as now, field work depended wholly on a reliable car, but the nearest mechanic was twenty miles away at Keekorok Lodge. His tools consisted of two broken wrenches, a bent pair of pliers, a large hammer, and an ever-present bottle, motivating me to buy a repair manual and become a fairly competent bush mechanic. I spent hours lying under the car each week, looking for incipient chassis cracks, broken shocks, engine mounts and spring leaves. The spring bushes had to be changed constantly – spare parts could not be imported if locally made versions were available, but those crumbled after a few hundred kilometers. The Mara is nearly as thorny as Laikipia, and I repaired punctures in camp; to this day, I hate even watching someone break down a tire with levers and a crowbar. Digital cameras and computers were years in the future, so I developed and printed hyena ID photos in my kitchen tent at night, using darkroom equipment run off my car battery. There were no phones, of course, and it took six weeks to get an answer to a letter home.

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“BACK WHEN I WAS A BOY”: AN MPALA APPRECIATION

MRC'S 20TH ANNIVERSARY



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For news I depended on the BBC over a crackly short wave radio, and as there were usually no other researchers in the Mara, my social circle consisted of hard-drinking balloon pilots at distant lodges. For exercise, I crossed the river to run, contributing yet more hilarity to Masai lives. One day I was challenged to a footrace by an ancient crone, a long leather skirt flapping about her ankles and long leathery teats flapping about her waist; she left me in the dust. The Mara is a fertile place, and three daughters spent their first months in camp.



Talek Camp, 1982

As a modern father, I washed their nappies daily in a bucket of river water, and found that a crying baby is a remarkably effective lion and hyena call. The kids never got sick, but they had adventures: one newborn was asleep in the tent when thieves cut into the back and spirited away my gun safe while mom and I sat at dinner nearby. Another was the target of an aggressive male baboon who thought her an easy meal; his skull still graces the mantelpiece of an eminent primatologist. Another became seriously dehydrated and constipated after her mother drank Masai beer at a raucous party, came down with severe shigella (dysentery), and barely produced milk for a week. Finally, a water enema from a darting syringe loosened up the baby right quick.

Today I often reflect on that life as I sit among friends to a nice meal at MRC, served by the gracious staff, complete with fresh salad, vegetarian options, and cold beer from the Nakumatt just up the paved road. My car is serviced at the MRC workshop, the



Washing diapers, 1982

office staff processes my research permit and I look forward to a hot shower in my clean well-lit banda. I read the news on the internet, Skype with family at home, and maybe watch a DVD in my neatly made bed, knowing that Mpala security is on patrol and no elephants will be scratching their behinds on my tent poles. Back when I was a boy, the low point was Thanksgiving Day 1982, when three weeks of El Nino rain swelled the Talek River and took my entire camp to Lake Victoria. Today at MRC, I whine piteously if the internet is slow or the coffee is instant.

Margaret and her staff have turned George Small's vision into reality, a unique world class center of scientific excellence in the African bush, where others take care of all the hard stuff, leaving us free to focus solely on research, living in comfort and good companionship. Mike Littlewood and the ranch staff maintain our 50,000 acre research site, looking after the cattle that pay the bills, grading the roads, keeping us secure. Mpala Research Centre is a gift to each of us, and on its twentieth anniversary I hope we all take time to express our gratitude to Margaret, Mike, the staff, the Board of Trustees, and to George Small's generous, far-sighted spirit. ■

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OF DOGS AND DIK-DIKS: A CONSERVATION TRIUMPH

Adam T. Ford

MRC'S 20TH
ANNIVERSARY



At the heart of the scientific method is a principle of reproducibility: the same results should occur no matter who takes the measurements. Typically, we see this principle used to 'double check' contentious or controversial results – nuclear fission and childhood vaccinations being some of the most well-known examples. But in an era of unprecedented global change, one of the most important and underappreciated outcomes of reproducibility is the ability to track changes over long periods of time. Indeed, because of the exceptional quality of the researchers that have worked at Mpala Research Center, we are in a unique position to document one of the most exciting and dramatic changes to occur on the Laikipia Plateau in the last 30 years: the recovery of the African wild dog.



James Ekiru, Francis Lemojo, and David Augustine measure the effects of herbivores on the plant community in 2001, before African wild dogs returned to Mpala.



As part of a long-term monitoring project in Laikipia and Samburu Counties, Dr. Rosie Woodroffe collars an African wild dog.

Like a Tolkien Middle Earth adventure, the story of how the African wild dog is changing Laikipia has been shaped by a Band of Scientific Heroes. Beginning in the late 1990s, Dr. David Augustine (now at the US Depart. of

Agriculture) studied cattle-wildlife interactions at Mpala for his PhD research. Augustine recorded the abundance of wild herbivores, the effect of herbivores on plants by isolating herbivores with electrified fences, and the activity of large carnivores with – at the time – cutting edge film and flash camera trap technology. All of this work occurred without Global Positioning Systems (GPS) or computerized Geographic Information Systems (GIS) and when internet access at MRC was a distant dream. Not long after Augustine's PhD work, Dr. Rosie Woodroffe began tracking wild dogs as they re-appeared across Laikipia and Samburu Counties. Her meticulous tracking efforts have given us detailed records of where wild dog packs move, what they like to eat, and how many adults and pups are in each pack. Based at MRC, Woodroffe documented the unique role of the diminutive dik-dik, a 5 kg antelope, in bolstering the recovery of this globally endangered canid.

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Unlike most other carnivore populations of concern, particularly those in Africa, Woodroffe's wild dogs have undergone a remarkable recovery: from a population of 0 in 2000 to over 30 packs of 350 individuals by 2008.

With Woodroffe's study underway, Drs. Margaret Kinnaird and Tim O'Brien began biannual surveys of native herbivore populations across Mpala. Critical to this part of the story is that these surveys use the same methods as Augustine did from 1999-2002. Reproducibility was taking hold at Mpala. Like Augustine, Kinnaird and O'Brien paired their visual surveys with camera trapping surveys across the entire 200km² MRC property, only this time they used digital cameras with infrared flash technology.

The last 'heroes' in our band of scientific adventurers includes Dr. Jacob Goheen, Dr. Rob Pringle and Dr. Todd Palmer who work as a team on the UHURU Experiment (Understanding Herbivory Under Rainfall Uncertainty). Beginning in 2009, the UHURU Experiment uses electrified fences to exclude groups of herbivores and then watch how plants respond to the absence - the same approach used by Augustine in the 1990s - showing reproducibility, again.

Combining these studies presents a unique opportunity to reveal the complex and healing pathway by which an endangered carnivore returns to its native ecosystem. Augustine provided us with prey numbers and their impact on the plant community when wild dogs were absent. Woodroffe documented the recovery of wild dogs and what and how much they ate. Kinnaird and O'Brien provided prey numbers after wild dogs returned. Finally, the UHURU Experiment showed how herbivores affect plants in the presence of

wild dogs. Putting all these pieces together, we have discovered that wild dogs are contributing to the recovery and vitality of tree populations across Laikipia. Because wild dogs are partial to a meal of dik-dik (consuming as much as 8 dik-dik/day/wild dog pack), they have reduced the dik-dik population over time, which in turn allows many more tree seedlings to escape the levels of consumption they experienced in the past when wild dogs were absent and dik-dik were plentiful.

Few research projects have the luxury of continuing longer than 4 years, as most are restricted to what can be accomplished during a 2- or 4-year graduate research program. However, MRC provides an intellectual home where unprecedented levels of cooperation and collaboration flourish among the community of researchers. At 20 years, MRC distinguishes itself as one of the few places where it is possible to bring together wide-ranging studies from accomplished researchers to meet the challenges of understanding nature in a rapidly changing world. ■

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*It's a new dawn for the plants at Mpala; species like the thorny *Acacia etbaica* are recovering since wild dogs have returned to the landscape and begun eating Guenther's dik-dik, a primary consumer of young *Acacias*.*

MPALA BY THE NUMBERS

48,000
ACRES

OVER 40

INSTITUTIONS

INCLUDING

LEEDS UNIVERSITY

CORNELL UNIVERSITY

PRINCETON UNIVERSITY

UNIVERSITY OF WYOMING

UNIVERSITY OF FLORIDA

MCGILL UNIVERSITY

FROM

MORE THAN

300

PEER-REVIEWED ARTICLES

IN

126

SCIENTIFIC JOURNALS

17

COUNTRIES

41

NATIONAL SCIENCE
FOUNDATION GRANTS
(SINCE 1995)

2,500

INDIVIDUALS TAKING
COURSES AND PARTICIPATING
IN WORKING GROUPS OVER
THE PAST 20 YEARS

OVER

40

MASTERS AND
DOCTORAL
DISSERTATIONS
CARRIED OUT,

**SEVERAL
HUNDRED**

PROFESSORS, POST-DOCS,
GRADUATES,
UNDERGRADUATE STUDENTS
PER YEAR

17

BY KENYAN
NATIONALS

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Since 1994, MRC has been the base for numerous research projects studying a diversity topics. Below is a list of the founding research projects that still continue today, as well as some of the long-term projects that have spanned over a decade.



KLEE

Kenya Long-Term Exposure Experiment

PIs: Dr. Truman Young (UC Davis), Dr. Corinna Riginos (Teton Science Schools),
Dr. Kari Veblen (Utah State U)

KLEE consists of 18 large experimental plots that simulate loss of large wild herbivores and different land uses (management for cattle, wildlife, or both). Some of the most exciting results have shown how wildlife can facilitate weight gain on cattle.

PRIMATE ECOLOGY

PI: Dr. Lynne Isbell (UC Davis)

Before the MRC facility was finished, Dr. Isbell began a ten-year study of vervet and patas monkeys, and hosted the first baboon project. These initial studies inspired multiple primate studies over the years, and Dr. Isbell has recently returned to extend her studies to the complex interactions among baboons, vervets and leopards.

GREVY'S ZEBRA PROJECT

PIs: Dr. Daniel Rubenstein (Princeton U), Siva Sundaesan (Denver Zoo),
Wilfred Odadi (TNC)

Grevy's zebras are a highly endangered equid with populations scattered throughout northern Kenya and Ethiopia. This founding study tracks Grevy's zebra numbers, movement patterns, and health. The study has a large outreach and education component and uses research-based solutions to minimize human-wildlife conflict.



UHURU

Ungulate Herbivory Under Rainfall Uncertainty

PIs: Dr. Rob Pringle (Princeton U), Dr. Jake Goheen (U. of Wyoming), Dr. Todd Palmer (U. of Florida), Greg Crutsinger (UBC), Dr. Maureen Stanton (Stanford U)

UHURU, like its predecessor KLEE, uses large-scale plots and electric fences to simulate large mammal extinctions but with an added variable of rainfall. Siting the plots along a rainfall gradient of 600 mm in the south to 400 mm in the north, allows researchers to tease apart the interaction of rainfall and the presence or absence of various mammal guides on plant diversity.

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STARLING SOCIALITY

PI: Dustin Rubenstein (Columbia U)

Superb starlings are common but beautiful birds that live in families where offspring help raise their siblings. This study focuses on understanding how such complex social behaviors evolve and how birds adapt behaviorally, physiologically, and genetically to environmental change.

BOMAS TO GLADES

PI's: Dr. Kari Veblen (Utah State U), Dr. Lauren Porensky (ARS-Fort Collins), Dr. David Augustine (ARS-Fort Collins), Dr. Truman Young (UC Davis)

The green, open glades dotting Laikipia are created from pastoral corrals ("bomas") and last for many decades. The first MRC scientific publication described the importance of these glades as a central, organizing feature of the landscape and future publications have shown the positive influence of glades on soil fertility, palatable forage and wildlife use, underscoring how people, their livestock and wildlife can co-exist.

FIRE-GRAZING INTERACTIONS

PI: Dr. Ryan Sensenig (Goshen College)

Fire has been used for centuries across East Africa to stimulate grass growth for livestock but ran out of favor as wildlife tourism increased. This project examines the response of vegetation and grazers to large-scale and small-scale experimental burns. A more recent focus is on how fire and elephants affect acacia trees.



RODENTS AS KEYSTONE SPECIES

PIs: Dr. Felicia Keesing (Bard College), Dr. Hillary Young (UC Santa Barbara)

Rodents were one of the first focal groups studied in KLEE and research has expanded over the years to include studies of their predators (snakes), their parasites (ticks and fleas), and their disease pathogens. Central to many of these studies is the key finding that rodents compensate for the absence of large ungulates (livestock and wildlife) by increasing their numbers and consuming significant quantities of grass.

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GAZELLE PROJECT

PI: Dr. Vanessa Ezenwa

This study investigates the role parasites play in shaping individual behaviors in Grant's gazelles. A major focus is how behaviors - like male territoriality - modify parasite exposure and susceptibility and how that effects their reproduction. This work is contributing to our understanding of the complex, two-way interactions between parasitism and animal behavior.



Margaret Kinnaird

ECOHYDROGEOLOGY

PIs: Dr. Kelly Caylor (Princeton University), Dr. Tom Evans (Indiana University)

Water is the single most limiting resource that defines life in the semi-arid lands of Laikipia. Using advanced and sophisticated technology - including one of only 3 hydroflux towers in Africa, the project aims to understand water availability, from where our water originates, how it is delivered, and how it travels through and shapes the ecology of the landscape.

ACACIA ANTS



Todd Palmer

PIs: Dr. Todd Palmer (U Florida), Dr. Maureen Stanton (UC Davis), Dr. Truman Young (UC Davis)

Co-existence and mutualism: The fascinating ants that inhabit whistling torn trees (*Acacia drepanolobium*) were the subject of one the earliest studies at Mpala, and quickly became a major research program. Researchers focus on two major questions: How do four ant species survive while competing for a single limiting resource (the trees)? And how has evolution shaped the relationships- which range from beneficial to detrimental - between these ants and their host trees, particularly in the context of elephants, giraffe and other species that eat the trees.

AFRICAN WILD DOGS

PIs: Dr Rosie Woodroffe (Zoological Society of London)

Once extirpated from Laikipia, wild dogs were first sighted in Laikipia in 2000. Dr. Woodroffe has been charting the recovery of the wild dog across the Ewaso Ecosystem since this first sighting. Her research focuses on their population status, movement, diets and diseases as well as mitigation of conflicts resulting from wild dog predation on livestock.

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TIME CAPSULE: THEN AND NOW



IN MEMORIAM:

WILLIAM S. EISENHART, JR., ESQUIRE

MRC'S 20TH
ANNIVERSARY



Jeff Gonya

A close friend of Mpala's, William S. Eisenhart, Jr. of York, Pennsylvania passed away on Monday, February 17, 2014. He was born over 100 years ago on August 17, 1913.

A graduate of Princeton University and the University of Pennsylvania Law School, Bill practiced law for 73 years and was a member of the York County, Pennsylvania and American Bar Associations.

Bill was instrumental in helping George Small with the formation of Mpala Wildlife Foundation and he was one of the three founding Trustees. He became a Trustee Emeritus in the late 1990's. Bill and his deceased wife, Hazel, have generously supported Mpala through the years as does his son, Chris, a leading donor to the George Small Outreach Program.

Bill provided leadership, time and financial support not only to Mpala and Princeton University, but also to numerous charities including, The Lutheran Church, The York Foundation, The York County Council of Social Agencies, The Rotary Club, The York County Estate Planning Council, The York Hospital, The York YMCA, The York YWCA, Gettysburg College, Gettysburg Lutheran Seminary, The Historical Society of York County, The Lutheran Social Services, The Children's Home of York, Easter Seals Society, The York County SPCA, The York County Academy, The York Chamber of Commerce, The York County Agricultural Society, amongst many others.

Bill will be missed by all of us that were fortunate enough to benefit from knowing him and experiencing his knowledge, wit, and love of life.

- Don Graham

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MPALA WILDLIFE FOUNDATION & MPALA RESEARCH TRUST

Founder:

George Small (1921-2002)

Mpala Conservancy Manager:

Michael Littlewood

Contact Information

(USA)

Kay Berney

kberney@mpala.org

Mpala Wildlife Foundation Trustees:

Donald Graham, Chairman

Giles Davies

Howard Ende

Jeffrey Gonya

Laurel Harvey

Dennis Keller

Ira Rubinoff

Paul Rudy

John Wreford-Smith

Mpala Research Centre Trustees:

Kenya Wildlife Service

National Museums of Kenya

Princeton University

Smithsonian Institution

Mpala Wildlife Foundation

Daniel Rubenstein

Mpala Wildlife Foundation

PO Box 137

Riderwood, MD 21139-0137

USA

(Kenya)

Tel: 254-62-32758

Executive Director:

Margaret Kinnaird, PhD

mkinnaird@mpala.org

Mpala Mobile Clinic Coordinator:

Shannon Wreford-Smith

shanni@wananchi.com

Newsletter Editing and Design

Stefanie Siller

Mpala Research Trust

P.O. Box 555, Nanyuki

Kenya

www.mpala.org