

LIVING WITH LIONS

LAIKIPIA PREDATOR PROJECT
KILIMANJARO LION CONSERVATION PROJECT

ANNUAL REPORT
January 2005-June 2006

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Photo: James Warwick

Executive Summary

We are working to restore, conserve and manage viable populations of large carnivores by developing management techniques that foster coexistence of people, livestock and predators in areas bordering parks and other regions without formal protection.

Large predators have been eliminated from most of the world because they prey on livestock. Only in the last few years has the public become aware that populations of African lions have plummeted. Few parks are large enough to ensure lions' long term survival, and because conflict with livestock is by far the most serious threat to large carnivores, it is critical that we find methods to integrate predator conservation with realistic livestock management.

The Laikipia Predator Project is the first integrated investigation into the ecology, management and conservation of large predators in human-dominated African landscapes. Laikipia is the only part of the world where ranchers enthusiastically tolerate a healthy population of large carnivores, making it an ideal laboratory in which to develop realistic and progressive predator and livestock management practices.

The Kilimanjaro Lion Conservation Project is attempting to save one of the world's most important remaining lion populations. Masailand is the vast ocean of grass straddling the Kenya-Tanzania border, home to Serengeti, Ngorongoro, the Masai Mara, and Amboseli National Parks. On the Kenya side, lions are under severe and increasing pressure, as people are spearing and poisoning lions at a rate which threatens population extinction within a very few years. This is an international conservation emergency; the KLCP and its partner the Mbirikani Predator Compensation Fund are the only groups confronting it.

If viable predator populations are to persist between protected areas, two conditions must be met:

- **Pastoralists and ranchers need affordable and culturally acceptable methods of protecting their domestic animals from large carnivores; and**
- **They must realize significant financial gain from predators to offset the costs of living with them.**



Photo: James Warwick

LAIKIPIA PREDATOR PROJECT

SUMMARY: Laikipia is a socioeconomic microcosm representing various economic approaches to African rangelands; nowhere else in the world do ranchers enthusiastically tolerate a healthy population of large carnivores. This makes it an ideal laboratory in which to develop realistic predator and livestock management. We are now applying lessons learned about predator conservation in Laikipia to other African rangelands.

PROJECT STAFF:

Laurence Frank, PhD: Project Director

Alayne Mathieson, MSc.: Project Biologist, full time

Predator Conservation Officer/Field Assistant Steven Ekwanga, full time

Laikipia Wildlife Forum Community Liaison Officers (6): Field Assistants, 25% time

Pilots: Andrew Francombe and Andrew Fernandes.

Tracker: Christopher Tenai



Photo: James Warwick

The Year in Review

Predator Studies: All known lion prides in the study area are radio-collared, and monitored in weekly aerial tracking flights. Over the course of the project, we have handled 129 lions a total of 182 times; 107 have been radio collared. Since January 2005, Alayne has captured 18 new lions, and changed the collars on 9 long time study animals.

Disease: We are collaborating with the Laboratory for Genomic Diversity of the US National Cancer Institute on a study of Feline Immunodeficiency Virus, a close relative of HIV that occurs in wild cats and hyenas.. Blood samples taken at the time of capture and recapture are screened for rabies, canine distemper, feline panleukopenia, coronavirus, calicivirus, and herpes virus.

Spoor Transects: One of the most challenging aspects of carnivore research is simply getting good estimates of numbers and densities. We have refined and adapted a new census method of counting tracks (spoor) along roads in the early morning to index predator numbers in both Laikipia and Kilimanjaro. By running these annually, we will gain both district-wide and landuse-specific estimates of predator density which will serve as baseline numbers for the future.

Poisoning and Law Enforcement: Fortunately, we have heard of no poisoning incidents in our main study area of central Laikipia this year. However, a pride was recently poisoned in eastern Laikipia.

Community Liaison Officers: We use the Laikipia Wildlife Forum's Conservation Liaison Officers in an outreach role to encourage predator-friendly livestock husbandry in their communities and pay 25% of the CLO salaries and transportation costs. They have been essential in planning and building the demonstration projects (below), as well as education on methods to better protect livestock.

Demonstration Boma Project: Because lions do not survive long on the communal areas of Laikipia, the major human-wildlife conflict is hyena depredation on goats and sheep, taken from flimsy bomas at night. In 2003, we ran a series of experiments on methods of improving bomas at low cost. Based on those results, the African Wildlife Foundation funded a project to build four demonstration bomas on every group ranch in the District. Predator Conservation Officer Steven Ekwanga, the local Community Liaison Officer, and KWS Community Wildlife Officer, holds a *baraza* (community meeting) on each group ranch to explain the reasons for conserving carnivores, and that people can eliminate their losses to hyenas very cheaply. Each community selects four local residents to receive a demonstration boma, two of which have a solid gate (the critical improvement) and are surrounded by low-cost wire mesh, the other two which have only the gate. A local *fundi* (carpenter) from each community helped with construction, so that they can duplicate the design for other people.



Photo: Laurence Frank

In 2005, AWF asked us to expand the project into Samburu District, where we found that some people have already been copying the demonstration design they saw in Laikipia. Steven has put in 115 demonstration projects in the two districts, and the results have been gratifying: the communities unanimously tell us that problems have decreased dramatically and many people have copied the design for themselves. Conservation sociologist Dr. Delphine Malleret King and the Laikipia Wildlife Forum CLO's are doing a formal assessment of the project.

Aberdares National Park Hyenas: KWS has asked out help in determining populations of spotted hyenas in the Aberdares national park. Rhino have declined recently, and KWS wants to drastically

reduce hyena numbers. The decline is almost certainly due to poaching rather than predation. We have spent a week in the Park with KWS personnel, trapping and marking hyenas for mark-resighting population estimate. We are also analyzing long term wildlife records to determine trends of both predators and prey.



Photo: Aaron Wagner

Striped Hyena Biology: Aaron Wagner has completed his PhD. on his pioneering study of striped hyena social organization and ecology and is currently revising his thesis for publication.

KILIMANJARO LION CONSERVATION PROJECT

SUMMARY: An exceptionally important wildlife area, Masailand covers much of southern Kenya and northern Tanzania. However, for the past few years, the Masai throughout this vast region have been killing lions at a rate which will drive the population to extinction within a few years. Based on Mbirikani Group Ranch, the KLCP is an effort to understand the recent loss of tolerance, and to find solutions to it. The project combines studies of the surviving lion population, local livestock practices, experimental compensation for livestock losses, and intensive education on livestock husbandry. Three sociological studies have been complete and are being written up as Master's theses. These dealt with:

- changing Masai attitudes toward predators and conservation
- assessment of community attitudes towards the Predator Compensation Fund
- herding practices in both Masailand and Laikipia

We have recently completed a report on the rate of lion killing in the Amboseli-Tsavo Ecosystem, and its implications for the future of this population.

PROJECT STAFF:

Laurence Frank, PhD, Director

Seamus MacLennan: Project Biologist, full time

Field Assistant: Anthony Kasanga

Tracker and cook: Kirubai Aiyessi

Pilot: Richard Bonham

MSc. Students: Ogeto Mwebi (herding), Shari Rodriguez (compensation), and Leela Hazzah (attitudes)



Photo: Amy Howard

The Year in Review

Lion Biology: At least 108 lions are known to have been killed in this region between Tsavo West and Amboseli National Parks since 2001. A spate of 12 killings in April 2006 in and around Amboseli led us to do a preliminary analysis of the data and publish a report on the situation. If the current rate of lion killing continues, this entire population, and probably the one in Narok District, will be lost. Given the tremendous importance of these lions to Kenya's tourism industry, we hope that all relevant authorities will take immediate action.

The few surviving lions stay in dense bush by day, coming out in the open only after dark. The KLCP started in March 2004. Seamus has collared 8 lions, 3 of which have subsequently been speared.

Compensation: In Kilimanjaro, the KLCP works closely with the privately funded Predator Compensation Fund organized by Tom Hill, the first experiment in compensation for livestock kills since the Kenya government abandoned its own corruption-riddled system years ago. The PCF is a carrot-and-stick approach, entailing rigorous verification of claims by a team of Predator Game Scouts. Compensation is generous, but is reduced for losses due to poor husbandry and withheld if predators are killed in the zone within a two-month period. Our lion monitoring is essential to assessing the success of the PCF. Seamus took over administration of the PCF for 6 months in 2004-5, significantly improving the system.

Compensation Assessment: Master's student Shari Rodriguez undertook a long series of semi-structured interviews and interviewed over one hundred people to assess the Masai attitudes towards the PCF. She is currently writing up results, which show that the efficacy of PCF would benefit from improved communications with its constituents.

Masai Attitudes to Predators: Master's student Leela Hazzah has completed a major study of changing Masai attitudes toward predators and other wildlife on Mbirikani; she is also currently writing up her results. In classic anthropological fashion, she immersed herself in the community, and thus garnered

insights which have allowed her to develop new approaches to community conservation appropriate to the distinctive Masai culture.

Herding Study: Seamus' preliminary analysis of the PCF data indicated that a large majority of livestock killed by predators on Mbirikani have been left in the bush at night. As this rarely occurs in Laikipia and Samburu, we enlisted Master's student Ogeto Mwebi to undertake a detailed study of herding practices in Masailand and Laikipia, on the assumption that if we learn what people are doing right in northern Kenya, we can help those in the south improve their herding and avoid depredation losses. Ogeto has completed his Masailand study, and is about to start the Laikipia comparison. His work has been funded by AWF.



Photo: James Warwick

ACTIVITIES COMMON TO BOTH PROJECTS

Locally produced predator conservation video for pastoralists: Jenny Sharman and Richard Jones (True Nature Films) have completed filming and editing an educational video in the Masai language on predator conservation and livestock husbandry, using local settings and local Masai-speaking people as narrators. This will be shown in schools and community meetings throughout Laikipia, using the Laikipia Wildlife Forum's mobile video theater and in Kajiado and Narok Districts by a special team. This idea has been enthusiastically received by conservationists throughout the region and by the KWS Education Department. We think it will have a significant impact on attitudes and behavior toward predators in these rangeland areas.

Assisting KWS in country-wide predator conservation: Most encouragingly, KWS has reconvened its Large Carnivore Conservation and Management Task Force under Dr. Patrick Omondi. A Kenya-wide policy on large carnivore management is being considered, based on earlier papers by Rosie Woodroffe and LGF. KWS has consulted the Task Force on numerous other issues, including the controversial plan to drastically reduce spotted hyenas numbers in the Aberdares National Park. The LPP has helped KWS

trap and mark hyenas in the park, and KWS personnel are conducting a mark-recapture analysis to obtain accurate population figures. We have also been asked to help train a new KWS Problem Animal Control team, and write the chapter on carnivores for a new KWS-produced handbook on Problem Animal Control.

Problem Animal Control Guidelines for Kenya: We have also been asked by KWS to participate in the production of standing operating procedures and an in depth manual for use by authorized personnel when dealing with problem carnivores.

Study on Hunting and Conservation: To test the often cited but rarely documented assertion that trophy hunting benefits conservation, Peter Lindsey and Alayne Mathieson were funded by WCS to interview hunters at the 2005 Dallas and Houston Safari Club conventions, to see how their priorities coincide with conservation concerns. The results were very encouraging – most hunters want to contribute to conservation and their priorities reflect this concern. One paper has been published, another is still under review, and popular articles for hunting magazines are planned.

Problem Animal Control Fact Sheet: We were asked by the African Lion Working group to produce a short ‘Fact Sheet’ containing recommendations for problem lion control policy and practice throughout Africa. This document strongly emphasizes that rural education on livestock protection should be the primary focus of all PAC activities, with precisely targeted, professionally administered lethal control being a last resort.

Conferences and Workshops:

PRIDE Initiative: Safari Club International and Dallas Safari Club Conventions, January 2006. Wildlife artist John Banovich launched an ambitious initiative to educate trophy hunters and raise funds for lion conservation called PRIDE (Protection, Research, Implementation, Development, Education). Our two projects and AWF are the beneficiaries of contributions from John’s clients. Talks and receptions were featured at both annual conventions, and will be repeated in 2007. This initiative is extremely important, because the hunting industry has a high stake in preserving healthy lion populations, and essentially administers vast regions of wilderness in eastern Africa.

We were particularly pleased to host the Honorable Francis ole Kaparo, Speaker of Kenya’s Parliament to these two conventions. Mr. ole Kaparo is an ardent and vocal conservationists, and Kenya’s most respected politician. He is a strong voice for conservation and rational wildlife management, and was received at both conventions with tremendous enthusiasm and gave the keynote address at the Dallas convention. His visit was fully funded by John Banovich and John’s clients.



IUCN Lion Conservation Workshop, Johannesburg, January 2006

In response to concern over continent-wide lion populations, two large workshops were convened by the International Union for the Conservation of Nature, the Wildlife Conservation Society, and Safari Club International. One was for West and Central Africa, the second for Eastern and Southern Africa. LGF gave one of three background papers at the second meeting, on lion-human conflict and its resolution. The first three days were spent in a WCS-sponsored Rangewide Priority Setting exercise, which mapped our knowledge of lion populations and their status more accurately than has ever been attempted. With participation from governments of nearly all lion-containing countries, the next three days were spent hammering out a continent-wide strategy for lion conservation, which will guide national efforts in the years to come.

LWF-WCS Laikipia-Samburu Conservation Planning and Collaboration Workshop, January 2006

Alayne attended the WCS-run workshop which pulled together most groups involved in conservation in this region. Lions were one of the key species used to define high priority areas for conservation, derived by detailed mapping of current abundance and prospects for the future.

Savannas Forever Workshop, Dar es Salaam, June 2006

See below for a description of SF.

Website:

With the help of a volunteer, Amy Howard, a website for both KLCP and LPP has been established. The address is www.lionconservation.org. It has been crucial in helping to publicize the recent slaughter of lions in Maasailand. Amy will continue to maintain the site.

Lectures:

- US Congressional International Conservation Caucus: LGF, May 2005
- Wildlife Conservation Network EXPO: LGF, October, 2005
- Philadelphia Zoo: LGF, October 2005
- Santa Monica Rotary Club: LGF, December 2005
- Los Angeles Zoo: LGF, December 2005
- California Academy of Science: LGF, 20 December 2005
- IUCN Lion Conservation Workshop, Johannesburg: LGF, January, 2006
- Safari Club International: LGF, January, 2006
- Dallas Safari Club: LGF, January, 2006
- National Geographic Tour: AM, Jan 2006
- Bellingham, WA: SMD, April 2006
- University of Washington: SMD, April 2006
- Bohemian Club: LGF, July 2006

NEW INITIATIVES IN 2006-7

Problem Lion Behavior/GPS collars: We have shown that some lions are chronic livestock killers and that others rarely if ever take stock. To prevent the development of the depredation habit, we need more detailed data on movements of both types of lions in relation to human activities and livestock concentrations. These data can only be obtained through use of GPS collars, and we have obtained a generous grant from the Bosack Kruger Foundation. Tests on four lions have been successful and we will be buying a further 20 collars for this study. Alayne and Seamus will use this research for D.Phil. and M. Phil. Degrees, respectively, at Oxford University.

Savannas Forever: SF is a new conservation initiative by Professor Craig Packer and other respected academics/conservationists with the goal of improving wildlife management in non-protected areas of Tanzania, Botswana, and Zambia. Trophy hunting is an important industry in these countries, but the hunting companies need significant help in effectively managing their vast areas of wildlife-rich wilderness. SF initiatives to promote that process include better monitoring of wildlife populations, improving benefits to human communities from hunting income, improving livestock management to protect large carnivores, improving concession and quota setting policies by governments, improving client and professional hunter education, and close cooperation with the big international hunting associations. LGF and Leela Hazzah will contribute primarily to the livestock and community programs.



Photo: Stephanie Dolrenry

PROJECT-SPECIFIC ACTIVITIES: LAIKIPIA

Spotted Hyenas: In the communal areas of Laikipia where lions do not survive long, spotted hyena attacks on small stock are the main human-wildlife conflict and result in retaliatory poisoning. Detailed movement and foraging information is essential to our efforts to reduce hyena attacks; we need to know how dependent they are on human-derived food in this prey-poor habitat, how many bomas an individual might encounter within its home range, how many they visit in a night, etc., in relation to season and wild prey availability. We have poor information on movements of spotted hyenas because they are wholly nocturnal; GPS collars are needed for this study. With them, we can test the efficacy of electric fences, chain link fences, and improved hygiene to see if hyenas avoid experimental bomas to concentrate foraging around control bomas. This study will be conducted by Stephanie Dolrenry for her PhD., and we are currently seeking the necessary financial support. We have recently deployed two Vectronics GPS collars on hyenas on Il Polei Group Ranch as a pilot study.



Survey of changes in attitudes of Laikipia ranchers since the start of the project: The overall success of the Laikipia Predator Project when it comes to influencing ranchers attitudes towards predators and their livestock husbandry practices is being assessed through an in depth questionnaire to all the same ranchers in the study area who were originally interviewed in 1997.

Mpala Research Centre Director Search Committee: LGF has been asked to serve on the search committee for a new director and to outline priorities for MRC. This research station has tremendous unfulfilled potential for making major contributions to conservation. Directorship of MRC is a critical position, and we will be very involved in recruiting the right person for the job.

PROJECT-SPECIFIC ACTIVITIES: KILIMANJARO

Masailand Lion Survey: We urgently need more accurate information on the distribution and relative abundance of lions throughout Kenyan Masailand. With cooperation from KWS, Seamus will spend Jul-September crisscrossing this region of 40,000 km² (15,600 mi²) doing spoor counts in the mornings and interviewing local people in the afternoons. He will be accompanied by two trackers and a Masai field assistant, and will work closely with KWS wardens and community wardens. Given the apparent urgency of the situation, these data will be analyzed and released as quickly as feasible.

Moran Corps: Leela Hazzah's work has shown that the strongest incentive for conservation among the Masai comes from financial benefits, particularly employment. Lion killing is done by young warriors (*morans*), who are uneducated, unemployable and bored. She and Seamus have suggested that a number of young men be employed as lion guardians, to help with monitoring, education on predator-friendly livestock management, improved herding practices, etc. We are currently seeking funds to test this idea, initially in the KLCP study area, and eventually on a much larger scale. This project will probably be Leela's PhD thesis work at the University of California, Davis.

COLLABORATIONS

KWS: Large Carnivore Conservation task Force: LGF is on the Steering committee, charged with developing a national policy on predator conservation and management, as well as dealing with specific issues, such as the Aberdares hyenas.

KWS: Aberdares Hyenas – described above.

KWS: we are writing the carnivore section of a new handbook on Problem Animal Control, and will be training KWS PAC teams in carnivore issues

IUCN Lion Conservation Workshop: see above

Cynthia Moss/African Elephant Research Project: we are working with Cynthia and her associates to find a solution to lion killing and broader conservation issues in the Amboseli area.

Pesticide Control Products Board of Kenya We have established a working relationship with this government body, which has proven responsive to reports of predator poisoning. They have also analyzed samples to identify the poisons used.

Mbirikani Predator Compensation Fund KLCP continues to work closely with this privately administered fund to refine the design of the program, and to collect detailed data on conflict between people and large carnivores.

Mpala Research Centre: Search Committee for new director.

Laikipia Wildlife Forum: Support of CLO program, local education on predator conservation and management, demonstration boma program and assessment.

National Institutes of Health, Laboratory for Genomic Diversity: see above. We provide extensive blood and tissue samples of on-going studies of FIV and other diseases

Samburu-Laikipia Wild Dog Project: on-going investigations of rabies and other diseases.

Okavango Delta Hyena Research: Providing expertise in hyena research methodology

PRIDE Initiative: described above

Savannas Forever: described above

PUBLICATIONS

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POPULAR MEDIA, 2005-6

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Television:

- Nature, The Vanishing Lion, May 2006
- Wild Chronicles, shown on PBS March 2006
- BBC The Natural World, broadcast several times in 2005-6
- BBC The Really Wild Show, shown Easter, 2005
- National Geographic – Fox Network: Crittercam on lions and hyenas in Laikipia, July 31, 2006

SPONSORS

The Laikipia Predator Project and the Kilimanjaro Lion Conservation Project have been supported by numerous institutions and individuals over the last year. We are extremely grateful for their generous support, without which none of our work would be possible. Special thanks to the Wildlife Conservation Society, which has been our primary supporter from the beginning, the Wildlife Conservation network, which has raised major funding, and Bruce Ludwig, the prime mover behind the KLCP from the beginning.

In alphabetical order:

- African Wildlife Foundation
- Arnold, Wendy (through National Geographic)
- Bosack Kruger Foundation (through WCN)
- Cheryl Grunbock and Martin King Foundation (through WCN)
- Court, Arthur and Elena (through PRIDE)
- Dallas Ecological Foundation (through PRIDE)
- Dallas Safari Club (through PRIDE)
- Flora Family Foundation (through WCS)
- Gold, Steve (through WCN)
- Logan, Tracey (through WCN)
- Kaltrieder, Ed (through PRIDE)
- Kaplan, Tom (through WCS)
- Ludwig, Bruce
- National Geographic Society
- Philadelphia Zoo (through WCS)
- Piuve, Michael (through WCN)
- Potrero Nuevo Fund/TIDES Foundation
- PRIDE Lion Conservation Initiative (artist John Banovich and his friends and clients)
- San Francisco Zoo
- Seaworld/Busch Gardens Conservation Foundation
- Silverman, Ron and Pat (through WCN)
- Wildlife Conservation Network and their many donors
- Wildlife Conservation Society



Photo: Amy Howard