MARA PREDATOR CONSERVATION PROGRAMME

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KENYA WILDLIFE TRUST

QUARTER 3 REPORT | 2022



KWT
KENYA WILDLIFE TRUST

EXECUTIVE SUMMARY

The research and monitoring team has mainly been occupied with this year's intensive monitoring session, which will be the ninth consecutive time we carry out a three-month survey to capture annual lion and cheetah densities for analysis of population trends. The collars from three lions continue to send out valuable movement data. We also published a scientific paper this quarter on prey switching in lions and cheetahs.

The community team was largely engaged in human-wildlife conflict mitigation and conservation education where they trained 125 livestock herders in four areas and acquired 160 lion deterrent lights to be installed in 30 bomas where depredation has been rampant. A first-ever trip outside of the Mara Ecosystem for our Wildlife Club schools was organized where 25 children and 5 patrons visited Amboseli Ecosystem on a learning tour. MPCP also increased the number of schools in its conservation education programme by six schools amongst other activities discussed in detail within the report.

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RESEARCH UPDATE



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Intensive Monitoring Session

This year's three-month intensive monitoring session started on August 1st and will run through to the end of October. Complete results from the annual monitoring this year will be shared in our upcoming reports since the monitoring is ongoing.

For the months of August and September, the team had a search effort of 5220 km of driving through Masai Mara National Reserve, Mara Triangle, and the adjacent Mara conservancies. During the two months of monitoring, we had a total of 198 lion sightings and 51 cheetah sightings across the study area (figure 1).

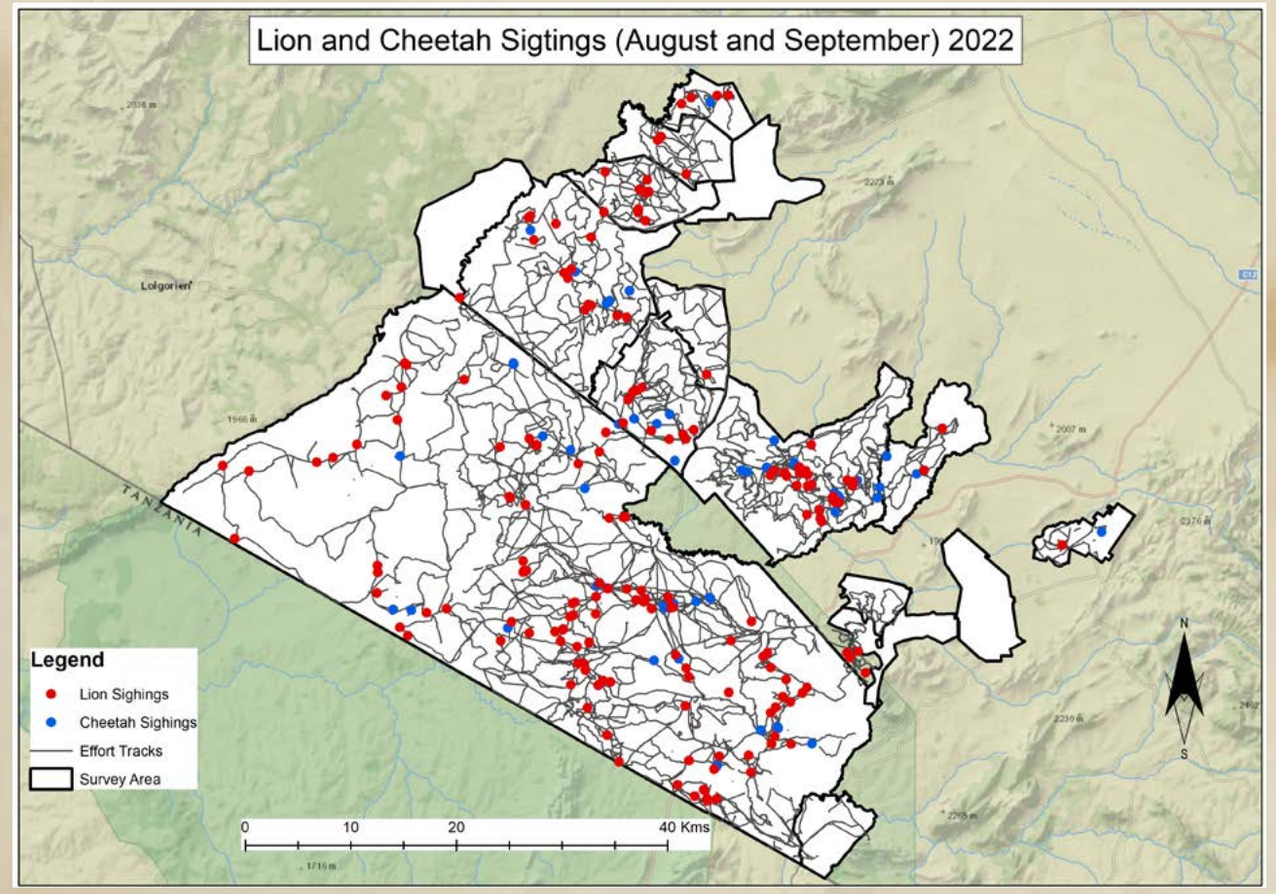


Figure 1. Lion and Cheetah sightings overlaid with the 5220 km of effort tracks.

A new lion/cheetah publication

A scientific paper was published in the Journal of Zoology during this quarter.

Using kill data for lions and cheetahs collected between 2013 and 2020, we explored the role the abundance of prey has on the potential for lions and cheetahs to switch prey species in the Mara ecosystem. The data for each predator was separated into migratory and non-migratory periods where the migratory period experienced an influx of the migratory wildebeest, along with zebra and Thompson's gazelle. We then assessed diets between the two periods to see whether there were any differences between lions and cheetahs as a function of the available prey. Lions were treated as one unit whereas cheetahs were separated into females, single males, and male coalitions.

Our results suggest diet switching for lions (figure 2) and male cheetah coalitions (figure 3) where the proportion of wildebeest increased when the migration arrived in the Mara. Female cheetahs (figure 4) and single male cheetahs (figure 3) showed limited evidence of switching. Across the two predators, the number of prey species in the diet declined during the migration period, suggesting compression of the diet on the abundant prey species.

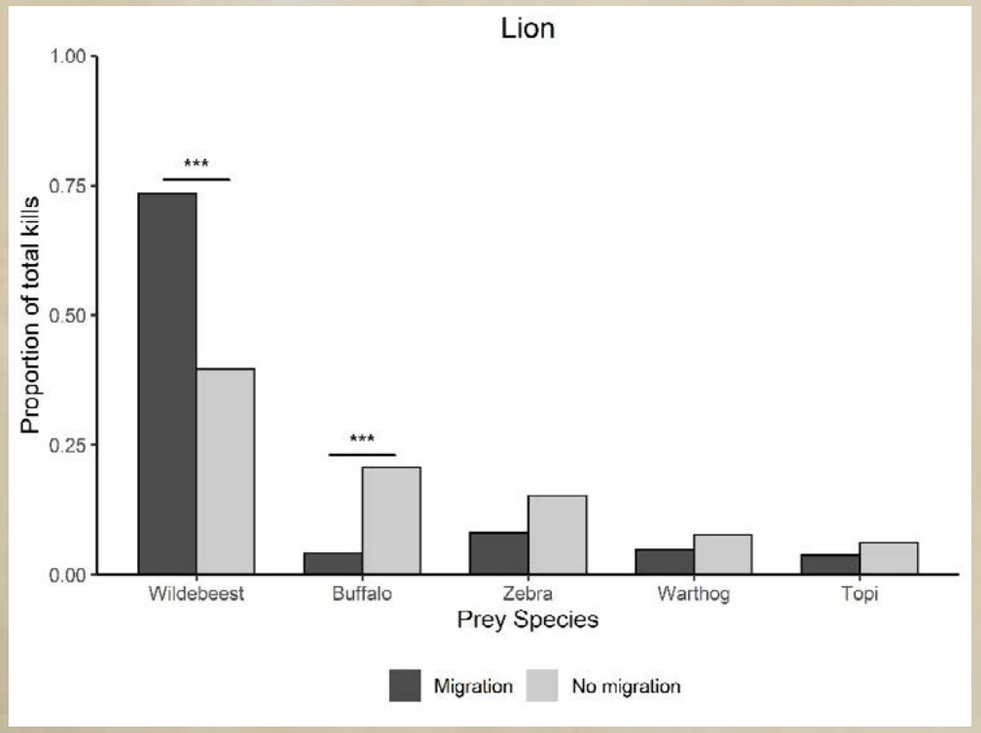


Figure 2. The proportion of kills made by lions in the Maasai Mara, Kenya, during and out of the annual wildebeest migration. A vertical bar with stars indicates a significant change.

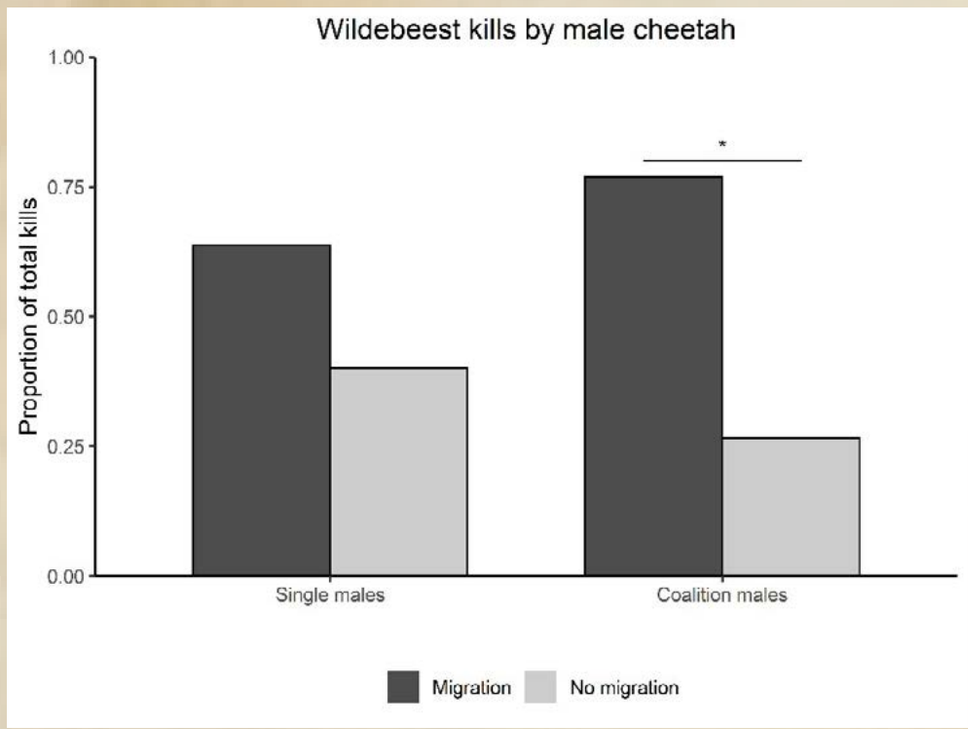


Figure 3. The proportion of wildebeest kills made by male cheetahs (Acinonyx jubatus) in the Maasai Mara, Kenya, during and out of the annual wildebeest migration. A vertical bar with stars indicates a significant change.

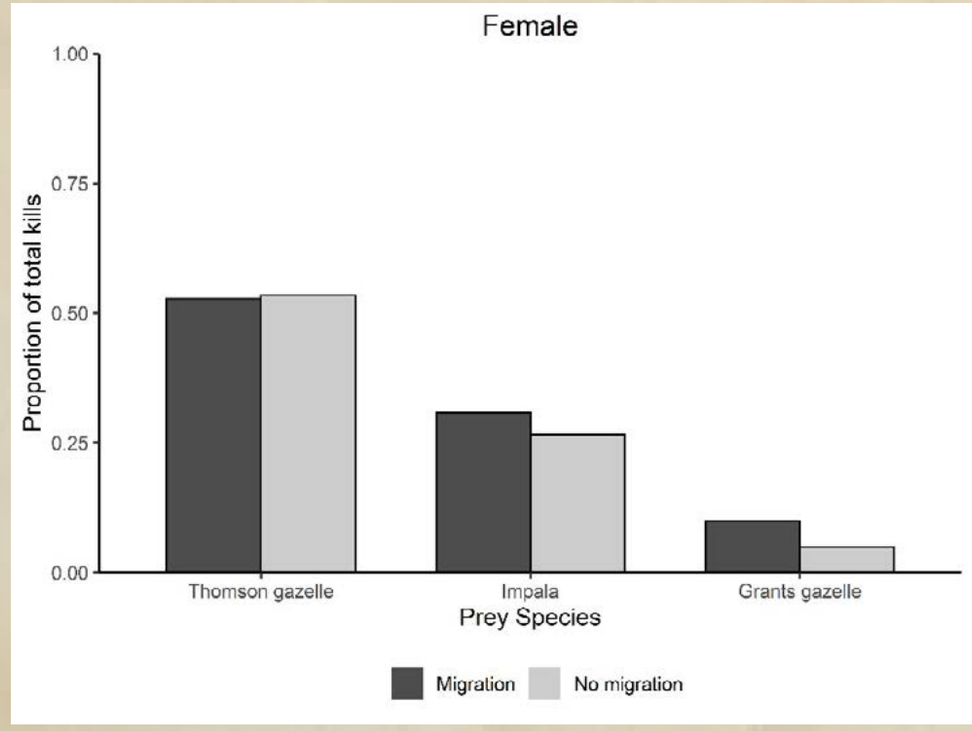


Figure 4. The proportion of kills made by female cheetahs in the Maasai Mara, Kenya, during and out of the annual wildebeest migration.

In conclusion, prey abundance can significantly impact the diet of predators and functionally there could be a change in the prey use by these predators. In addition, not all predators should be considered equal, with single female cheetah and male coalitions showing different trends. These data provide evidence that we should consider inter and intraspecific variations in prey selection when modeling predator-prey dynamics.

Our analysis showed that the abundance of prey can influence the prey profiles of the predators and this could indeed have implications for food web dynamics. Furthermore, a change in the wildebeest migration patterns might have negative consequences for predators and resident prey species. Research has demonstrated that fewer wildebeest are using the Mara part of the ecosystem during the annual migration and that they spend less time there. This could force predators to over-exploit the resident prey, which is already in decline.

The full article can be freely accessed through this link https://bit.ly/3TAfv1l



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Lion updates

Human-caused predator mortality in the National Reserve

Reported incidents of human-caused mortality of predators inside the National Reserve have been on the increase during this reporting period. The mortality events included confirmed cases of an adult male cheetah, an adult male lion, and a subadult male lion.

On July 28th, we responded to the scene of a dead adult male cheetah, who we identified as Leboo from the former Tatu Bora coalition. The KWS vet unit performed an autopsy and the conclusion was death by spearing. The spear had penetrated his chest cavity and the injury caused death almost immediately. As Leboo was found in the early morning hours and, based on evidence, it was concluded that he was killed by herders during their illegal night cattle grazing operations.

On September 10th, an adult male lion named Mandevu was speared and killed near the Mara-Serengeti border in an area called Nengaloi. According to Narok County officials, the culprits were Tanzanian herders grazing their cattle in the Mara Reserve at night. We have been monitoring Mandevu since he was born in 2015, and we deployed a GPS collar when he was dispersing in 2017. The collar dropped off 18 months later when he and his two brothers were in Nashulai Conservancy, where after they made their way back into the Reserve. Their dispersal period was a success and they fathered cubs with different prides, including the Olooloimutia (Sopa), Black Rock (Rockey Valley), and Koka prides. He and his brothers were in control of the Koka pride when he was killed.

On September 24th we received a report that one of the four dispersing almost three-year-old Sankai males from Olare-Motorogi Conservancy was seen around the Double Cross area in a paralysed state. The KWS vet unit was called and they tried to treat him, but unfortunately, the treatment did

not help. We are unsure why the male was not euthanised. After the treatment, the lion disappeared and we assumed that he had succumbed to his injuries. Much to everyone's surprise, he was seen again a couple of weeks later but died the following day. The cause of his fatal injury was spearing, most likely by nighttime herders.

MPCP is in discussions with the Narok County on how we can tackle the human-caused mortality rates. On top of the night grazing issues, an added problem is that herders from Tanzania are more frequently being employed to herd the Kenyan Maasai cattle and that there has been an influx of cattle from the Tanzanian side into the National Reserve, even spilling into some of the Mara conservancies. We are also analysing our long-term lion dataset for age-specific mortalities and survival rates, comparing the National Reserve to the conservancies, to provide any evidence for human-caused mortality in the National Reserve.

Natural-caused mortalities

On September 10th, the adult female Winter from the Topi Pride was found dead. We suspect that she was killed by a buffalo. Buffalo has been a staple diet for the Topi pride for a while. Winter was born in 2008 in the Marsh pride and later formed a breakaway group to become the Topi pride.

On September 26th, we found a dead female between the border of Enonkishu and Ol Chorro conservancies. We identified her as a female who was born into the Lemek pride in 2009. She left the core Lemek pride in 2020 and formed a breakaway group when the five-male coalition from the Sankai pride entered the scene. The breakaway group moved to Ol Chorro Conservancy to protect their cubs together with the two males Dere and Barrikoi, who have since disappeared. The breakaway group moved back to Lemek Conservancy in 2021 and settled with the Sankai males, but were on the move again when the four Iseketa males took over Lemek Conservancy earlier this year. The now-deceased female and her two companions spent most of their time in Enonkishu Conservancy during this quarter. The cause of death is unknown, but there were no signs of human interference.

Collar update

The programme continues to monitor collared lions to understand their spatio-temporal utilisation and quantify threats that affect them to come up with evidence-based management recommendations and avert potential human-lion conflicts.

During the last quarter, only three lions remained with collars;

1. Adult male from Olkinyei conservancy (Ole Cook)
2. Adult female from Motorogi conservancy (Nengor'kor) and
3. Adult female from Oloisukut Conservancy (Komeyian).

Komeyian

The lioness is doing well, having been sighted recently mating with a Rekero breakaway male, and the Oloisukut team has been doing a great job in finding and monitoring these lions in trying to prevent and minimize human-wildlife conflicts.

Her movements have not changed much since the previous quarter, and she is still avoiding areas of human settlements and continues to leave the conservancy to the north (figure 5).



Saitoti Silantoi, MPCP's Research Assistant, showing one of the Oloisukut Conservancy rangers how to use the VHF Radio to track and monitor Komeyian.

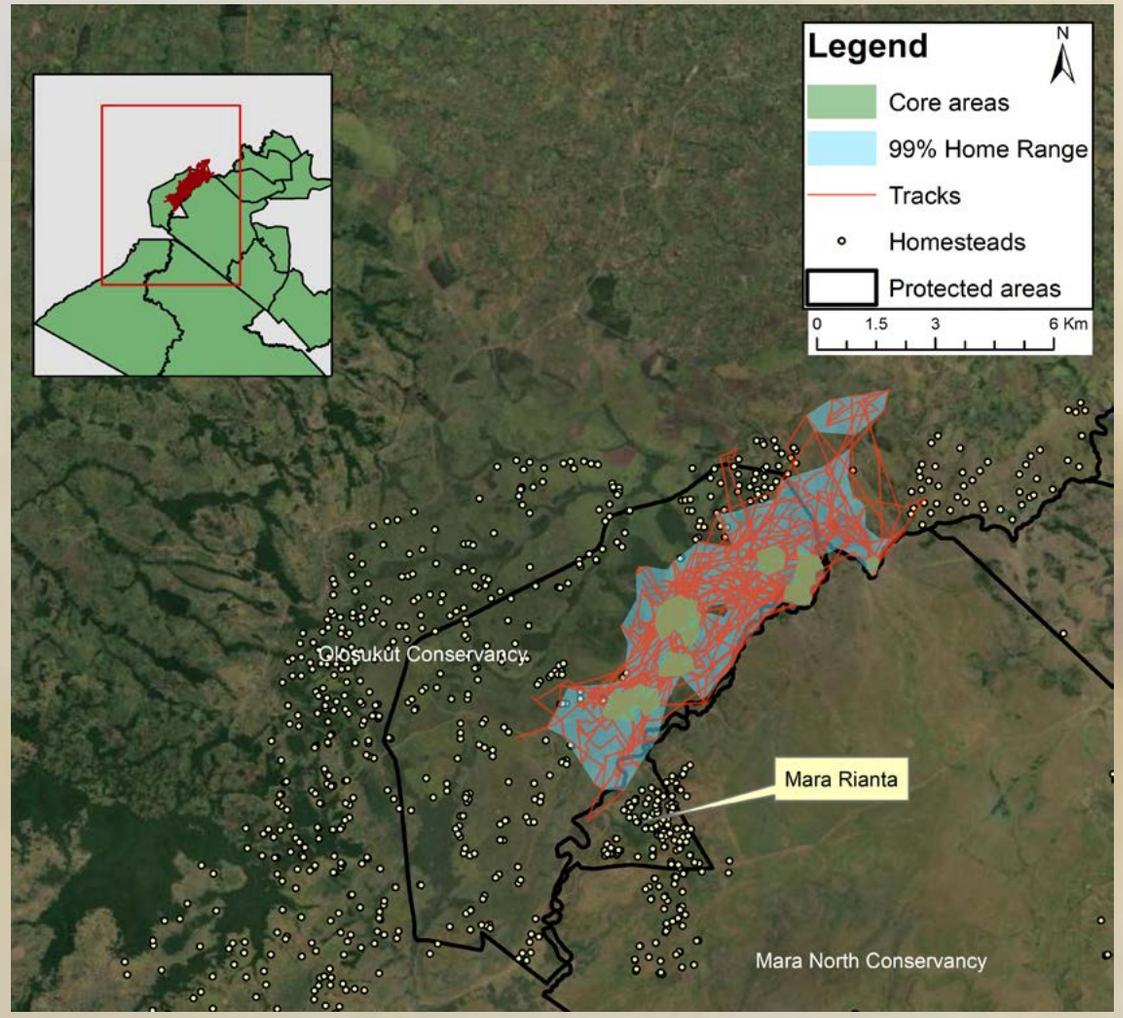


Figure 5. The collared Oloisukut female's core areas, 99% home range and tracks.

Nengor'kor

The collared female of Olare-Motorogi Conservancy spent several weeks within a fenced area of Olkupelia Camp, which is non-operational. She recently emerged with two cubs of approximately three months.

She succeeded in raising the previous litter of three cubs (1 male and 2 females) to maturity. Her collar will lapse to its full collaring duration of 24 months and drop off in November 2022.

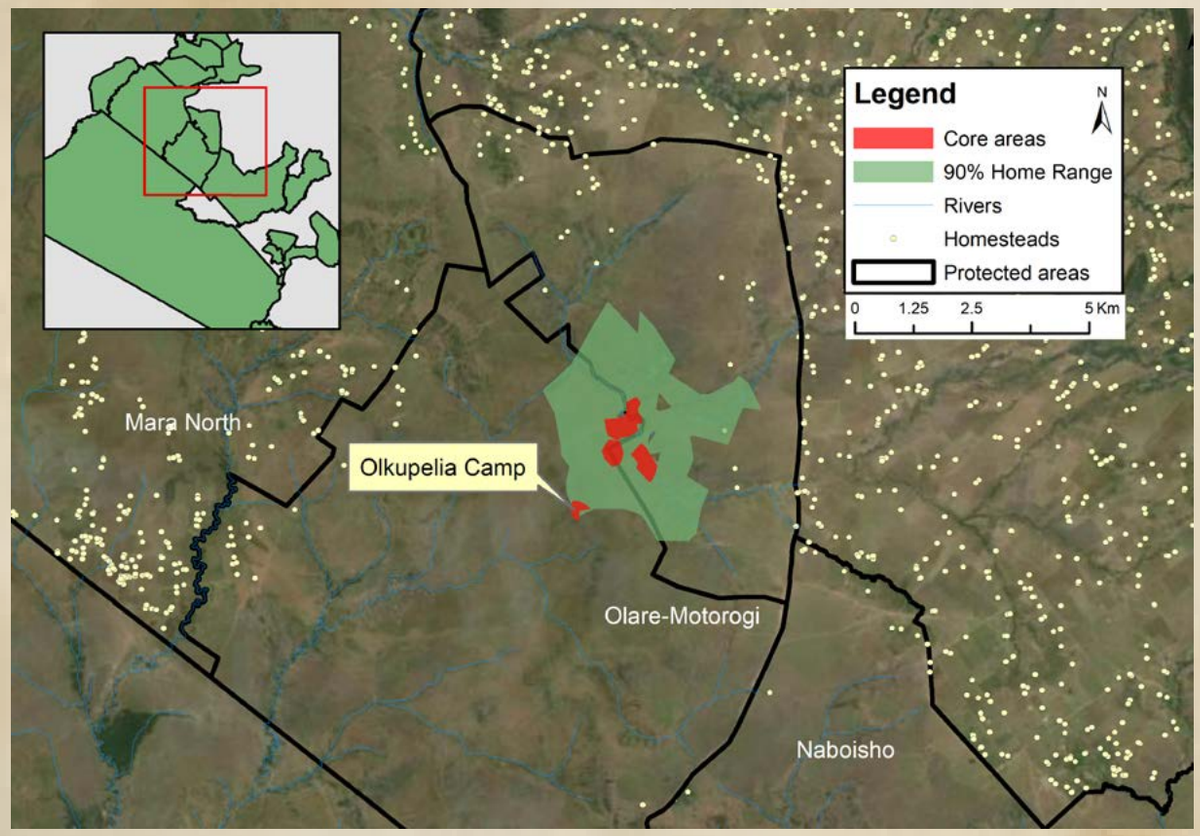


Figure 6. The Iseketa female's core areas and 99% home range. Olkupelia Camp where she gave birth to cubs is also shown.

Ole Cook

Ole Cook is the only collared male lion at the moment, and he has been spending most of his time in Olkinyei Conservancy but has also been venturing outside to Naboisho Conservancy and the community lands as well (figure 7). Fortunately, he has not been tempted to travel too far and for long periods outside the protected areas.

Together with his brother, who the local guides from Ol Kinyei Conservancy recently named Lembalang, which means having a very loud, booming roar in Maa, they are controlling the Lemuny pride in Ol Kinyei Conservancy.

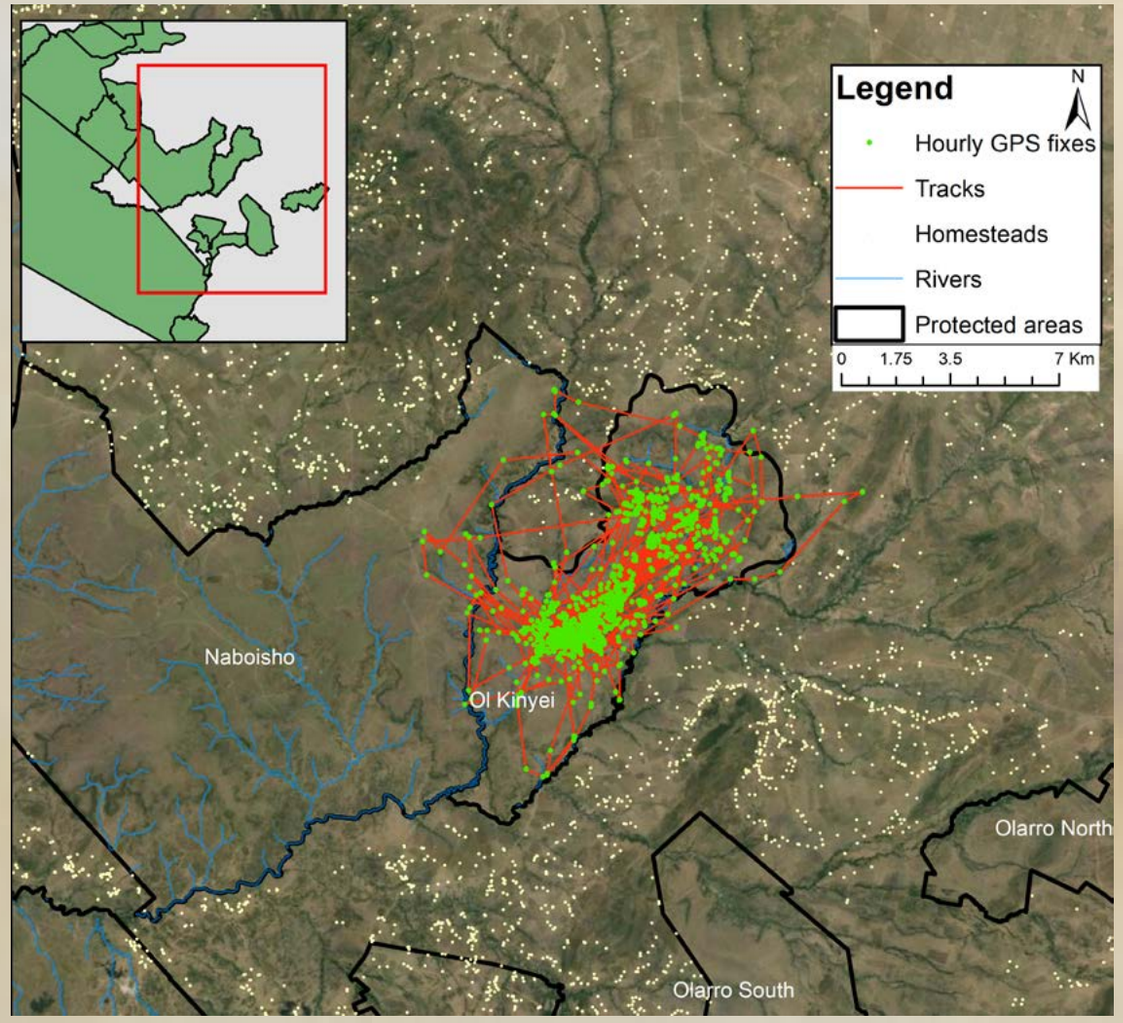


Figure 7. Ole Cook's hourly locations and tracks.

Cheetah updates

Births and Mortalities

We did not record any new births this quarter.

Two cub mortalities were recorded, whereby Risasi and Sila both lost cubs. Of the four cubs Risasi gave birth to in May this year in the Mara Triangle, she lost one of them in September to unclear circumstances. The cub was found dead in the morning by rangers on patrol with no open wounds and so we really do not know what transpired. Sila, on the other hand, who brought two cubs out of the lair from her litter in May, unfortunately, lost one cub to lions in Olare Motorogi Conservancy.

New Individuals

We recorded two adult individuals that were new to our database. We observed the first individual, a young male, in the Mara Triangle, and interestingly, he was not shy of vehicles, unlike most of the new cheetahs we have observed coming from the Serengeti before. He has been a common sighting in the Mara Triangle and the guides have now named him Mpaka, which is Swahili for border.

The other new individual is a very shy male that we found on our trip to Olarro North Conservancy as part of our intensive monitoring session. It is not the first time we have come across new individuals in the Olarro area, and we highly suspect that the cheetahs are coming from the community areas east of Olarro.

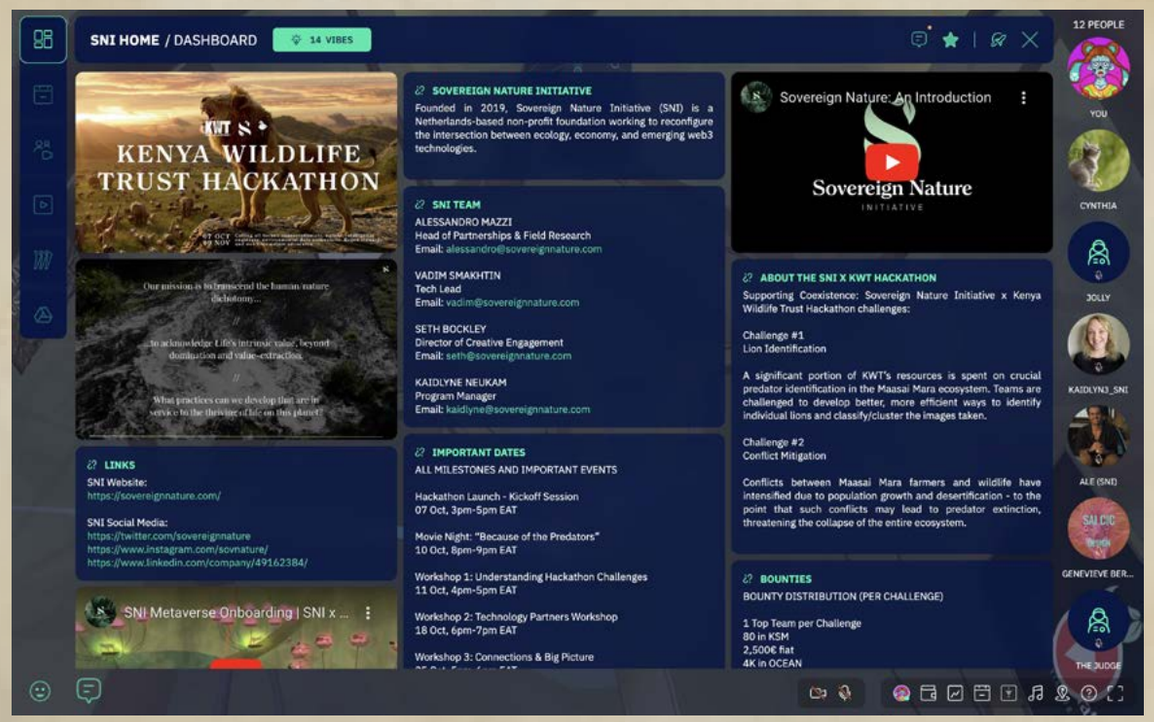
SNI x KWT Hackathon

The Kenya Wildlife Trust in partnership with Sovereign Nature Initiative kicked off the first hackathon with a focus on providing solutions to our work. Participating teams finalized and pitched ways to apply web3 technologies to predator conservation challenges in Kenya's Maasai Mara.



The SNI Metaverse where all the teams have their ongoing developments was created by Momentum. You can access the platform to engage in the art and technology projects by clicking this link: https://bit.ly/sni-metaverse

Winners will be announced this November and we are excited to see and work towards the implementation of the lion ID and conflict mitigation solutions.



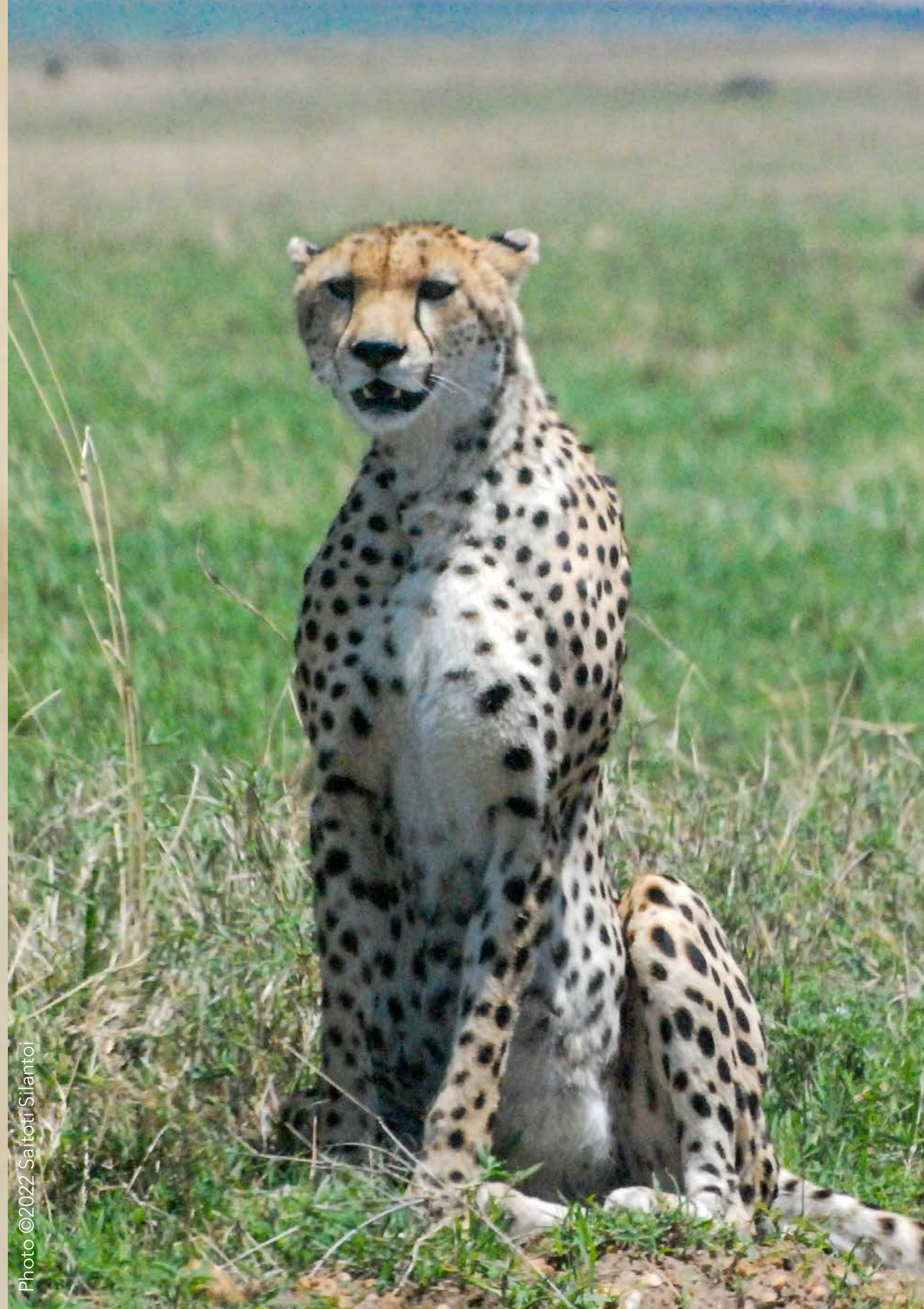


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COMMUNITY UPDATE



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Human-Wildlife Conflict Mitigation
Livestock herders training

The Mara ecosystem is a mix- use ecosystem where people, livestock, and wildlife interact in close proximity. Most of the Mara conservancies introduced grazing plans that make it more likely for people (herders), livestock, and wildlife to interact in an open ecosystem. These interactions sometimes result in Human-Wildlife Conflict. The Mara Predator Conservation Programme (MPCP) aims to achieve a harmonious coexistence between people and predators by reducing human-wildlife conflict through education and awareness for herders.

During this quarter, our community team and lion ambassadors trained 125 livestock herders in four conflict hotspots areas of Ngosuani, Pardamat hills, Olare-Orok, and Oliopa. The training aimed to create a network of Mara herders who can report predator sightings and conflicts to Lion Ambassadors and other relevant authorities, inform herders about the wildlife act of 2013, and reduce human-predator conflict through good herding practices.

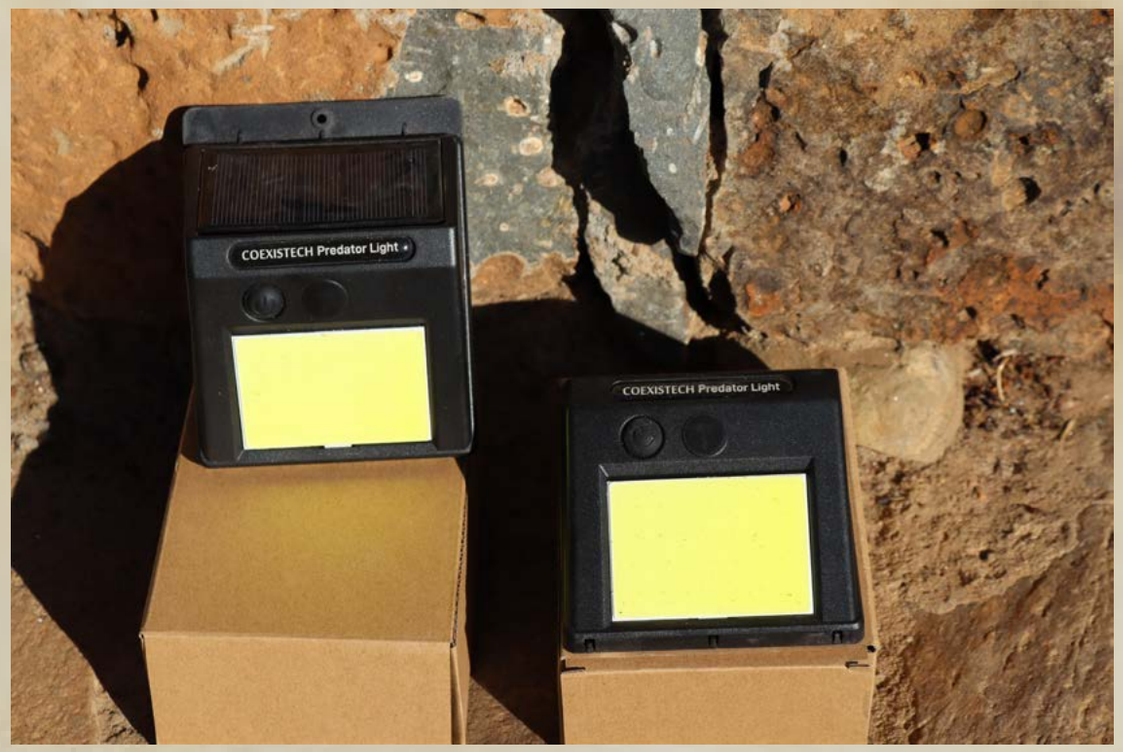


MPCP'S Community outreach officer training herders

Lion deterrent lights

Following the successful implementation of piloting lion deterrent lights in the Mara and an evaluation that showed their efficacy at deterring conflicts, MPCP has acquired an additional 160 lion lights which will be deployed in conflict hotspots across the Mara.

The lights which will be deployed in 30 bomas will complement other mitigation measures employed by livestock owners to deter nighttime predation. The target bomas are located in areas with dense vegetation and susceptible to night predation by hyenas and lions.



A photo of lion deterrent lights to be deployed in conflict hotspots bomas

Livelihoods Programme update

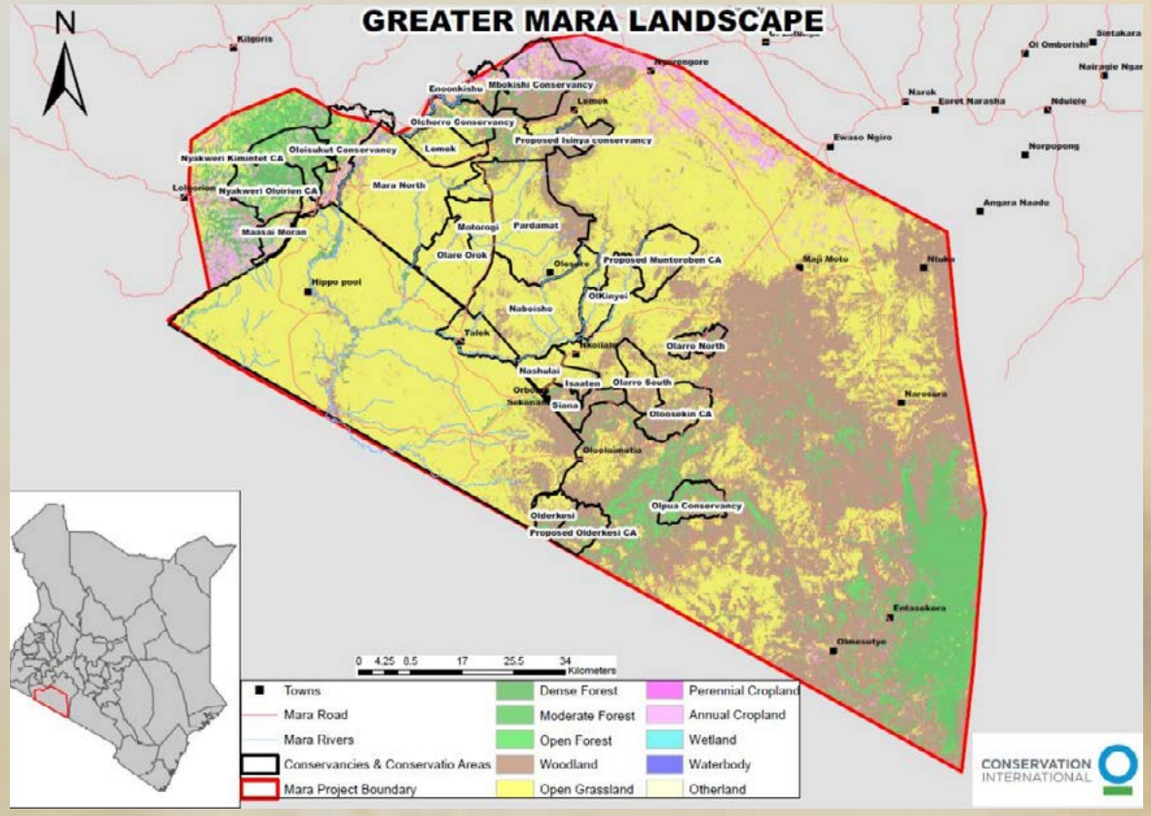
The Livelihood programme is a conservation initiative that aims at strengthening the livestock farmers in Kenya's wildlife areas with a pilot in the Greater Mara Ecosystem (GME). Through the Livelihood Ufugaji Hifadhi programme, Kenya Wildlife Trust and Kenya Wildlife Conservancies Association partnered with Conservation International to investigate the possibility of implementing the Herding for Health (H4H) model in the Great Mara Ecosystem. Conservation International prepared a feasibility report for the implementation of H4H in the GME launched at a workshop in sweet acacia on 28th September 2022.

The analyses confirmed that the major threats to the landscape are; livestock diseases and predation, fences, private land holding, unplanned grazing, and poor market access.

The programme will work in direct collaboration with local communities and offer relevant training on technology, business acumen, and animal husbandry. Further, it will offer livestock farmers a new value chain, allowing them to maximize the income they receive from selling their livestock and livestock products.



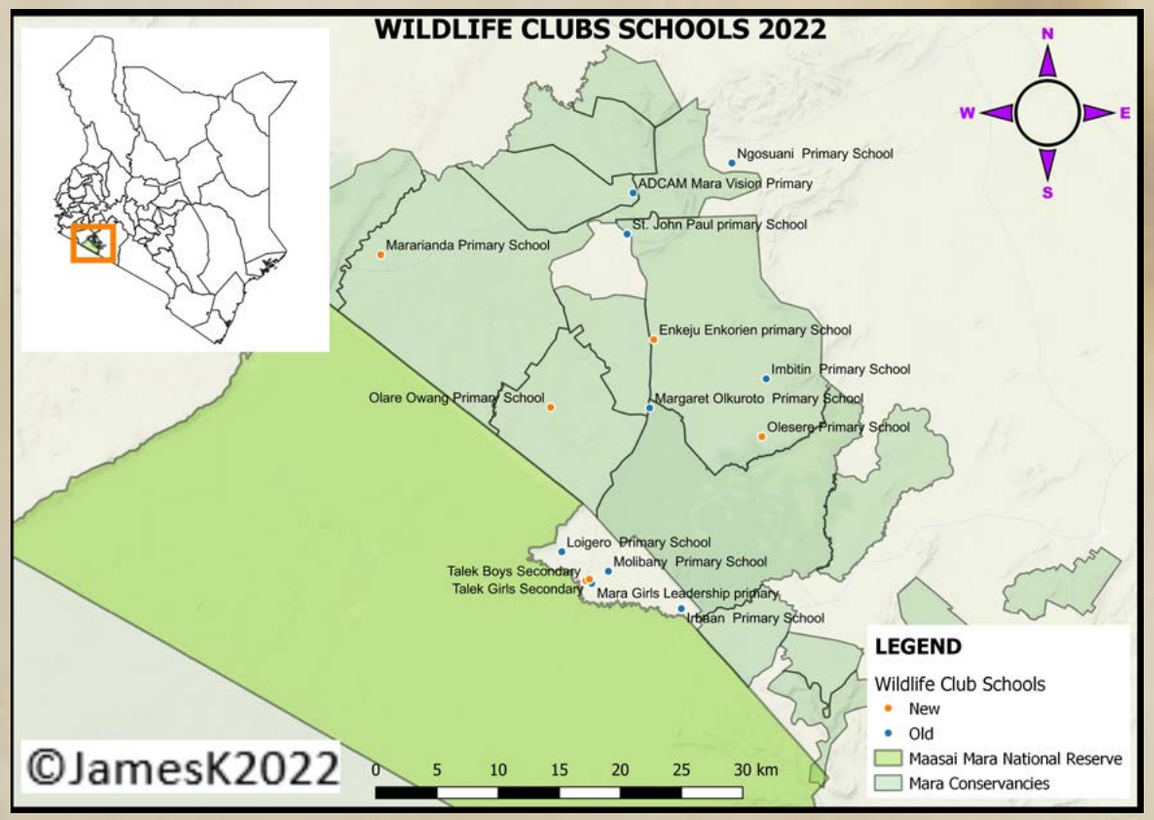
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GREATER MARA LANDSCAPE
N
Kilgoris
Mbokishi Conservancy
Enonkishu
Olchorro Conservancy
Lemek
Proposed Isinya conservancy
Nyakweri Kimintet CA
Oloisukut Conservancy
Nyakweri Oloirien CA
Mara North
Maasai Moran
Motorogi
Pardamat
Olare Orok
Proposed Nuntoroben CA
Hippo pool
Naboisho
Talek
Nkoilale
Olarro North
Nashulai
Olarro South
Siana
Olooseku CA
Olpusimoru
Olderkesi
Proposed Olderkesi CA
Olpus Conservancy
Ewaso Ngiro
Narok
Ololulunga
Mosiro
Ololaimutia
Oloolaimutia
Ololaimutiek
Oloolua
Ngong Hills
Kajiado
Ololunga
Ilpolei
Ilmotiok
Mashuru
Rombo
Kimana
Sultan Hamud
Emali
Loitokitok
Oloitokitok
Kibwezi
Mtito Andei
Sultan Hamud
Simba
Kiboko
Makindu
Nairobi
Kajiado
Kitengela
Athi River
Machakos
Mavoko
Kangundo
Tala
Matuu
Kathiani
Mwala
Yatta
Kangundo
Masii
Mbiuni
Wamunyu
Kalama
Mua Hills
Kilungu
Kibauni
Kilungu
Kibauni
Kola
Kibwezi
Makueni
Wote

WILDLIFE CLUBS

Recruitment of new members

MPCP is excited to report the addition of six new schools to its wildlife club pool during this quarter. This was catalyzed by the demand from the neighboring schools to be part of the wildlife clubs and benefit from the conservation education MPCP offers to the old wildlife member schools. Two hundred and forty members from two secondary schools (Talek boys & Talek girls) and four primary schools (Olesere, Enkeju Enkorien, Mararianda, and Olare Owang) were recruited and every member was issued with a copy of the Ole Peenko book series.





Mara Rianda school members posing for a group photo after recruitment

Screening wildlife documentaries

To enhance awareness of wildlife behaviors and interactions, the Wildlife club's member's schools were privileged to watch wildlife documentaries during their free time. MPCP team shared wildlife films with the schools which they watched during their leisure time or movie nights.

This is to expose children to the conservation world and watch wildlife in different habitats. During this quarter the MPCP community team screened two films (Cats and Dogs) from the African environmental Film Foundation in two different schools, ADCAM and Ngosuani.



ADCAM pupils watching wildlife club documentary

Conservation Talks

During this year's World rangers Day, MPCP partnered with neighboring conservancies and their rangers to give a talk to wildlife club members. Selected rangers from Olare Orok, Naboisho, Mara north, and Pardamat interacted with more than 200 wildlife club members from Olkurroto, Irbaan, Ngosuani, and Mbitin respectively.

The rangers showcased the work they do and the importance of rangers in the ecosystem.



Johnmark Segeny from Olare Motorogi conservancy interacting with Olkurroto wildlife club members

Equipping school libraries

MPCP equipped learners in ten schools with 500 copies of the Ole Peenko book series, the books will remain in the school's bookstores/ libraries, and both wildlife club members and non-members will get access to these books anytime they wish to read. This is a way to expand conservation education to reach more school children.



Tree nursery

The wildlife club tree nursery that MPCP put up in one school (Olkurroto Primary) early this year flourished well. The aim of the tree nursery was to provide sustainable indeginous tree seedlings to the wildlife clubs schools to enhance forest cover.

The seedlings are now ready for transplanting and soon we will distribute them to new schools for planting. Communities around will also benefit from the seedlings as a way of trying to increase forest cover in the greater Mara ecosystem.



Olkurroto wildlife club members attending the tree nursery

Exposure trip to Amboseli

Twenty-five wildlife club members and five patrons from ten schools were privileged to get a chance to visit the Amboseli ecosystem.

The three nights stay at Oldonyo Musa camp was exceptional, members learned a lot on matters of conservation. Among the activities that were involved were; game drives to Amboseli national park, nature walks, paintings, and many more fun activities.





Wildlife club members patrons in Amboseli





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