Mara Lion Project

2017
Quarterly Report
01 January—31 March

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MARA LION PROJECT

KENYA WILDLIFE TRUST

website: kenyawildlifetrust.org
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Executive summary

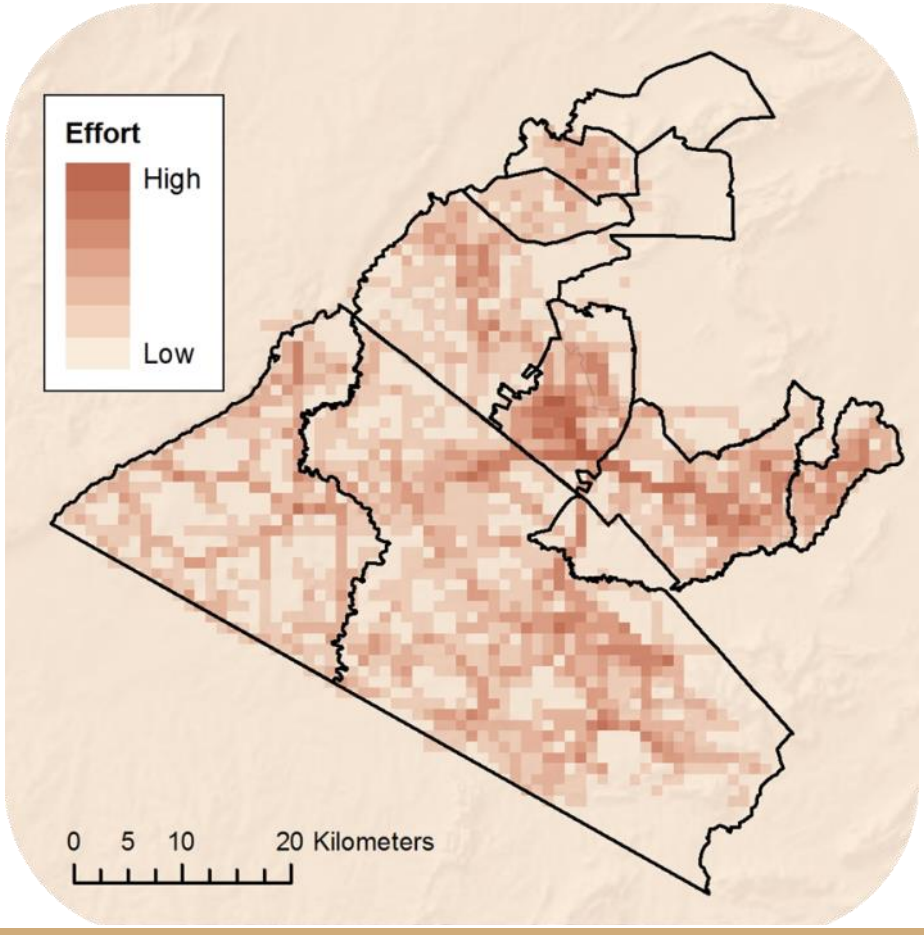
During this quarter we documented the death of six lions, in five separate incidents. Four of them were dispersing sub-adult males, while one was a dispersing sub-adult female, deepening our concern for this demographic group and highlighting the importance of our focus on them. The sixth was Tikki, an old lioness in Naboisho Conservancy.

However, it is not all gloomy, lionesses across the protected areas have cubs—in fact there seems to have been a baby boom in recent months. At the same time, we have finally received some much-needed rain. As usual, the western areas have received much more than the east, and certain areas are still very dry. The rainfall has breathed new life, with fresh grass attracting plenty of herbivores. This is good news for the lions and predators generally, especially those with little mouths to feed.

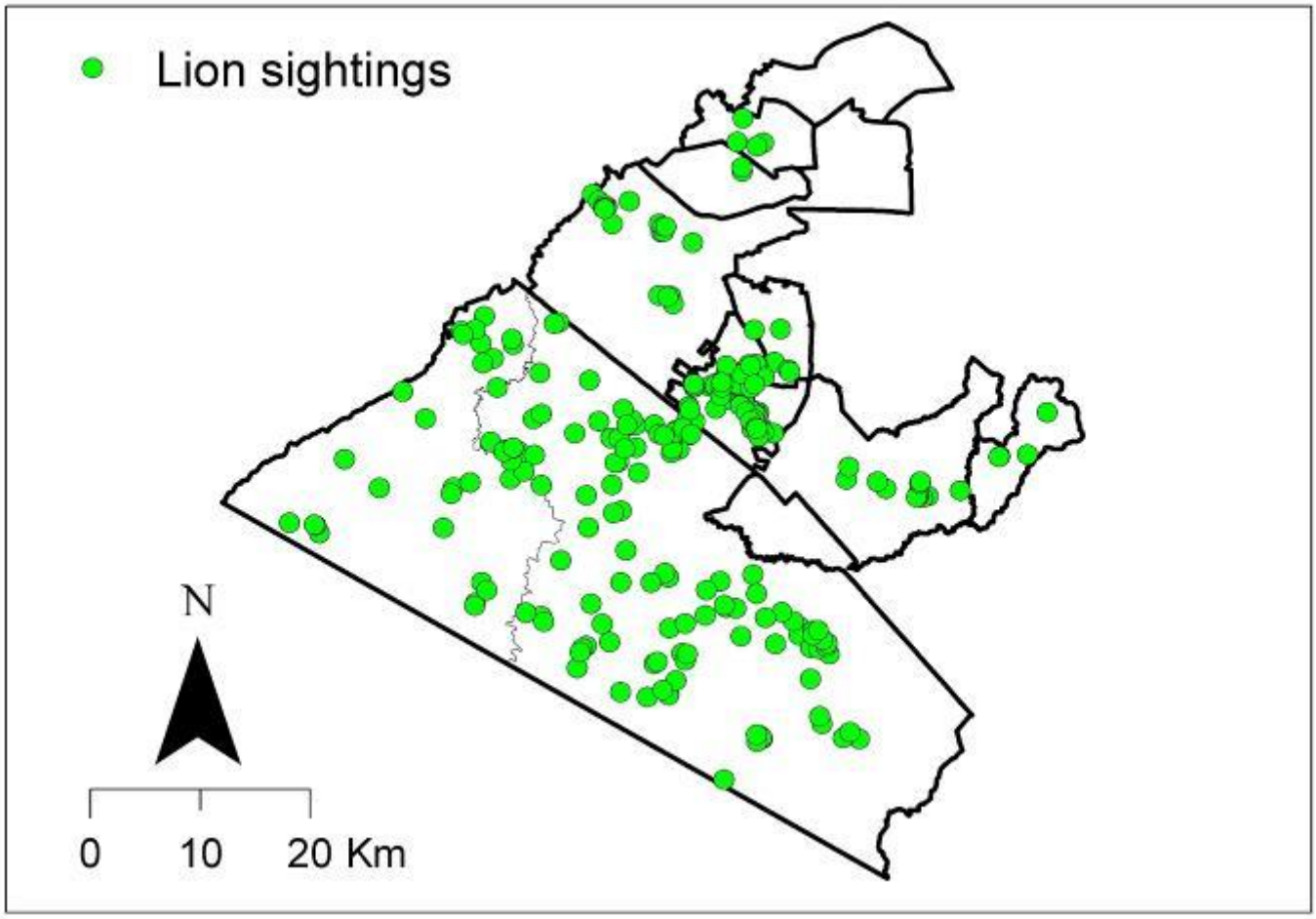
Field update

Twice a year we conduct Intensive Monitoring Sessions (February-April and August-October) and use this data to estimate spatial trends in population density. While we do most of our fieldwork during these times, we conduct fieldwork year round to keep our databases and ID catalogues up to date.

During this quarter we completed 150 patrols and drove 8227 kilometres while recording all predators, people, livestock and vehicles. This map shows all our tracks and is coloured according to distance driven per cell.



During this quarter we had 307 lion sightings. The map below depicts the locations of each sighting and should be viewed in light of the effort map on the previous page.



Comparisons to previous years

During this quarter we had prolific lion sightings—we recorded 307 sightings while driving 8,843 kilometres. Compared to the same quarter in 2016, we recorded 121 sightings while driving 7,192 kilometres. If we were to do a direct comparison between the years, it would appear as if there was a large dip in lion numbers between the years. However, it should be noted that 2016 was an El Nino year and we had received prolific rains. This resulted in very tall grass, making lions harder to see. To estimate numbers accurately, we use a spatially explicit capture-recapture method to analyse our data. Using this, we explicitly estimate detection probability when estimating lion numbers. This means that even if lions were more difficult to detect in 2016 as opposed to 2017, when we come to analyse the data, we will take this varying detectability into account. In addition, our drive effort differed between the two years by 1,651 kilometres. More drive effort will result in more sightings, but again that does not necessarily mean there were actually more lions. Once again, our methods of analysis account for such differences in drive effort, both in terms of total distance driven, and distance driven in different areas.

This highlights the importance of robust analysis of data, rather than simply relying on a whole count of lions seen during a certain time frame. Towards the end of 2017 we will analyse all survey data to provide comparisons across the years from 2014 to present. This promises to be a very interesting and informative output.

Lion Deaths

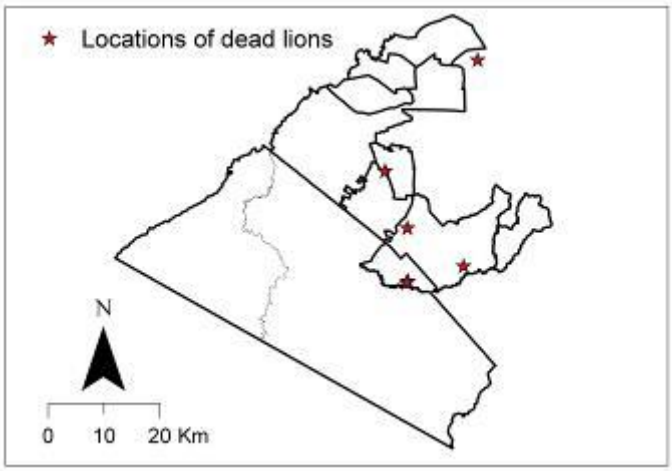
20/02/2017
Location: West of Lemek town
Dead lions: 1 sub-adult male lion
Pride: Dispersing male—Enesikiria pride
Cause of death: Likely anthropogenic
Summary: In December 2016 we deployed a collar on this young male as part of our dispersal programme. Soon afterwards he ventured into the Pardamat hills and on towards Lemek where he was found dead. It is likely that the lion was responsible for cases of livestock depredation.

28/02/2017
Location: Olare Motorogi Conservancy
Dead lions: 1 sub-adult male lion
Pride: Dispersing male from Lemek pride
Cause of death: Likely anthropogenic
Summary: This male was first seen as a cub with the Lemek pride in Lemek conservancy. With no brothers, he dispersed alone. We saw him in Naboisho conservancy briefly and then not again for some months. More recently we had two sightings of him in OMC conservancy.

01/03/2017
Location: Naboisho Conservancy
Dead lions: 1 sub-adult male lion
Pride: Dispersing male from Ilkisiusiu pride
Cause of death: Likely other lions
Summary: This male originates from Naboisho conservancy but since his dispersal he has rarely been seen. Late last year we sighted him in Naboisho and, judging from reports, it appears that another pride of lions attacked and killed him.

11/03/2017
Location: Naboisho Conservancy
Dead lions: 1 adult female lion
Pride: Sampu Enkare
Cause of death: Likely other lions
Summary: This female was at least eleven years old and resided in Naboisho Conservancy. By the time her carcass was found it was almost entirely consumed. This pride has recently been disrupted by three dispersing males from the Fig Tree Pride and it is likely that a fight ensued.

30/03/2017
Location: Close to Talek town
Dead lions: 1 sub-adult Male & 1 sub-adult F
Pride: Unknown as yet
Cause of death: Anthropogenic
Summary: These lions had killed a calf in Talek town and people in the area retaliated. One person was injured by the male lion which was subsequently shot. We are still trying to identify which pride these lions originated from.

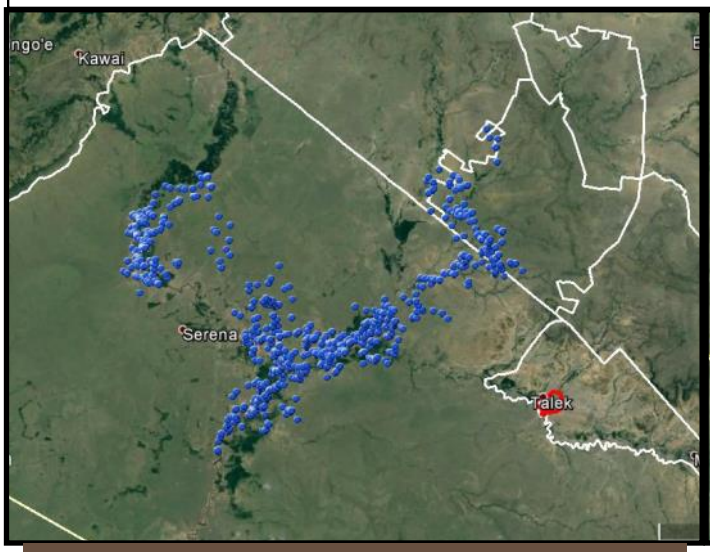


Collar update

Collar update

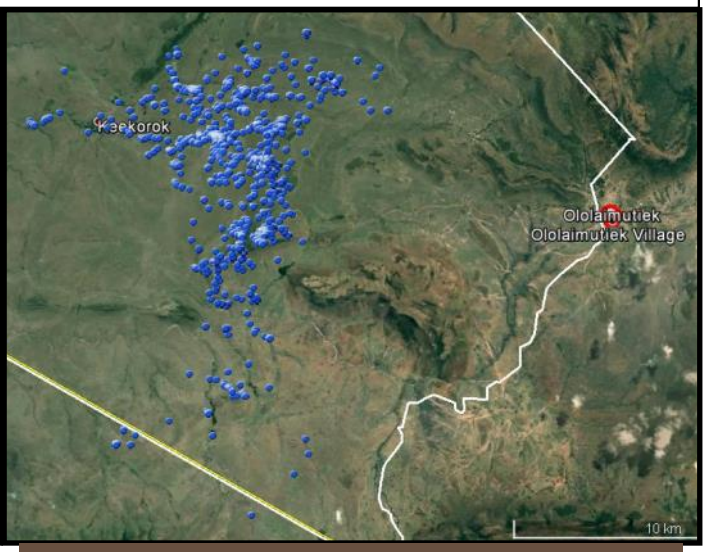
We have a permit to deploy 7 satellite collars on sub-adult male lions. We chose sub-adult males due to the large number of young males we have recorded dispersing from their natal pride that then disappear. While we appreciate that some tourists may question the use of collars, they do provide information that is vital to conservation planning.

At present, we have four collars deployed on young males. One collar (ENEfM1) has started to malfunction and is only sending data sporadically. Ideally we would replace the collar, but this lion has been residing in the Loita Hills for some time and attempts to capture him have failed. During the coming quarter we aim to deploy three collars.



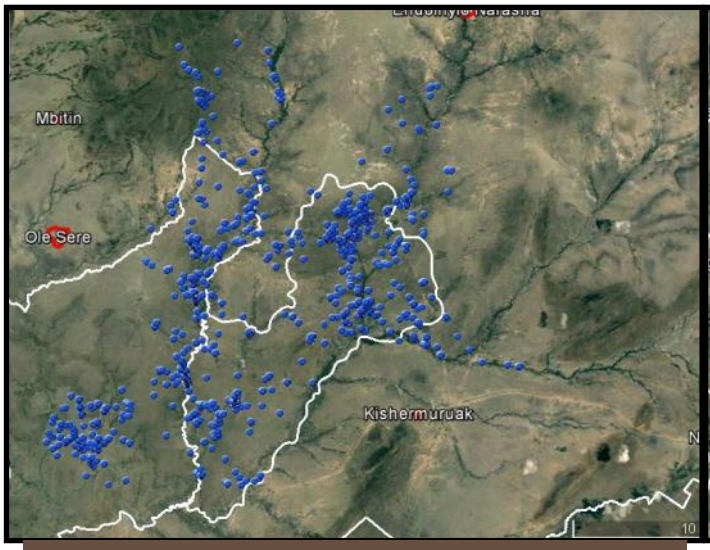
PORaM1

Originally from OMC



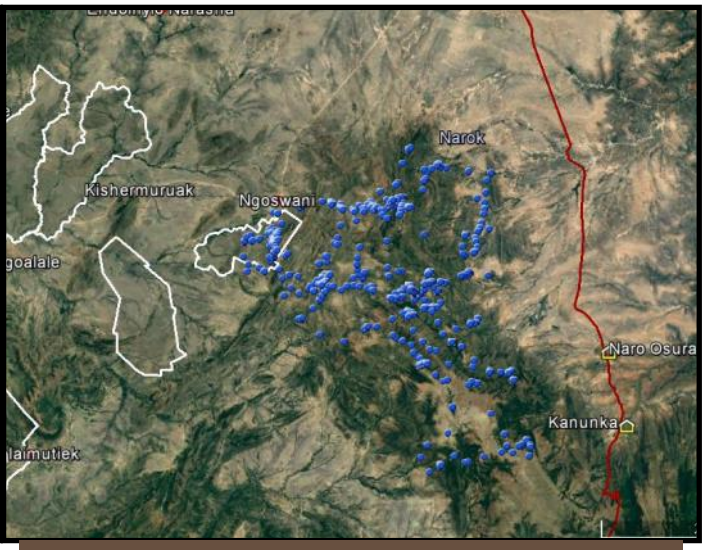
KWSaM2 (MMNR)

Originally from MMNR (KWS)



SAMbM1 (Naboisho)

Originally from Naboisho



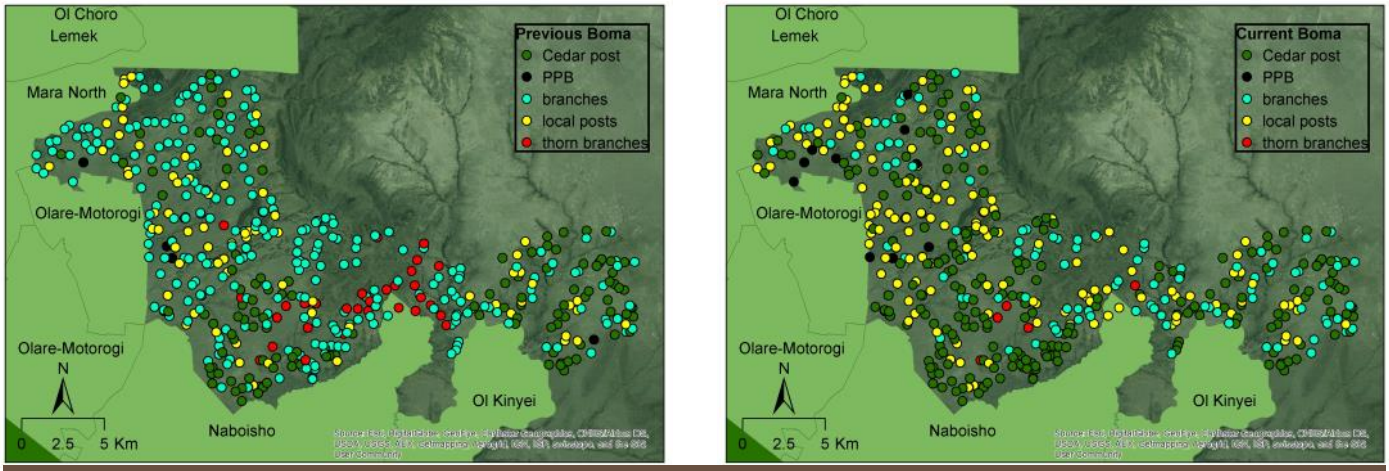
ENEfM1 (Naboisho)

Originally from Naboisho

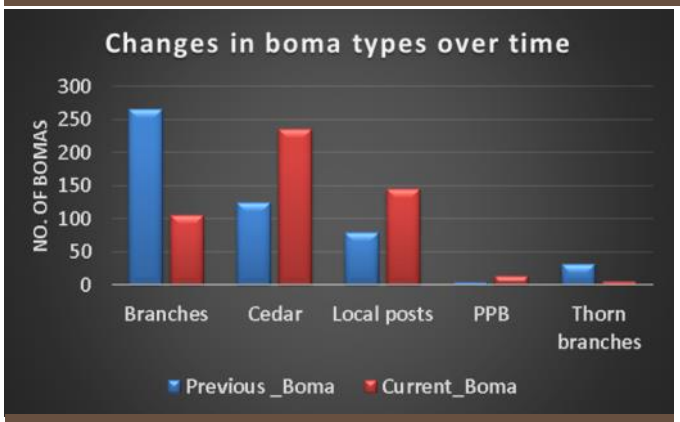
Community work

Boma conversion and deforestation

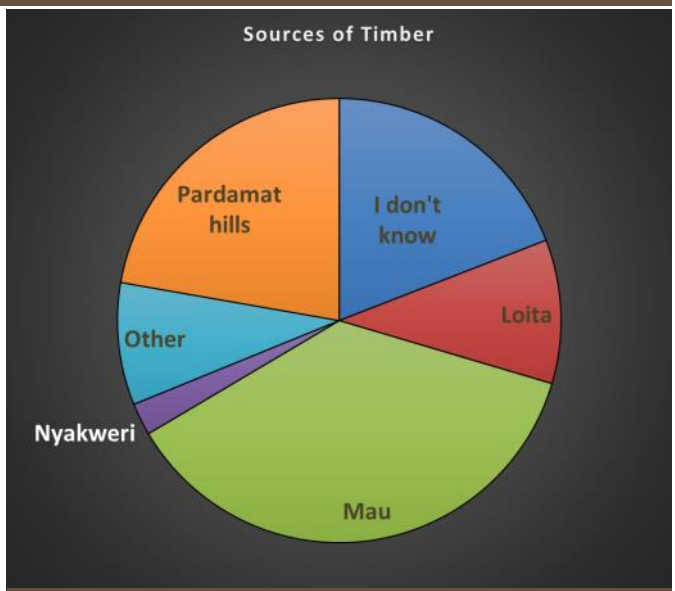
Our previous research has shown that stronger bomas result in less livestock depredation. The community is well aware of this and commonly seek to strengthen their bomas. With more disposal income available, families are upgrading their bomas. We previously reported that more than 50% of bomas in our study area are made from cedar, which gives rise to concern over deforestation. This quarter we sought to document the conversion rate and associated costs. We interviewed 508 households to understand the situation.



Previous (left) and current (right) boma materials. We visited 508 households and enquired what their previous boma was made from. We then recorded their current boma materials. Previous bomas were largely constructed out of branches, but most have been converted to either cedar or other "local posts" harvested from nearby forests.



The number of cedar bomas has almost doubled in the last 10 years.



58% of cedar posts are being harvested in the Mau forest, while 16% have come from the Loitas. Meanwhile 57% of local posts come from the Pardamat hills.

The cost of livestock bomas

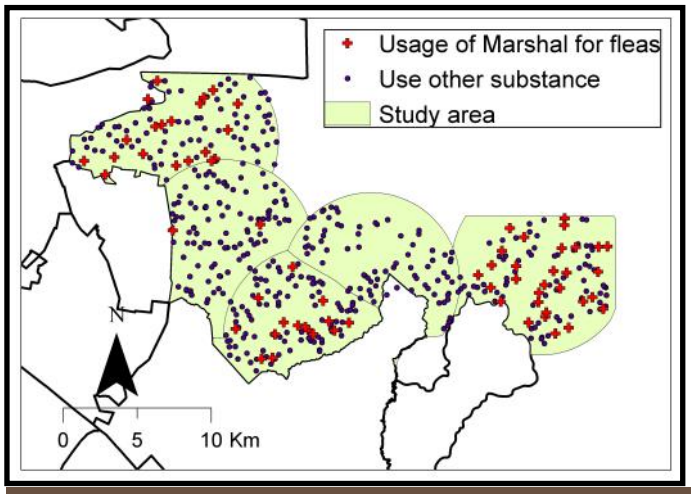
Cedar bomas typically cost upwards of K100,000 (US$1,000)and in some cases, cost over K200,000. Bomas made from local posts were typically cheaper and generally cost around K50,000. Bomas made from branches were the cheapest to construct and cost between K10,000 and K50,000 to build.

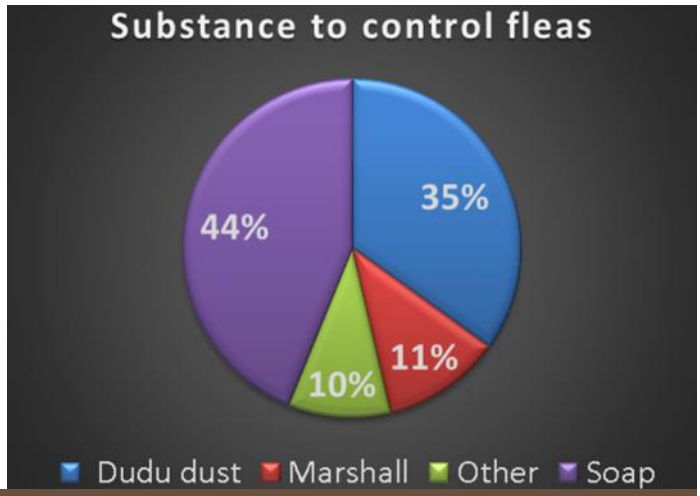
The future?

64% of respondents said that they will re-build their boma in the next 4 years. If the current rate of conversion to cedar continues, this represents a massive potential for further deforestation.

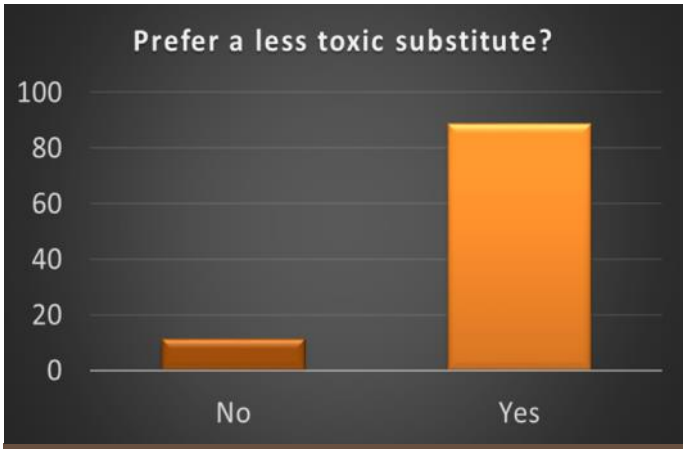
Wildlife poisoning: The problem

In the Mara ecosystem, Marshal is commonly used to treat livestock for ticks and fleas. If consumed, this substance is lethal, not just for livestock and wildlife, but also for humans. The killing of a predator in retaliation for livestock loss is typically an impulsive act. If one wishes to retaliate, there is only a small window of time to poison a carcass before the predator leaves the area. It is unlikely that someone will go to the shop, purchase the substance, come back and poison the predator. It may be possible therefore to limit the number of poisoning events by limiting the availability of poisons.





11% of the 508 people we asked used Marshal to control fleas and ticks on their livestock. The majority of people said that they used soap (44%), while 35% used a product by the name of Dudu Dust. The map to the left shows how widespread Marhsal is within our study area. These areas could be focused on in terms of encouraging people to use other substances.



The vast majority would prefer to use a substance other than Marshal to control fleas. However, they would only consider this, if the new substance was as effective as Marshal at killing fleas, and a similar price.

Potential solutions

While 11% may seem a relatively small number, just within our limited survey of 508 people, this translates to at least 70 households that have a highly poisonous substance at their disposal every day. However, with so many people saying that they would prefer to use an alternative for treatment of ticks and fleas, this could present an opportunity. If a substance were found that was as effective and as cheap as Marshal, it would appear as if people would be willing to use it, and therefore not store Marshal in their homes. This would greatly reduce the availability of Marshal within the area and might make some people think twice before using it to poison wildlife. In addition, shops in the area could be encouraged to stop selling Marshal in favour of an equally effective and equally priced alternative. This too would limit the availability of Marshal within the area. We fully acknowledge that this will not eliminate the use of poisons against wildlife, but it might just reduce it by making it a little less readily available.

Wildlife Clubs

To ensure that there is a future for wildlife in the Maasai Mara, it is key to engage with the younger generation by exposing them to wildlife and conservation related topics which is why we started up the Wildlife Clubs in various schools across the Mara. This quarter the Mara Girls Leadership School in Talek enrolled as members bringing the total number of Wildlife Clubs to six and the total number of members to 250.

During this year's World Wildlife day, we took the new Wildlife Club members on a game drive to the Maasai Mara National Reserve to give them a chance to see wildlife in their natural habitats as we have been doing with other member schools. They had a great drive and they saw various predators including lions, cheetahs and hyaenas and other wildlife such as elephants and buffaloes.

We continued to implement other activities in our annual calendar for the wildlife clubs. This included holding club meetings, debates, watching of films and other planned activities. We also purchased more books for the club's libraries and distributed them to the schools. In addition, the Wildlife Club members entered this year's Wildlife Clubs of Kenya art and essay competition with the theme *"Sharing nature with wildlife for a better future"*. We provided the schools with crayons, paper and other materials and we have now submitted 14 drawings and 36 essays to Nairobi where the judges will pick the best from the country.

One of the Wildlife Club members rescuing an Eland calf that had followed shoats back to a boma.

We believe that exposing children to wildlife in a positive way can change their perceptions towards wildlife. Many of the Wildlife Club members are increasingly engaged in wildlife related issues and they often report sightings and conflict cases to the team.

For example, there was a recent case of a young Eland calf that had followed shoats back to their boma. Once at the boma the domestic dogs tried to kill the eland. Disturbed by the situation, a young boy (member of the Mara Hills Wildlife Club) phoned Dominic Sakat, the project's Education and Outreach Officer, for help. Dominic went to the boma and helped the young boy save the Eland and they took it back to its herd.

Stakeholder engagements

Tony Lapham Predator Hub Open Day

On the 21st of March the Mara Lion Project and the Mara Cheetah Project held an open day to provide stakeholders with updates on the projects and to disseminate key findings. The day was split into two sessions; the morning session was for wildlife managers and wardens and the afternoon session was aimed at tourism partners, guides, researchers and other organisations working in the Mara. Each session was made up of three presentations, one on the Mara Cheetah Project, one on the Mara Lion Project and one on the community work that is being carried out by both projects. The presentations were then followed by a question and answers session which resulted in some fruitful discussions on management practices. Stakeholder present included:

- Narok County Government
- Kenya Wildlife Service
- MMWCA
- Olarro Conservancy
- Naboisho Conservancy
- Olare-Motorogi Conservancy
- Mara North Conservancy
- Ol Kinyei Conservancy
- Nashulai Conservancy
- Maa Trust
- Asilia
- Kicheche Camps
- Porini Camps
- Ride Mara
- Oldarpoi Mara Camp

Updates on our research findings and community projects were presented to over 50 stakeholders during the Predator Hub Open Day.

Workshops and meetings

Borderland Conservation Initiative meeting

Michael Kaelo attended the Borderland Conservation Initiative (BCI) meeting held in Nairobi on 1st and 2nd March 2017. The meeting was organised by African Conservation Centre (ACC) and was a continuation of ongoing work in an already established partnership between various organisations in the Kenya-Tanzania borderlands area aimed at trans-frontier conservation collaboration.

The focus of the meeting was to define minimum viable conservation areas (Kenyan chapter) on the three key conservation areas in the border (Maasai Mara, Amboseli, Loita-Naroosura corridor) as well an opportunity for the different working groups (Lion and Predators, Community, Elephants and herbivores) to meet and come up with recommendations for action.

Groundtruth 2.0 Project Workshop

Michael Kaelo took part in a one day workshop organised by *Groundtruth №¤ Project* in collaboration with *Upande Limited* held in Talek on 28th March. The aim of the workshop was to seek input/information on designing a digital observatory in the Mara ecosystem. This intitial meeting was organised to discuss what the citizen observatory could do for the different stakeholders, objectives setting and designing a working theme for the observatory. The one day workshop was attended by representatives of various stakeholders in the Mara including the Kenya Wildlife Service (KWS), Maasai Mara Wildlife Conservancies Association (MMWCA) and Narok County Government (NCG).

Poisoning incident mapping Workshop

On 17th March 2017, Dominic Sakat and Michael Kaelo attended a workshop organised in collaboration with Nature Kenya. The aim of the workshop was to map out poisoning incidences in the Mara with members of the community, conservancies and other stakeholders to try and identify poisoning hotspots. It was also a platform to present our work to different stakeholders and to start putting together a wildlife poisoning contingency plan.

Meet the Team

Nic Elliot - Project Director

Nic has worked with lions since 2007, focusing his research and conservation efforts on dispersing males. In 2007 he joined the University of Oxford's WildCRU and returned to his native Zimbabwe to conduct a PhD on the ecology of dispersal in lions which he completed in 2013.

Niels Mogensen - Chief Project Officer

Niels conducted a BSc. in Biology at the University of Aarhus and later transferred to the Department of Behavioural Biology at the University of Copenhagen for his MSc. His fieldwork focused on how the Maasai and their livestock affected lion behaviour.

Kelvin Koinet - Research Assistant

Kelvin joined the project at the beginning of 2016. For the past seven years he worked with SORALO, in his later years, running a team of Resource Assessors. He is currently undertaking a Bachelors degree through correspondence at the University of Nairobi.

Julius Makibior - Mechanic

Julius was born in Kakimirai, Bomet County. He is a trained automotive technician with over 20 years of experience in vehicle maintenance. Julius is in charge of all the project vehicles and the maintenance of the Tony Lapham Predator Hub and is therefore crucial to the team.

Kasaine Sankan

This quarter we were delighted to welcome back Kasaine Sankan. Kasaine is pursuing a Bachelors degree at Eldoret University, which is partially sponsored by the Kenya Wildlife Trust. Kasaine was with us for one month while on a university break and will return in June.

Michael Kaelo - Chief Community Officer

In 2005 Michael joined Kenyatta University for a BSc. in Environmental Studies and Community Development. In January 2012 Michael started an M.A in Environmental Planning and Management at the University of Nairobi after which Michael joined the Mara Lion Project.

Dominic Sakat - Community Liaison Officer

In 2007 Dominic was enrolled in the Koiyaki Guiding School, where he attained his bronze KSPGA guiding certificate. Since August 2011 Dominic has been working in the communities of the Mara in an effort to mitigate against human-lion conflict.

Holistic Assessor team

In early 2016 we launched the holistic assessor programme. We employed five people (seen together with Dominic Sakat) to work within their home areas on issues relating to human-wildlife conflicts. All five are based in the Pardamat area.

Billy Kaitet—Caretaker and chef

Billy was born and brought up in Naroosura in Narok County. He trained as a room steward, laundry service and maintenance person. Billy joined the project in April 2016 as a chef and caretaker. He also helps Julius in the day to day activities at Tony Lapham Predator Hub.

Acknowledgements

We are grateful for the collaborations and support of our partners and stakeholders in the area:

- Mara Cheetah Project
- Narok County Government
- Kenya Wildlife Services (KWS)
- Maasai Mara Wildlife Conservancies Association (MMWCA)
- Mara Triangle (Mara Conservancy)
- Mara North Conservancy
- Olare-Motorogi Conservancy
- Naboisho Conservancy
- Ol Kinyei Conservancy
- Lemek Conservancy
- Ol Chorro Conservancy
- Enonkishu Conservancy

Affiliations

The **Kenya Wildlife Trust (KWT)** is the umbrella organisation for the Mara Lion Project. The Mara Lion Project was established by the Kenya Wildlife Trust (KWT) and officially launched in October 2013 amid concern that the lion population may be declining. KWT recognises the vital importance of large predators, and particularly big cats, to both tourism and the surrounding communities. Nowhere is this more apparent than in the Greater Maasai Mara Ecosystem where tourists come from around the world to view big cats in a viewing experience unparalleled in Africa.

Nic Elliot of the Mara Lion Project is a member of the Wildlife Conservation Research Unit (WildCRU), University of Oxford.

Donations

We are grateful to the following for their support of our work in the field this quarter:

Ankie Stiasny
Tomas Kindler

Long-term Funding

We are extremely grateful to the following institutions and individuals for their long-term, and continuous support of the Mara Lion Project. Your support ensures that the project can not only continue, but also grow and develop in response to rising challenges across the Greater Mara.

BAND Foundation for providing funding for the biomedical project

Allan Earnshaw, Nick Lapham and Skip Dunn for their continued support and enthusiasm for the project