



# Murchison Falls National Park Giraffe Survey

UPDATE REPORT  
March 2019



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## A New Beginning – But A Continuation

It is a new year and the end of the dry season. Much of the long grass in Murchison Falls National Park (NP) has been burned and new green shoots are starting to come up after the first short rain showers. The Delta area in the west of the park is particularly affected by the burns and the land looks almost black. However, this is part of a continuous process and the timing of our survey is fixed on the giraffe population assessment calendar. The Giraffe Conservation Foundation (GCF) and Dartmouth College together with their partners have regularly collected giraffe demographic data of the largest known population of Nubian giraffe since July 2014. This year some new team members joined this exercise but the aim was to continue surveys following the same methods as in previous years.

## Survey Methodology

Murchison Falls NP with an area of 3,840 km<sup>2</sup> is divided by the Victoria Nile into a southern and a northern section. Until two conservation translocations of Nubian giraffe in 2016 and 2017, giraffe were only found on the ~1,600 km<sup>2</sup> northern section of the park which is by far the more accessible area and also the area where the survey is carried out. For the purpose of the survey this area has been divided into different sectors and predefined loops are driven in a single vehicle.



We start the survey loops every morning at 7am together with Jozef Adriko, a highly experienced ranger of the Uganda Wildlife Authority (UWA), who has worked with the survey team for years, and who crosses over to the north side on the first ferry of the day. This timing enables us to watch the sun rise over the Nile, a sight worth seeing.

We followed previously established survey protocols and drove along the planned routes throughout the park's northern road network (Figure 1). In accordance with our designed robust survey protocols, we drove each loop twice, taking five days for each round of surveys.



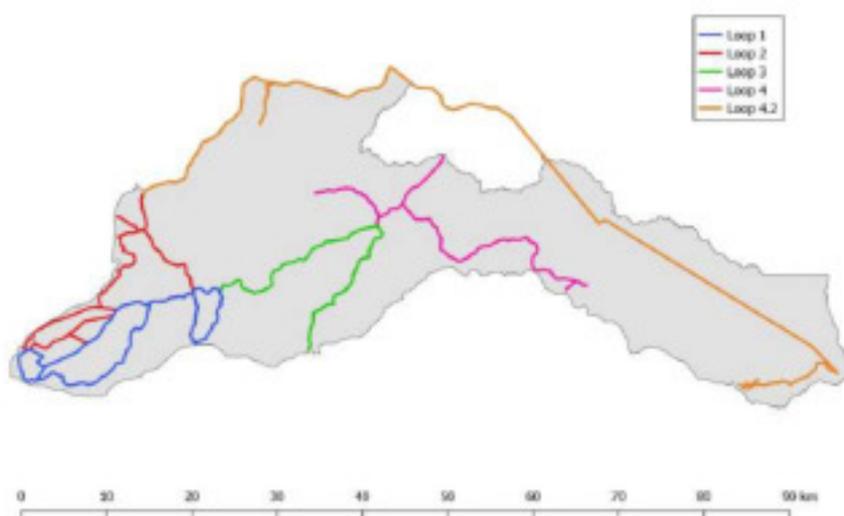


Figure 1: Five loops in Murchison Falls NP northern section as covered by the survey.

While driving these loops we specifically look for giraffe in an attempt to spot as many as possible and photograph them from the right-hand side as per the convention developed by the team. GPS readings were taken for each giraffe sighted and individual's age and sex as well as group composition was recorded. Age was estimated based on body development and classified as adult, juvenile or calf (Strauss 2013). Additionally, we collected information on the presence of

visible signs of skin disease and snare injuries on each giraffe.

On average we finished each loop after approximately nine hours of driving and manoeuvring the vehicle into the correct position for taking the photograph perpendicular to the right-hand side of the body. Much of the time was spent off-road, sometimes driving up to 3km across variable terrain or forest to get to the sighting. In the burnt areas it was easy to watch out for water courses, warthog holes, termite mounds, deep soil depressions (crevasses even), large rocks and assorted tree debris but navigating off-track was all but impossible in areas with long grass. However, carefully driven, the vehicle bore the brunt of the crashing and bashing that it had to withstand, and many evenings were spent in a mechanic's workshop in Pakwach. Nevertheless, all loops were completed!

Back at camp, we used the specialised giraffe computer software, Wild-ID (Bolger 2012) to compare the photographed spot patterns with a database of previously observed giraffe. For Wild-ID to extract the spot pattern and find the 20 best matches from previously identified individual giraffe, the photographs have to be cropped to the body. The final match is selected manually by the researcher.



## Results

In total we located 131 different groups of giraffe with group compositions ranging from 1 to 61 individuals. Out of the total of 1,128 separate sightings (Figure 2), 778 different individuals were identified. Over the course of the survey, we found 83 calves/sub adults and 3 adults that were new to our database. The total number of sightings and individuals was much lower than in the December 2018



survey when large herds were observed in the Delta area which now showed lower giraffe numbers. This followed the pattern observed in previous years. In comparison, we observed 1,195 unique individuals at the same time last year, however, the rains had arrived earlier and many of the giraffe had already returned to the Delta area. In March 2017, 696 unique individuals were observed.

Of the giraffe that were observed at least twice, one female was spotted 26.6km from the original sighting eight days later and one male 24.2km from the first sighting six days later.

One of the benefits of the survey is also that we monitor the health status of giraffe. We specifically looked for giraffe skin disease (GSD) which is still not very well understood. Out of the 778 different individuals we found 330 animals (42%) to have visible skin lesions. Consistent with previous surveys, the problem of GSD was proportionally greater in the Delta area in the West of the park compared to the central Wankwar and Eastern Chobe areas (57%, 40% and 3% respectively).

During this survey we observed snare injuries on 17 individuals (15 males and 2 females, 2.2% of total observed giraffe), mostly in the western Delta area. Two giraffe still had snares attached while the others were old injuries that left the foot/leg swollen or dislocated. The injured animals seemed to stay together in the Delta area, close to water, and travelled on average for 1.5km between sightings.

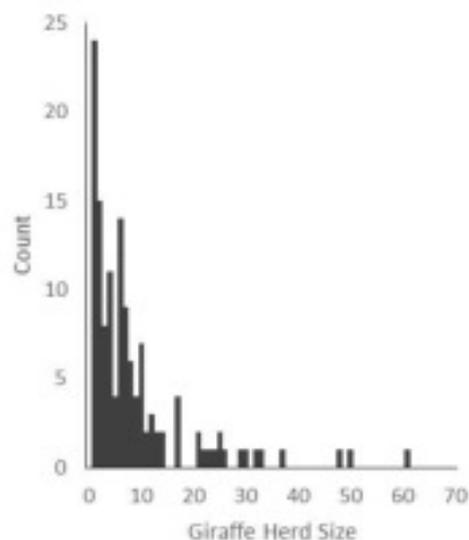


Figure 2: Giraffe herd size, March 2019 survey.

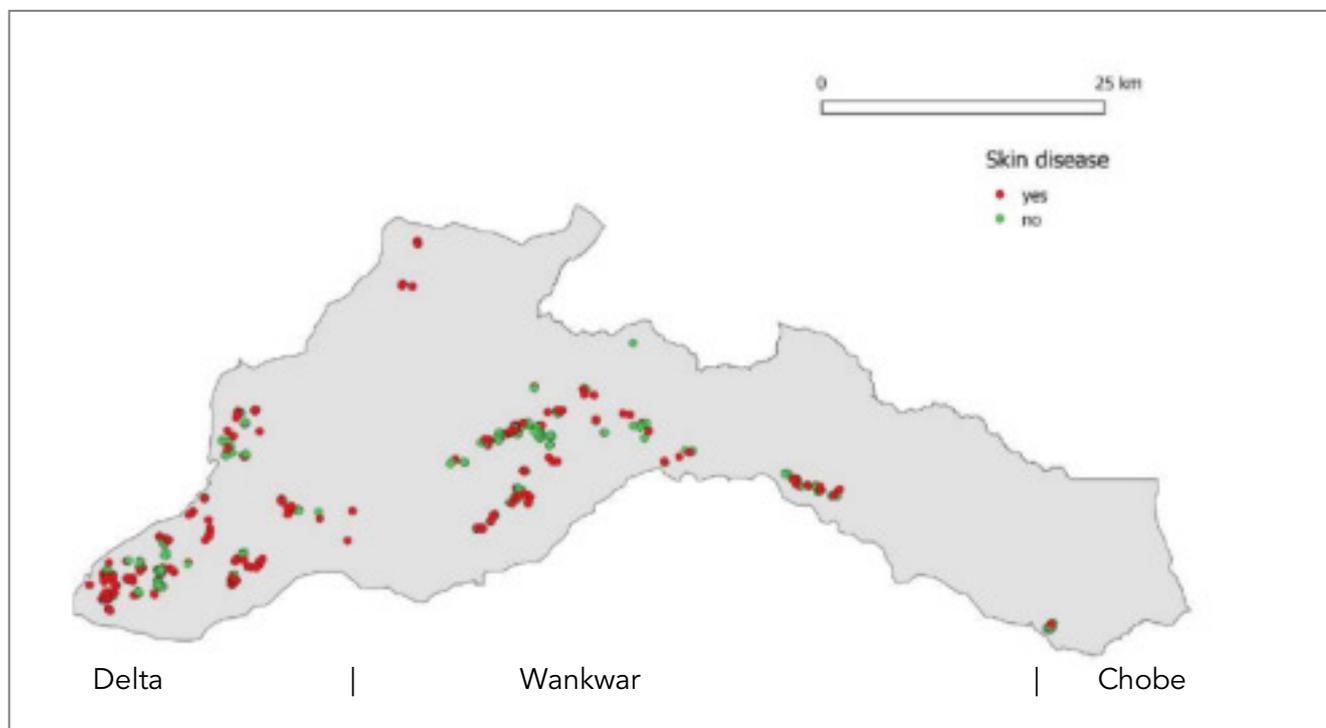


Figure 3: Spatial distribution of all observed giraffe during March 2019 survey. Visible signs of GSD are denoted by red dots.



Figure 4: Spatial distribution of giraffe with snares of impacts of snare wounds.

During one of our off-road sojourns we found an old wheel-trap which we picked up and handed over to UWA for safe-keeping.

The survey gives an indication of the spatial distribution of giraffe in the dry season. The survey was completed just in time before the rains started.

The same survey will be repeated again in December 2019, at the end of the wet season, in order to

get a better understanding of giraffe distribution at that time of the year.

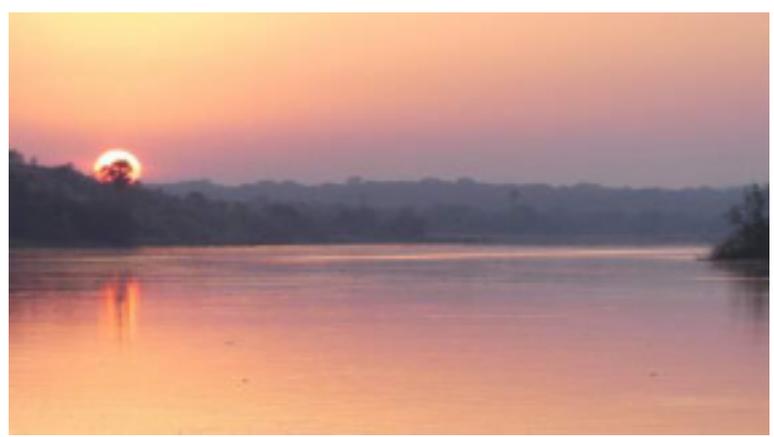
We are looking forward to a continued collaboration with UWA, GCF and Dartmouth College. Thank you to everybody who was involved in this round of surveys.

Dr Petra Campbell & Dr Felix Patton

**References**

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Strauss M. 2013. *A guide to estimating the age of Masai giraffes (*Giraffa camelopardalis tippelskirchi*).* University of Minnesota, USA.



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