

MARA PREDATOR CONSERVATION PROGRAMME



ANNUAL
REPORT | 2022



EXECUTIVE SUMMARY

THIS ANNUAL REPORT covers the progress of the Mara Predator Conservation Programme (MPCP) in 2022. The overall goal of MPCP is to support stable, healthy predator populations in the Greater Mara Ecosystem by providing scientific evidence for conservation action. The programme is strongly guided by Kenya Wildlife Trust's value proposition of being driven by science and focused on people.

For the ninth consecutive year, the research team completed the annual intensive monitoring session. The Masai Mara has Kenya's most closely monitored lion and cheetah populations in terms of robust and consistent density estimates. We recorded 281 lion and 67 cheetah sightings during the monitoring session. The updated lion & cheetah densities will be published in the 1st quarterly report of 2022.

The research team collared three lions in 2022 and retrieved four collars, two from lions that were killed by people. A full collaring report with outcomes and conservation impacts has been published.

All cheetah demographic parameters were recorded and kept up to date, including cheetah individuals who survived their first year, along with population survival trends. A discussion on the crisis of National Reserve cheetahs is presented.

The community team carried out activities geared at achieving human-wildlife conflict mitigation through the construction of 21 recycled plastic poles bomas across the Mara, 5 herders training, and 5 poison response training among others. understanding and

appreciating the roles of predators through community outreach where a dog and cats rabies vaccination exercise were held and 2680 animals were inoculated, and engaging communities in conservation education through wildlife clubs to achieve coexistence with predators; where six new wildlife clubs schools with 240 new members were recruited as well as our first ever club members trip to Amboseli ecosystem was conducted. These activities are discussed in greater depth within the report.

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CONTENTS

EXECUTIVE SUMMARY	3
RESEARCH UPDATE	6
Annual lion and cheetah intensive monitoring survey	7
Lion and cheetah sightings	8
Lion Updates	10
Cheetah Updates	16
Wild Dog Updates	21
COMMUNITY UPDATE	24
Human wildlife conflicts mitigation	25
Community outreach	27
Wildlife clubs	30
Livelihoods Program	37
Team Updates	39
Appendix	42
Acknowledgments	43

RESEARCH UPDATE

ANNUAL LION AND CHEETAH INTENSIVE MONITORING SURVEY

In 2022, we completed our three month annual intensive monitoring survey (IMS). MPCP has been conducting these surveys since 2014, enabling us to obtain updates on lion and cheetah densities and distribution in the short term, while long-term data will give us insight into population trends.

During the three months IMS (August 01- October 31), our effort totalled 7,497 km of driving through 13 Mara conservancies, the Mara Triangle and the National Reserve. The effort and our coverage of the study area is displayed in figure 1. Olarro South Conservancy was not covered with the usual amount of effort due to management issues.

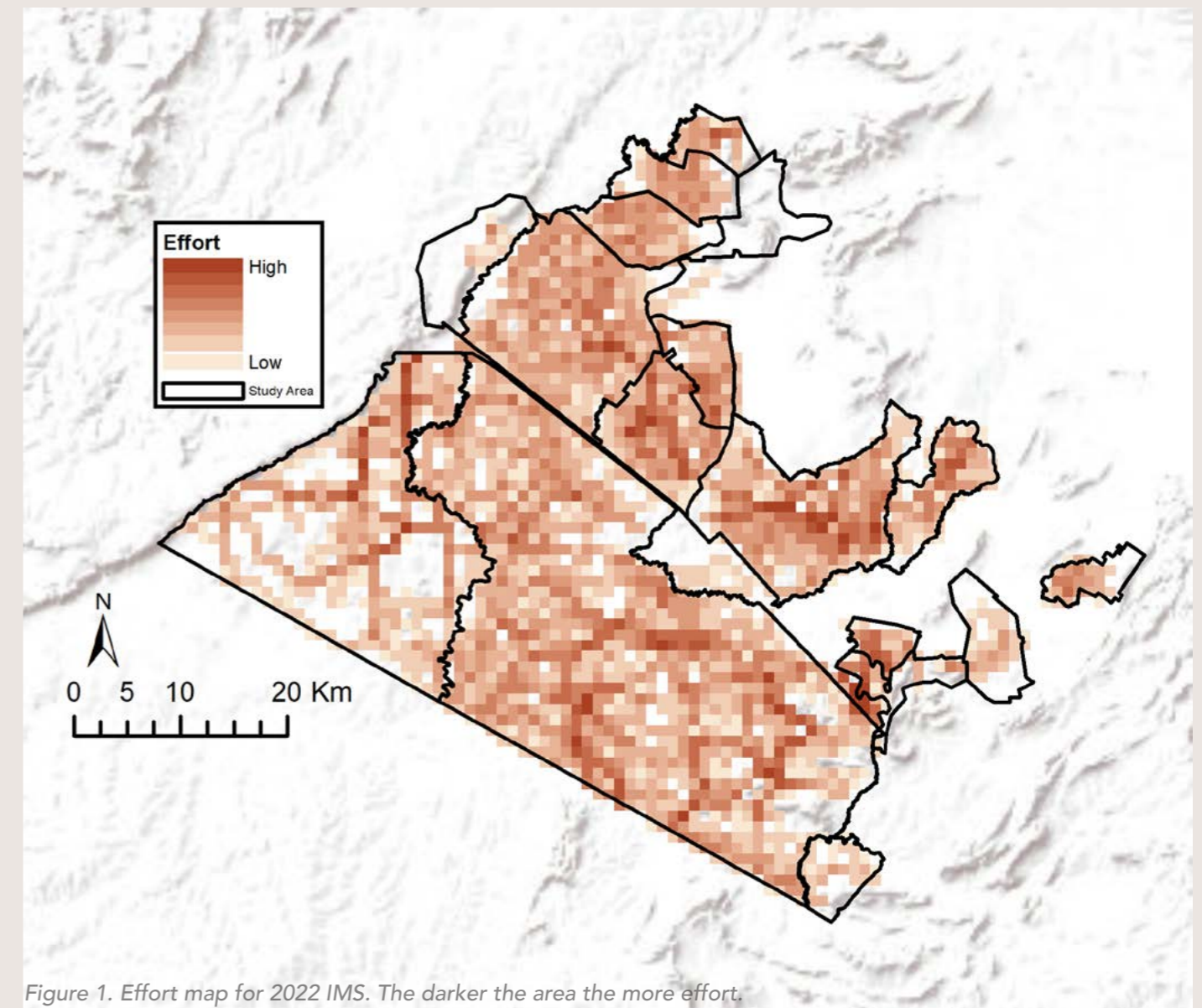


Figure 1. Effort map for 2022 IMS. The darker the area the more effort.

LION AND CHEETAH SIGHTINGS

We had a total of 281 lion sightings and 67 cheetah sightings, and their distribution overlaid on our tracks can be seen in figure 2.

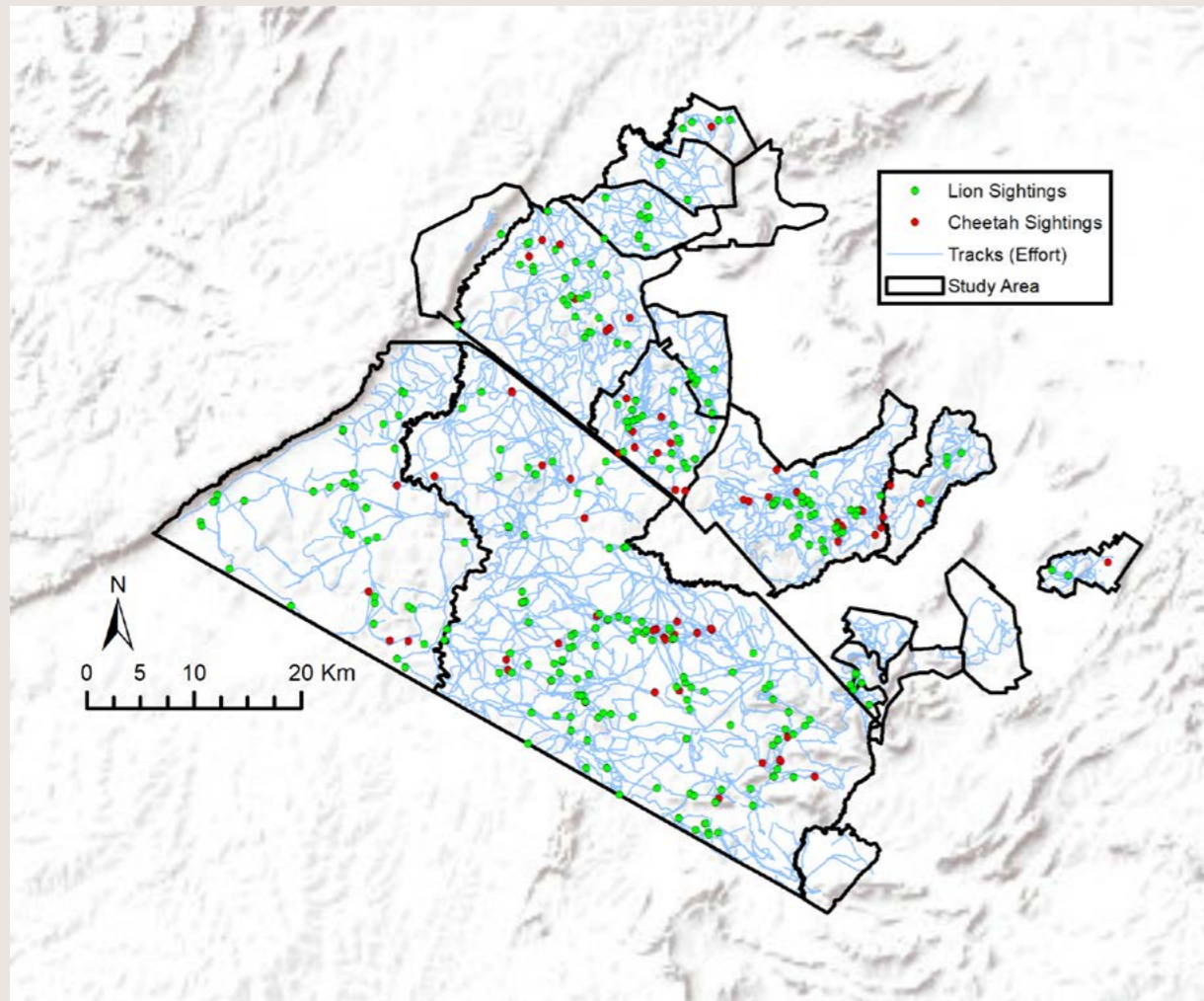


Figure 2. Lion & cheetah sightings overlaid the 7,497 km of driven tracks.

Table 1 and 2 summarises the number of unique individuals of lions and cheetahs that were sighted during the IMS. We had a drop in the number of unique cheetahs (25) during this year's IMS compared to the IMS in 2021 (28).

Plausible explanations include a lower search effort, that we did not manage to find more individuals or simply, that there just were fewer individual cheetahs present during the three-month period, but it is too early to tell how this will reflect in the density estimates. We will be running the spatially explicit capture-recapture model soon from where we get updated lion and cheetah densities and heatmaps.

We also recorded a lower number of unique individual lions in 2022 but that is probably due to a lower search effort combined with fewer lion sightings.

The results will be available in the first quarterly report of 2023.

Search effort (km driven)	Lion sightings	Lion detections*	Unique individuals >1 year old	
7,497 (8,709)	281 (299)	632 (801)	Male	111 (143)
<h1>Lions</h1>			Female	224 (224)
			Total	335 (367)

Table 1: Summary of lion sightings and numbers during the Aug01-Oct31 2022 survey.
*Lion detections are the total count (including all duplicates) of all lions seen. Numbers from 2021 are in brackets.

Search effort (km driven)	Cheetah sightings	Cheetah detections*	Unique adult individuals	
7,497 (8,709)	67 (61)	78 (59)	Male	10 (10)
<h1>Cheetahs</h1>			Female	15 (18)
			Total	25 (28)

Table 2: Summary of cheetah sightings and numbers during the Aug01-Oct31 2022 survey.
*Cheetah detections are the total count (including all duplicates) of all cheetahs seen. Numbers from 2021 are in brackets.

LION UPDATES

LION COLLARING

We deployed three collars on two females and one male in 2022 and retrieved four collars from four females. Two of these were dropped-off successfully after a two-year period while the remaining two were retrieved after the lions were killed by people in retaliation for livestock predation.

Figures 3-9 display the seven collars that were active at some point in 2022. Each map contains collared lions' core territories overlaid with their home ranges for our complete datasets. Maasai homesteads and rivers are shown where relevant.

Collaring of lions have had the following conservation impacts:

- Documentation of lion mortalities due to conflicts with local communities.
- Identification of important usage areas outside protected areas
- Engaging in conservation outreach work in hotspot areas guided by the collar data
- Building predator proof bomas and conducting baraza's in priority areas
- Meetings with members of Siana community after a lion killing
- Engaging our Lion Ambassadors in warning communities of lion presence and mitigating conflicts
- Directly engaging Oloisukut Conservancy management by enabling their rangers to track the collared female in real time
- Preventing retaliation in Olare-Motorogi Conservancy by making herders aware that we were tracking the collared female in their conservancy.

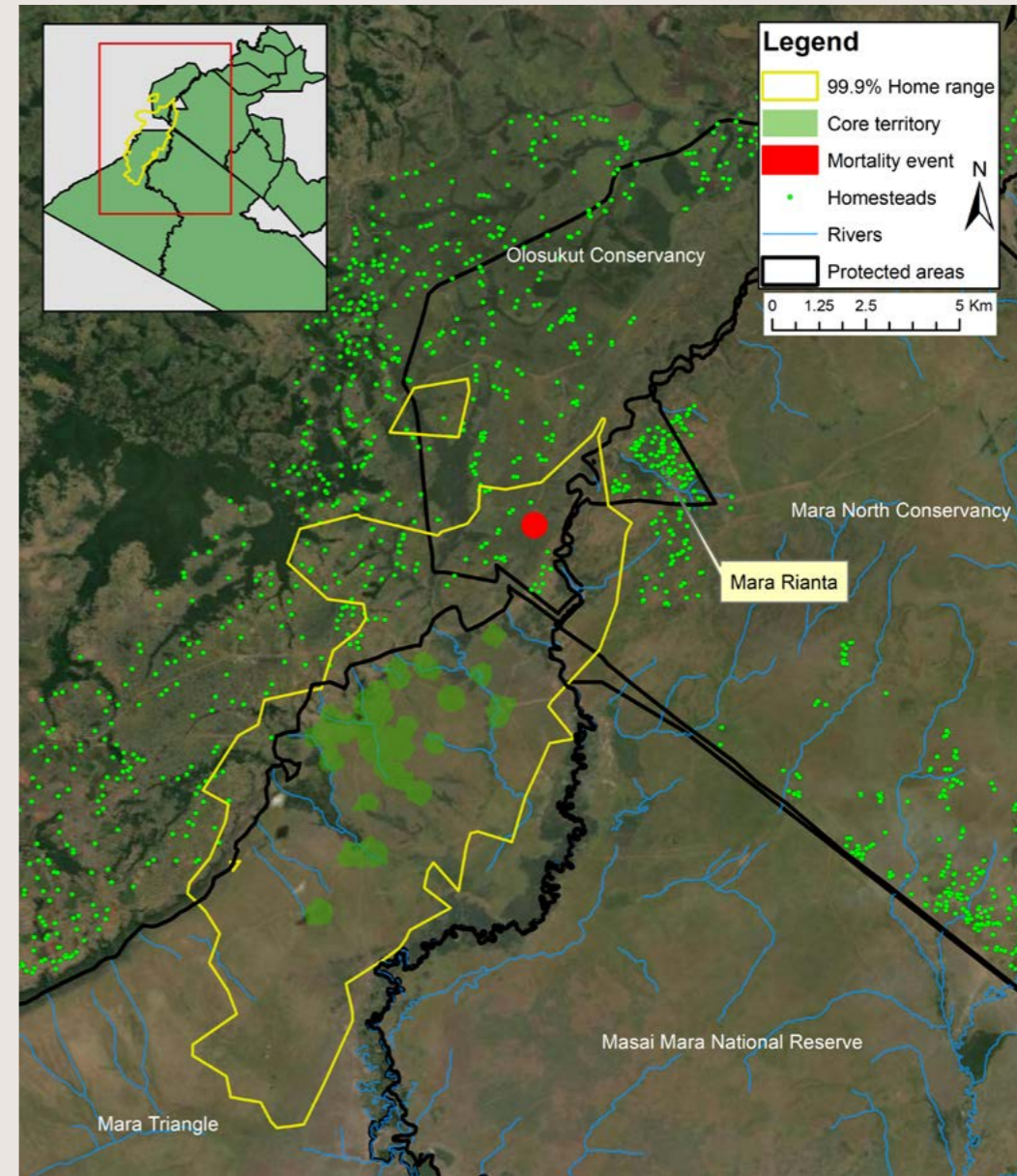
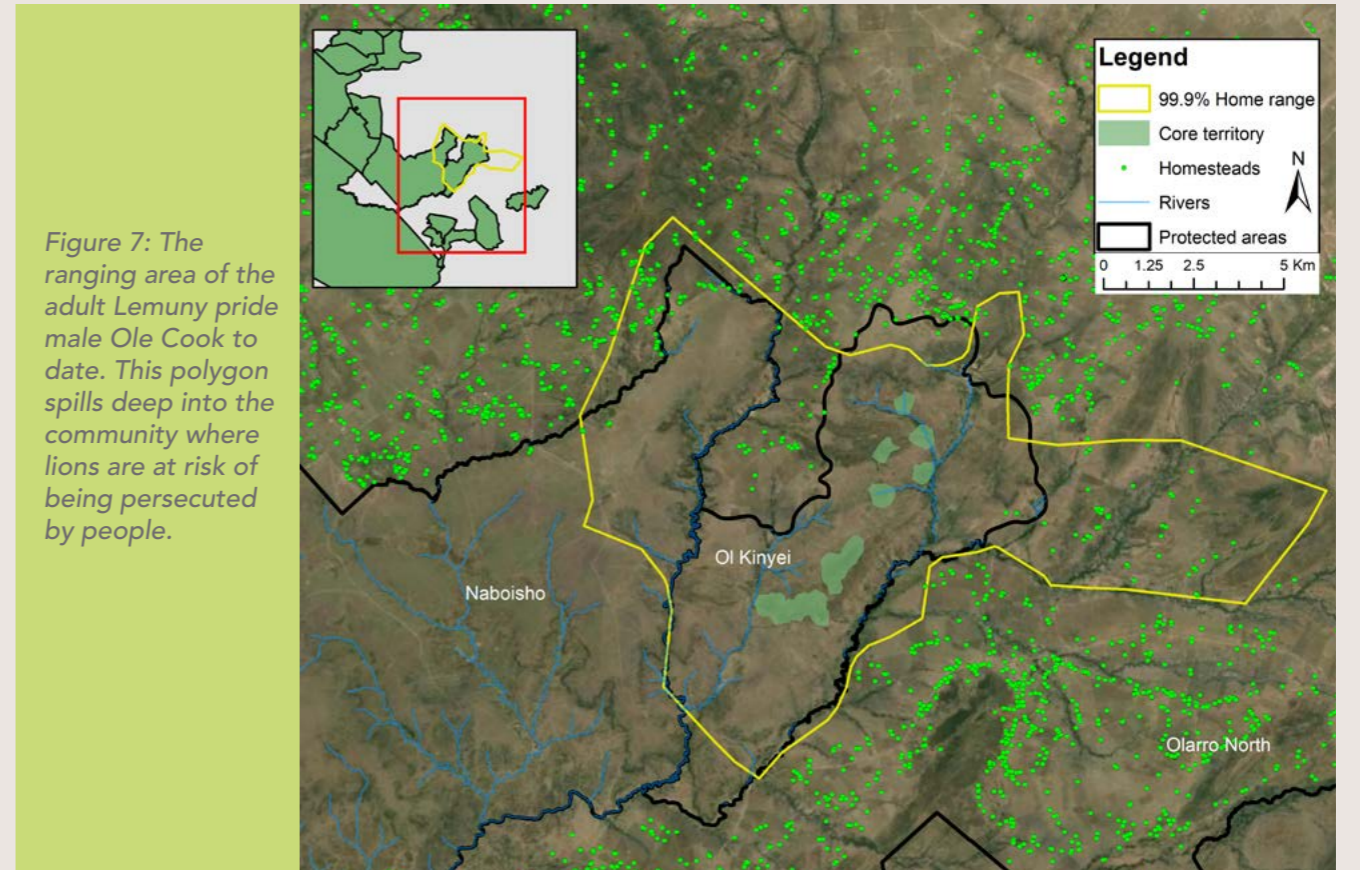
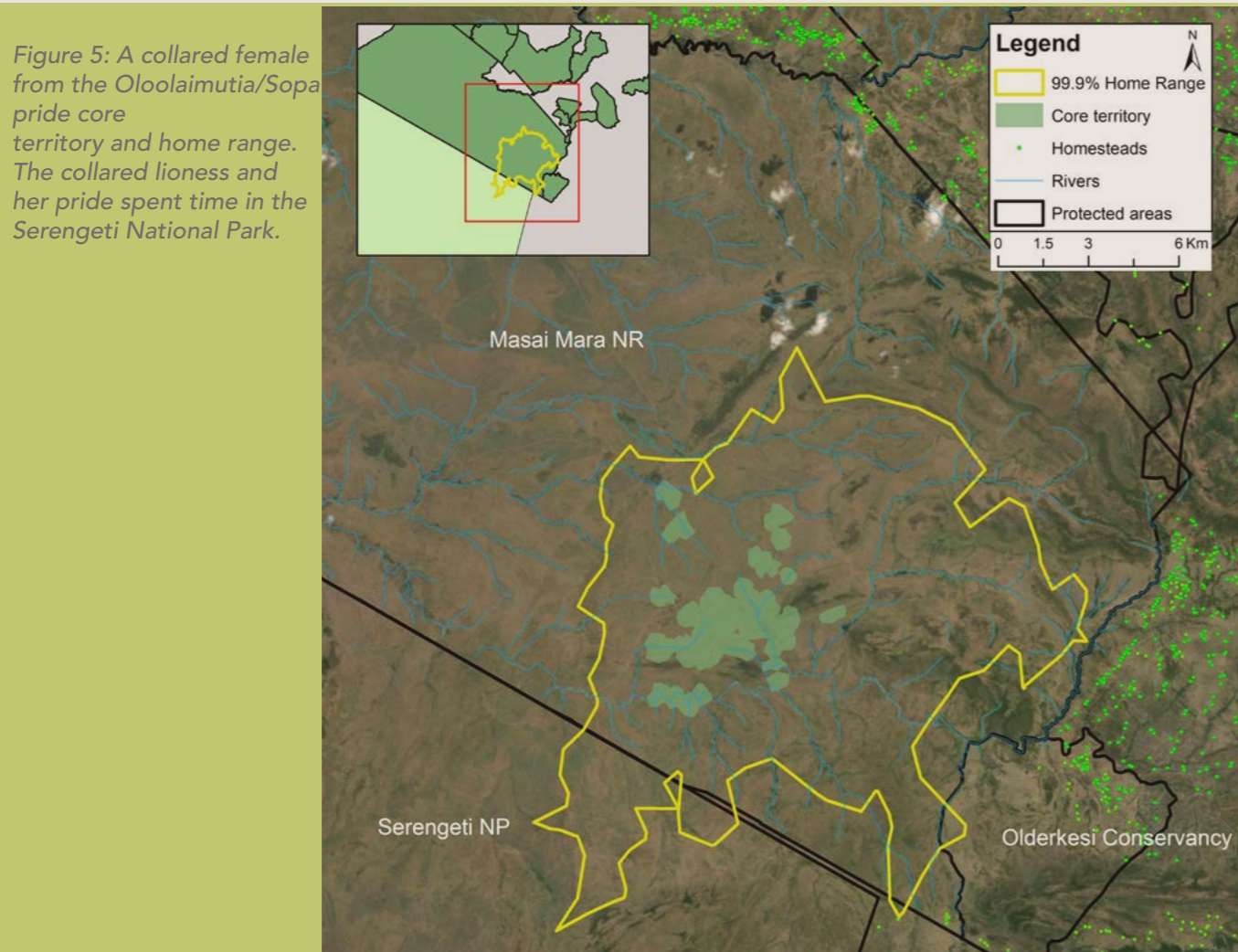
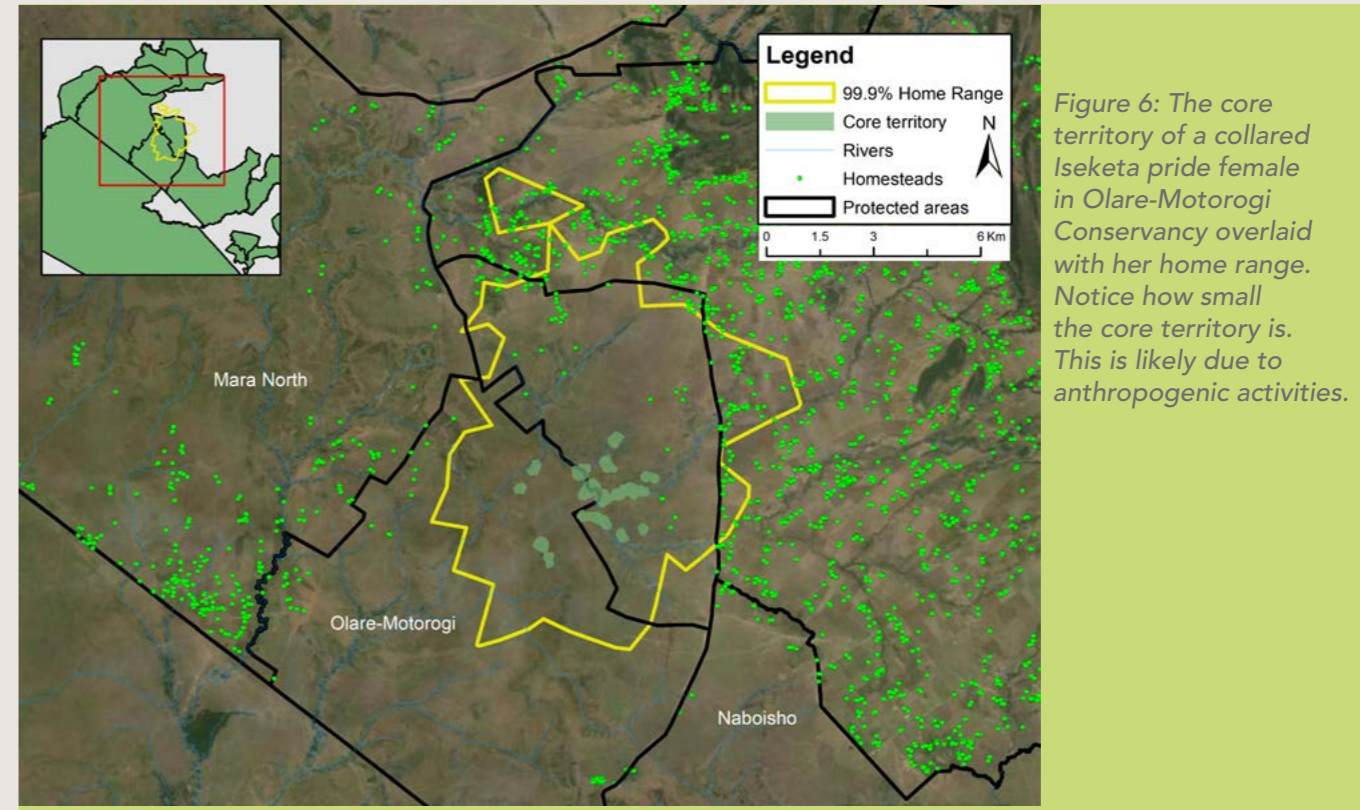
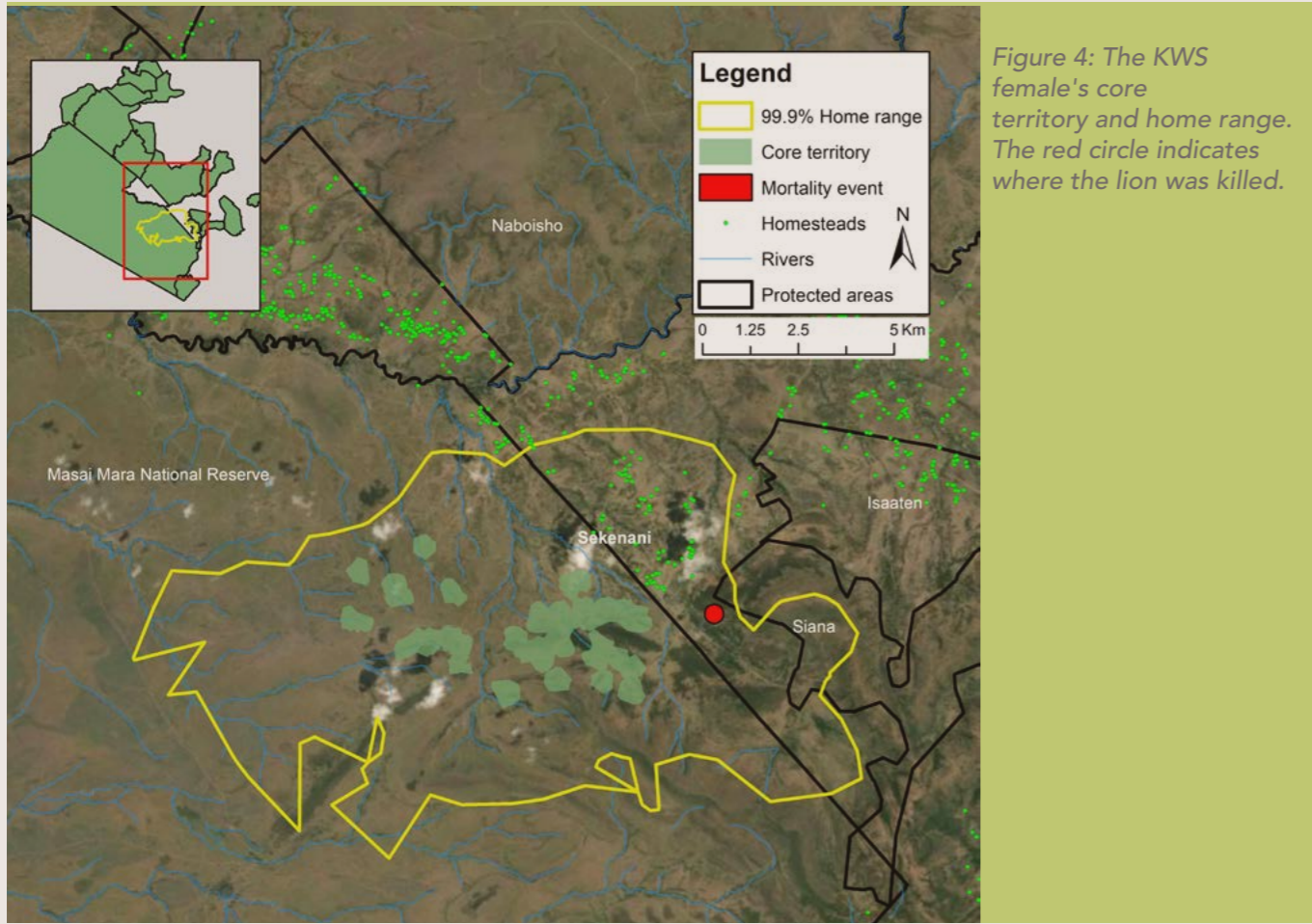


Figure 3: The Angama female's core territory overlaid her home range. The red circle indicates where the lion died from her human caused injuries.



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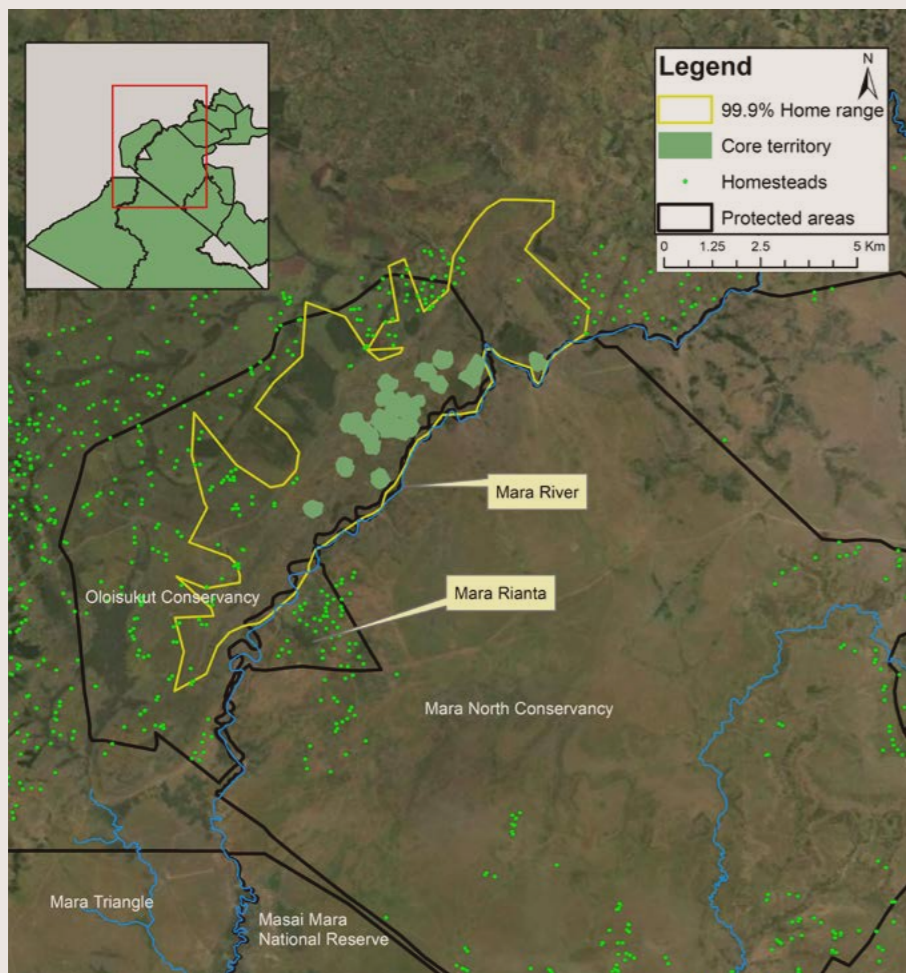
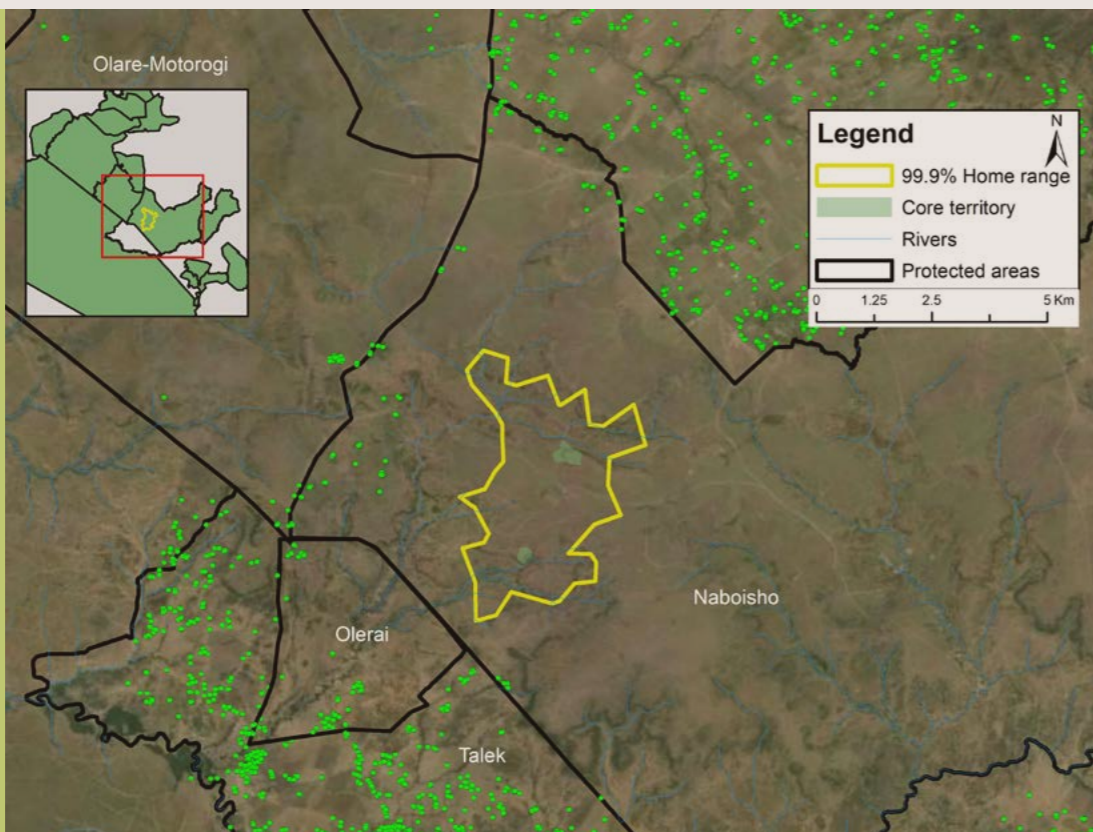


Figure 8: Komeiyan's core territory overlaid her home range in Oloisukut Conservancy. Notice how the home range is squeezed between the Mara River and the homesteads within the conservancy.



Figure 9: Naboisho Conservancy's collared female Namunyak's core territory overlaid her home range to date.



HUMAN-CAUSED LION MORTALITIES

At least six lions were killed by people, including three males and three females. Besides the two females described above, a third female was killed after breaking into a boma in an attempt to predate on sheep. The male mortalities included two well-known adults and a dispersing sub-adult, all killed within the National Reserve by herders during illegal nighttime grazing activities.

Mandevu was speared and killed near the Mara-Serengeti border. According to Narok County officials, the culprits were Tanzanian herders. 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.



Mandevu



Offbeat male and female cubs from the 2015 litter.

The Offbeat pride born male Jesse2, a brother to the female killed in the boma mentioned above, was killed close to the Fig Tree area of Talek, presumably in retaliation for cattle predation in the same area. MPCP has been monitoring Jesse2 since he was born into the Offbeat pride in their 2015 litter, fathered by Jesse and Frank. Seven males in total survived as small cubs in the litter but one died while still with the pride and so six males successfully dispersed. The six males broke into two groups of four and two after dispersal.

The group of four, which included Jesse2, eventually took over the Sankai pride in Olare-Motorogi Conservancy. One of the males disappeared in late 2017 and is assumed dead while a second male was put down after killing a young boy at the beginning of 2021. The two remaining males eventually left the Sankai pride and settled permanently in the Reserve with the Fig Tree pride. Jesse2's brother Olope was killed by other lions earlier in 2022, and so Jesse2 was the last lion remaining in that coalition.

The sixth lion that was killed was one of the four dispersing almost three-year-old Sankai males from Olare-Motorogi Conservancy. He was speared around the Double Cross area and eventually succumbed to his injuries.

The killing of lions inside the National Reserve is on the increase and we are probably only seeing the tip of the iceberg. The six mentioned lion mortalities are only what we have been able to document. Many lions in recent times have vanished, including healthy pride females e.g. the entire Fig Tree pride and some members of the Maji ya Fisi pride. It is unnatural for this demographic i.e. healthy adult pride females, to vanish.

Another main concern, besides the nighttime grazing, we have found 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 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.

CHEETAHS UPDATES

CHEETAH CUB BIRTHS, MORTALITY AND DISPERSAL EVENTS

In 2022 we recorded eight mothers emerging with 22 cubs from the lair of which 10 died, as can be seen in figure 10, with 2020 numbers shown in comparison. This gives a cub mortality rate (within the same year) of 45% for 2022 (54% for 2021). Of the 52 cubs that emerged in 2021, 18 survived their first year which gives a survival rate of 35% (the average from 2013-2021 is 50%, figure 11).

Less than half (42%) as many cubs were born in 2022 compared to 2021 and it is the lowest number of recorded births to date (figure 11). One explanation could be that the Mara had more mothers with dependent offspring, but our data show that this was not the case in 2022. Other explanations could be that more cubs were killed while hidden in the den and hence fewer emerged or that some females gave birth in late 2022 and that they have not been recorded before this report's deadline. Finally, a plausible reason is that the Mara female cheetah population in 2022 was lower than usual. We will establish if this was the case when we finalise our 2022 survey results.

We recorded five dispersal events which included five males and eight females.

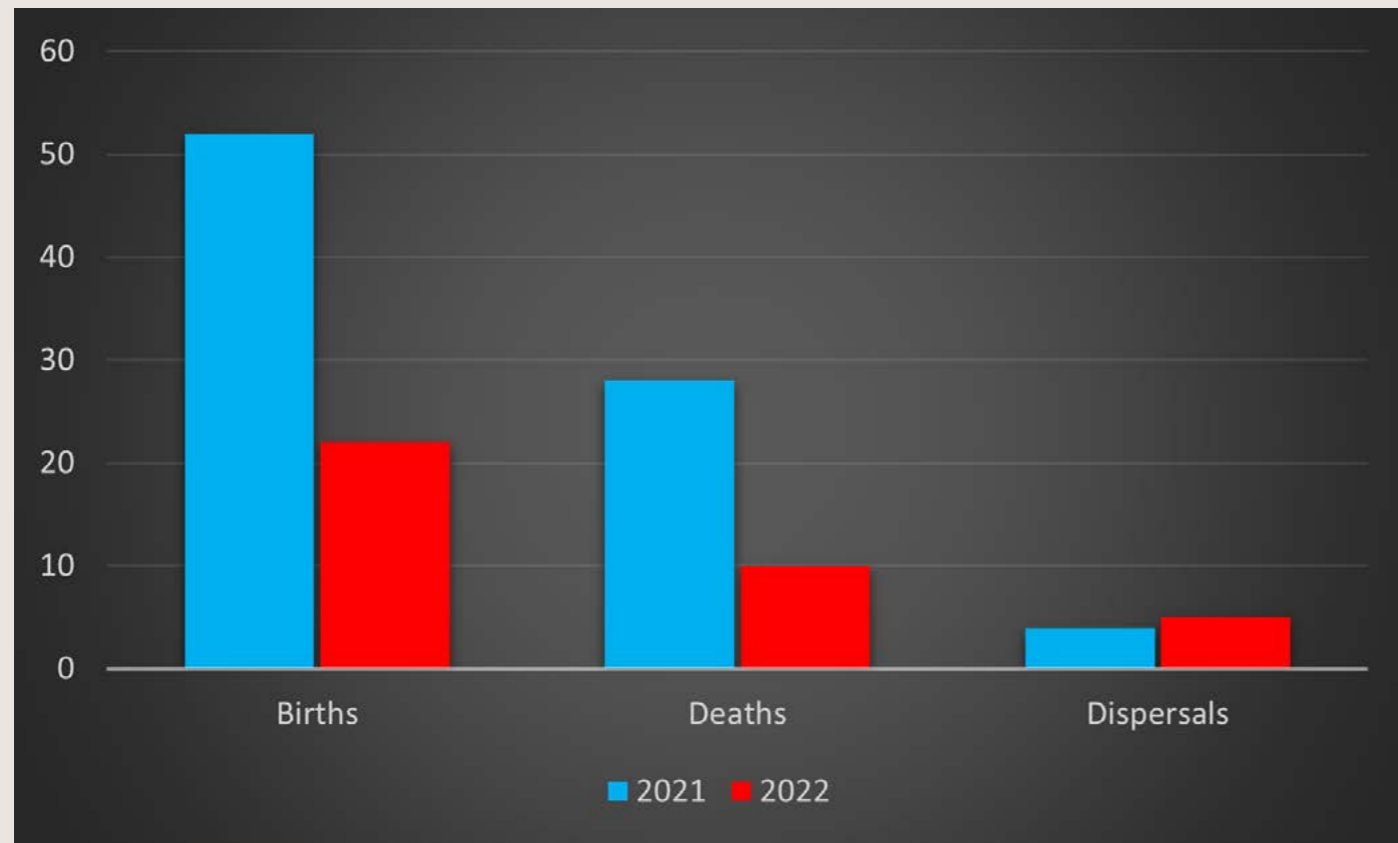


Figure 10. Cub births and deaths and dispersal events in 2021 and 2022. It is important to note that we do not know the exact number of cubs actually being born as they are usually hidden for the first two months where mortality events can take place. We can only record the number of cubs after emergence from the lair.

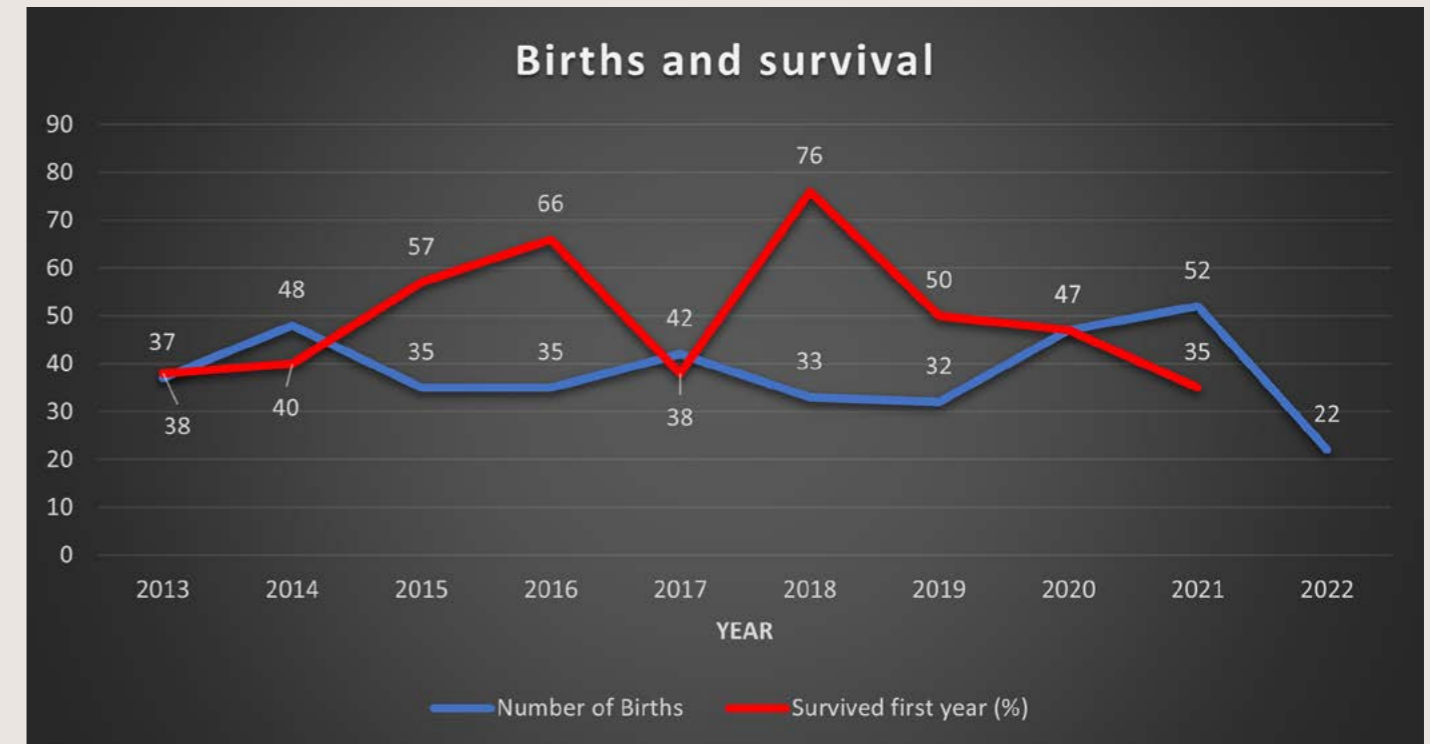


Figure 11. The number of cubs recorded after leaving the lair overlaid with the percentage of cubs that survived their first year. Data is represented from the years 2013-2022.

ADULT MORTALITIES

We recorded four, three males and one female, well-known resident adult cheetah deaths in 2022 which was yet another blow to the Mara cheetah population. The three males were all members of the Five Musketeers coalition aka Tano bora. Dartonian/Orpadan was the first male we lost followed by Olarishani and finally Leboo.

The female cheetah who died was Entito. Dartonian, Olarishani and Entito died from natural causes while Leboo was speared to death by herders in the National Reserve.



Entito

NEW INDIVIDUALS

We recorded two new individuals last year who were added to our database.

The first individual we encountered was an adult male that we came across in the Mara Triangle during our intensive monitoring session.

The second individual was an older adult male that we came across in Olarro North Conservancy.



New Olarro Male

NATIONAL RESERVE CHEETAHS

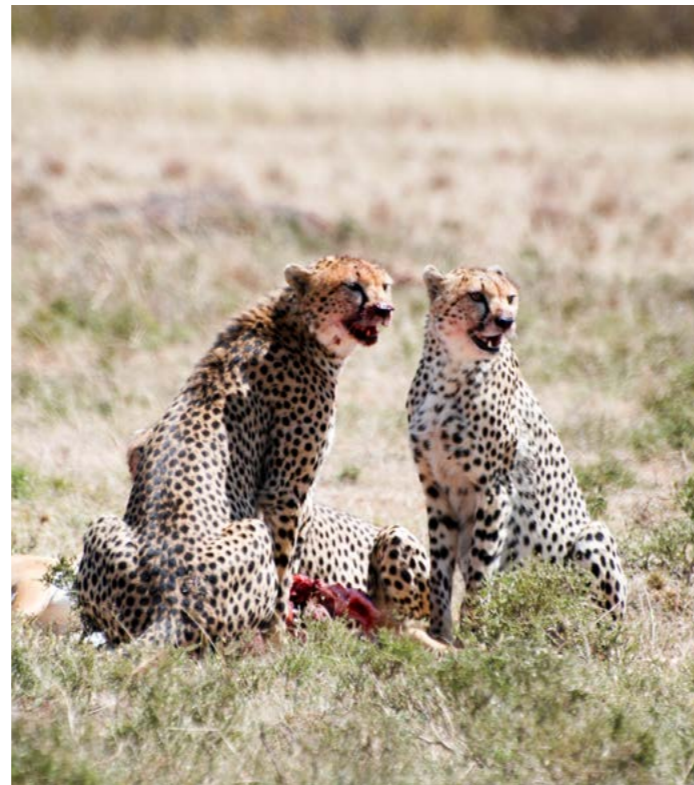
The current (2022) resident female cheetah population within the Masai Mara National Reserve is not in a good state. There are only two adult females, Nolari and Imani, who stay permanently within the Reserve boundaries, although Imani occasionally visits a conservancy. Nolari and Imani are both old being 10+ years of age. Only four other adult females, including Raisi, Siligi, Nashipae and Neema utilise the Reserve as part of their home range, but they also spend a lot of their time in either the Serengeti or the Mara conservancies.

The cub recruitment rate for the resident Reserve cheetahs is extremely low, and our data shows that the main reason for this trend is mass tourism, both directly e.g. disturbance at the den and indirectly e.g. preventing cheetah mothers to see incoming lions.

The Narok County government are aware of the situation and they are the only entity who are able to manage tourism in the National Reserve. We hope that the new management plan will tackle this worrisome trend.



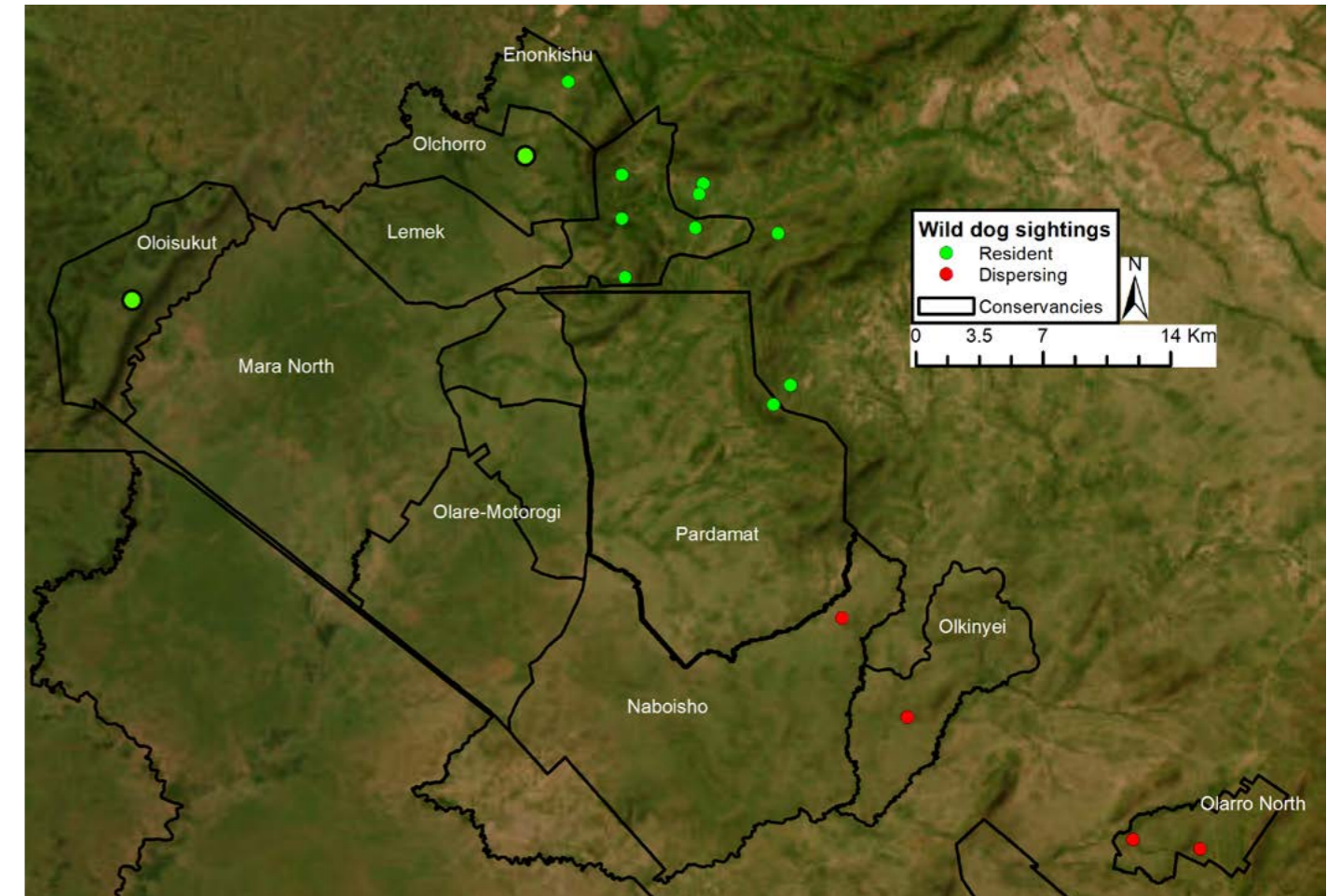
Imani's cubs



Neema's subs

WILD DOG UPDATES

In 2022, we continued our wild dog monitoring efforts, conducted herder's training, held community meetings (barazas), participated in conflict mitigation work and contributed to the Mara wild dog vaccination program. We also actively participated in a virtual wild dog conference, which has resulted in a collaboration between MPCP and the Painted Wolf Foundation. The funding being received from Painted Wolf Foundation was leveraged thanks to the ongoing support from Base Camp Explorer Foundation (BCEF).



Wild dog sightings in 2022

Our sightings in 2022 include both known residents and dispersing wild dogs. The resident wild dogs were seen in Mara North, Olchorro, Enonkishu, Pardamat and Oloisukut Conservancies, while the unknown dispersing wild dogs were seen in Naboisho, Olkinyei and Olarro North Conservancies.

The Mara Predator Conservation Program (MPCP) has focused on two wild dog packs since we included wild dogs into our program in 2019: the Enonkishu pack and the Pardamat pack. From our sightings in 2022, we have identified three out of the four adult females from the Enonkishu pack and one female and three males from the Pardamat pack, all from the 2019 litter.

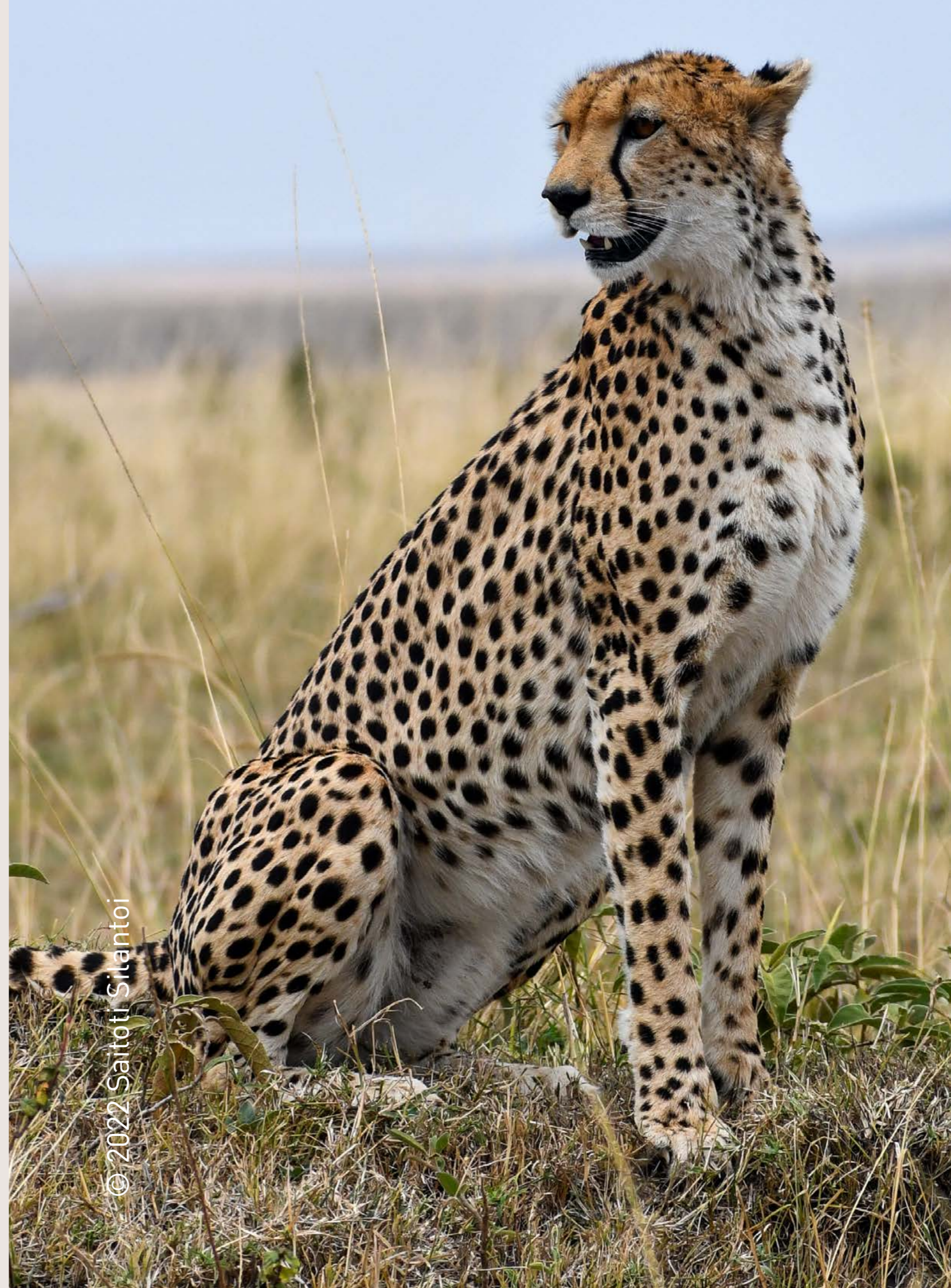
It seems that the two packs have united into one pack, that in turn live in a fission-fusion society i.e., group members merge and split irregularly.



Wild dogs sighted in 2022



Wild dog pack in Olarro by Saitoti Silantoi



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COMMUNITY UPDATE

COMMUNITY OUTREACH AND EDUCATION

Mara Predator Conservation Programme’s community outreach focuses on three key objectives; human wildlife conflict mitigation, community outreach and conservation education in primary schools.

During the year 2022, significant progress was achieved in each of the three objectives as discussed below.

HUMAN WILDLIFE CONFLICT MITIGATION

The Mara Predator Conservation Programme (MPCP) has been spurred to initiate initiatives to combat Human-Wildlife Conflicts (HWC) that threaten peaceful coexistence between humans and wildlife. These activities are aimed at sensitizing communities on conflict mitigation measures and improving people’s attitudes and perceptions toward predators. Some of these initiatives implemented this year include:

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 reporting period, the community team and lion ambassadors trained 165 livestock herders in five conflict hotspots areas of Ngosuani, Pardamat hills, Olare-Orok, Irbaan, 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.



Figure 12: MPCP’S Community outreach officer Dominic Sakat training herders at Irbaan area

RECYCLED PLASTIC POLES BOMAS

The Maasai Bomas, constructed using decaying wooden branches (Figure 13), are vulnerable to nocturnal predators. The most significant depredation occurs at night, killing many livestock because of stampedes and others exposed to predators as they flee for survival.

The lion ambassadors (LA) programme 2021 boma survey in ten areas in Mara, revealed that the communities have feeble bomas susceptible to nocturnal depredation, 1,109 weak bomas were recorded, and of these, 1046 were constructed out of branches, while 63 were made of whistling thorn, this clearly confirms the risk and vulnerability of livestock to night depredation.

MPCP and the communities have worked closely together to reinforce the weak bomas through the provision of triple twisted chain links and boma constructions in efforts to create a more welcoming environment where both predators and humans feel less threatened by one another.



Figure 13: A traditional Maasai boma made from tree branches

During this period, MPCP partnered with Nature Kenya to construct 16 recycled plastic poles bomas (Figure 14) in twelve areas; Kishermoruak, Olare orok, Lemek, Kijirrijirr, Ilpoorri, Itturisho, Siana, Irbaan, Enchorro o sidan, Endoinyo narasha, and Mararianda. Additionally, MPCP built 5 bomas across the Mara at Mararianda, Ngosuani, Oliopa, and Eluai, in addition to the existing reinforced and constructed bomas.

Nkuroto Sitany, one of the beneficiaries, lost seven cattle to lions in one night and says, *"I've worked for many years to build my herd, and I can't believe that seven were lost in one night. However, I am grateful to MPCP for keeping the few remaining ones safe at night, as I begin another struggle that I thought was over"*.



Figure 14: A newly constructed recycled plastic poles boma which is predator proof

ANTI-POISON CAMPAIGN

Livestock are crucial to Masai livelihoods, and anything that offends livestock is perceived as a threat by pastoralists. Predators often invade bomas and kill more livestock at night than during the day. This agitates the community and as means of resolving the conflict on the ground, poisoning the carcass is an option to eliminate the predators with the hope that the predators will return to the kill. Sometimes they do, but often the poison kills bird carnivores as well.

We responded to a poisoning incident at the

Pardamat-Isintin area this year, where a carcass was poisoned (Figure 15), and a lion was killed. Poisoning is largely driven by livestock losses to predators in addition to negative attitudes from communities.

In the Mara, poisoning is still done secretly and sometimes goes unnoticed.

The fight against Wildlife poisoning is one of the top priorities of MPCP, as it threatens not only the survival of predators in the Mara but also affects the existence of other carnivores and birds of prey.



Figure 15: Blurred out poisoned carcass, the pink substance represents the toxic material

During the reporting period, MPCP teamed up with the Maasai Mara Wildlife Ambassadors (MMWA) to conduct campaigns in 10 markets. Anti-poison messages disseminated through traditional songs (infused with anti-poison messages), coral chants, drama, and speeches were all used to communicate the risks associated with the use of poison.

The campaigns reached more than 10,000 market attendees and more will be reached by the message as most of the observers recorded the songs using their smartphones to watch later at home.

T-shirts with an anti-poison message were given to a few men and women in the markets which will ensure the message stays on.



Figure 16: MMWA team performing during the anti-poison campaign held at Nkorinkori market.

POISON RESPONSE TRAINING

Wildlife poisoning is still a major challenge that conservation organizations and government agencies are struggling to address. In addition to the antipoison campaigns, MPCP is tackling this issue through poison response training to different stakeholders and creating a network of people equipped to act in case of poisoning incidents. The community team alongside lion ambassadors, has trained 78 community members from five villages (Kikurukurr, Ebiti, Ilpoorri, Oloisukut, and Pardamat) and 50 conservancy rangers from Oloisukut (Figure 1&) and Pardamat conservancies on how to respond when poisoning incidents occur.

During the training sessions, the participants were educated regarding various aspects of wildlife poisoning, such as the primary causes, types of toxins regularly encountered in the Mara, the signs and symptoms of poisoned animals, the process of decontaminating a poisoning site, safety protocols while responding to poisoning, crime scene investigation and the reporting of wildlife offenses to the appropriate government bodies.



Figure 17: Michael Kaelo briefs Oloisukut conservancy rangers before the practical session on crime scene investigation

PREDATOR DETERRENT LIGHTS

Following MPCP 2022 evaluation survey on predator deterrent lights to measure efficacy which showed remarkable results in mitigating human-wildlife conflicts, we acquired 160 predator deterrent lights and installed them in four hotspot areas, zone 13, zone 6, zone 8, and zone 7. 48 households benefited 12 in each zone.

The zones are characterized by dense-closed vegetation making the livestock living nearby susceptible to predation. The lights, in combination with other mechanisms pastoralists employ to deter night predations, will help to keep off predators at night and enhance human-wildlife coexistence.



Figure 18: Predator deterrent lights at Ngosuari

DOGS & CATS ANTI-RABIES VACCINATION

The MPCP team took part in the 6th yearly Northern Mara inoculation effort against rabies from February 17th-19th, 2022. The campaign aimed at eradicating rabies from domestic dogs and cats to prevent cross-infection with wildlife and targeted 2500 dogs and cats across the selected areas.

The vaccination exercise took place in areas around Enoonkishu conservancy, Mbokishi Conservation Area, Pardamat Conservation Area, Lemek, Mara North Conservancy, Olare Motorogi Conservancy, Emarti, Aitong, and Ngosuari. The chosen areas are basic for Wild dogs as they are normally seen with two denning sites discovered at Ngosuari and Pardamat.

Ultimately, a total of 2,680 cats and dogs were vaccinated, which will not only improve their health but also ensure the welfare of wildlife by preventing rabies from spreading further.

Figure 19: Vets carrying out the vaccination exercise at Mbokishi area



CONSERVATION EDUCATION

The Mara Predator Conservation Programme is partnering with 15 schools in the Mara ecosystem to implement conservation education initiatives. The 13 primary schools and 2 secondary schools are beneficiaries of MPCP through wildlife clubs that are being run and funded by the programme. In 2022, a series of activities both indoor and outdoor were carried out as outlined below.

RECRUITMENT OF NEW MEMBERS



Figure 20: Mararianda school members posing for a group photo after recruitment

This year MPCP recruited 240 pupils as wildlife club members in six schools namely; Olesere, Enkeju Enkorien, Mararianda, Olare Owang, Talek boys and Talek girls.

This is aimed at reaching more young learners with conservation related topics and activities that will help them coexist together with wildlife in the future as well as being wildlife champions in different fields.

WORLD WILDLIFE DAY CELEBRATION

Thirty-five wildlife club members and four patrons from Molibany primary school celebrated this year's World Wildlife Day (March 3rd) whose theme was **"Recovering key species for ecosystem restoration"**, by visiting Maasai Mara Game Reserve.

T-shirts with the day's message were printed and issued to all the participants. This activity was aimed at educating members on the importance of conservation space as a tool for recovering key species.



Figure 21: Molibany wildlife club members posing for a photo before the game drive.

ANNUAL GAME DRIVE (FIELD VISITS)

More than 200 new wildlife club members, 20 patrons from 10 schools and a few community members were privileged to go for game drives in the Mara conservation areas to see wildlife this year.

This visit was meant to give a chance to the members to interact with wildlife in close proximity as well as learn more about the different species found in the Mara positively. Most of the members had never gotten a chance to enjoy a game drive and this provided a unique learning experience.



Figure 22: Oleser primary school wildlife members posing for a photo in the Maasai Mara national reserve

VILLAGE CLEAN-UPS

MPCP community team together with wildlife clubs members and community members carried out three clean up exercises in three villages; Kolong village in Talek, Olkimitare village in Aitong and Entepesi village in Mararianda.

These exercises were aimed to reduce the amount of plastics disposed of and educate the communities around villages on the dangers associated with a polluted environment and encourage hygiene in the villages.

MPCP provided the community members with the metal drum as dustbins to ease rubbish collection.



Figure 23: Entepesi villagers and Mararianda wildlife club members posing for a photo during clean up exercise

WILDLIFE CLUBS INTERACTION DAY

During this year's International Day for biological diversity, the Mara Predator Conservation Programme organized and facilitated the wildlife club's interaction day on 21st May for all wildlife clubs. The objective of the event was to celebrate the milestones and achievements of the Clubs since inception.

The one-day event that was attended by over 500 school children, Area Chiefs, conservancy managers and community members provided an opportunity for the children to interact, learn, and share conservation messages in form of poems, songs, dance, drama, and role play to others and community members, and other stakeholders in the Mara.



Figure 24: ADCAM primary school club members presentation during open day interaction.

WILDLIFE CLUBS' PATRONS' TRAINING



Figure 25: Wildlife club patrons from the 9 schools posing for a photo after the training

MPCP is dedicated to supporting the growing number of wildlife clubs in schools by ensuring they're up and running throughout the year. To enable this, MPCP worked with clubs' patrons to guide and monitor wildlife club members. The idea was achieved by equipping the club's patrons with knowledge on how to run the club successfully.

MPCP organized a two-day training whose theme was "**Conservation Education for Patrons**" which was facilitated by Dr. George, conservation Programmes manager–Wildlife Clubs of Kenya. 18 patrons from 9 schools MPCP works with in the Mara region participated in the training held in Talek.

The training covered a range of topics including resource mobilization for environmental projects, the role of teachers in promoting Education for Sustainable Development (ESD) in Kenya, a whole-school approach to micro-project planning and management, ESD and the school curriculum, and proposal writing.

After the training, the patrons were treated to a game drive in the Maasai Mara National Reserve where they saw lions, elephants, buffaloes, and other herbivores.

WILDLIFE CLUB BULLETIN

Water scarcity is still a major challenge in some schools in the Mara. MPCP'S community outreach officer observed that members of the wildlife club were walking great distances just to obtain water to irrigate the seedlings they had planted.

With the support from MPCP, the three schools (Mbitin, Molibany, and Ngosvani) that participate in the wildlife club received 5000 liters of water tanks each.

This will ensure that there is sufficient water to care for the seedlings during periods of drought and also provide clean drinking water for the students.



Figure 26: Molibany wildlife club members pose for a photo next to the tank.

DISTRIBUTION OF READING MATERIALS

To help children access correct information and learn conservation through reading, MPCP equipped wildlife club members with reading materials. The Ole Peenko book series was distributed to all club members, and libraries were stocked with these books for non-members to read at their convenience.

This aims to broaden the reach of conservation education.



Figure 27: Wildlife club patron and members from ADCAM Primary school in Aitong reading the first edition of the Wildlife club bulletin



The Maarifa Foundation, an NGO that supports the Mazingira club members at Kishermoruak primary school, requested MPCP's community outreach officer to read the first and second editions of Ole Peenkos books with 50 club members. The objective of this joint reading session was to aid the learners in comprehending the stories and gaining accurate information about conservation in the Mara ecosystem, thus fostering an appreciation for its importance.



Figure 28: MPCP's community outreach officer reading together with Ole Peenko 2nd edition with Mazingira club members at Kishermoruak primary school.

SCREENING OF WILDLIFE DOCUMENTARIES

MPCP provides Wildlife club's member's schools with wildlife documentaries to watch during their free time. This year, MPCP'S community outreach officer screened 5 films at five educational institutions with the aim of introducing children to the world of conservation and giving them a chance to observe wildlife in various habitats, thereby increasing their understanding of wildlife behavior and interactions.



Figure 29: ADCAM pupils watching wildlife documentary

CONSERVATION TALKS



Figure 30: Johnmark Sengeny from Olare Motorogi conservancy interacting with Olkurroto wildlife club members

Wildlife rangers play a vital role in conservation areas across the globe. To recognize their work, MPCP partnered with neighboring conservancies and their rangers to give a talk to wildlife club members during this year's World rangers Day.

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 role of rangers in the ecosystem.

TREE NURSERY AND TREE PLANTING EXERCISE

To combat desertification in the Mara through increased forest cover, MPCP took advantage of the available community land and wildlife club schools' compounds as tree planting fields. During this year's long rains, MPCP purchased 1000 indigenous seedlings and planted them in a community water project at Mbitin village and also established a tree nursery at Olkurroto primary schools (one of its wildlife club schools).

The aim of the tree nursery was to provide sustainable indigenous tree seedlings to the wildlife clubs schools compound and communal lands.



Figure 31, 32: Olkurroto wildlife club members attending to their tree nursery, A young boy and a community member plant a tree during the exercise.

The nursery was secured by plastic poles and chain-links to keep off wild and domestic animals. The two exercises brought together a host of stakeholders including; wildlife club members, community members, and MPCP staff.

EXPOSURE TRIP TO AMBOSELI

Another great achievement for the wildlife clubs this year was an excursion trip to Amboseli. Twenty-six wildlife club members and six patrons from ten schools were privileged to get a chance to visit the Amboseli ecosystem. MPCP partnered with Oldonyo Musa camp in Amboseli where members stayed for three nights and were involved with a series of conservation activities.



Figure 33: wildlife club members posing for a photo at Amboseli gate.

Among the activities that they engaged in were; game drives to Amboseli national park (Figure 33), nature walks, paintings, and many more fun activities.

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). The programme works in direct collaboration with local communities and offers relevant training on technology, business acumen, landscape restoration, 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.

CONSERVATION FIELD AGENTS WORKSHOP

MPCP took part in a two-day conservation field agents workshop held at Talek on the 25th & 26th of February 2022. The workshop aimed to equip the twenty field agents from twenty clusters with knowledge and skills to collect data on livestock husbandry, map livestock trade routes to main markets, and understand challenges faced by livestock farmers. Narok county livestock department personnel were among the trainers in the workshop. During the Workshop, the agents were equipped with skills to identify various livestock diseases, manage to graze, and grow suitable grass for livestock fodder, and record-keeping to maximize production by farmers.

THE HERDING 4 HEALTH FEASIBILITY REPORT

Kenya Wildlife Trust partnered with Conservation International to investigate the possibility of implementing the Herding for Health (H4H) model in the Great Mara Ecosystem. On completion of a Herding 4 Health (H4H) feasibility assessment, a validation workshop with key stakeholders was held in the landscape. The workshop took place on 28th September 2022 in Talek, Greater Mara Ecosystem. The purpose of the workshop was to briefly present the findings of the feasibility assessment and seek input and validation from key stakeholders. 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.

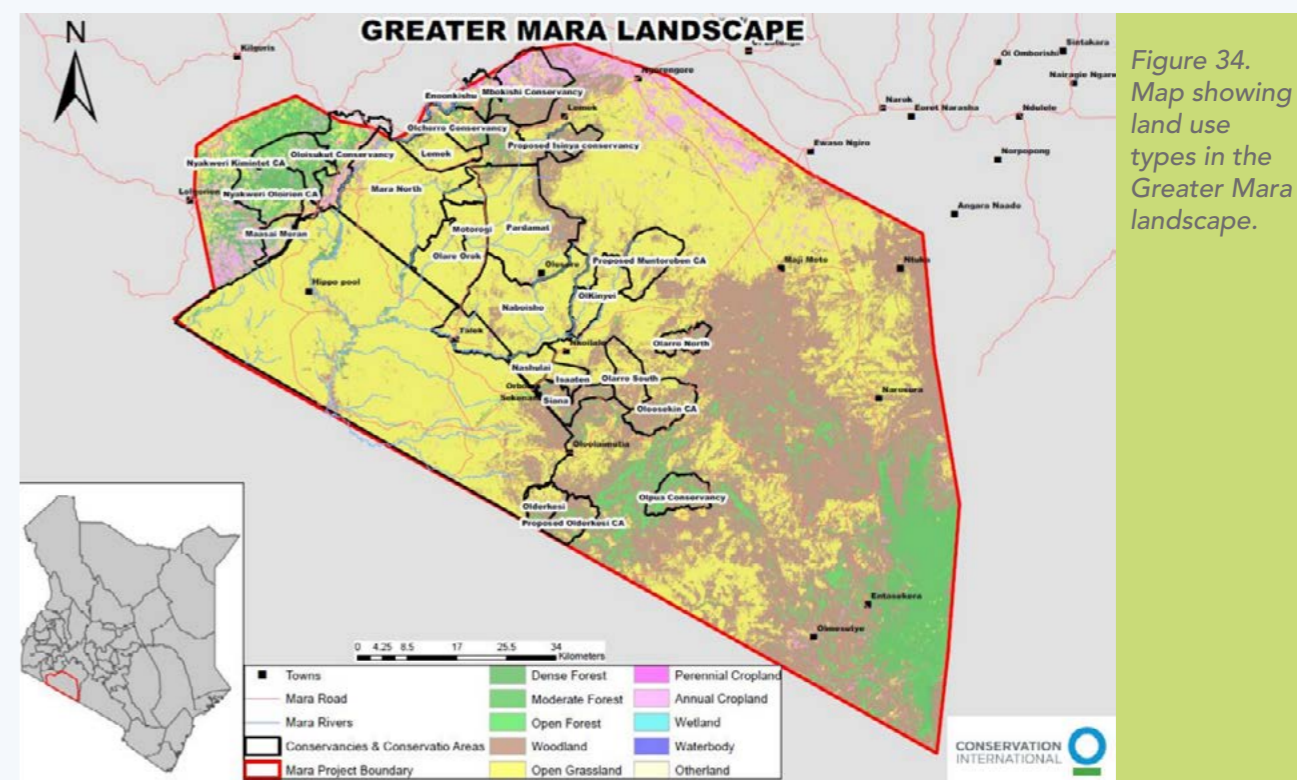


Figure 34. Map showing land use types in the Greater Mara landscape.



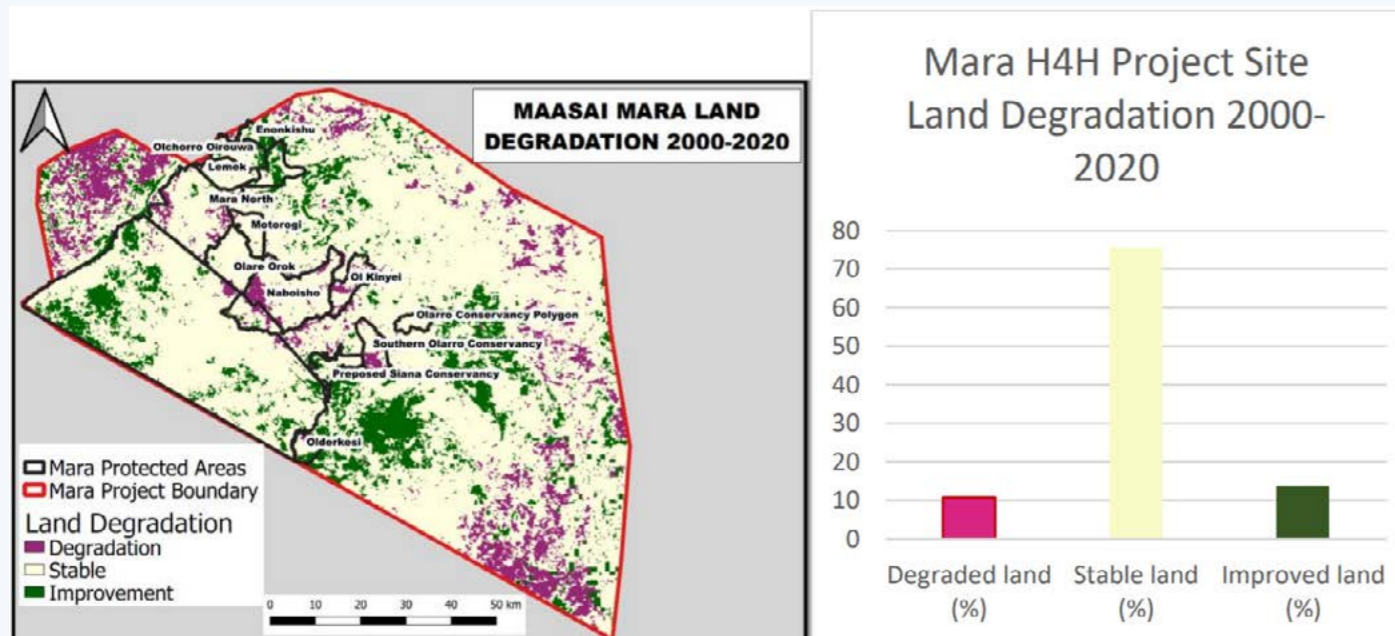


Figure 35. Mara Landscape degradation map

FARMERS' ROUTINE LIVESTOCK PRODUCTION AND MANAGEMENT PRACTICES TRAINING



Figure 36 Mr. Rono one of the trainers educating participants on livestock diseases, diagnosis, and management.

The introduction of wildlife conservancies in the Mara has been acknowledged as a successful strategy for preserving wildlife and their habitats in places where livestock and wildlife frequently cross paths. Nonetheless, there are still numerous issues that must be addressed, including rivalries over resources and the heightened risk of disease transmission due to increased interaction between livestock and wildlife that remain a major concern. The Maasai people have long-standing practices and traditions when it comes

to recognizing and dealing with livestock illnesses based on observing animal behaviour and symptoms. Enhancing their traditional practices with scientific knowledge and skills in managing livestock is a bonus for their existing natural livestock management aptitude.

In December 2022, Kenya Wildlife Trust and Kenya Wildlife Conservancy Association prioritized interventions to enhance livestock production and improve the livelihoods of the community. A team of consultants from the Narok Pastoral Areas Training Center gave training to 70 farmers from the 20 clusters over a period of 3 days at the Talek Go Green Hotel.

The training focused on routine livestock production and management practices to maximize income from livestock and livestock products.

TEAM UPDATES MPCP STAFF PUBLICATIONS

In 2022 we published one scientific publication, which was on how seasonal variation in prey availability affects prey switching by lions and cheetahs.

M. Vettorazzi, **N. Mogensen**, **B. Kaelo**, & **F. Broekhuis** (2022). [Understanding the effects of seasonal variation in prey availability on prey switching by large carnivores](#). *Journal of Zoology*.

2022 EARTH RANGER USER CONFERENCE

Two representatives from the MPCP attended the 7th EarthRanger User Conference held at the Great Rift Valley Lodge in Naivasha between 4 – 6 November 2022.

The EarthRanger User Conference brings together some of the world's leading conservationists, technologists, and scientists who want to leverage technology and data to accelerate the way the world protects wildlife, people, and ecosystems using a collaborative real-time Earthranger visualization platform.

The conference provided an opportunity for the team to connect with other users and interact with experts to learn more about the application of the EarthRanger tool. The two-day conference was attended by more than three hundred other participants from 35 countries on 5 continents. MPCP seeks to leverage the use of Earth ranger to monitor the movement of lions and livestock to create an early warning system for mitigating human-predator conflicts in the Mara.



Attendees during a session at the conference



COLLABORATION IN ACTION ENABLING EFFICIENT TRAVEL

Governors' Camp Collection is a leading aviation service provider in Kenya, with a rich history of pioneering luxury tented safaris and flying safaris to the world-famous Masai Mara Game Reserve for over 50 years. To enhance and complete the services for Governors' Camp clients, they established Governors Aviation to provide flights to and from the Masai Mara Game Reserve.

Their commitment to providing high-quality aviation services has been instrumental in enabling MPCP to reduce travel time and expenses for our staff, enabling us to focus on our mission of safeguarding predators and supporting communities to achieve coexistence. This has enabled us to optimize our utilization of donor funds towards targeted impact work aimed at achieving our overall objectives

In 2022, Governor's Aviation provided 35 flights, representing a cost saving of over USD 5,000. We are grateful for the ongoing partnership with Governors' Camps Collection and their dedication to supporting conservation efforts in Kenya.



Michael Kaelo, Manager - Mara, at Musiara Airstrip just poses for a photo before his flight.

APPENDIX WEATHER

We recorded a total of 1054 mm of rain from the Predator Hub's weather station, Figure 37.

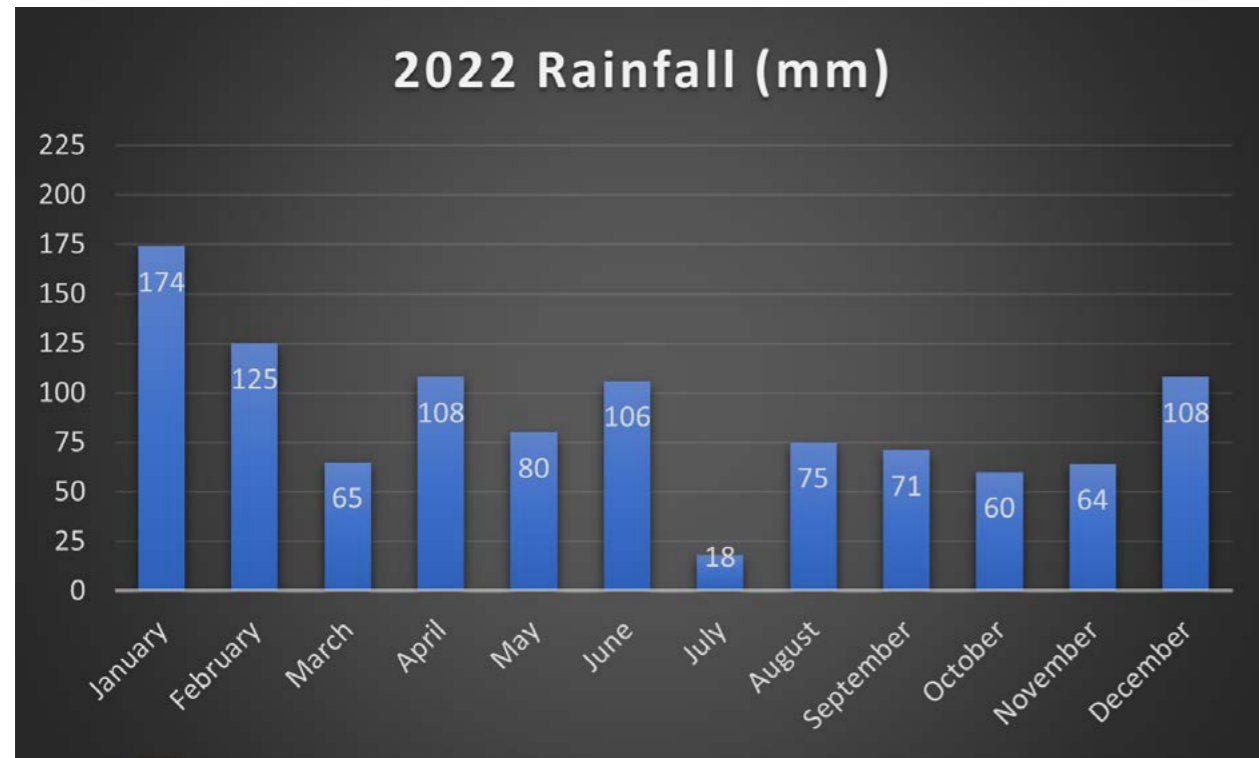


Figure 37. Monthly rainfall in 2022

Figure 38 shows the rainfall over the last five years, from 2018-2022 in order to see short-term trends in rainfall. There has been a large variation in the long rains, which usually run from March-May, and the rains have become more unpredictable over the years.

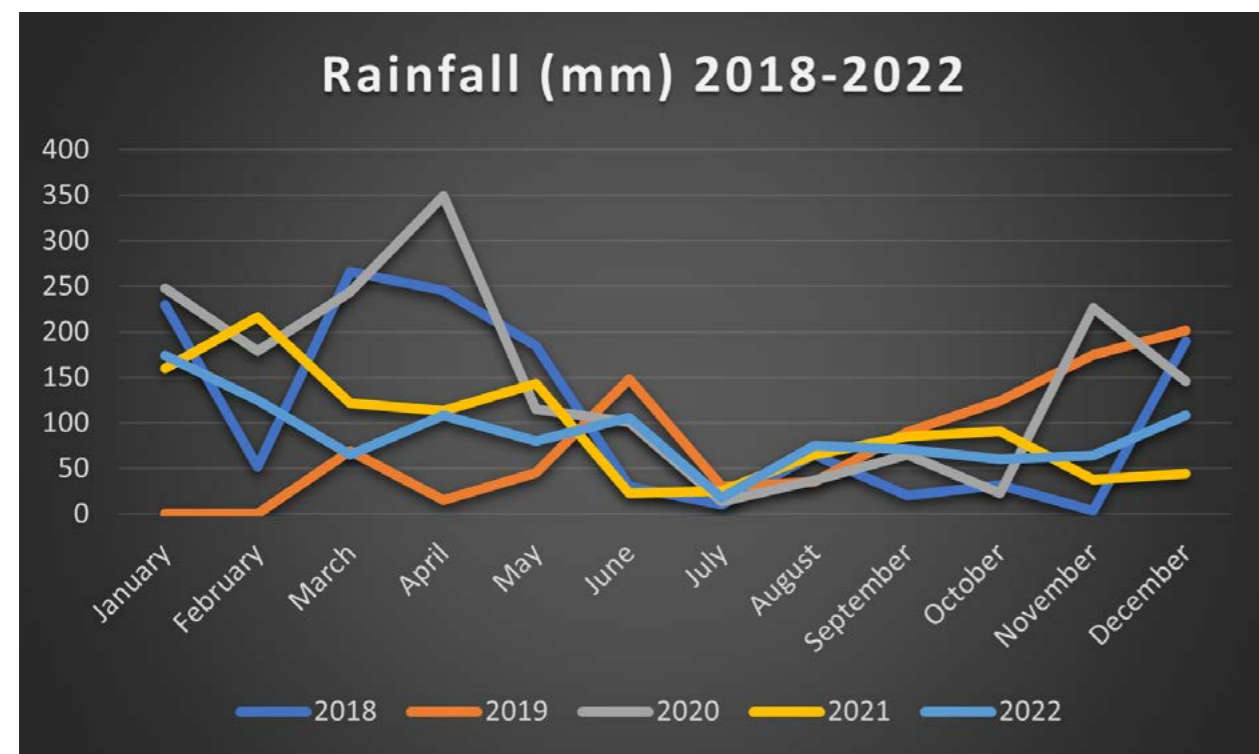


Figure 38. Monthly rainfall from 2018-2022.

ACKNOWLEDGMENTS

Our 2022 achievements were only possible through collaborations and support from our dedicated partners. We would like to extend our sincere gratitude to everyone who supported us.

In particular, we are extremely grateful to the following organizations for their support.





Mara Predator Conservation Programme

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