

# Fences and Footprints

PREDATOR CONSERVATION FIELD NOTES FROM A PH.D. STUDENT

By Alexandra E. Sutton



Courtesy of Alexandra E. Sutton

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*Jambo!* (Hello!)

This spring kicks off my first field season in Kenya, where I'll be working with a Nairobi-based charity, the Anne K. Taylor Fund, and noted biologist Stuart Pimm on a predator conservation project along the western border of the Maasai Mara National Reserve. The reserve spans over 583 square miles and is best known as the site of the Great Migration—during which millions of wildebeest, gazelles, and zebra make their dramatic annual journey northward in search of grasslands. The Mara is also home to thousands of wildlife species—including many large predators.

Over the past three years, the Anne K. Taylor Fund (AKTF) has been working along the western edge of the Mara, up and down the Oloololo Escarpment in the Trans Mara and Mara North. Through its Boma Fortification Program, AKTF has helped more than 300 local Maasai build predator-proof fences

around their cattle yards using chain-link fencing and aluminum tiles. Cattle fences may not sound like conservation, but these kinds of programs are a critical part of resolving the human-wildlife conflict that threatens lion, leopard, and cheetah populations across Africa. In 2012, the founder of this organization, Anne Kent Taylor, received a grant from the National Geographic Society's Big Cats Initiative that will support the fortification of many more Maasai livestock enclosures, or "bomas," and, we hope, will save predators in the process.

Apex predator populations are in decline worldwide, and big cats are particularly at risk, largely due to human-wildlife conflict ([Dickman 2010](#), [Mogensen et al. 2011](#)). In the human-dominated pastoral landscapes of East Africa, the ranges of large predators often overlap with human activity, and human-wildlife conflict arises most often around the issue of livestock depredation.

In the Greater Maasai Mara Ecosystem, livestock depredation is a constant problem. For the Maasai, cattle are a way of life; they provide food, material goods, financial security, and social status. Because depredation poses a significant threat to livelihoods, it often leads to the retaliatory killing of predators—a major challenge to the sustainability of local populations ([Patterson et al. 2004](#), [Kolowski and Holekamp 2006](#), [Kissui 2008](#), [Hazzah et al. 2009](#)). In the past, the nomadic nature of Maasai life helped keep conflict to a minimum; but as the Maasai community modernizes, settling down into a permanent home becomes more common. For Maasai along the western border of the reserve, this stationary lifestyle has become the norm—and so has conflict with predators.

Such conflict has contributed to the precipitous decline of Africa's predator populations. For example, the African lion (*Panthera leo*) population numbered more than 100,000 in 1950; now just 30,000 individuals remain ([Riggio et al. 2012](#)). Thus, with an eye toward preserving the remaining predator populations, conservationists working throughout eastern and southern Africa have sought to reduce



Courtesy of Alexandra E. Sutton

Near some Maasai bomas, or livestock enclosures, in the Trans Mara region of Kenya, Alexandra Sutton (kneeling at center) and a researcher with the Anne K. Taylor Fund (far right) measure a leopard print in the mud as two local herders observe. Behind them, damage to the thatched roof and wooden door of a boma signal the leopard's predation attempt.



Credit: Alexandra E. Sutton



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Lions (left) and black-backed jackals are two predators that target livestock in Africa. Others include leopards, cheetahs, hyenas, wild dogs, honey badgers, and baboons. Big cats are most often the target of retaliatory attacks by humans.

the threat posed by lions, hyenas, jackals, and other predators by implementing projects to help fortify or redesign bomas.

Several organizations have reported anecdotal success with reducing predation through the creation of these fortified bomas. To date, however, very few studies have measured the effectiveness of these structures in preventing livestock loss and stopping retaliatory lion killing (Dickman 2010). I'm tasked with collecting data about the fence program, and answering some fundamental questions about the project. First, we want to know whether the fences actually *work*. If we find that they do, then we'd like to know just how well—and why. Another goal of my research is to quantify the number of retaliatory killings, which vary regionally.

I'm going to be collecting data on livestock predation rates and predator activity in the AKTF's study region. To gather information, I'll comb through old predation reports with conservancy managers, park officials, and field team members; I'll sit down for interviews with Maasai cattle owners and herders; and I'll monitor footprints to try to track predators myself. The prints will help me recognize which predators are active in a region and verify reports of livestock attacks—giving me further insight into the problem of livestock predation in the western Mara. I'll be attempting my tracking with the help of the WildTrack™ Footprint Identification Technique (FIT), an image analysis protocol that uses a statistical software package to read animal tracks. With a strong database of known prints, the system's accuracy approaches 93 percent.

Understanding the magnitude of livestock predation—and the exact impact of boma fortification as a mitigating technique—will enable better problem solving for conservationists. Armed with new information, I'll be able to work with colleagues at the AKTF

to better design, implement, and assess future boma fortifications. What we find here in the western Mara can also help us advise other conservationists working on the complex problem of livestock predation in shared landscapes worldwide.

In the Mara, every day brings new information and new adventures. Well-known for their generosity, the Maasai have deeply impressed me with their kindness and willingness to help. Maasai elders are happy to recall the exact day they last saw a rhino, and young herdsmen (*morani*) delight in testing their knowledge against our wildlife identification test (their average score is around 94 percent). We also learn about all kinds of predation behaviors—for example, the way that lions will approach a boma from the windward side, using their scent to try to scare the cattle into breaking out and fleeing (essentially tricking their prey into doing all the hard work for them!). And we get to see wildlife in action, like the day we ran into two African wild dogs (*Lycaon pictus*)—locally extinct for more than 20 years—trotting along the escarpment. Every day I work here in the Mara, I love it a little bit more. With luck and work, I hope to help protect its natural riches.

Asante (Thank you),  
Alexa ■



Credit: Alexandra E. Sutton

The sign on a new chain-link fence erected to exclude predators from bomas notes the assistance of the Anne K. Taylor Fund—a National Geographic Big Cats Initiative grantee and the funding sponsor of Sutton's research in Kenya.



Read field notes from Alexandra Sutton throughout the summer on TWS's blog at [www.news.wildlife.org/category/blog](http://www.news.wildlife.org/category/blog). You can also follow her on Twitter (@aesutz) or visit her personal blog, *A Lion's Life for Me*, to learn more about her research.