



Update Report

Twiga Tracker - Chad

First-ever GPS satellite tagging of Kordofan giraffe in Zakouma National Park

January 2019



@giraffe_conservation



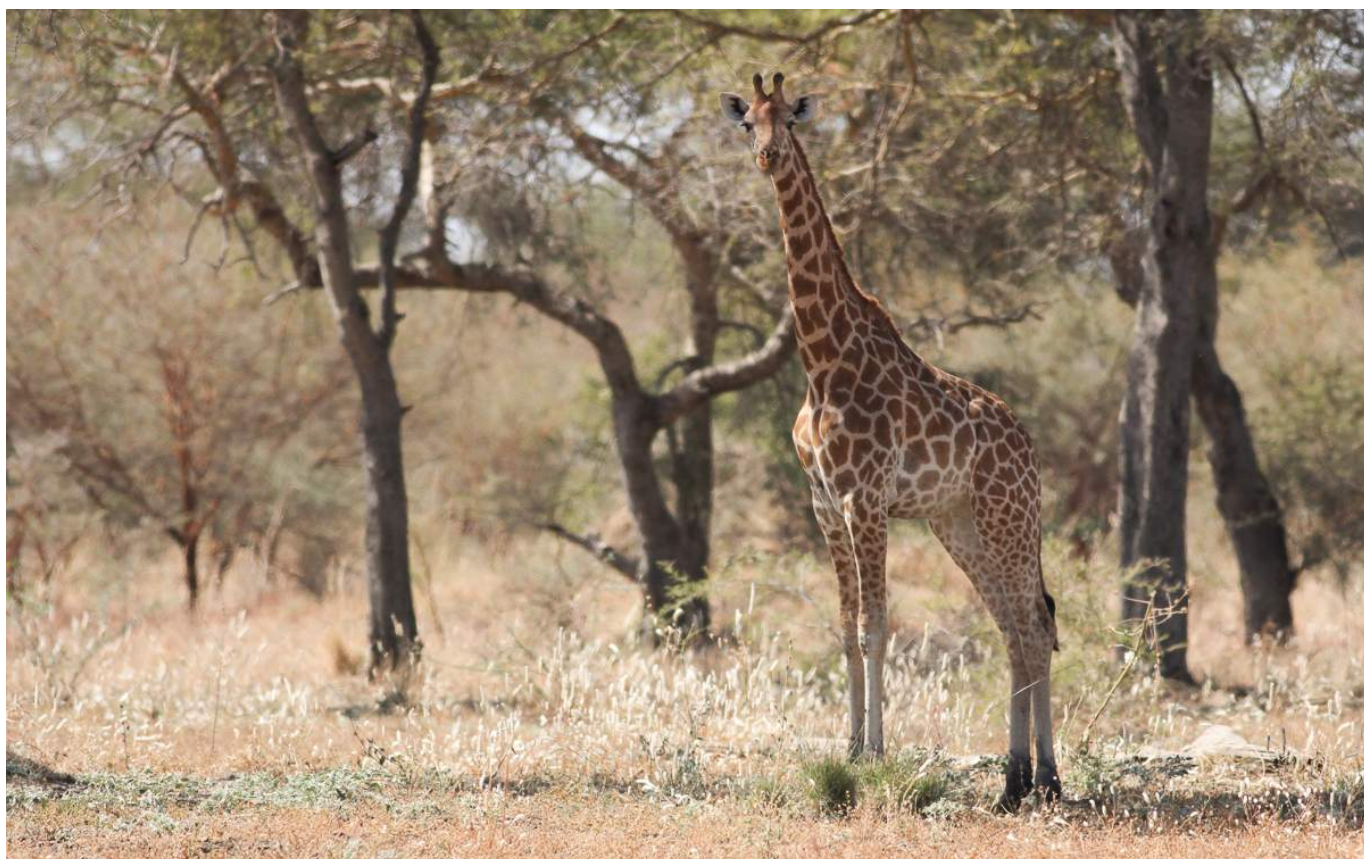
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Twiga Tracker is an Africa-wide initiative of the Giraffe Conservation Foundation (GCF) working in close collaboration with the Smithsonian Conservation Biology Institute, San Diego Zoo Global and Wildlife Conservation Alliance to gather data on the spatial movements of all giraffe species throughout Africa. *Twiga Tracker* has the ambitious aim to GPS satellite tag more than 250 individual giraffe throughout their range. The latest population to be tagged as part of this Africa-wide conservation research effort are Kordofan giraffe (*Giraffa camelopardalis antiquorum*, a subspecies of the northern giraffe) in Zakouma National Park (NP) in Chad.

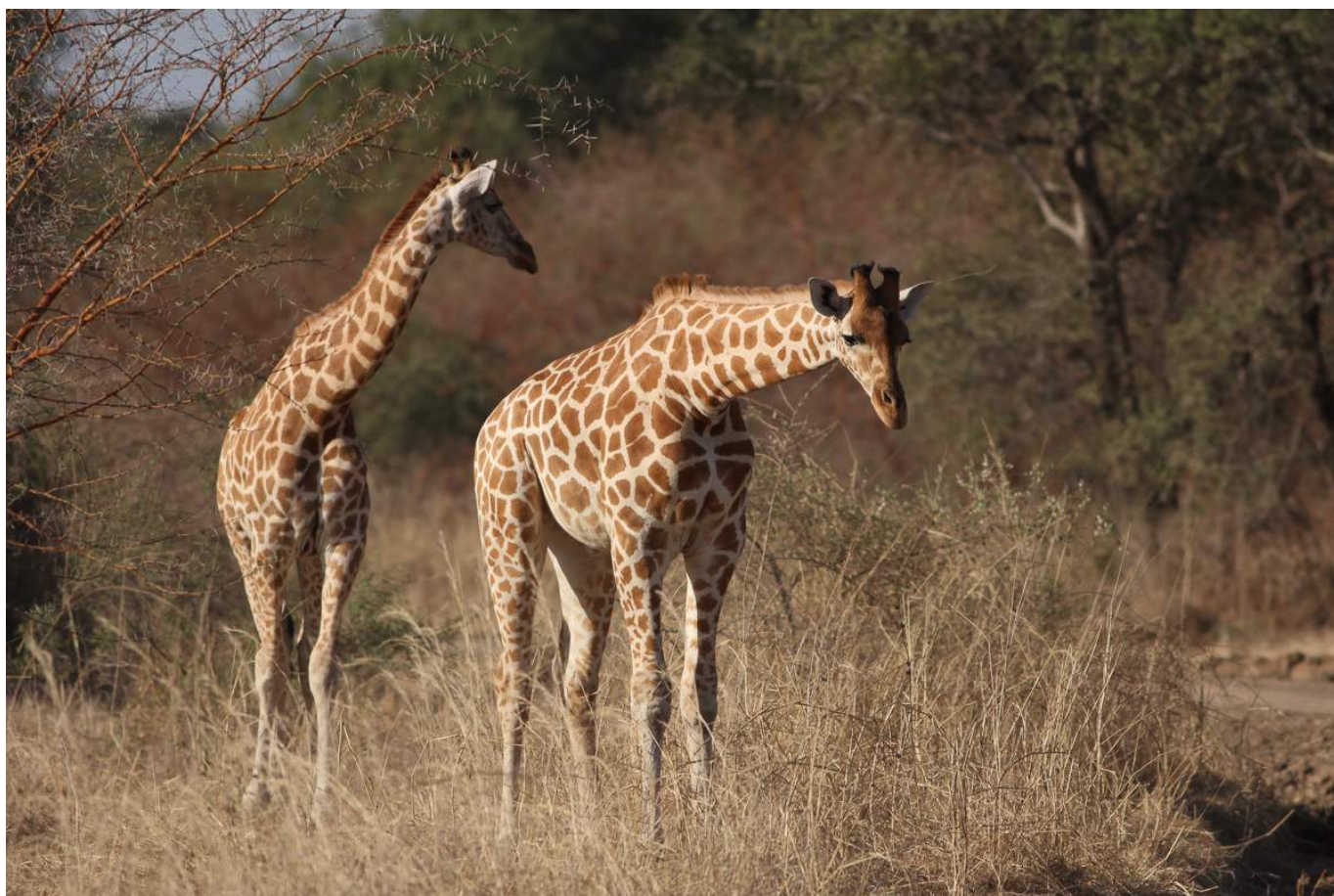


In January 2019, GCF in partnership with the Kordofan Giraffe Project and African Parks Network (AP) undertook the first-ever giraffe GPS satellite tagging operation in Chad. The aim was to tag up to 15 giraffe in the large open landscape of Zakouma NP, which is thought to be home to more than 60% the world's Kordofan giraffe in the wild. Recent estimates suggest that the Zakouma Kordofan giraffe population makes up an even larger part of the world population considering ongoing civil unrest in other parts of Central Africa which have impacted wildlife numbers.

Zakouma NP is a conservation success story and is home to one of the few increasing giraffe populations in Africa. In 1963 Zakouma NP was initially created to preserve the last 50 Kordofan giraffe in Chad. The park is best known for its extreme wet season, with more than half the its 3,201km² under water for 6-months of the year between May and October. This is surely one of the most extreme wet season environments giraffe inhabit anywhere in Africa and we expect some potentially interesting movements. Since 2010 when AP took over park management, the giraffe population has increased from 537 individuals to an estimated 1,200 individuals (and counting) today.



The Kordofan Giraffe Project, established by Dominique Rhoades with support from GCF and AP, is the first dedicated conservation research effort of the now listed as *Critically Endangered* Kordofan giraffe within Chad. Established in November 2018 and currently set to run until 2022, the research gathered will provide vital baseline data for conserving Kordofan giraffe, including an accurate population count; population structure (numbers of females, males, juveniles and fatalities); the roll of giraffe in the Zakouma ecosystem including monitoring giraffe predation and scavengers at giraffe carcass sites; identifying the most important habitats and vegetation species for the giraffe; as well as thanks to *Twiga Tracker*, establishing movement patterns within the park especially in relation to the wet and dry season, water availability, and importantly to find out if the giraffe reside outside the park boundaries at times.



In January 2019, eight solar powered GPS satellite units (so-called ossi-units) were fitted to the ossicones of eight female giraffe. Weighing only 185g, the units cause no interference with the giraffe's natural behaviour and enable us to monitor their movements year-round to see if and how the extreme wet and dry seasons affect the giraffe. GCF pioneered GPS satellite technology for giraffe when they fitted GPS satellite collars on giraffe in northwest Namibia in 2002. The units used in Zakouma NP are the latest design and have already been trialled and tested throughout the continent by GCF. Ossi-units are durable, unobtrusive and importantly, solar powered, which reduces battery size and will hopefully make these small units last a long time.

The tagging operation was conducted by an experienced team consisting of GCF Director Dr Julian Fennessy, expert wildlife veterinarian (and recent winner of the Tusk Trust Prince William Award for Conservation in Africa) Dr Pete Morkel, as well as Zakouma NP AP manager Leon Lamprecht and his



team on the ground. The first few days involved a level of preparation and planning on how, where and who was responsible for what, to familiarise everyone with their roles, and despite some initial problems with a plane, flight scheduling and more, the on-ground implementation of *Twiga Tracker* Chad 2019 could begin.

Zakouma NP has thicker than average habitat for giraffe and its terrain is difficult for driving as it only slowly dries up after the wet season. Accessibility of large areas of the park was still limited in January and the terrain is dotted with potholes created by elephant and buffalo. Limited mobility within the park made it difficult at times to locate giraffe, who after the long wet season were not as habituated to vehicles and people as hoped for. Despite these challenges the team spent some long hours in the field searching for and following these elusive giraffe.

Slowly and systematically over the course of a week the team searched for giraffe in different areas of the park. Some giraffe were located in herds, some by themselves, and each time the team crept close enough for the veterinarian to dart them from the vehicle with the tranquilizer. After the drug was administered, it took between 2-5 minutes before the drug took affect and the animals showed a reaction before the team could move in to bring down each giraffe safely. Safety of each animal was of primary concern and having an experienced team on hand helped tremendously.

All activities during an operation like this are meticulously noted; time of dart entering giraffe, time of giraffe on the ground, time of giraffe being released again, and everything in-between. From darting to up and running, the whole process took on average 15-20 minutes for each giraffe.



During the time the giraffe was secured on the ground to fit the ossi-unit, the health of each animal was assessed and numerous bio-data was collected. As part of the larger *Twiga Tracker* initiative across Africa a number of measurements are collected to determine if there are any major differences between the



(sub)species. All giraffe are assessed for signs of skin disease or any other potential health issues, and importantly a small skin biopsy is taken to assess the Kordofan giraffe's DNA and build a better picture of where they fit into the wider African giraffe population taxonomy.

Interestingly, the giraffe is fully awake throughout the whole process, as the veterinarian administers the reversal of the tranquilising drug as soon as the animal hits the ground and the giraffe is restrained by sitting on its neck, holding its head, and placing a blindfold over the eyes to reduce stress. Reversing the effects of the tranquilizer immediately helps to ensure the giraffe is safe throughout the whole procedure and ready to fend for itself from the moment it stands up again. A giraffe's stature is such that by sitting on the neck, the animal, wide awake, is unable to get up – very similar to that of a horse or camel. After all is done, the blindfold is removed and as soon as the last person gets off the neck the giraffe is able to get up and walk or run away – some seem far happier to be released while others spend a little time checking out their surroundings before nonchalantly walking off.

The ossi-units have recorded the giraffe's movements since they were fitted. During the first two weeks after fitting none of the giraffe moved far from where they were darted. However, this did not come as a surprise and we expect to see interesting movement patterns from May onwards when the rains return to Zakouma NP.

The Kordofan giraffe population of Zakouma NP is critical for gaining a better understanding of this subspecies. After years of high poaching pressure during times of civil war, their numbers are now increasing rapidly under the safe management of AP in cooperation with the Chadian Government.

Remote monitoring of this giraffe population will be supplemented with regular on-the-ground surveys during the dry season as well as a camera-trap network to confirm sightings. As we learn more about Kordofan giraffe in Zakouma NP, we can assess necessary conservation measures for this subspecies, which might include fitting additional ossi-units, potential translocation to other safe zones within the country or further afield. Over the coming months and years, the GPS satellite units will help us to better understand the habitat needs of the giraffe and importantly guide informed management decisions, and possibly a National Giraffe Conservation Strategy and Action Plan for the future.





A big thanks to all involved, in particular the teams of the Giraffe Conservation Foundation and African Parks, The WoodTiger Fund and Dr Pete Morkel.

