

Oryx

African lions survive in corridors of human tolerance

By Stephanie Dolrenry, 24th February 2020

Over the years as a wildlife conservationist I have often been involved in discussions about corridors, such as where to establish them and how to protect them. After these discussions, I always came away feeling something was amiss with the way the term 'corridor' was being defined, especially with regards to African lions. Corridors are usually thought of as spatially clearly-defined and primarily habitat-based. Although such habitat corridors are important to lions, in a world where humans and lions often share space, I have learnt that there is something at least equally as important to the felids' survival, and that is the tolerance of local communities.



Left: A male lion, Martii, on the communally-owned, unprotected lands of Eselenkei Group Ranch. Right: Male lion, Lorgeeti, on the unprotected area of the communally-owned Mbirikani Group Ranch.

In the early 2000s there were virtually no lions left in Amboseli National Park, because many had

been killed by Maasai pastoralists in retaliation for livestock depredation. Since then, in my 15 years of researching this charismatic keystone species, I have seen multiple generations of lions move in, around, and out of these landscapes. The reasons behind their survival are complex, but it would seem that the current high tolerance of lions by the local communities, probably a result of conservation initiatives, has allowed these felids to survive to adulthood, breed and disperse successfully.

Many of the individual lions on which our research focussed are known livestock killers. We refer to them as 'chronic problem lions' as they repeatedly jumped into *bomas* (livestock corrals) at night and attacked herds during the day. In response to these events, the lions were hunted many times by the local herdsmen. But time and again, fellow herdsmen and community members benefitting from conservation initiatives stepped forward to calm angry and upset livestock owners. This led to these problem lions surviving, allowing them to reproduce and disperse.



Left: Guardian Ng'ida climbs a termite mound to use radio telemetry to track collared lions. Right: A Guardian surveys his zone for lion sign at sunset as a storm builds.

Over the decade and a half of our work, we recorded detailed data about the lions observed, and identified every individual lion sighted. In the broader Amboseli ecosystem, we currently monitor more than 200 lions. They now occur at densities of 5–6 lions/100 km², a massive increase from our early years of monitoring, when we observed less than 1 lion/100 km². Our rich data sets allowed us to put together a story of survival within the ecosystem and beyond. We can now better understand how these lions have adapted to living amongst high densities of people and livestock.

Throughout the years, the ratio of lions using the protected areas has remained at c. 30% of the total population. This means 70% of the population live entirely in human- and livestock-dominated landscapes. Lions are often hunted when they attack livestock, particularly when such attacks take place inside *bomas*. Our observations have led us to postulate that by living in a landscape where

humans, not lions, are the apex predator (i.e. living in a landscape of fear), these lions learned how to move and subsist more successfully near people, allowing the dispersers to traverse a densely populated area before arriving at an area of refuge.



A male lion, Martii, and lioness Selenkay on the communally-owned lands of Eselenkei Group Ranch.

Our [findings](#) are also cause for great excitement, as to our knowledge, this is the first time links have been observed between the lion populations of Tsavo West, Amboseli, and Nairobi National Parks. We believe the increased and sustained human tolerance over several lion generations, in addition to continued availability of habitat and prey, enabled the lions' survival, which in turn has contributed to the increased viability of the lion metapopulation across the region of south-central Kenya. In addition to habitat preservation, promoting connectivity by increasing human communities' tolerance for, and acceptance of, large carnivores while concurrently facilitating the carnivores to learn how to coexist in human- and livestock-dominated landscapes, leads to a more connected and robust metapopulation. The story of these lions' successful survival and dispersal provides an example of how human tolerance can engender connectivity, sparking hope for a brighter future for lions in these landscapes.



A GPS unit alongside (for size reference) a lion track in drying mud.

Now, as I go forth and discuss corridors, I plan to keep the following lessons in mind:

- *Corridors are more than spaces and habitat* – I will thus strongly advocate for a broadening of their definition, particularly for large carnivore species that are a challenge to human-wildlife coexistence.
- *Systematic data collection and storage are vital* – I now have a reinforced understanding of the importance of systematically collecting and storing data on individuals over generations – the insights that motivated this publication would have been lost had we not diligently recorded the identities of individual lions during the first sightings, when they were still within protected areas, after they dispersed into non-protected landscapes, and each time cubs were born.
- *Collaborations are key* – Lastly, the engagement in broad-scale collaborations that create opportunities for the exchange of knowledge and best practices, particularly in identifying dispersing animals, is essential to improve the understanding of connections between sites.

Most importantly, without forbearing communities exemplifying the necessary tolerance to allow lions to move through their space, the functional metapopulation of lions in the Tsavo-Amboseli-Kitengela landscape would have been lost already. A big thank you to the communities, particularly those who have advocated lion conservation. You are greatly appreciated.



OSAPUKU

Born: 5th July 2011, Eselenkei G.R.
Meaning of name: 'the big one'



All photos: Philip J. Briggs

The Open Access article [Corridors of tolerance through human-dominated landscapes facilitate and connectivity between populations of African lions *Panthera leo*](#) is available in *Oryx—The International Journal of Conservation*.



Stephanie Dolrenry

Dr. Stephanie Dolrenry is co-director of Lion Guardians, Wildlife Guardians, a founding director of LINC (Lion Identification Network of Collaborators) and PRIDE Lion Conservation Alliance. Her expertise built over 15 years in Kenyan Maasailand lies in understanding lion adaption to humans, while working closely with communities to engender ownership and incorporate traditional ecological knowledge into lion conservation. Her current interests include changing contexts in wildlife conservation, use of technology in and measurable impacts of conservation, and applications for reducing human-carnivore conflict.