MARA PREDATOR CONSERVATION PROGRAMME

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KENYA WILDLIFE TRUST

QUARTER 3 REPORT | 2021



KWT
KENYA WILDLIFE TRUST

EXECUTIVE SUMMARY

The research team initiated its annual intensive monitoring session, which will result in updated lion and cheetah densities for 2021. The collaring data continued to provide insightful data. We investigated prey switching in cheetahs and added four new individual cheetahs to our database. The famous five male cheetah coalition evicted one of their members. The Pardamat/Lemek wild dog pack has split up and a daughter from the 2019 litter died of unknown circumstances.

The community team held four community consultative barazas in Pardamat and Isinya conservation areas which are of great importance for the conservation of the Lemek/Pardamat packs of wild dogs. The team recruited and trained five additional lion ambassadors which increases their number to fifteen across the Mara. In addition, they also conducted poison response training where 78 community members were equipped with skills to respond to wildlife poisoning.

The team continued to work with the nine wildlife clubs schools in the Mara where this quarter MPCP produced and distributed the 2nd edition of Ole Peenko's book titled: Ole Peenko Learns from Naserian.

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RESEARCH UPDATE



Photo © Brian Kaelo

Intensive Monitoring

On August 1st, we began this year's three months intensive monitoring session. We still have October to go and so full details of the results will be available in our upcoming reports. Here is a brief update on our search efforts and sightings thus far.

In the months of August and September, our search effort was 5972 km of driving through the National Reserve and the Mara conservancies, figure 1, and during this period we had a total of 187 lion sightings and 34 cheetah sightings, distributed across the Mara as illustrated in figure 2.

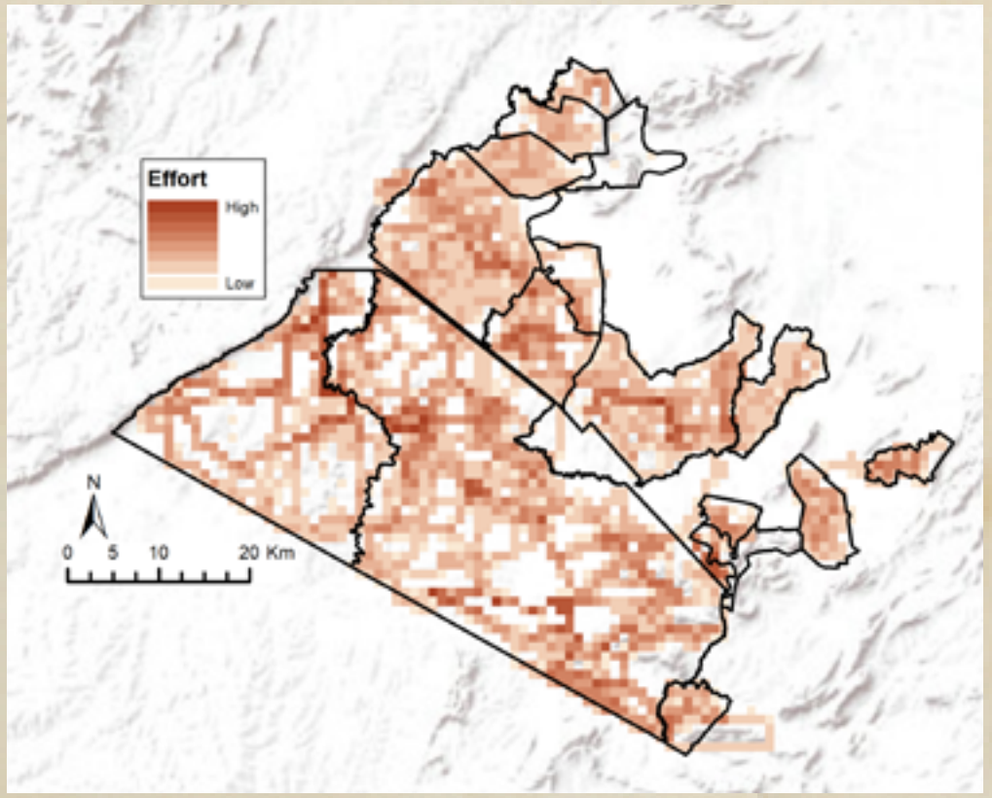


Figure 1. Effort map, coloured according to distance driven per 1x1 km grid cell.

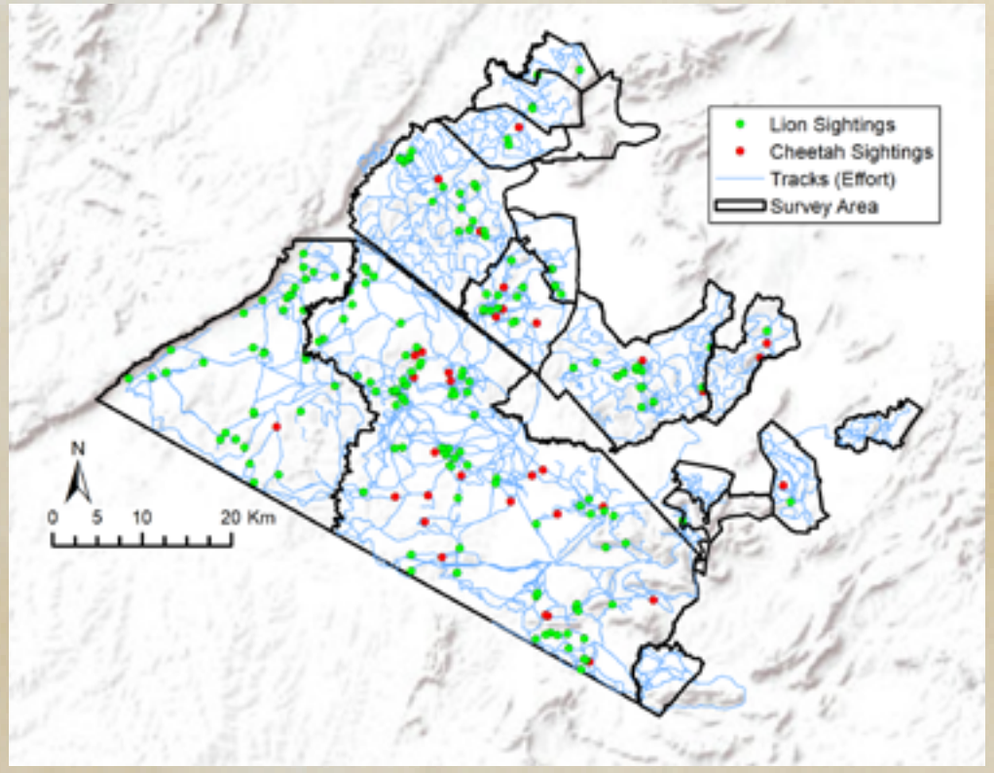


Figure 2. Lion & cheetah sightings overlaid with the 5972 Km driven tracks.

Lion updates

Collaring data

Collaring predators enables us to understand how livestock affects their space use and the importance of certain features of the habitat, for example, rivers/streams.

During the last quarter, the livestock density in an area where one of the adult females is collared was high. To illustrate how this affected the collared lioness and her pride, we overlaid their 90% kernel density with the livestock density, figure 3. The lion's space use was minimised and concentrated around streams where they can hide in the thick riparian habitat.

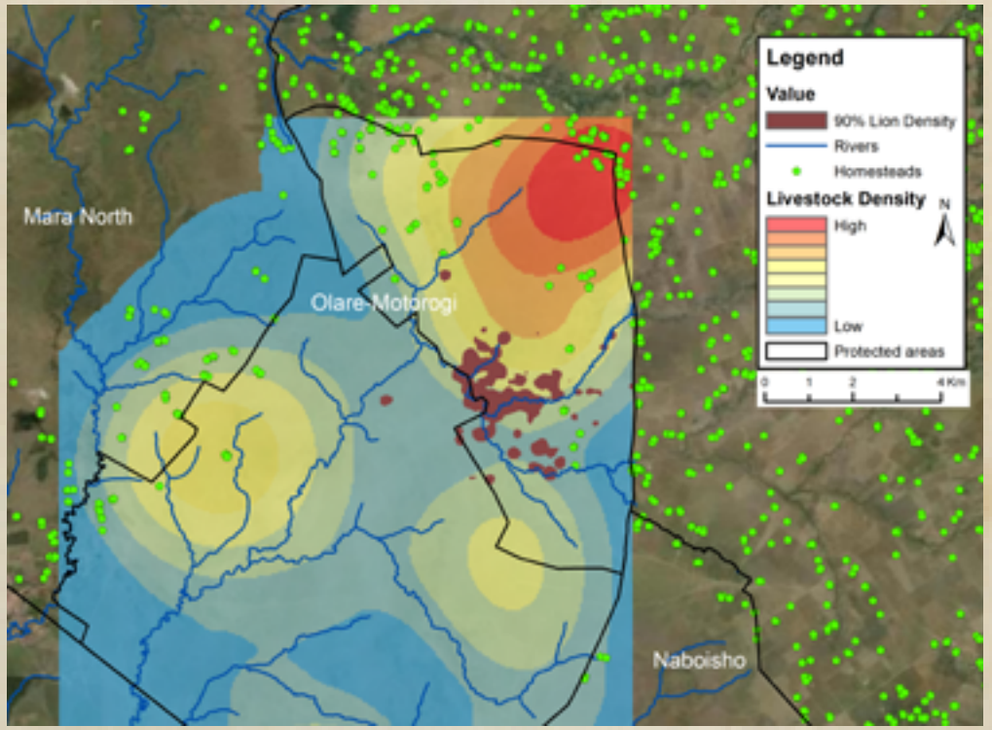


Figure 3. The 90% Kernel density for the collared adult female lion is shown overlaid with the livestock density in one of the Mara conservancies. The lion's space-use is mostly concentrated around the rivers during this time.

To put this into context, we compared her to a collared lion utilising a livestock-free area, figure 4. Although rivers were still important, much more of the lion's space use was on the open plains. This shows how livestock can affect lions and just how crucial riparian habitat is for them to survive. Furthermore, preliminary analysis shows that a buffer zone of 200 meters around rivers has an important positive effect for lions and should therefore be kept free of livestock.

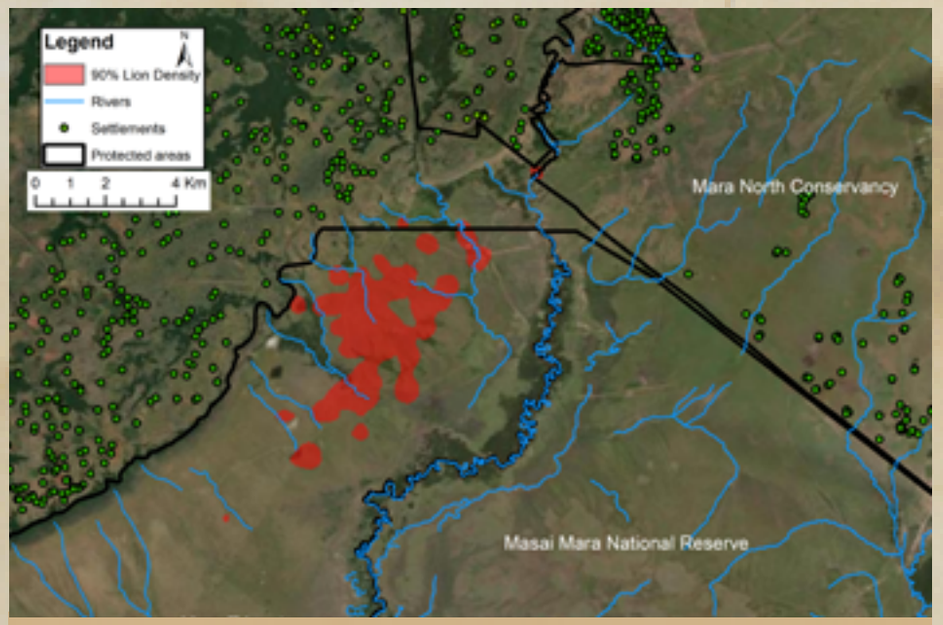


Figure 4. The 90% Kernel density for a collared adult female lion is shown from the Mara Triangle, where there are no livestock intrusions. Notice how much of the space-use is away from the surrounding rivers.

Cheetah Updates

The end of the 5 Musketeers

In June 2021, the five Musketeers were seen on the boundaries of Naboisho and Olkinyei conservancies, well outside their usual territory in the National Reserve. We sighted the former dominant male Dartonian (Olpadan) alone with an impala kill while at the same time, the other four males were taking down a wildebeest. One month later the four males were in their usual stomping ground in the Reserve although Dartonian was not with them. The partnership had come to an end.

We were excited when we found Dartonian in the company of a younger male who had recently left his mother to start an independent life. But their union only lasted around a month, as Dartonian was seen alone again in the southern part of the Reserve while his temporary companion was back in Naboisho Conservancy. While in the Reserve, Dartonian decided to head back to the territory he once held with his coalition mates. But this ended badly in July. While he was resting, the other four males sought him out where after a massive fight erupted. Dartonian was seriously beaten, sustaining injuries to his right eye and body. The KWS vet team came to his rescue and he managed to survive the attack. MPCP has been closely monitoring him since and he is doing well, surviving as a solitary cheetah.



A recent photo of Dartonian

New cubs & mortalities

Over the last quarter, we recorded a total of 31 cheetah cubs from nine different females. Five of the 31 cubs born we recorded died, while six cubs that were born from the previous quarter also died, figure 5.

Although lions were responsible for the majority of the cub mortalities, it is important to note that although lions do kill several cheetah cubs, we have provided evidence showing that it does not have a significant impact on the Mara cheetah population as a whole. It should also be emphasised that mass tourism in the Reserve can indirectly be a source of cub mortality, as many vehicles in one place could potentially attract curious lions and hyenas, who in turn will sense the cheetah presence and seek them out. Also, many vehicles around cheetah sightings is a stress factor for the mother. The photo in figure 6 shows a scenario where vehicles overcrowded a cheetah sighting.

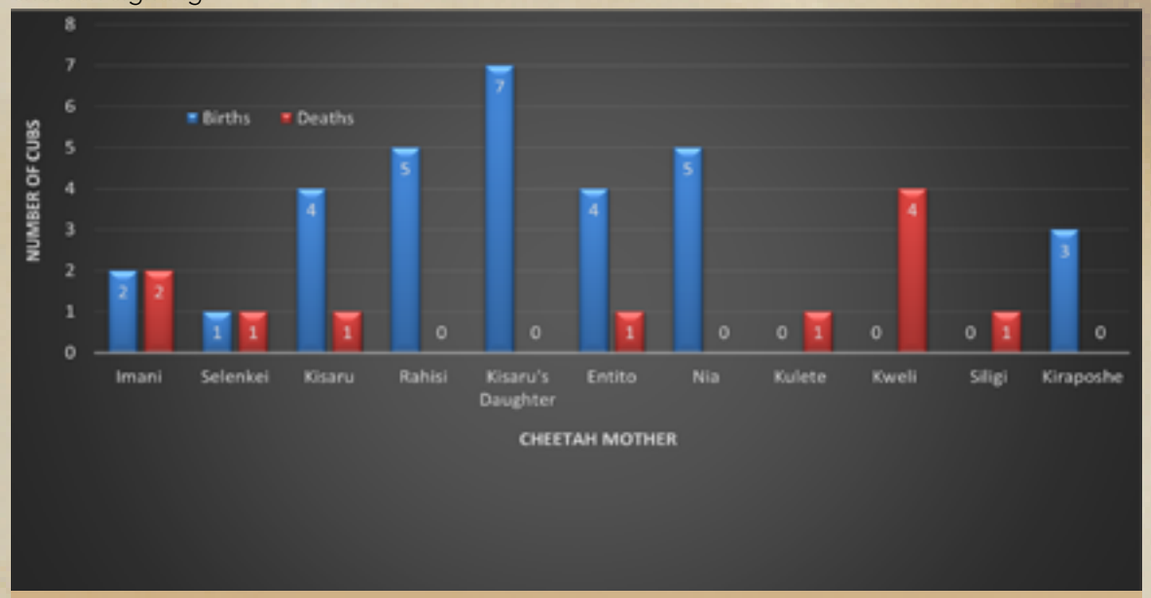


Figure 5. New cheetah cubs and deaths recorded over the last quarter. Three cheetah mothers who gave birth in the previous quarter lost cubs as well (Kulete, Kweli & Siligi).



Figure 6. Safari vehicles overcrowded a cheetah sighting.

New Individuals

We registered four new individuals who we could not identify in our database. The unidentified individuals were an adult female in Olkinyei Conservancy and a group of three dispersing cheetahs consisting of two males and one female that showed up in Olarro North Conservancy. These new individuals likely came from the community area east of the Greater Mara Ecosystem and we suspect that there is a possible cheetah population there because we regularly encounter new individuals in the above mentioned conservancies.



New Individuals

Dispersal Events



Sila's Subs

Two dispersal events happened during the last quarter with six sub-adults successfully making it to independence. The two groups consisted of three females and three males. The groups were from Nashipae and Sila's litters, including Selenkei's Son who had stuck with Sila for a while.

Deaths

One of the Sopa Males was killed by a Coke's Hartebeest in the National Reserve. The pair of males were a common sighting in the Sopa area of the Reserve and we still sighted the remaining male roaming their territory as a solitary cheetah.



Remaining Sopa Male

Prey switching in Mara cheetahs

A student from the University of Wageningen analysed some of our long-term cheetah data focusing on potential prey switching in cheetahs during the wildebeest migration. Below is a summary of his key findings.

Switch or no switch: does wildebeest migration cause prey switching to occur for cheetahs in the Masai Mara?

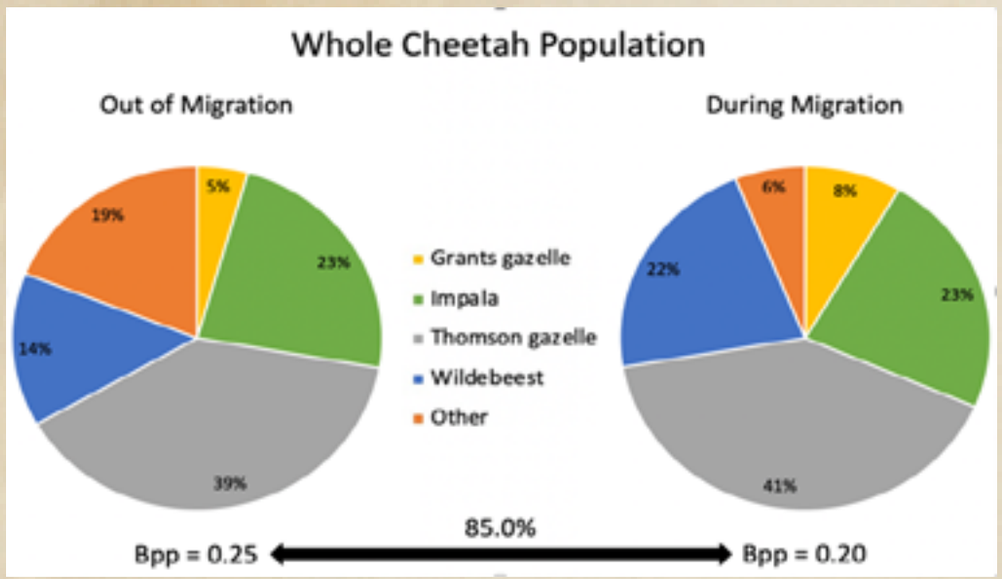
An important ecological aspect that influences prey selection by carnivores is the concept of prey switching. Cheetahs hunt on a variety of species and generally prefer smaller prey. However, cheetah prey selection could be influenced by fluctuating prey pulses caused by the annual wildebeest migration. In this study, 220 cheetah kills between 2013 and 2020 were analysed to determine if the wildebeest migration causes cheetahs to switch prey species or prey age class. From these kills, the prey profile breadth (Bpp) of cheetahs during wildebeest migration and outside the migration was calculated and compared. The overlap between these profiles was also investigated. These calculations were done for the entire cheetah population and three cheetah social groups separately: females, single males, and male coalitions.

The results, which are illustrated in figure 7, showed a difference in prey species selection during wildebeest migration compared to outside the migration, but that this difference differed per social group. Regarding the population as a whole, cheetahs seem to significantly kill more wildebeest during the migration compared to out of the migration. Among the social groups, only male coalitions showed a statistically significant difference for prey species selection.

In terms of selection on specific prey age classes, there was no significant difference for both the whole cheetah population and for all social groups.



Entito's daughter from her 2020 litter. Photo taken by Saitoti Silantoi.



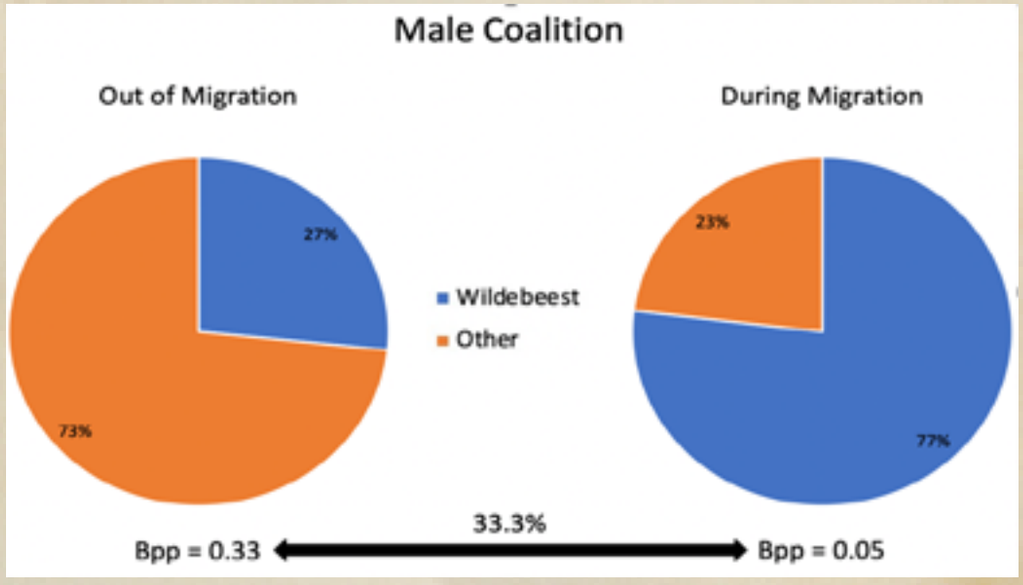


Figure 7. Prey profiles of cheetah social groups. Bpp (prey profile breadth) values close to 0 indicate the predator being a specialist, whereas values close to 1 indicate a generalist. Values above the double arrow resemble the percentage of overlap between the two prey profiles.

Wildebeest migration is positively influenced by the onset of specific rain periods, but climate change is potentially causing these rains to be less consistent and their patterns to change over the years. Therefore, it is important to understand the impact this migration has on cheetah prey selection. As resource pulses might start to fluctuate more in the future, understanding these ecological relationships is key for conservation purposes.

We are currently incorporating lions into the model and will hopefully be able to publish a scientific article in the future from this.

Wild dog Updates

The Mara Predator Conservation Programme continues to monitor wild dogs and study their interaction with their surroundings. During this quarter, there have been several sightings predominantly in the conservancies however within human-dominated landscapes.

Sightings

We are happy to report that some members of the Lemek-Pardamat pack have been sighted again after quite some time of absence. Two males and three females were sighted on the eastern part of Mara North Conservancy near Saruni Mara Camp, and a few weeks later, two of the females from the mentioned sighting were sighted near Ngosuani primary school crossing over to the Pardamat hills, indicating that the Lemek-Pardamat pack are living a fission-fusion society. In September, one of the females born in the August 2019 litter was found dead at Enkikwei, which is in the southwestern part of Mara North Conservancy, just a week after having sighted her with the female at the Ngosuani area east of Mara North Conservancy as described above. She had no physical injuries and looked healthy and so we do not know what caused her death. Close by were two other pack members, a male, and a female, both in good condition.

Dispersing wild dog sightings

Several dispersing wild dogs were sighted this quarter. Two females, one with a collar, were first sighted at our Predator Hub heading to the National Reserve and sighted the following morning at Lookout plains. The two females are from a pack in the Serengeti as confirmed by the Serengeti Wild Dog Project.

A lone female with mange, also fitted with a collar from the Serengeti Wild Dog Project, continues to roam in the Olaro-Siana area but was also sighted in Naboisho conservancy this quarter.



Pardamat-Lemek pack members



Two Pardamat-Lemek pack females



Two females from a pack in Tanzania in the Reserve

Human wild dog conflict



A sheep killed by wild dogs

Several human - wild dog conflicts were reported predominantly in the Lemek-Pardamat area during daytime when shoats were out to graze. The conflicts are caused by the Lemek-Pardamat pack that utilizes the area between Lemek, Pardamat to Enchorro Osidan, North of Naboisho Conservancy. We continue our conflict mitigation practices including herder training.

COMMUNITY UPDATE



Photo © David Mbugua

Human-Wildlife conflict mitigation

MPCP teams work closely with community members and other like-minded partners to identify, innovate, fundraise and implement strategies aimed at mitigating human predator conflicts to enhance coexistence efforts across the Mara Ecosystem. During this reporting period, the following activities were implemented:

Recruiting and training of lion ambassadors

The Lion Ambassadors (LAs) programme was initiated in 2020 by MPCP to increase coverage of its Human-Wildlife Conflicts (HWC) mitigation efforts, community outreach, and collaboration with other partners in efforts to conserve predators, especially Lions, in the Mara. 10 LAs were employed in 2020 and were very instrumental in data collection (settlements, HWC, communication, livestock amongst others). During this quarter, with support from the Lion Recovery Fund (LRF) MPCP recruited, trained, and equipped an additional 5 lion ambassadors to bring the total to 15 LAs who operate in 15 zones in the Mara as depicted in the Map below.

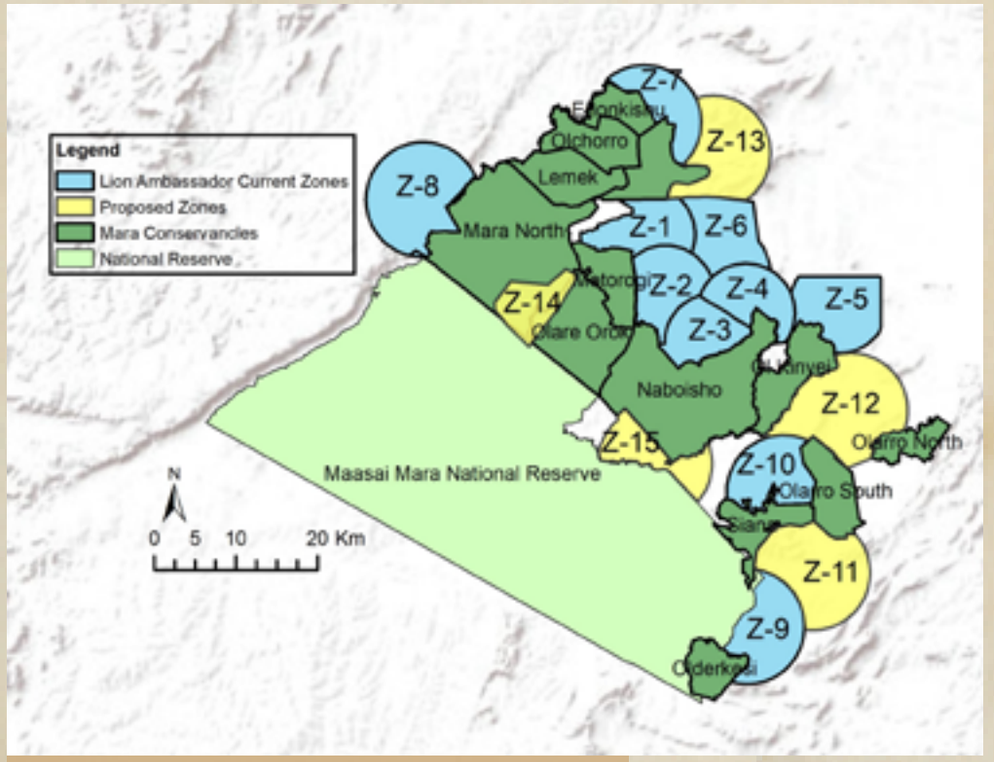


Figure 12: Location of Lion Ambassadors Zones in the Mara Ecosystem.



Community team with Lion Ambassadors



Lion Ambassador training

Community outreach

MPCP's community outreach is aimed at building the capacity of community members who live closer to conservation areas through community meetings, workshops and targeted campaigns on ways to coexist with predators and resolving challenges associated with coexistence.

Poison response training

Wildlife poisoning is a challenge to conservationists around the world. MPCP has been engaging different stakeholders in poison response training to build a network of people with the capacity to respond to wildlife poisoning. During this quarter, the MPCP team trained 78 community members in five villages on ways to respond to poisoning incidents in their respective areas. These villages include Olare orok, Lemek, Kishermoruak, Irbaan, and Kijirijirr.



Community members from the Lemek area pose for a picture after attending a poison response training.

Of the 78 participants who attended the 5 trainings, 72 of them were aware that wildlife poisoning happens in the Mara but only 26 of them have ever been to a poisoning scene. 13 participants had gotten some form of training on poison response but only 12 said they could attend to a poisoning scene before the training. After the training, 77 of the 78 participants were confident to be able to effectively attend to a poisoning scene and decontaminate it to prevent deaths of more predators or birds of prey as depicted in the figure below

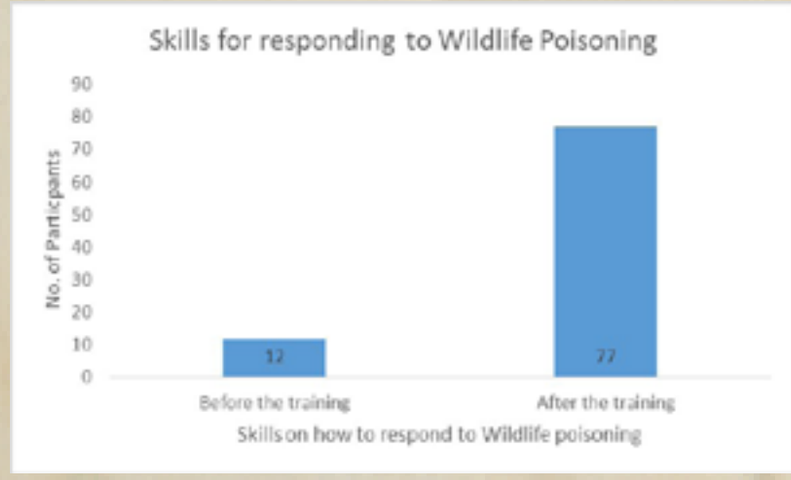


Figure 14: Skills for responding to wildlife poisoning amongst the participants before and after the training.

Community barazas

During this quarter MPCP held four community barazas in Isinya, Ilchorroi, Isintin, and Enchorro Osidan aimed at discussing with communities to gain insights on wild dogs presence and challenges faced in order to come up with strategies to promote coexistence. During the barazas, a questionnaire survey was administered and from the data collected, 53 (N=60) participants reported that wild dogs were found in those areas while 33 of them reported having sighted them within this year. 55 had positive attitudes towards wildlife in general while 8 were negative. In Ilchoroi and Isintin wild dogs were mentioned as the most problematic predator and caused 43 livestock deaths (most of the sheep and goats) in the previous two months.



Figure 15: Community members from Enchorro osidan keenly following proceedings during a community baraza.

Conservation Education

MPCP continues working with the nine wildlife clubs through trained club patrons who mentor young children on conservation matters. During the reporting period, MPCP published and distributed the 2nd edition of Ole Peenko's book titled "Ole Peenko learns from Naserian and other stories". The book is a follow-up to the first edition but covers more information on climate change and the co-existence of humans and wildlife. Stories and themes match real-life in the Mara ecosystem thus helping learners access correct information on wildlife conservation.



Figure 16: Wildlife club members from Molibany primary school in Talek enjoying their new copies of Ole Peenko learns from Naserian book.



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