MEP September 2022 Report

Chilies from the MEP Experimental Farm drying out to make into various products.

GENERAL

This month, we have seen an increase in conflict in the Marmanet Forest. This area came onto our radar in 2018 when we saw collared elephant "Vasco" move over 70 km from the Mau Forest across settlements northeast into this highland forest near lake Bagoria. Then in 2022, an elephant we collared in Nakuru, "Lolotoo", again streaked over 50 km north to Marmanet Forest. Since 2020, MEP has deployed a single ranger, and sometimes additional volunteers, with a motorbike to record conflict and watch over our collared elephants Vasco and Lolotoo inside the forest. A passionate community member Hillary Sinde has done a good job of reporting incidents but has not had the capacity to mitigate conflict or stop the logging. Their loosely structured outfit was named Bik a'Belek, which means 'elephant people' in Tugen. Hilary continues to report widespread deforestation. We will be seeking funding for starting a new team in this area.

Equally important is the Mosiro area for elephants. We've had collared elephants here since 2016 and increasing conflict around water and settlements means that elephants are threatened in this area. Recently, we've responded with the helicopter three times in the last month to elephants that have been in life threatening conflict situations. MEP has a model of building up rapid response teams in the areas of most need. We do this by selecting, training and equipping community members to be rangers. If MEP is able to expand, these are the two areas we have evaluated as the most in need of our support.

SECURITY, ANTI-POACHING & CONFLICT

On September 7, Kenya Wildlife Service (KWS) seized 23.6 kg of ivory and arrested two suspects based on Mara Elephant Project intelligence. The intelligence unit worked throughout the rainy night following a lead from community members near a village in Loita. MEP's intelligence unit worked alongside officers from the Entasekera police station to apprehend the suspects and

seize their motorbike and the four pieces of elephant tusk. MEP's vast network of intelligence officers and informants increases the opportunity cost for poachers and middlemen who bring ivory into Kenya to distribute globally. KWS and MEP have seized a total of 162.45 kg of ivory in 2022 based on MEP intelligence.

The two Mara Elephant Project / Sheldrick Wildlife Trust Mau De-Snaring Units are patrolling in the Mau Forest to increase protection for wildlife and the forest, an important habitat for wildlife. Snares are meant to kill the wildlife caught in their clutches and can fatally injure larger wildlife, like elephants, which is why it's critical to remove them. In September, the "Charlie" and "Alpha" ranger units uncovered bushmeat poaching camps inside the forest and alongside government partners, the teams arrested poaching suspects, removed snares and confiscated bushmeat. This in addition to their arrests and seizures related to habitat destruction activities.

MEP's mobile team and Mara North Conservancy (MNC) rangers joined forces in late September to bust an illegal logging transport taking place on the border of MNC. They received intelligence that a tractor was transporting a large amount of olive posts, and in a joint operation, they were able to seize 300 olive posts. Joint operations like this help to deter habitat destruction activities in the area and increase protection for wildlife. Additionally, the MEP mobile team removed 11 snares in an unprotected area bordering two conservancies.

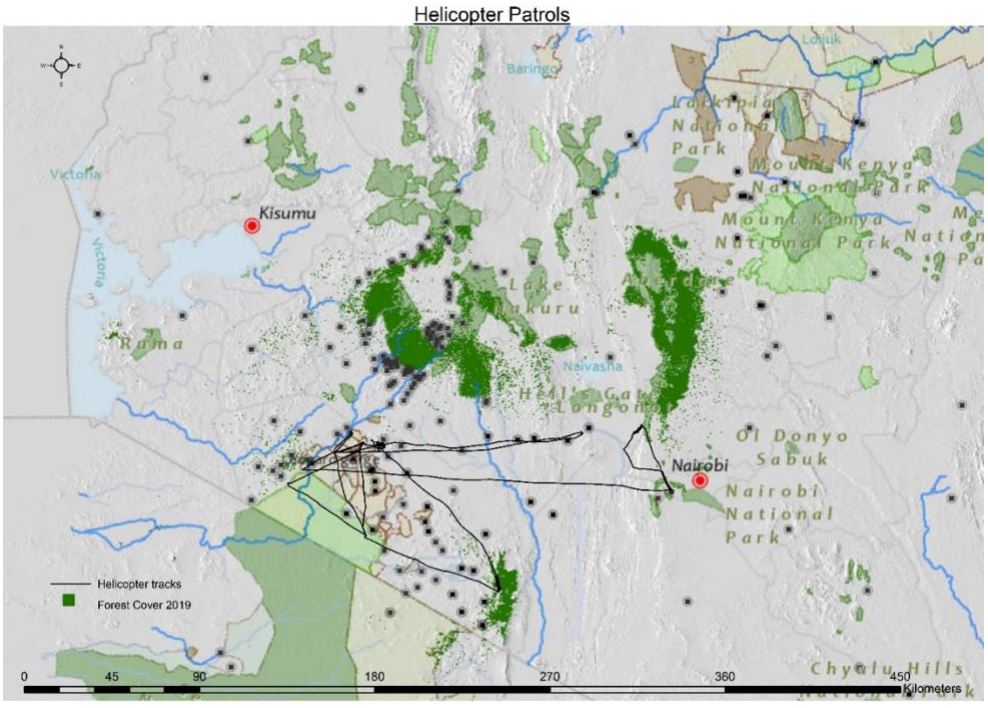
In total in September, MEP rangers alongside Kenya Wildlife Service and Kenya Forest Service arrested two bushmeat poaching suspects, removed 35 snares and confiscated 35 kg of bushmeat. They also arrested 19 habitat destruction suspects, destroyed 25 kilns and 33 sacks of charcoal, confiscated two power saws, 370 posts, 42 pieces of timber and one tree. They mitigated 31 conflict incidents, the most in 2022.

It's back to school time, and for these Kenyan children, their walk to school got a lot more interesting on September 1 when elephants decided to join them. The Mara Elephant Project "Foxtrot" ranger team responded to a herd of 34 elephants getting close to a settlement in their area of operation. They responded to move the herd away from the community, which included ushering them across a main tarmacked road children were using to walk to school. Not only did the kids get an interesting story to tell once they were at school, but they also got a lift from MEP rangers. Our rangers are community members who respond to neighbors when elephants and people collide. They know that positive interactions with wildlife are key to shaping the next generation of Kenyan conservationists.

On September 22, MEP's mobile ranger unit teamed up with Kenya Wildlife Service Vet Dr. Ephantus Ndambiri from the Sheldrick Wildlife Trust Mara Mobile Vet Unit to treat a bull elephant with two spear wounds, one on each front leg. He was treated inside a protected area, but most likely received the wounds while traversing into communities bordering the conservancy. We are proud to partner with like-minded organizations to intervene when needed.

In September, MEP rangers covered a distance of 1,109 km on foot and 13,317.9 km by car in the GME. They patrolled 127.4 km on foot in Marmanet Forest and MES rangers patrolled 21.1 km on foot in Shimba Hills.

HELICOPTER



On September 24, the helicopter responded to chivvy elephants that had moved into a conflict area near Maimaihu. KWS requested they be pushed back across the SGR to a safer place near Mt. Suswa. We attempted to re-collar Olchoda but we could not find him. We also attempted to collar an elephant in the southern part of Loita Forest, but the hot and high conditions were unsafe to hover in, so the mission was aborted. We will need a larger helicopter to do this important collaring when we find elephants in this area again.

COMMUNICATIONS & FUNDRAISING

On September 12, we celebrated 11 years of protecting elephants and their habitats across the Greater Mara Ecosystem. We are extremely grateful for your support over the years and every single donation, both big and small, matters.

We are excited to announce that Janeth Jepkemboi is the first ever recipient of the Fran Duthie African Elephant Conservation Scholarship distributed by MEP. Janeth is beginning her master's program at Karatina University studying environmental science. Janeth's parents worked hard to put her through high school, and she helped by doing fundraisers. To pursue her undergraduate degree, she took out loans and worked throughout. Janeth was an exceptional candidate for this scholarship generously supported by Fran Duthie and her family.

MEP Matters, the second quarter newsletter was released in September. Long-time tourism partner Asilia Africa is supporting Mara Elephant Project once again with a grant for the experimental farm. Asilia joins MEP to invest in Kenyans, like Abigael Pertet and her team of seven farm researchers, to innovate and advance solutions to promote co-existence. On the experimental farm, MEP is growing and testing elephant friendly crops to reduce elephant crop raiding pressure and diversify financial income for local farmers. It's a key piece of research for MEP to promote co-existence and protect both elephants and communities in the Mara, and we're so grateful Asilia continues to support our efforts.

In September, the Sidekick Foundation, Inc. d/b/a Mara Elephant Project USA had a total of $235,785.62 in donations and the MEP Trust had $5,500. Thank you to the Rosemary Joyce Milchuck Estate, long-time supporter Leslie L Alexander Foundation, Royal African Foundation who supported the protection of an elephant for three years, Neil Anthony, Ginni Keith, Charles Nelson, Mr. and Mrs. Charles Rice Foundation, The Edward E Hills Fund, Frances Akita, Mary Barber, Donna Barlow, Lloyd Shulman, Allen Wise, Erika Johnson, Mary Cottrell, Allan Montgomery, Jeff & Marta Wilde Charitable Fund, Judith De Graaff, The Linda & Mark Zaitlin Charity Fund, Joseph Boenitz, Gayle Christie, Gus Constantin, Nirmala Dharmaraja, Louise Donovan, Deeanne Gibbons, Donna Golden, Susan Hatch, Edward Kaplan, Peter Kuniholm, Richard Litkenhaus, Roger McNeil, Sharon Monroe, Leslie Ridley-Tree, Gary Rosenberger, Ratna Sabapathy Family Foundation, Barbara Tuchi, William Van Buren, Robert Wittes, Diana Wortham and Hal Liebes.

Thank you to everyone who supported MEP in the Greatest Maasai Mara photo competition. This entry was from Jules Oldroyd.

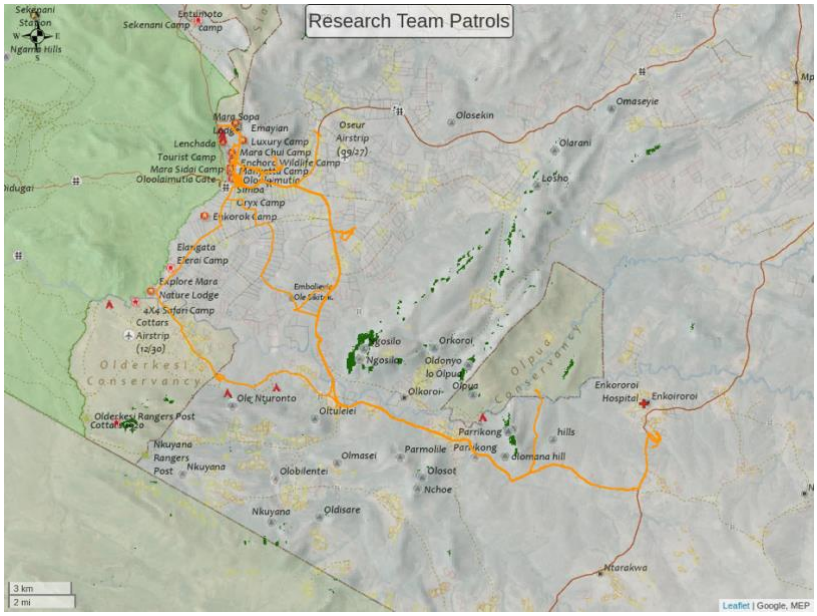
RESEARCH & CONSERVATION

Director's Update

In September, we spent several days reviewing the MEP strategy for the next few years. The exercise has helped structure the growing research and conservation department into distinct programmes including i) research, ii) conservation technology, iii) monitoring and reporting, iv) applied conservation and outreach, v) coexistence.

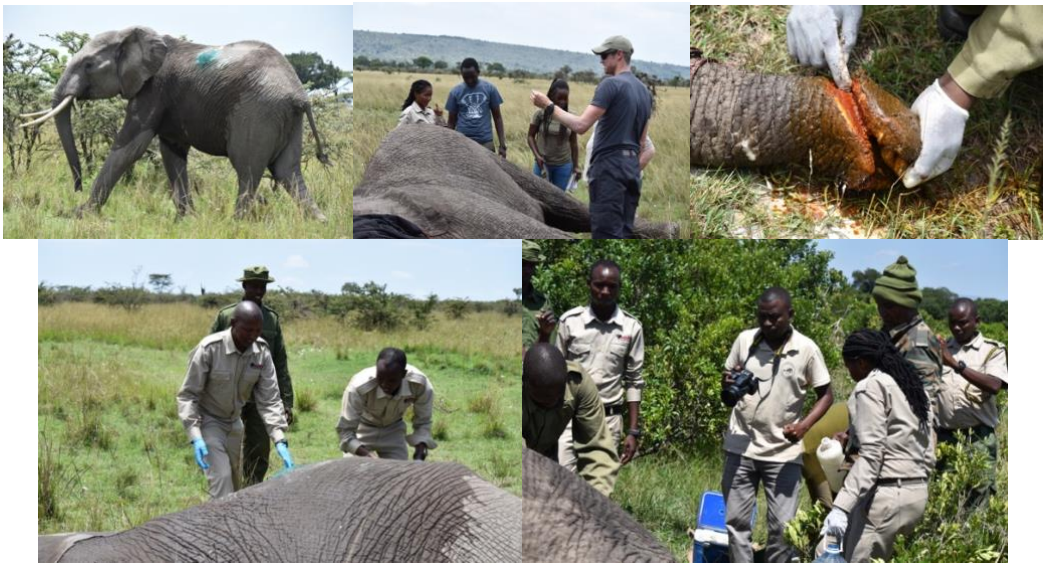
In September, MEP took on Cindy Obath as a consultant for the One Mara Research Hub as coordinator for the Hub and also in the development of a monitoring framework for the Mara Conservancies. We worked on updates to the TerraChart application to include a 'flight mode' that is designed to make the capture of spatial information easier when working in restricted environments like an airplane. The update was recently released to the Google Play Store. We also hosted Jared Stabach from the Smithsonian in late September and had opportunity to strengthen our collaboration on spatial and tracking data analyses.

Year	Month	Electric	Other	Wire	De-fenced	Total (kms)
2019	November	48.27	-	18.35		66.62
2019	December	81	-	59		140
2020	January	111.16	4.64	124.71		240.51
2020	February	101.62	1.17	33.99		136.78
2020	March	48.59	0.14	59.76		108.49
2020	April	19.78	0	10.38		30.16
2020	June	24.75	1.88	41.18		67.81
2020	June	15.19	1.48	107.88		124.55
2020	July	37	-	52.76		89.76
2020	August	60.12	7.52	40.08		107.72
2020	September	126.95	7.15	221.44	15.18	370.72
2020	October	109.05	10.57	218.99	1.78	340.39
2020	November	101.2	24.52	153.12	13.88	292.72
2020	December	62.99	9	190		261.99
2021	January	87.9	19.4	121.09	5.2	233.59
2021	February	79.2	22.9	175	-	277.1
2021	March	20.3	7.4	147.92	8.6	184.22
2021	April	80.2	31.05	96.4	2.3	209.95
2021	June	40.3	23.6	296.5		360.4
2021	June	37	44.8	214.2	2.7	298.7
2021	July	21	33.6	138	63.6	256.2
2021	August	14.03	48.7	159.8	0.44	222.9
2021	September	19.2	34.8	218.1	0.1	272.2
2021	October	21.7	17.9	109.5		149.1
2021	November	5.6	7.9	169.9		183.4
2021	December	-	0.6	86.4	-	87
2022	January	13.3	28.9	182.6		224.8
2022	February	1.8	24.5	54		80.3
2022	March		43.3	168.7		212
2022	April	7.3	21.5	133.6		162.3
2022	May	0.1	46.6	65.5		112
2022	June	23.4	12.6	8.3		44
2022	July	0.8	10			10.8
2022	August		3.5			3.5
2022	September		10.8			10.8
	Total (kms)	1,420.4	527.3	3,877.3	113.78	5,973.4



Movements (orange tracks) of MEP's three field assistants during September. All of our field assistants are working on mapping fences, roads and landcover ground-truthing points using motorbikes and our TerraChart app. They recorded km of 10.8 km of fences and 0 LCC points in September.

The Mara Elephant Project long-term monitoring (LTM) team alongside Director of Research and Conservation Dr. Jake Wall and Conservation Officer Wilson Sairowua responded to reports of three bull elephants in need of vet intervention in Mara North Conservancy (MNC). MNC rangers first reported the injuries and the MEP team joined Kenya Wildlife Service Vet Dr. Ephantus Ndambiri from the Sheldrick Wildlife Trust Mara Mobile Vet Unit. All three bulls were previously identified by the LTM team as individual 110, 141 and 28. Individuals 110 and 28 had arrow wounds most likely a result of crop raiding in nearby community farms across the river from the conservancy. Individual 141 had a snare tightening around his trunk and an arrow wound near his eye. Luckily, after the snare was cut, the injury was treated, and it appears that it won't harm his trunk's movement. It takes teamwork to protect the Mara's elephants, and successful large-scale operations like the one on September 16 show that organizations operating in the Mara work together to protect the wildlife and wild spaces.



The MEP LTM team monitored the more severely injured bull elephant, individual 141, one day after his treatment. He had a deep snare wound around his trunk and an arrow wound near his eye that were both successfully treated, but they wanted to ensure he still had full use of his trunk. They found him in Mara North Conservancy using his trunk to graze and noted that his treated arrow wound was healing nicely.

The MEP LTM team is tasked with monitoring and identifying the elephants that call the Mara home. There is one female that is particularly impressive, individual 77. She is the matriarch of a herd of 40 and is estimated to be in her 30s. She was recently photographed by the LTM team in the Maasai Mara National Reserve enjoying the long grass.

Collared elephant Fitz and his herd photographed by the "Golf" team.

MEP Experimental Farm

General Update

September started with average rainfall, the rains came as a blessing since the drought had driven most predators to the farm, leaving only a few crops un-predated. We started the month with planting most of the vegetables and due to the rains, they are looking healthy. We have also had a few predators visit especially the monkeys who are uprooting vegetables that were recently planted.

The Experimental Farm's kitchen garden is really starting to take off. We've planted heirloom seeds to test their ability to grow sustainably and we've deployed several approaches to limit the amount of space needed to grow a wide variety of crops. We have used wine bottles, grow bags and more to test out various designs and are currently growing artichokes, basil, parsley,

eggplant, oregano, leeks, carrots, bell peppers, cilantro, collard greens, amaranth, cabbage, tomatoes, thyme and cauliflower.

Experimental Farm SITREP: *September 2022*

Date Time	Plot Id	Type of Crop	Details
2022_09_01	1-3.1 3-11.1 9-4.1 11-9.1	Sukuma	Two plots were replanted for the second time, the first crop was harvested for about seven months, one plot was replanted for the third time and one plot for the fourth time, this particular plot has been frequently uprooted by vervet monkeys.
2022_09_01	3-5.1 5-8.1 11-14.1	Cabbage	The first two plots have been replanted for the fourth time while the last two have was replanted for the third time.
2022_09_01	1-10.1 5-13.1 8-9.1 9-3.1 11-6.1	Tomatoes	All tomato plots were replanted for the third time, a few plots were predated and the crops.
2022_09_01	1-6.1 5-14.1 6-1.1 7-4.1 8-10.1	Capsicum	All the capsicum plots were replanted for the second time, the first were harvested for about seven months and reached obsolete, they had zero predation throughout their growing season.
2022_09_02	2-6.2 5-15.2 7-7.2 9-14.2 10-10.2	Geranium	Geranium is a new plant introduced to the farm; it has been planted for the first time replacing wheat which was heavily predated on.
2022_09_04	2-1.1	Peppermint	Peppermint is a fast-growing crawling crop; it was cleared to allow it re-grow.
2022_09_04	2-4.1 3-9.1	Beans	Beans have been replanted for the 8th time, though we have identified the plant to replace it, we are still waiting for the yam splits,

	4-7.1 6-13.1 10-6.1		we do not want the space to be unused so meanwhile we had beans planted.
2022_09_04	2-12.1	Goose Berry	Hippos ate the leaves of the growing gooseberry.
2022_09_04	3-8.1 5-12.1	Peppermint	The two plots were predated on by hippos.
2022_09_18	S2-1-1.1	Maize/Hives	Vervet monkeys uprooted the germinating maize.
2022_09_18	S2-1-4.1	Maize/Ditch	Vervet Monkeys uprooted the germinating maize.
2022_09_28	1-3.1 2-2.1 3-5.1	Sukuma Spinach Cabbage	The three plots were uprooted by vervet monkeys and had to be replanted.
2022_09_29	2-4.1	Beans	The beans tips have been eaten by vervet monkeys.
2022_09_30	10-5.2	Eggplant	1 kg of eggplant fruits were harvested and taken to the research camp.

The Experimental Farm nursery where all our seeds are propagated into seedlings.

Canola and Geranium which were recently introduced to the farm.

Tomatoes, Cabbages, Spinach, Sukuma and Capsicum that were recently planted.

Climate Report

Table 2: 1 MEP's Experimental Farm Rainfall Recording September 2022

Date Time	Precipitation (ml) Rain gauge 1	Precipitation (ml) Rain gauge 2 (200m^2)
2022_09_05	42	24
2022_09_08	20	14
2022_09_30	3	2

Tracking Manager Report

Can you spot the elephant? You'd think being the largest land mammal on the planet that they'd be easy to spot; however, elephants are masters at blending in. In September, the MEP mobile ranger team was monitoring collared elephant Ivy and her herd in Enonkishu Conservancy and as you can see from the first photo, that's easier said than done. They found Ivy with her herd of eight grazing peacefully and in good health.

Collared elephant Chelsea has been consistently tracked since 2015, and she and her herd of 20 are navigating an increasingly complex landscape with infrastructure development expanding into her home range. On September 26, the MEP "Foxtrot" ranger team while on patrol monitored Chelsea and her herd in Ol Kinyei Conservancy, an area that is set aside for wildlife. However, once these elephants leave the safety of the conservancy, they run into communities living right next door where they can cause damage to fences, farms causing MEP rangers to rapidly respond to mitigate the conflict.

The MEP long-term monitoring (LTM) team got a video of collared elephant Fred enjoying some acacia in Mara North Conservancy. Fred is one of the largest bull elephants in the Mara, and has been tracked by MEP, KWS and WRTI since 2013 to increase his protection and promote co-existence. Fred was joined by another large bull.

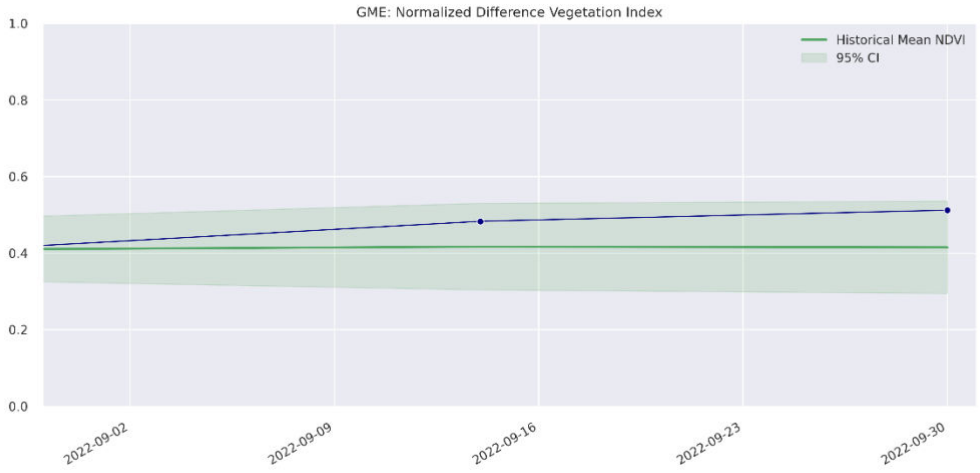
Collared elephant Polaris was recently monitored by the MEP's LTM team in Olare Motorogi Conservancy. Polaris is a large bull elephant that was originally collared in 2013 to monitor his

movements in an area seeing an expansion of the human footprint. Monitoring him in real time has allowed MEP to intervene when he's been trapped within community lands, presumably fenced in while trying to navigate between conservancies. Just recently, two bulls in his bachelor herd were treated for spear wounds as a result of conflict. Monitoring him in real time allows MEP, KWS and WRTI to react when conflict arises and better understand how fences and increased infrastructure development are affecting his movements.

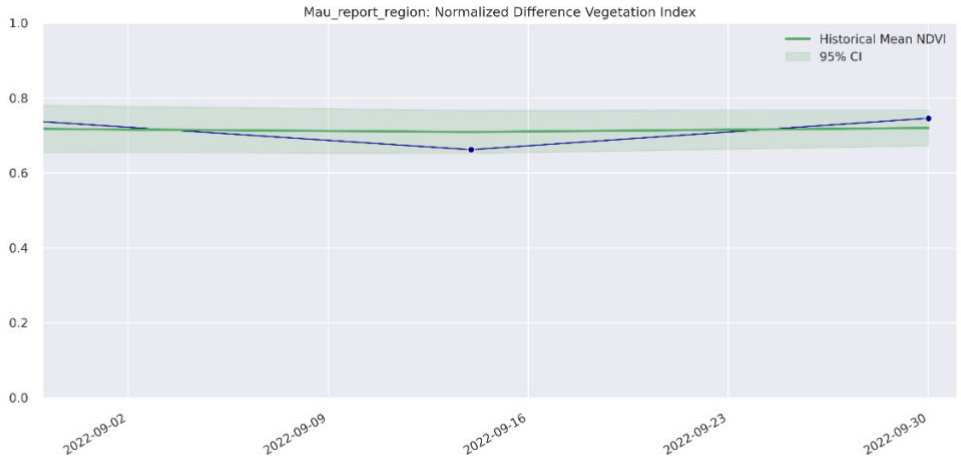
ENVIRONMENT: NDVI

Normalized Difference Vegetation Index (NDVI) is a measure of plant photosynthetic activity. Higher NDVI indicates the plant is greener. The blue trend line shows the current value while the green area shows the 95% distribution of values centered around the green trend line from values measured back to February 2000.

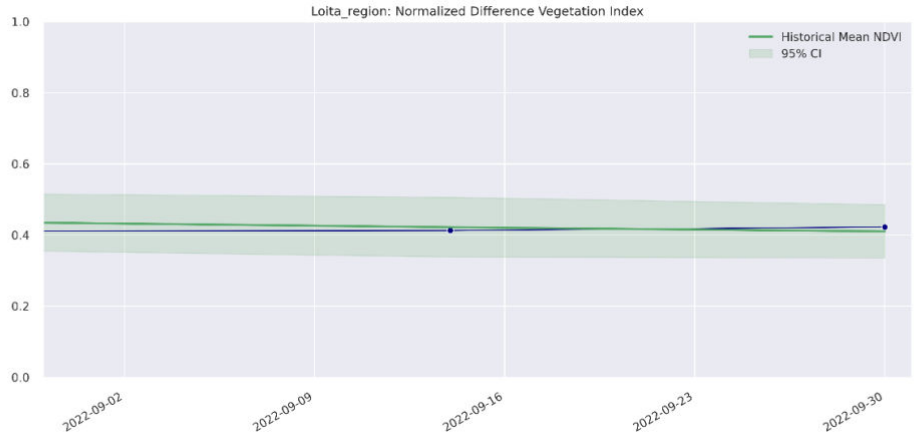
Greater Mara Ecosystem (GME)



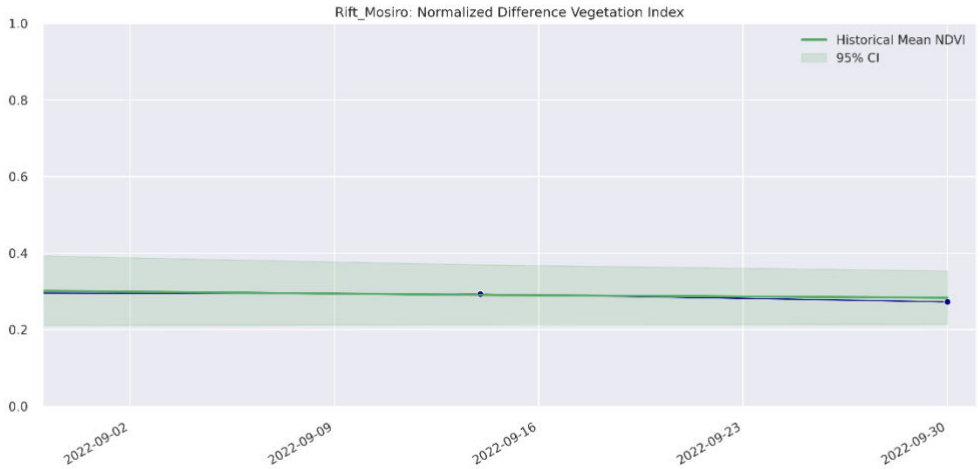
Mau Forest

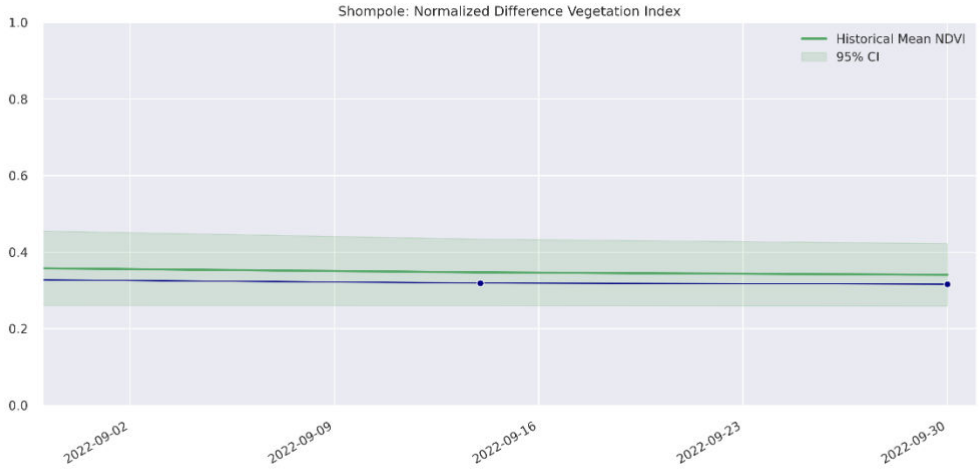


Loita

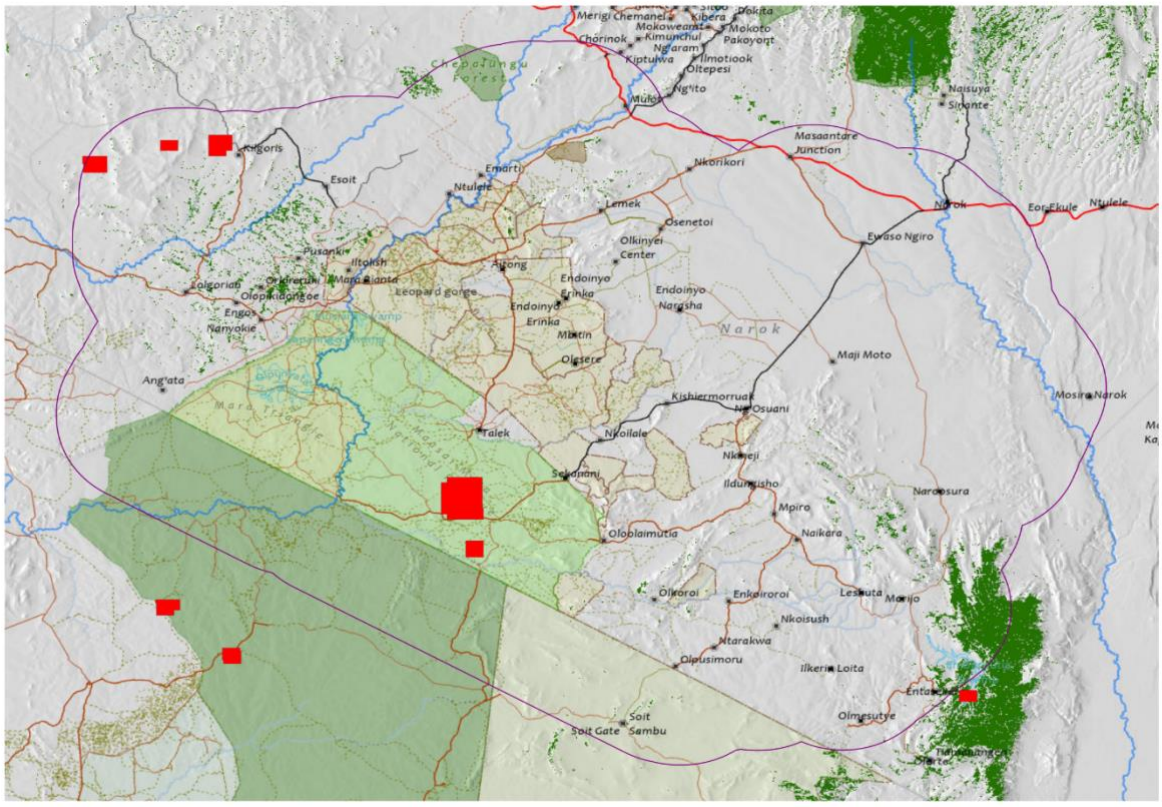


Rift Valley





ENVIRONMENT: Burn/Fire Areas



Red blocks indicate burn areas as measured by NASA's FIRMS dataset during the period September 1 - October 1, 2022. Accessed through Google Earth Engine.