

Lion Killing in the Amboseli -Tsavo Ecosystem, 2001-2006, and its Implications for Kenya's Lion Population

18 May 2006

Laurence Frank*
Seamus Maclennan*
Leela Hazzah*
Richard Bonham†
Tom Hill†

***Kilimanjaro Lion Conservation Project**
PO Box 555
Nanyuki
Kenya
and
Museum of Vertebrate Zoology
University of California
Berkeley, CA 94720

†Predator Compensation Fund and Masailand Preservation Trust
PO Box 24133
Nairobi
Kenya

lgfrank@berkeley.edu

SUMMARY

Lion populations are in decline throughout most of Africa, but the problem is acutely urgent in Kenyan Masailand, where local residents are spearing and poisoning lions at a rate which will ensure local extinction within a very few years. Kajiado and Narok Districts contain two of Kenya's most important tourist destinations, Amboseli National Park and the Masai Mara National Reserve, where lions are the primary attraction for overseas visitors. Limited data from the Tsavo-Amboseli Ecosystem (lying between Amboseli and Tsavo West National Parks) indicate that a minimum of 108 lions, and probably many more, have been killed in the region since 2001. In spite of a generous compensation program which pays people for livestock lost to predators, lion numbers on Mbirikani Group Ranch have declined steadily, and evidence suggests that the situation is as bad or worse elsewhere in the region. Young warriors who engage in traditional lion killing do not face significant consequences because of lax law enforcement and judicial corruption. Unless that changes in the immediate future, Kenya will lose its most important tourist attraction.



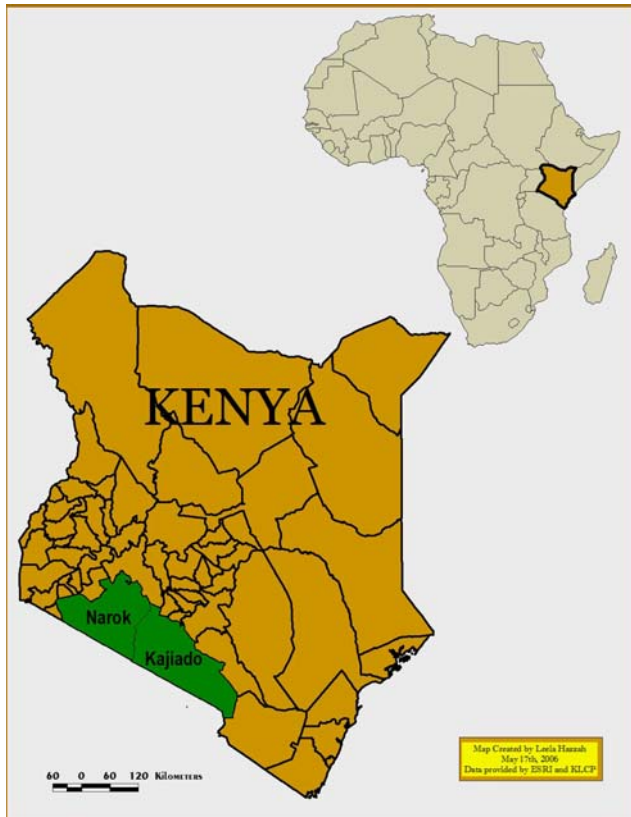
Two young male lions speared and mutilated in 2005. Photo: S. MacLennan

BACKGROUND

The lion population of Africa is in serious decline. We have no reliable data from earlier periods, but can confidently estimate that Africa's population prior to colonization would have been at least one million, falling steadily to perhaps 500,000 by 1950, perhaps 200,000 by 1975, (Myers, 1975), and less than 100,000 by the early 1990's (Nowell and Jackson, 1996). Current estimates of continent-wide numbers range from 23,000 (Bauer and van der Merwe, 2004) to 39,000 (Chardonnet, 2002). The most recent, and probably most accurate estimate, is less than 28,000 (Eastern and Southern African Lion Conservation Workshop, Johannesburg, Jan. 8-13, 2006 unpubl.). All estimates agree that more than half of Africa's surviving lions are in Tanzania, which has large wilderness areas without livestock and a robust trophy hunting industry which places high value on lions.

By contrast to Tanzania, the situation in Kenya is poor and getting rapidly worse. Until very recently, the 40,000 km² (15,600 mi²) of northern Masailand (Narok and Kajiado Districts of southern Kenya, Fig. 1) were a stronghold of lions and other wildlife; although there are no data, this large prey-rich region probably still held several thousand lions until recently. In the last five years, much of this population has been decimated by poison and spearing, both in retaliation for livestock killed by lions and for traditional *Olamayio* (young men proving their manhood). Although information is poor, it appears as if the Masailand lions are in such serious decline that

the entire population may disappear within a very few years. This report summarizes the state of our knowledge, but because both historical and current data are lacking, much of it is necessarily speculative. With cooperation from the Kenya Wildlife Service, the Kilimanjaro Lion Conservation Project is undertaking a survey of lion distribution and abundance in Masailand, so we will soon have better information. We know that the Kajiado population is already very low, and last month's killing of at least a dozen lions in and around Amboseli National Park may represent the beginning of the end.



In earlier times, a vast lion population was resilient to the depredations of a small human population. However, at current depleted population levels, the lions of Kenyan Masailand can no longer withstand regular killing. Conservation initiatives and benefits are slowly becoming more prevalent in Masailand and employ some warriors and adults. Although *moranism* (warriorhood) is in gradual decline as a traditional way of life, *Olamaiyo* is still important in today's Masai society. Lion killing will no doubt continue in its traditional role, as retaliation for lost livestock, and sometimes as a political statement. The lions do not have time for Masai tradition to change.

Figure 1. Kenyan Masailand, Narok and Kajiado District

Lion Killing in Tsavo-Amboseli Ecosystem 2001-2006

The killing of 87 lions between 1998 and 2004 in and near Nairobi National Park was well documented and reported in the international press. However, little has been published about a similar situation in the region between Amboseli and Tsavo West National Parks (Figure 2)

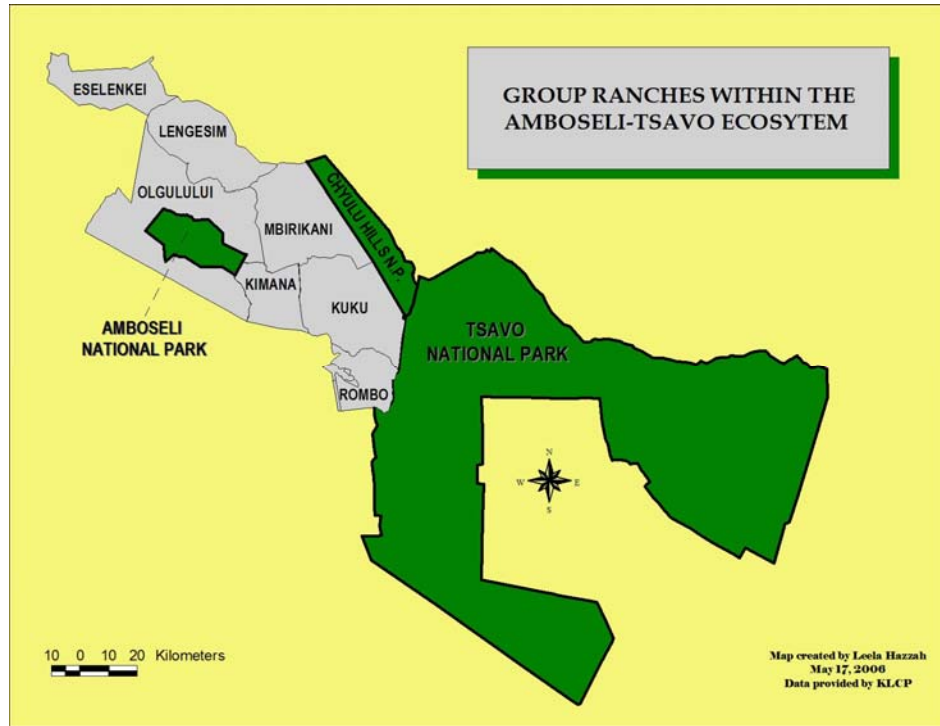


Figure 2. The Tsavo-Amboseli Ecosystem, showing locations of group ranches, Amboseli and Chyulu Hills National Parks.

A significant increase in spearing and poisoning was seen on Mbirikani Group Ranch and adjacent group ranches starting in 2001 (Table 1). Since then, the Amboseli-Tsavo Game Scouts Association has recorded at least 108 confirmed killings. We must emphasize that these represent only known killings; except on MGR where monitoring has been good, many others are likely to have gone undetected. Bushmeat snaring is common in the region, and we know that snares kill many predators that are never found. Note that the 2006 figures represent only the first four months of the year, so the full year's toll is likely to be much higher. Although the population seems to be in rapid decline, the number of killings has been increasing annually; the final total for 2006 is likely to be much higher than it is as of May, the date of this report. Thus, it would appear that people are putting greater effort into lion killing, as each year they are killing more of an ever-decreasing population.

Year	Lions Killed
2001 (averaged)	20.5
2002 (averaged)	20.5
2003	11
2004	19
2005	17
2006 (through April)	20
TOTAL	108

Table 1: Known Lion Killings in Amboseli-Tsavo Ecosystem, 2001-2006. Accurate dates were not recorded as part of incident records in 2001-2002, so we have averaged the 41 known killings in those two years.

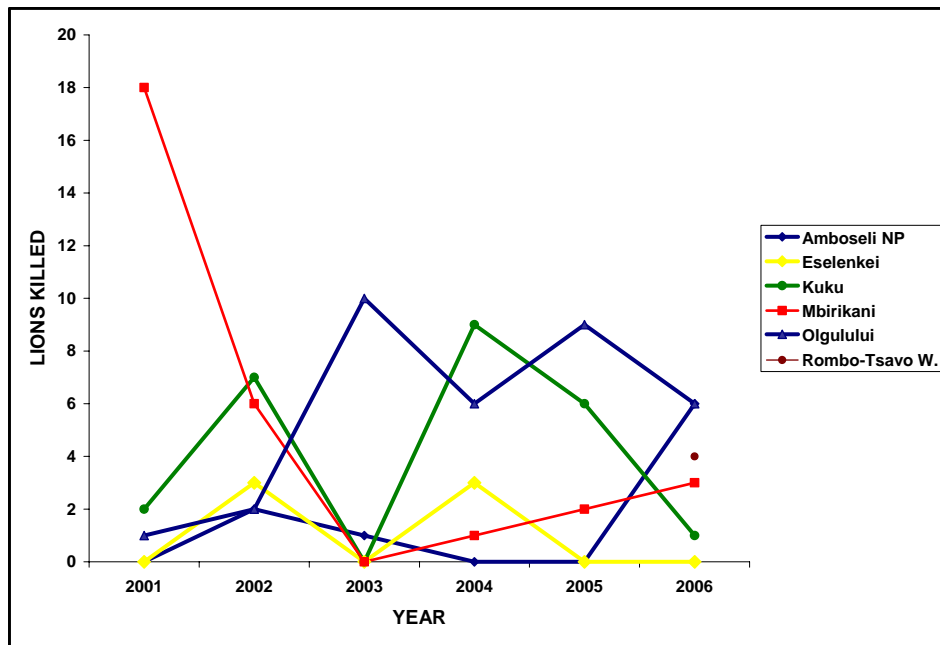


Figure 3: Locations of Known Lion Killings in Amboseli-Tsavo Ecosystem, 2001-2006. These numbers are minima, and are probably best for Mbirikani Group Ranch, particularly in the earlier years. The Predator Compensation Fund started on Mbirikani in mid-2004. It is dismaying to note that nine lions have been killed within the boundaries of Amboseli National Park in at least 5 different incidents.

Sex was recorded for 50 of the lions killed. Of these, 33 were female and 17 were male. Because females are frequently accompanied by dependent cubs, a large additional number of juveniles will have died as a result of losing their mothers. Needless to say, killing females and cubs is far more destructive to a population than killing males.

Killing is heaviest during the long rains (April-June, Figure 4), when young men have returned to permanent settlements after grazing their herds far from home during the dry season. They have little to do at this time of year, which is also when most traditional ceremonies occur, giving them the opportunity to sing of their feats in large gatherings.

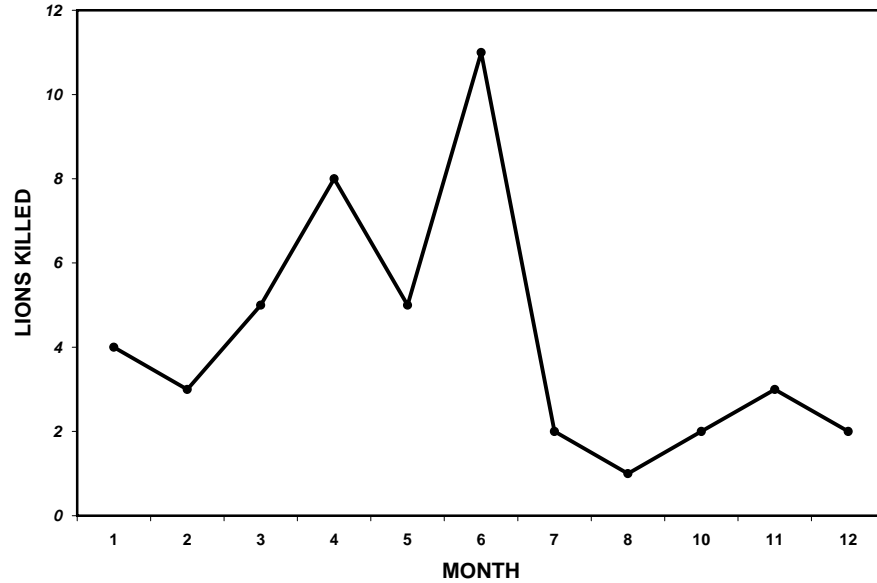


Figure 4: Seasonal variation in lion killing, 2003-5. Note that the 20 kills that have occurred thus far in 2006 have not been included, as the full year is not represented at the time of writing.

Although poisoning may have declined since 2001-2, spearing is still increasing, in spite of what must be a declining lion population (Figure 5); lion sightings are drastically lower than they were in 2000. We must emphasize that poisoning is more difficult to detect than spearing, as it is not necessarily publicized. After a successful lion hunt, however, morans sing at manyattas to announce their victory, ensuring wide acclaim.

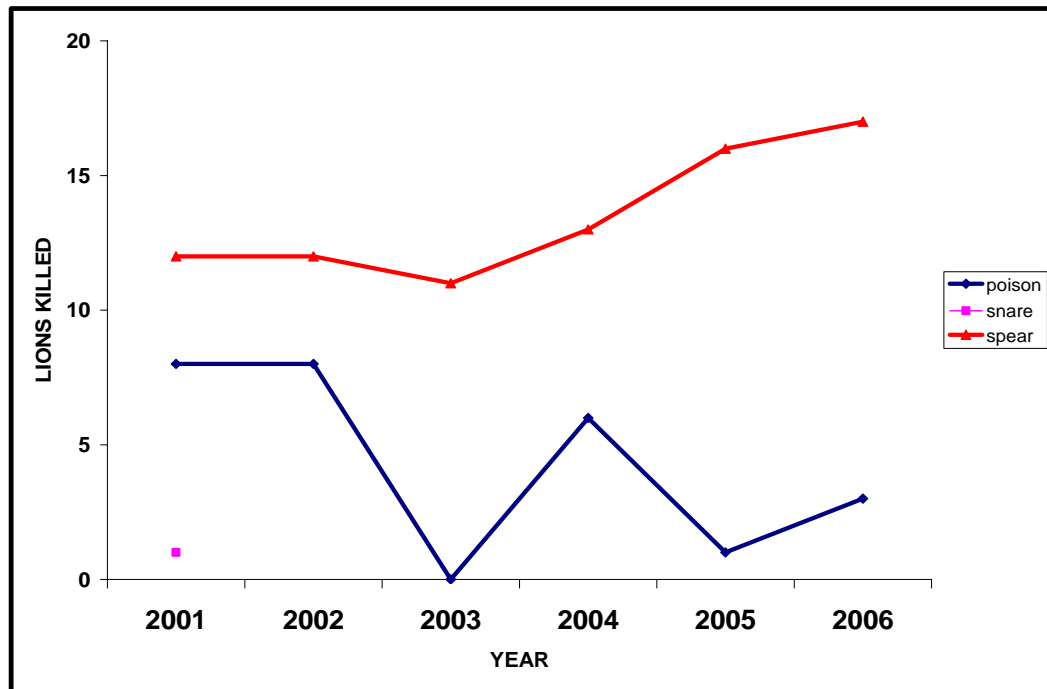


Figure 5: Methods used to kill lions, 2001-2006. Data for 2001-2 have been averaged. Note that 2006 represents only the first four months of this year, so this is likely to rise substantially.

Legal Consequences of Lion Killing

In recent years, the Amboseli-Tsavo Game Scout Association has arrested nearly all the young men involved in spearing lions. However, in no case have they suffered serious legal consequences. They have usually been let out on minimal bail, and then either evidence is “lost”, prosecutions fail to materialize, or judges have been bribed to drop charges or impose trivial fines. In several cases, the game scouts who arrested offenders were severely punished by the community: their wives were taken away from them by the elders. In summary, game scouts have paid a much higher price for their enforcement activities than have morans for their offences.

Implications for Kenyan Masailand

Although there are no data for the rest of the region, we can extrapolate from our data for Mbirikani Group Ranch to derive a rough estimate of the District lion population where the current resident population is 4 adults and 2 cubs on an area of 1200 km², for a density of 0.005/km². Given that the activities of the Predator Compensation Fund and the Kilimanjaro Lion Conservation Project have apparently reduced the level of killing on MGR compared to neighbouring group ranches, suggesting that the MGR density might be higher than most areas of Kajiado District. Thus, even assuming that the entire district is still all wildlife habitat, the 18,000 km² of Kajiado would hold fewer than 90 lions of all ages, or 60 adults and subadults. This is certainly an overestimate, because it does not take into account the large regions that have no lions due to human settlement, agriculture, and bushmeat snaring.

There are even fewer data for Narok District (22,000 km²), so it is more difficult to estimate possible lion numbers. Ogutu et al (2005) estimated the density outside the Masai Mara Game Reserve as about 12.5% that inside. Applying his figure to Dloniak’s (2006) density estimate of 0.18/ km² for the Reserve, we get 0.0225 lions/km², or fewer than 500 adult and subadult lions, in Narok District, even assuming that the entire district is still wildlife habitat, certainly untrue.

All evidence points to a recent increase in lion killing, and a precipitous drop in lion populations in Kenyan Masailand. The (admittedly very rough) estimates given above suggest fewer than 560, in addition to the 270 Dloniak estimates for the MMNR.

Kenya’s Lion Population

Although it appears to be in rapid decline, the Masailand lion population is still Kenya’s largest. From estimates given here, and using estimates for other areas from Bauer and van der Merwe (2004), we can estimate lion numbers for all of Kenya (Table 2). Those authors estimated the population of northern Kenya to be 800, which was a pure guess and probably far too high; I have revised that to 100, still a guess but probably more realistic. From these figures, we get a total of 2010 lions.

Region	Est. Lions
Masailand	825
Tsavo	675
Laikipia	230
Meru	80
Samburu–Isiolo	100
Northern Kenya	100
TOTAL	2010

Table 2: Estimated lion populations in Kenya, 2006

The optimistic estimate of 825 lions in Masailand accounts for 41% of the total. Although proximity to Serengeti National Park may help lions persist in the MMGR, elsewhere in Narok and in Kajiado lions appear to be in such rapid decline that they are likely to disappear entirely in a very few years. Local youths killed off the entire Amboseli lion population in the early 1990's, but dispersal into the Park from surrounding lands ensured that a new population re-established itself. That reservoir has nearly dried up, and at the current rate of killing, Amboseli NP may soon have no lions, and no source of replacement.

Stemming the Slaughter

Olamaiyo is clearly still a major part of moranism, and is unlikely to die away on its own soon enough to save the lions of Kenyan Masailand. If anything, our data indicate that the rate of killing is increasing, even though the lion population has clearly plummeted in the last few years. We suggest a four-fold approach that may help alleviate the problem in the long term. However, only immediate, strong, and consistent law enforcement is likely to save the population from local extinction within a very few years.

- Better sharing of wildlife (tourism) revenue and increased conservation employment among different group ranches might help alleviate the problem over time. However, the current situation is an immediate emergency that cannot wait for policy and economic circumstances to change.
- Expansion of compensation throughout the region may also help in the long term, but current resources do not permit that. Further, the Predator Compensation Fund is wholly dependent on the efforts of Tom Hill and on private donations from overseas. This is not a sustainable solution for the long term. Either compensation needs to be funded from wildlife income, or replaced by an insurance scheme, which would require wide-scale participation from livestock owners.
- Expanded regional monitoring of lion numbers is essential if we are to have any idea of population trends, and efficacy of interventions. The KLCP and KWS are undertaking a rapid assessment exercise throughout Kajiado and Narok Districts which will provide rough baseline information, but proper monitoring, at least in selected representative areas, must be established and maintained.
- In the meantime, only serious law enforcement will save this lion population in the short term. Authorities must find the resolve to arrest, prosecute, and imprison everyone who

kills lions in this region. Government also has indirect policy options, e.g. withholding payments and other support to communities by KWS.

In the absence of strong and immediate response, lions will soon be extinct in southern Kenya. Lions are critically important to tourism; that loss would almost certainly have a major impact on Kenya's international image, with direct consequences for tourism and thus the national economy.

References

- Bauer, H.; van der Merwe, S. 2004. Inventory of free ranging lions *Panthera leo* in Africa. *Oryx*: 26-31.
- Chardonnet, P. 2003. *Conservation of the African Lion: contribution to a status survey*. International Foundation for the Conservation of Wildlife and Conservation Force.
- Dloniak, S. 2006. Masai Mara Predator Research Project Annual Report. PO Box 86, Karen, 00502, Kenya
- Myers, N. The Silent Savannas. *International Wildlife*. 5:5-10
- Nowell, K. and Jackson, P. 1996. *Wild Cats: Status, Survey and Conservation Action Plan*. IUCN – The World Conservation Union. Gland, Switzerland.
- Ogutu, J.O., Bhola, N., and Reid, R. 2005. The effects of pastoralism and protection on the density and distribution of carnivores and their prey in the Mara ecosystem, Kenya. *J. Zool. Lond.* 265:281-293