East Africa Programme

UPDATE REPORT

January – March 2020

Background

The Giraffe Conservation Foundation (GCF) East African office, based in Nairobi, was established to increase collaborative giraffe conservation efforts with government institutions, private stakeholders, along with local and international NGOs with respect to giraffe conservation and management. In 2019, the office expanded and now has a regional base in Uganda to help increase our support in the country. The East African region is critical for the long-term survival of wild populations of giraffe as it is home to three distinct species: Masai giraffe (*Giraffa tippelskirchi*), reticulated giraffe (*G. reticulata*) and Nubian giraffe (*G. camelopardalis camelopardalis*) – all of them threatened with extinction in the wild. This report is the first one of 2020 and highlights the steps and programmes that GCF has initiated and supports towards conserving giraffe in the region between January and March 2020.

Specific programmes

Masai giraffe in Kenya

With support from our conservation partners Drs Petra and Felix Campbell the first-ever photographic mark-recapture surveys in the Masai Mara Ecosystem continued during this reporting period. The team completed counts in the Mara Triangle Conservancy (MTC) and a section of the Masai Mara National Reserve (MMNR; see Figure 1). These surveys are part of a larger effort to monitor the Masai giraffe population in the Masai Mara Ecosystem and so far, seven of the 15 conservation areas have been covered. As was the case in other conservation areas across the ecosystem, the survey sites were divided into different transects based on the accessible road network. Due to the heavy rains experienced in late 2019 and early 2020, some transect sections weresurveyed on foot in the presence of a ranger. Additionally, the survey areas were divided into three blocks, whereby MTC represented one block and MMNR was divided into two blocks, as per the delineations used by the Kenya Wildlife Service (KWS) during their aerial surveys (Figure 1). On average, 25 giraffe were observed per day in MMNR compared to 42 giraffe per day in MTC. From these sightings, 157 unique individuals were recorded in MMNR and 160 giraffe in MTC. Interestingly, there were more female giraffe in MTC, which accounted for 63% (n=105) of the population, whereas in MMNR female giraffe accounted for 55% (n=87) of the population. In both populations, adult giraffe were more common as previously expected. No signs of predation attempts, snare injuries or giraffe skin disease (GSD) were recorded. The absence of GSD sightings was particularly interesting given that the Masai Mara Ecosystem is contiguous with the Serengeti Ecosystem in Tanzania, which has a prevalence rate of 23% of the giraffe population. While there were no observations of the GSD, there were sightings of different skin conditions that manifest as perforations, though the effects remain unknown. Additionally, two female giraffe (one each in MMNR and MTC) were observed with deformed ossicones. The photo-analysis also revealed that among the giraffe sighted in MTC, 19 were previously recorded on the Siria Plateau, two each shared with Olare Motorogi Conservancy (OMC) and Block 2 of MMNR, and one from the Mara North Conservancy. On the other hand, MMNR had 12 giraffe that were previously recorded in OMC and one each from Naboisho Conservancy and Siria Plateau. In total, the surveys have identified 2,674 unique giraffe in the Masai Mara Ecosystem to date. It is anticipated that the number will increase further as additional surveys are still to be conducted in the remaining conservancies as part of our broader collaboration with conservation institutions to implement the Recovery and Action Plan for Giraffe in Kenya 2018-2022.

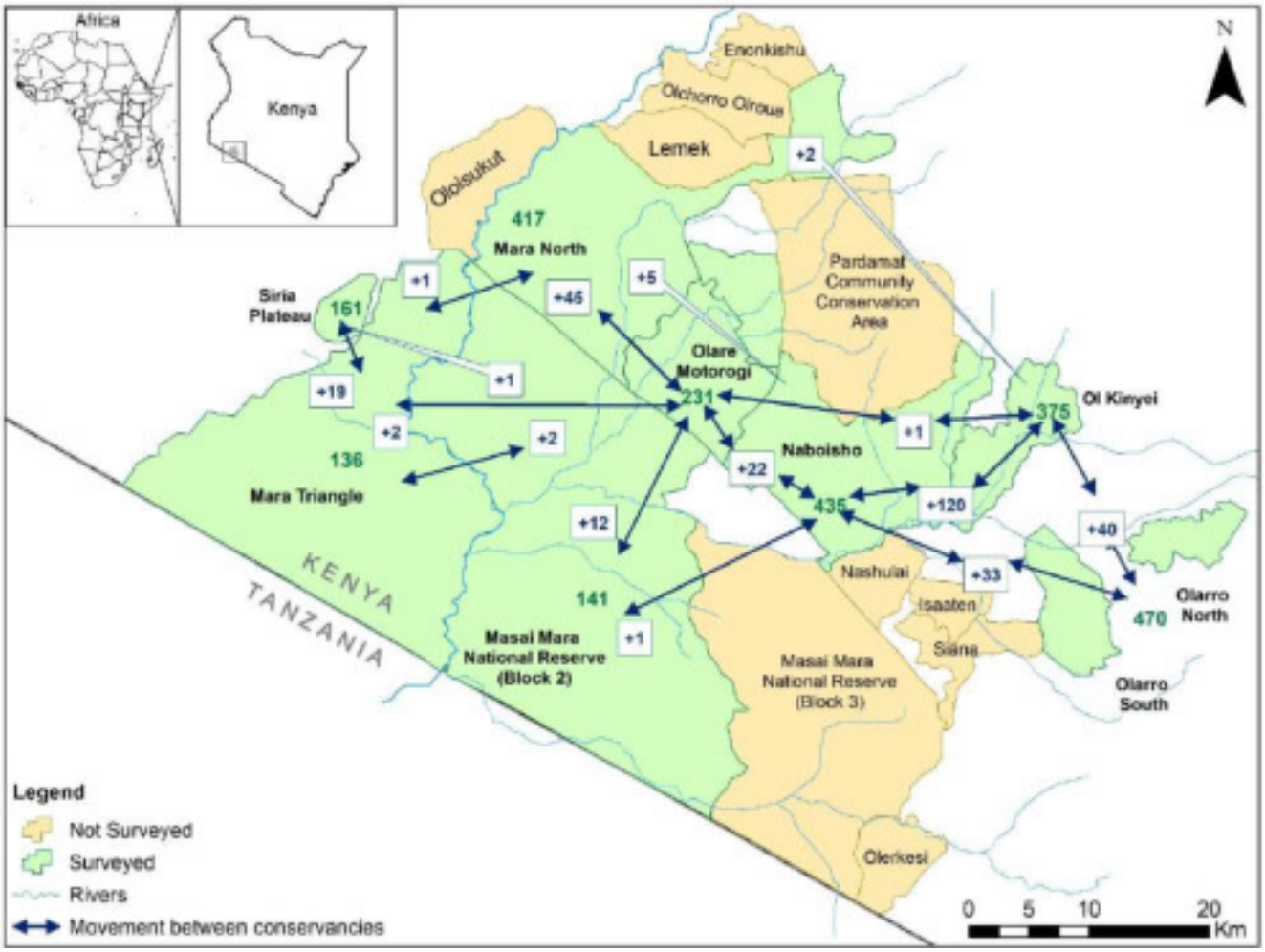

Fig. 1: Movement of giraffe between the surveyed areas within the Masai Mara Ecosystem. The green numbers indicate the number of unique individuals within each surveyed area whereas the blue numbers show the number of shared individuals that were identified in the respective conservation area.

Masai giraffe in Tanzania

In collaboration with the Tanzania Wildlife Research Institute (TAWIRI) and Tanzania National Parks Authority (TANAPA), GCF deployed the first-ever GPS satellite tracking units for giraffe in Tanzania. A total of eleven units were deployed in January and February 2020 (Figure 2): four in Tarangire National Park and seven in Serengeti National Park. This multifaceted programme is part of a broader collaboration to implement the recently launched Tanzania Giraffe Conservation Action Plan 2020-2024, whereby the ossi-units will be used to monitor the movement of both healthy giraffe and individuals with symptoms of GSD that manifest externally. Of the four giraffe that were tagged in Tarangire National Park, two had GSD and two were healthy individuals, whereas among the seven giraffe tagged in Serengeti National Park, only two had GSD. This matches the prevalence rates of the disease in Serengeti National Park which is much lower (23%) when compared to Tarangire National Park (63%).

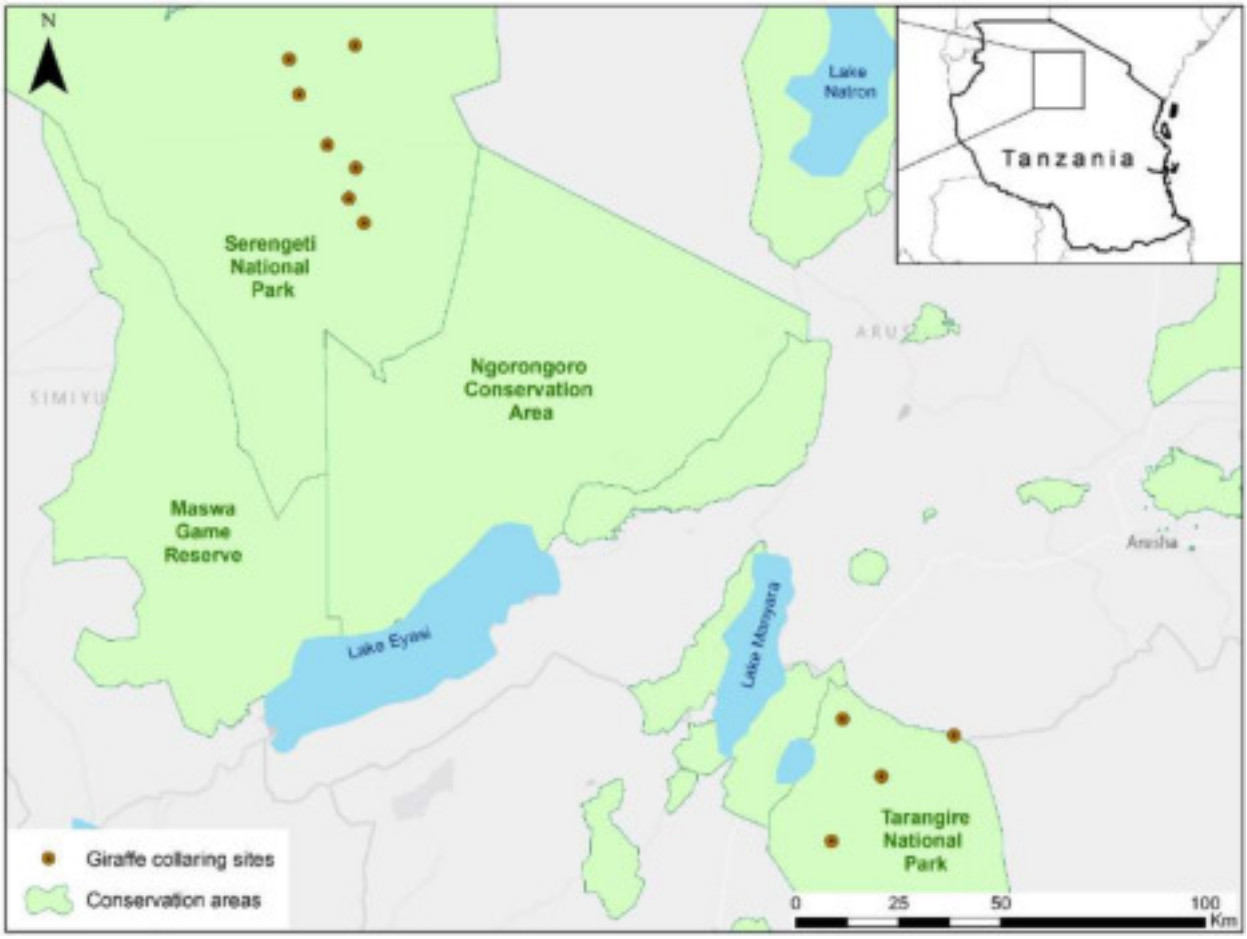

Fig. 2: Sites where the first eleven ossi-units were deployed on giraffe in Serengeti National Park and Tarangire National Park, Tanzania.

All giraffe were anaesthetised by remote delivery darts from a vehicle by a TAWIRI veterinarian. We ensured that there was a team to monitor all important vital signs including respiration rate and temperature at various times and under different conditions. As part of the tagging, blood and tissue samples were collected (Figure 3) and stored in RNAlater for further analysis. All collected samples are now stored with TAWIRI as the country's repository centre. While the prolonged rainy season at the start of the year slightly affected the field programme, we intend to collect additional samples (and deploy additional GPS satellite tagging units) in the future. Additionally, the focus for the study remains on key priority areas where GSD has previously been recorded, such as Ruaha National Park where 86% of the giraffe population show signs of the disease. The long-term aim of this conservation programme to determine 1) the etiological agent of GSD to better understand the pathophysiology of the disease, and 2) the relationship between GSD in Tanzania and Uganda, where we have collected samples through collaborative efforts with the Uganda Wildlife Authority (UWA) and other conservation partners. Samples from the Uganda study are currently analysed and results written up together with Colorado State University, Cheyenne Mountain Zoo and Cleveland Metroparks Zoo. All these initiatives will help provide crucial management recommendations for conservation authorities throughout East Africa, especially if there is any potential of the disease to crossover to livestock.

Fig. 3: East Africa Coordinator, Arthur Muneza, collects a tissue biopsy sample from a female Masai giraffe in Tarangire National Park while a GPS satellite ossi-unit is fitted at the same time.

Nubian giraffe in Kenya

In February 2020, GCF's Kenya Programme Coordinator, Matthew Wachira, accompanied staff from the African Fund for Endangered Wildlife (AFEW) and KWS to conduct a two-day post-translocation monitoring exercise of giraffe in Mwea National Reserve. In the last two years, AFEW and KWS have translocated six giraffe (three males and three females) to boost the Nubian giraffe population in the reserve. At the same time, the post-translocation exercise presented an opportunity to raise awareness on the Recovery and Action Plan for Giraffe in Kenya 2018-2022 to management authorities of the reserve. As such, Matthew and the AFEW staff trained the participating KWS rangers and research scientists on the use of pattern recognition software as a valuable management tool for giraffe. In this regard, the recently translocated giraffe could be afforded particular attention during routine monitoring to assess their welfare, social grouping as well as feeding behaviour. During the post-translocation monitoring, two giraffe (one male and one female) of the group that was introduced in 2019 were observed in a healthy condition, as well as two female giraffe that were introduced in 2018. In addition, Ibrahim, a male giraffe that was introduced in 2013 was also identified during the post-translocation monitoring. This recent translocation of giraffe had increased the total number of giraffe in Mwea National Reserve to an estimated 57 individuals. However, the team also observed nine new-born giraffe aged between two to six months that had not been recorded previously. While the Mwea National Reserve population is growing, the unknown threats of tick infestation as well as infrequent snaring remain in the reserve. In fact, a day prior to the teams mission, KWS vets were called in to de-snare a giraffe in the reserve. Nonetheless, the rangers are now well equipped to continue monitoring the giraffe and better protect the population.

Fig. 4: Herd of Nubian giraffe in Mwea National Reserve, Kenya. Due to the recent translocations and increase in births the population is showing a positive trend.

Nubian giraffe in Uganda

GCF has supported the Uganda Wildlife Authority (UWA) in the conservation of their *Critically Endangered* Nubian giraffe throughout the country since 2013. This collaborative conservation initiative is governed by a Memorandum of Understanding between both parties. Over the past six years, this partnership has yielded great success for giraffe conservation throughout the country including collaboration on annual conservation translocations expanding the giraffe range by over 1.1 million acres in Uganda, support of vital capacity building, and assistance with monitoring on all giraffe populations in country. Importantly, all conservation innitiatives are in line with the draft National Giraffe Conservation Strategy and Action Plan for Uganda.

At the beginning of 2019, GCF met with representatives from UWA, the Uganda Wildlife and Education Centre (UWEC), Makerere University and the Uganda Ministry of Tourism to advance additional giraffe conservation support in the country. One outcome from these meetings was the decision to expand our field programme in Murchison Falls National Park (MFNP) to incorporate support for targeted veterinary response to giraffe (and other wildlife) affected by illegal wire snare traps as well as assisting in other anti-poaching operations. Poaching, specifically illegal wire snare traps, were identified by UWA and GCF as a major threat to Nubian giraffe (amongst other wildlife), especially within MFNP. While giraffe are not the primary target for wire snare traps, the indiscriminate nature of the wire snares ensures all species are at risk of injury or death. Giraffe caught up in wire snares are often strong enough to break the wire free from its anchor point and can end up dragging the wires around for days, weeks or even longer, resulting in severe wounds, infection, distal limb swelling, and potentially permanent limb deformities. In extreme cases the wire snares can result in limb amputation and death.


Fig. 5 & 6: A Nubian giraffe carcass that was found in the field. On closer inspection this male had a snare around its leg that was still attached to a large log that became jammed between two trees resulting in the death of this individual.

This more active role in addressing the threat of wire snare traps comes in the form of wildlife veterinarian Dr Sara Ferguson who joined the GCF team in early 2019 as Uganda Conservation Coordinator and with generous support of her position from Naples Zoo at Caribbean Gardens. Sara is based in the field full-time working closely with UWA on the ground not only supporting multiple patrols for snared giraffe (and other wildlife) but also providing technical and physical support for quick and appropriate veterinary interventions. Through this work we are aiming to reduce the impact of wire snares on giraffe (and other species) by facilitating early identification and removal of wire snares ideally before any damage has been caused or by providing appropriate treatment and supportive care. This first quarter has seen the UWA-GCF vet response team able to identify and treat 24 animals found with wire snares, of which 19 were Nubian giraffe. In addition, GCF is evaluating other avenues to aid ongoing anti-poaching efforts within and around the park to decrease the impact of poaching in the park.


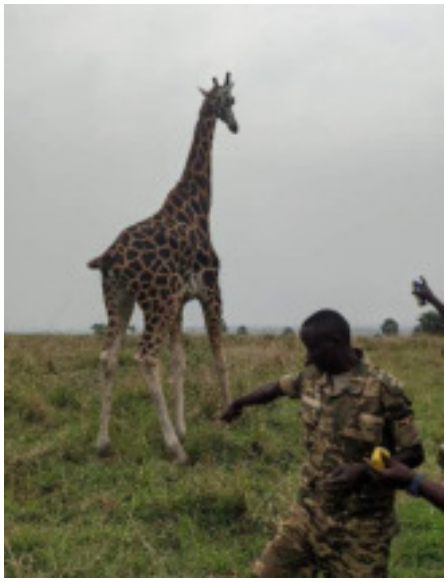

Fig. 7 & 8: The UWA/GCF team treated a male giraffe with a wire snare on the right forelimb. He walked much better immediately after the wire was removed and treatment was administered.

GCF is committed to building and enhancing capacity of African people throughout the continent by

providing the best training, guidance, and encouraging involvement for present and future generations in giraffe conservation. In Uganda we continue to support the ongoing training of UWA rangers and veterinarians in game capture and wildlife immobilisation as well as students of veterinary medicine and conservation biology programmes from Makerere University. To further our in-country support, this year GCF committed to supporting the young wildlife veterinarian Dr Patrick Okello, who has previously volunteered for UWA in MFNP. With GCF's direct financial and technical support, Dr Okello can continue gaining experience and further his career in wildlife conservation medicine under the guidance and mentoring of Dr Ferguson..

In February 2020, GCF's Dr Ferguson travelled across the border to the Democratic Republic of the Congo (DRC) to assist our partner African Parks Network (APN) in fitting a number of GPS satellite units ("ossi-units") on *Critically Endangered* Kordofan giraffe in Garamba National Park. During the week-long operatoin in very challenging terrain the team comprising of GCF, APN's research and monitoring division and members of the Institut Congolais pour la Conservation de la Nature (ICCN) successfully fitted units on three adult female Kordofan giraffe. These GPS units will provide valuable data on giraffe movements within Garamba National Park and most importantly inform management decisions regarding this small population. Data collected from these individuals will also be incorporated into GCF's Africa-wide research programme Twiga Tracker to better understand how and where giraffe move to inform giraffe conservation and management throughout their range.

In March 2020, the GCF team joined UWA along with representatives from UWEC, Makerere University and Gorilla Doctors as part of the annual National Giraffe Working Group to review the status of activities developed as part of the draft Uganda National Giraffe Conservation Strategy and Action Plan. Over the course of the day projects were reviewed and the draft Strategy and Action Plan was updated. This initiative is important to bring together giraffe conservation partners in the country and we as GCF are proud to support it by providing technical and financial support.

Fig. 9&10: The team composed of GCF staff, keepers, researchers and other giraffe enthusiasts surveyed giraffe in Pian Upe Wildlife Reserve and Murchison Falls National Park, Uganda.

In mid-March 2020, the GCF team joined by colleagues from Chester Zoo, San Diego Zoo Global, Seneca Park Zoo and other passionate giraffe enthusiasts undertook the annual post-translocation monitoring of the giraffe in Pian Upe Wildlife Reserve, as well as the annual population survey of the giraffe population at Kidepo Valley National Park. The first stop was Pian Upe Wildlife Reserve, located to the north-east near the border

with Kenya, to check in on the Nubian giraffe re-introduced in October-November 2019 (for more information see the report on *Operation Twiga IV* on the GCF website). The team met with the UWA research and monitoring team who have continued to keep a close watch on the giraffe since their re-introduction and have updated us on their wellbeing. The team was able to join the UWA rangers in the field and observe three of the translocated individuals, all of whom appeared to be settling in well. The park is large, and roads limited so with limited time we were not able to find more giraffe. Shortly after our departure the UWA team observed the remaining giraffe all in one herd and sent photographs showing them all in good body condition and adapting well.

Next on the agenda was Kidepo Valley National Park, however, also the reason for the team to cut their stay at Pian Upe Wildlife Reserve short, GCF had to make an emergency diversion back to Entebbe to ensure that our conservation partners could reach their respective homes before Uganda went into lockdown due to the COVID-19 outbreak. Luckily, everyone was able to reach home without too much trouble and some of the group might return next year again for another survey trip. GCF's Drs Michael Brown and Sara Ferguson were able to continue the work and headed to Kidepo Valley National Park for the annual population survey, which GCF first started in 2015. The results are currently under final review and we see positive trends with most of last year's calves surviving and additional new ones born this year. The population in Kidepo Valley National Park is estimated at around 61 individuals. Stay tuned for a future update.

Fig. 11: Team shot in Pian Upe Wildlife Reserve, Uganda

COVID-19 also disrupted the bi-annual population survey for the Nubian giraffe in MFNP. Drs Felix Patton and Petra Campbell, who already performed last year's bi-annual surveys for GCF in MFNP, commenced with this survey following their work in the Masai Mara Ecosystem (see above section on Masai giraffe in Kenya). Unfortunately, they could only conduct two days of the two-week survey before they had to return to Entebbe and then Europe before the borders closed due to Uganda's COVID-19 lockdown.

After finalising their survey in Kidepo Valley National Park, Drs Brown and Ferguson were able to dedicate time to continue the MFNP survey and almost completed surveying the population before Dr Brown's departure on one of the last re-patriation flights to the USA. The data collected is currently under analysis, but the world pandemic has definitely caused some disruption in this quarter's field season.

In Lake Mburo National Park, GCF continues to support the local Giraffe Education and Research (GEAR) programme in partnership with UWA and Kacheera Camp. The GEAR team undertakes bi-weekly monitoring of the resident Nubian giraffe population, which was re-introduced in 2015. GEAR also promotes giraffe education and awareness through quarterly hour-long radio talk shows, which have been met with great success. While COVID-19 disrupted regular monitoring and patrols, UWA reported the sighting of a new calf, bringing the total population to 26 individuals – hopefully we can share new photos with you soon. Before the lockdown, the GEAR team continued to take school children from surrounding communities and schools

for visits into the park to increase conservation awareness and instil the feeling of ownership of Uganda's giraffe in the next generations. Unfortunately, these activities had to cease due to COVID-19 as all schools in Uganda remain closed. As soon as Uganda lockdown ceases, we will be able to get back into the field and keep you updated about the local giraffe population.

Reticulated giraffe in Kenya

In September 2019, 28 reticulated giraffe were GPS satellite tagged in collaboration with KWS, San Diego Zoo Global, Northern Rangeland Trust, Loisaba Conservancy, Mpala and a host of other community conservancies. Since then, we are gaining interesting insights into the giraffe's movements and habitat utilisation. To date, the tagged giraffe have travelled over 16,000 km combined (Figure 12).

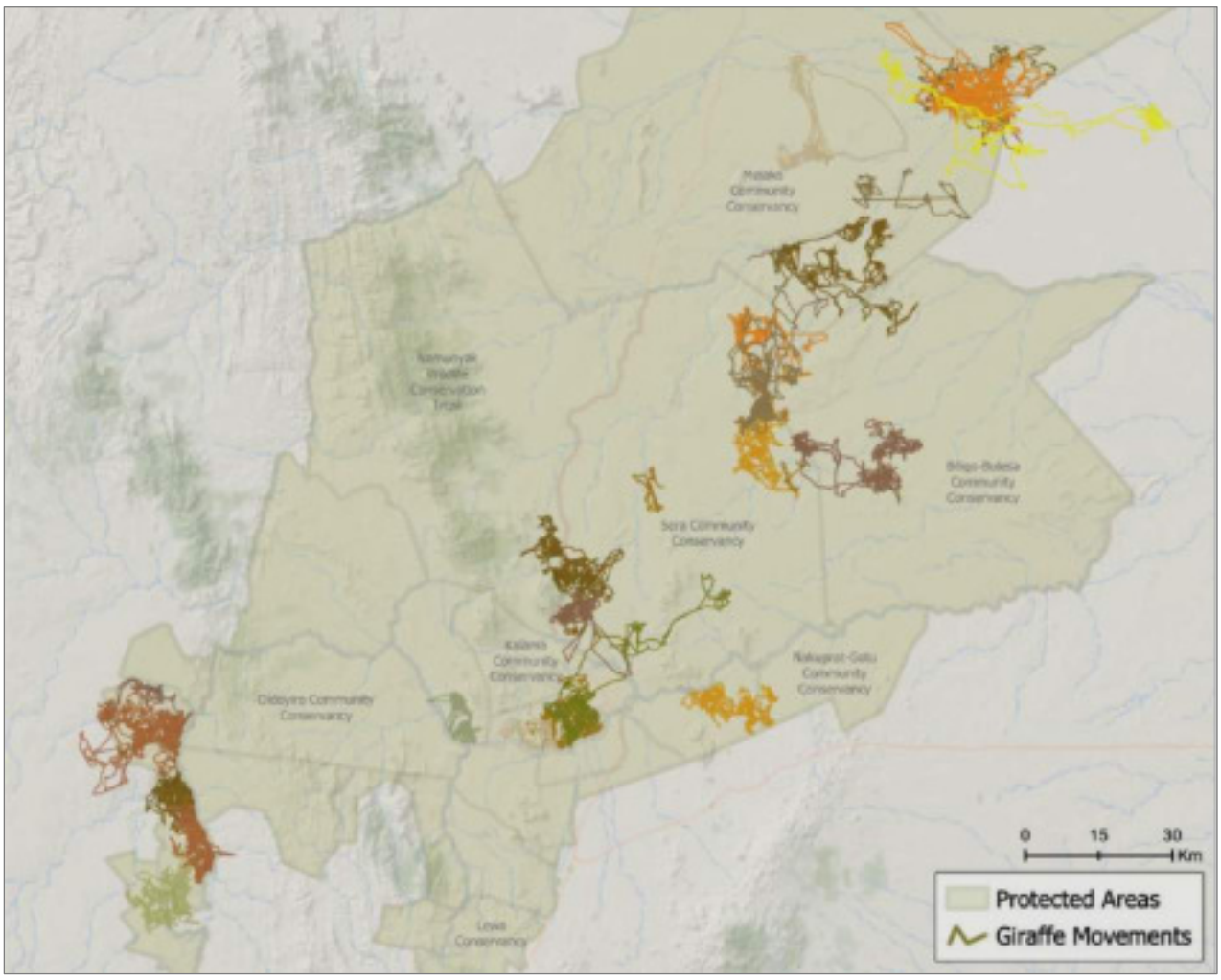

Fig. 12: Map detailing the movements of the 28 giraffe that were tagged in 2019 from time of deployment in September 2019 until January 2020, northern Kenya.

These data are providing vital insights into how far giraffe travel in these vast and open rangelands as well as overlap and coexist with people and livestock. To ensure consistency with the data, only the units that are transmitting reliable data were factored into these analyses. Thus, while these data provide interesting insights, they are still very inconclusive and further, more in-depth analyses are needed. Excitingly and a first-ever, our partners at San Diego Zoo Global have generated preliminary estimates of how much space reticulated giraffe need in the wild. Their estimates show that the home range for female reticulated giraffe is ~250 km^2, while male giraffe utilise ~1,250 km_2 – five times the size. However, it is important to note that

these are preliminary results and as additional data are collected, the home ranges will be refined further. Nonetheless, the data is regularly shared with local conservation managers for anti-poaching support and management, as well as with collaborative researchers to assess where giraffe occur in proximity to the A2 highway in northern Kenya as well as areas that may be potential critical crossing points. This is particularly important as progress is made on the expansion of roads via the Lamu Port and Lamu-Southern Sudan-Ethiopia (LAPSSET) transport corridor project. Through the movement data (Figure 12), we are able to identify areas where giraffe may be crossing the highway more frequently. Since these units were deployed, we have recorded 16 unique crossing incidences of the A2 highway by three individual giraffe. Future research will investigate reasons why giraffe cross the highway in these areas. Additionally, the San Diego *Twiga Walinzi* teams in northern Kenya are currently working to develop vegetation layers that will help with occupancy analysis as well as better understand habitat preference for reticulated giraffe. In the long-term, these data will provide crucial insights into home range and habitat utilisation of reticulated giraffe, which directly contribute to the implementation of Strategic Objectives 4.1 and 4.2 of the Recovery and Action Plan for Giraffe in Kenya 2018–2022.

Fig. 13: San Diego Zoo Global *Twiga Walinzi* representative leads a community meeting in Namunyak Wildlife Conservancy, northern Kenya.

The *Twiga Walinzi* team continues to conduct road surveys on the A2 highway to monitor road kills. During the surveys, the team identified iconic species such as aardvark, striped hyena, black-backed jackal and African painted dog among others. However, no reticulated giraffe mortality or poaching incidence was recorded. As part of expanding the work of *Twiga Walinzi* and the team's network, GCF's East Africa Coordinator Arthur Muneza, and the San Diego Zoo Global Senior Research Coordinator (Population Sustainability) Jenna Stacy-Dawes, visited Mugie Wildlife Conservancy to train the local rangers and researchers on the use of pattern recognition software for giraffe monitoring. Importantly, Mugie Wildlife Conservancy is bisected by the C77

road that extends to Maralal. The road is undergoing expansion though Mugie Wildlife Conservancy remains unfenced and as such is an important habitat for wildlife in the Laikipia landscape. The *Twiga Walinzi* team will conduct subsequent surveys in conjunction with the research team at Mugie Wildlife Conservancy to build the research and collaboration network in northern Kenya. In the long-term, we will explore the use of GPS satellite units to supplement the photo-ID monitoring and help with targeted conservation management.

Awareness raising and capacity enhancement

To enhance and raise awareness on giraffe conservation status in the region, we continue to build partnerships across the globe and to give invited lectures. Our East Africa Coordinator presented findings of the Masai Mara surveys to the Narok County representatives and KWS management team. The workshop represented an opportunity to disseminate scientific data to inform management of giraffe within the Masai Mara Ecosystem. For the implementation of the National Recovery and Action Plan for Giraffe in Kenya 2018–2022 to be effective, management authorities will need to be involved in research activities and dissemination of up to date data. GCF will continue to work with conservation partners to raise awareness and enhance capacity on giraffe conservation.

Fig. 14: GCF East Africa Coordinator, Arthur Muneza, presents findings of the Masai Mara Ecosystem surveys at Talek, Narok County, Kenya.

Statement on coronavirus disease (COVID-19)

As the world continues to withstand the economic shutdowns and various impacts of the COVID-19 pandemic, we at GCF are closely monitoring updates and directives from governments and health experts. We are keeping safe and continue to provide online technical support to our conservation partners. Given the restrictions on international and domestic travel in the various regions where we provide field support, we have had to postpone some of our field activities and will resume planning and implementation of our conservation initiatives based on advice from our government partners. We thank all our partners and supporters for their continued support to save giraffe and urge everyone to stay safe during these unprecedented times.

Partners & Supporters