

Pian Upe Wildlife Reserve

POST-TRANSLOCATION MONITORING REPORT

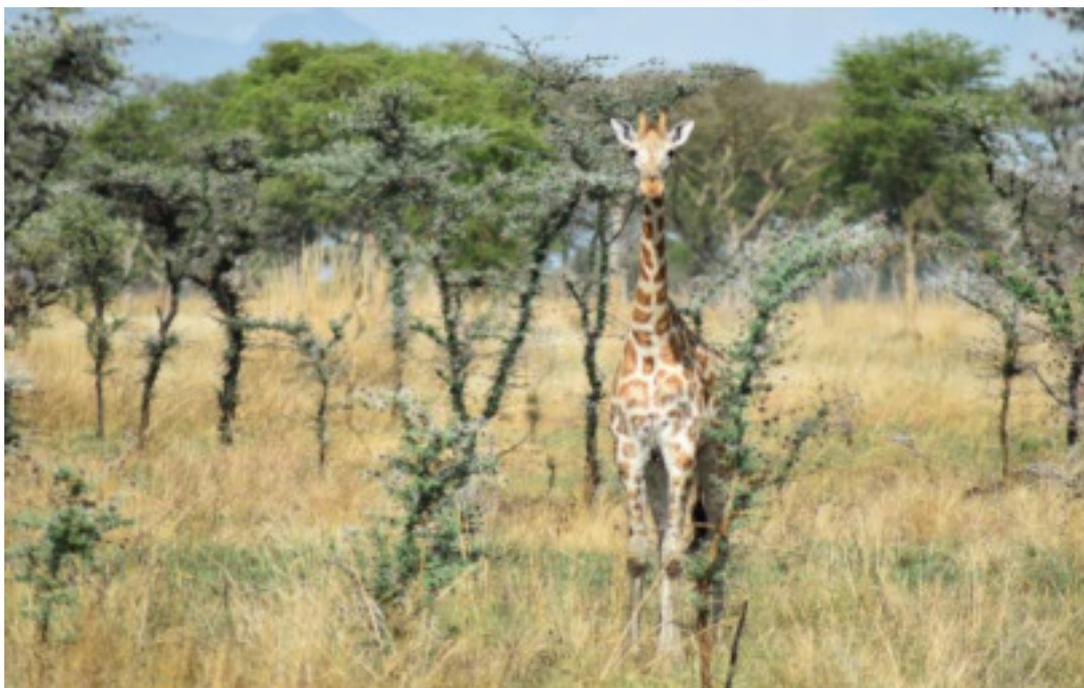
March 2020





Introduction

In November 2019, the Uganda Wildlife Authority (UWA), with the support of the Giraffe Conservation Foundation (GCF) and partners, re-established a population of the critically endangered Nubian giraffe in Pian Upe Wildlife Reserve (WR). Pian Upe WR, located in eastern Uganda, is the second largest protected area and the largest reserve in Uganda (Fig. 1). Historically, Pian Upe WR supported one of the largest giraffe populations in Uganda but civil unrest and armed poaching resulted in their local extinction by the mid-1990s. Since 2013 GCF has supported UWA with giraffe conservation initiatives throughout the country, including four successful giraffe translocations (to Lake Mburo National Park (NP), the southern bank of Murchison Falls NP and Kidepo Valley NP). Consistent with previous translocations, this translocation was the result of rigorous scientific study of the source population in Murchison Falls NP as well as the other key elements such as habitat suitability, disease, threats and social aspects in and around Pian Upe WR. The translocation process, from planning to implementation, was informed by the IUCN Guidelines for Reintroductions and Other Conservation Translocations as well as GCF's Practical Guide to Wild Giraffe Translocations. In accordance with these guidelines, as well as the goals outlined by the draft National Giraffe Conservation Strategy and Action Plan for Uganda (2020-2030), effective post-translocation monitoring is a critical component to inform the cycle of adaptive conservation management in these new systems. Additionally, since subsequent giraffe translocations to Pian Upe WR are planned to augment the founder population, understanding the distribution, habitat use, survival and general ecology of this reintroduced giraffe population is essential to informing conservation management efforts and future translocations.



Prior to the translocation, GCF and the UWA Research and Monitoring team in Pian Upe WR jointly designed the post-translocation monitoring protocols. These protocols were tailored to include the use of GPS telemetry to track post translocation movements and individual-based surveys to monitor the population status. Incorporating the local knowledge of the UWA monitoring team as well as the technical and subject matter expertise of GCF and emerging technologies of GPS tracking units deployed on some of the translocated giraffe, we designed monitoring techniques to specifically address the unique challenges of the vast trackless landscapes of Pian Upe WR. To evaluate the status of the translocated giraffe population and



to refine monitoring and mitigation protocols, a team led by GCF/UWA and joined by members from Chester Zoo, San Diego Zoo Global, Seneca Park Zoo, Twiga Walinzi Kenya, and other conservation volunteers, travelled to eastern Uganda in March 2020 to collaborate with UWA colleagues.

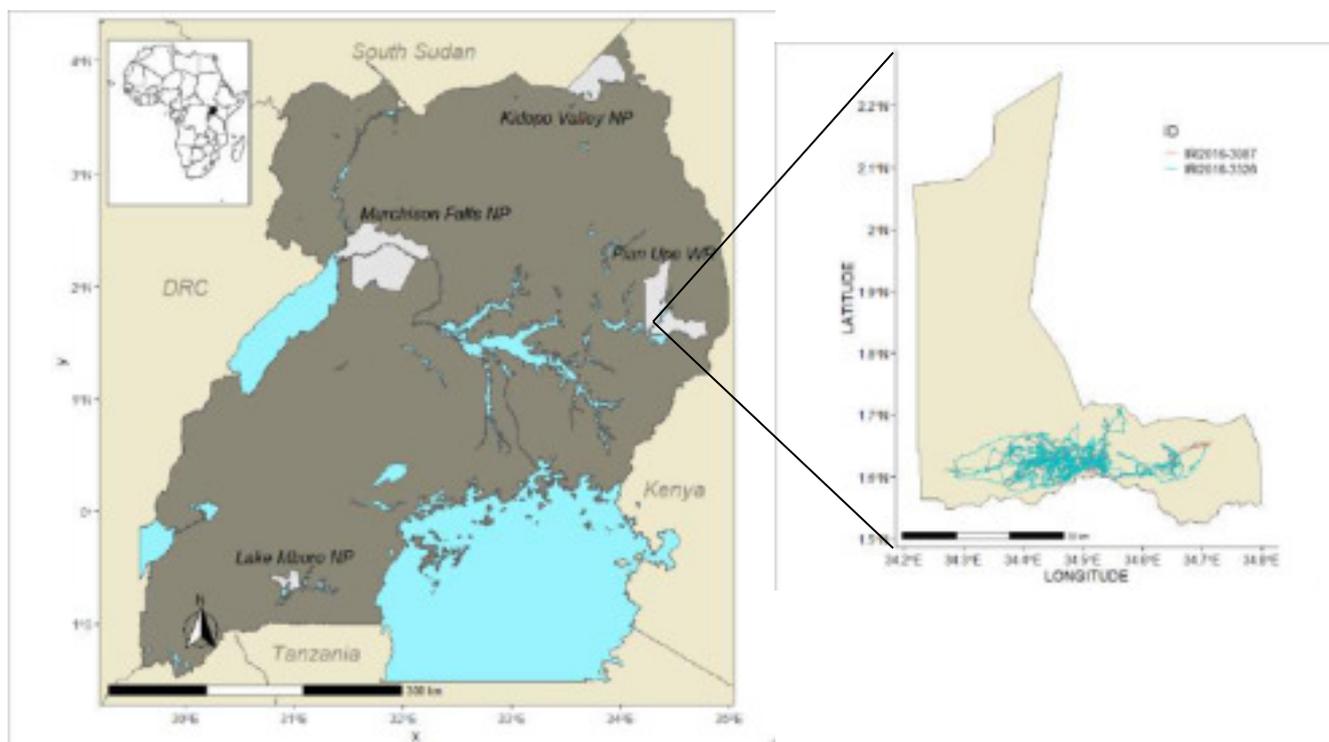


Fig. 1: Map of Nubian giraffe populations (light grey) in Uganda. The inset map features the movements of GPS satellite tagged giraffe in Pian Upe WR.

Project Objectives

As part of our ongoing efforts to re-establish the Nubian giraffe population in Pian Upe WR, we have the following targeted project objectives:

- Analyse telemetry data to understand space use and movement decisions of translocated giraffe;
- Liaise with UWA to evaluate and refine post-translocation monitoring protocols;
- Equip UWA Research and Monitoring team with effective tools for the implementation of refined post-translocation monitoring protocols; and
- Train on-the-ground partners in the implementation of post-translocation monitoring protocols.

Preliminary Analyses of Post-Translocation GPS Telemetry Data

As part of the initial post-translocation monitoring program, two subadult female giraffe were fitted with GPS satellite units at capture before translocation to allow the UWA Research and Monitoring team to regularly monitor their movements and herd status. Although released in separate cohorts, the two GPS satellite tagged giraffe quickly found each other and have continued to be in close association since their translocation in November 2019.

These GPS units were programmed to collect hourly coordinate fixes and report these location data via the Iridium satellite network every six hours, allowing near real-time visualisation of giraffe movements. In addition to providing the monitoring team with the giraffe's locations for visual confirmation of herd structure and composition, these GPS units allow for the remote analyses of post-translocation movement behaviours. This understanding of translocated giraffe spatial ecology in Pian Upe WR informs the protection of key resources



and targeted monitoring efforts.

To date, the tracked giraffe travelled cumulative distances of 1,533.9 km and 1,524.5 km respectively. Using kernel density home range estimators with a reference bandwidth, the 95% isopleth of area covered was estimated to be 304.5 km² and 304.7 km². It is important to note, however, that these giraffe were in close association and these space-use metrics are therefore not independent.

Outside of brief bouts of wide-ranging exploratory movements, the giraffe predominantly inhabited the area west of the reserve headquarters at Okolim along the southern border of the reserve (Fig. 2). This area is dominated largely by open *Acacia (Vachellia)* spp. and *Balanites aegyptica* savannah.

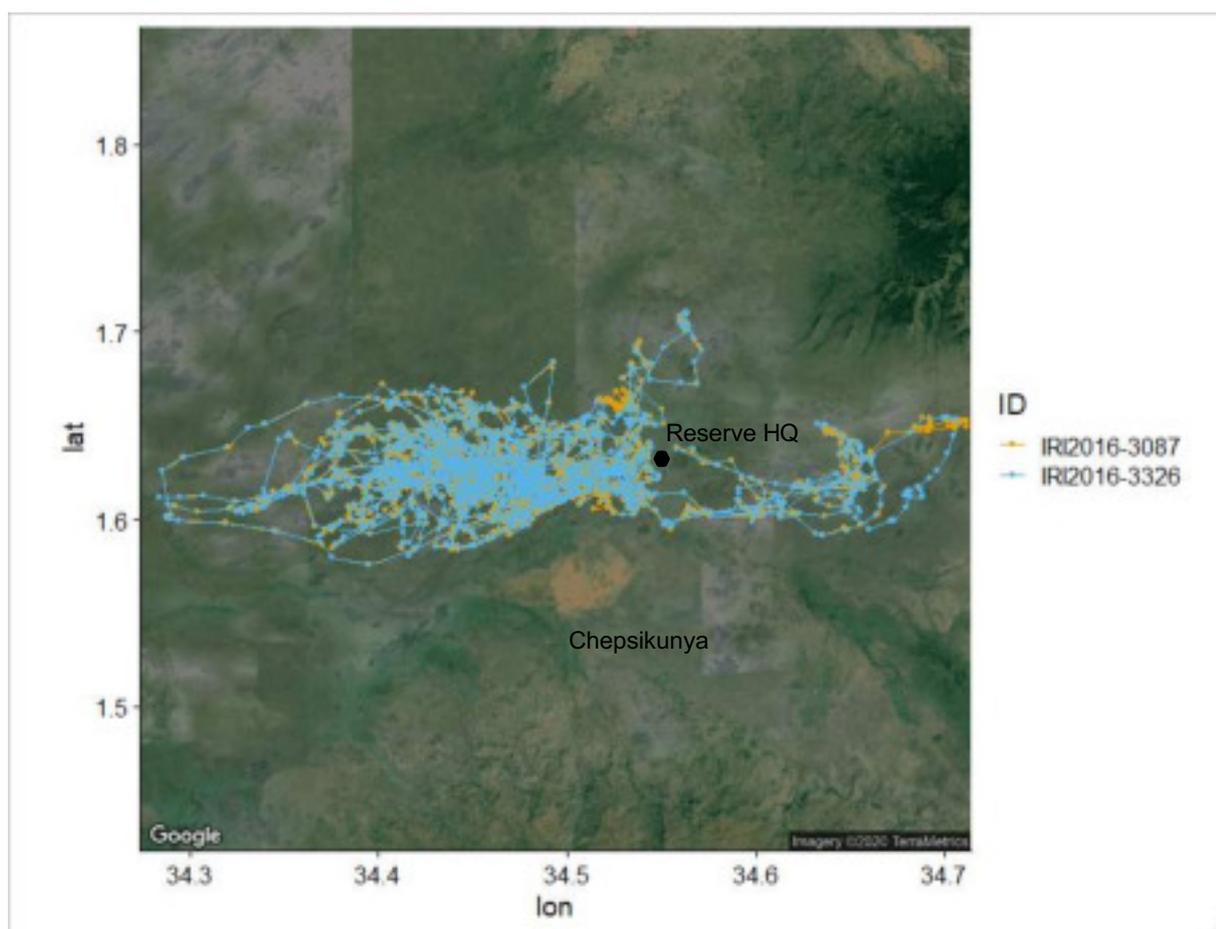


Fig. 2: Map of two GPS-tracked giraffe space use from November 2019 to April 2020 in Pian Upe WR. They have moved together since soon after they were translocated from Murchison Falls NP. Their movements were largely localised in the southwestern portion of the reserve with bouts of exploratory movement outside of these core areas.

Refining and Implementing Post-Translocation Monitoring Protocols

To further advance the adaptive management strategies for giraffe conservation in Pian Upe WR, we coordinated activities with the local UWA Research and Monitoring team. Through this ongoing dialogue, we built on existing monitoring protocols to develop more robust methods for understanding giraffe utilisation in their new environment, to gauge metrics of success for the conservation translocation, and to identify potential areas of improvement for future prospective translocations

These protocols are based on individual-based surveys widely implemented on giraffe populations throughout



Africa and use each giraffe's unique spot patterns as identifying characteristics to identify all encountered giraffe. To facilitate these survey protocols, GCF donated a digital camera, binoculars, GPS units and an identification book for the Pian Upe WR translocated population (Fig. 3).

In working with the UWA team, we identified strategic approaches to maximise the impact of available resources in the reserve. Because of the unique opportunity as two giraffe in this founder population are fitted with GPS tracking units, we employed both systematic and targeted survey approaches. We conducted a series of predominantly vehicle-based surveys, patrolling the main tracks which run along the east/west axis of the reserve. Pian Upe WR encompasses over 2,200 km² of savannah, much of which is not accessible through the limited track network. We took advantage of the rolling topography and picturesque kopjes as established glassing points to scan for giraffe in the uninterrupted bush below (Fig. 4).

We also conducted targeted surveys, using the location of the GPS-tracked giraffe to guide off-road surveys to find giraffe that might be inaccessible by using exclusively systematic road-based techniques. Throughout the process, we worked with UWA to offer improvements for more systematic and regular surveys as well as enhanced data management systems for the analyses and reporting of the giraffe population status and distribution.



Fig. 4: UWA rangers scan the trackless savannah in Pian Upe WR for the translocated giraffe.



Fig. 3: GCF-SCBI conservation fellow Dr. Michael Brown donating equipment to the UWA Research and Monitoring team in Pian Upe WR.

Using these refined monitoring protocols and donated equipment, the UWA and GCF team were able to account for all of the translocated giraffe in Pian Upe WR. Three giraffe, including the two equipped with GPS tracking units, were found in southern Pian Upe WR in the savannahs east of the reserve headquarters and the remaining giraffe were subsequently located by the UWA Research and Monitoring team in a single large herd located in the valleys west of the reserve headquarters. With all the translocated giraffe accounted



for, this is an encouraging sign for the future success of this founder population.

Needs Assessment

The GCF/UWA team identified key areas where strategic contributions and technical support would enhance local capacity and performance related to giraffe conservation initiatives. This suggested equipment would be used in support of the mission to monitor the translocated giraffe population and to assess viable habitats in other areas of the reserve. Additionally, UWA requested support in modifying



Fig. 5: UWA rangers photograph one of the GPS satellite tagged female giraffe in Pian Upe WR to update the ID photographic database.

digital data collection protocols and data management to accommodate the specific needs of the modified giraffe monitoring protocols in Pian Upe WR. GCF will continue to work collaboratively with UWA to provide technical support in developing and refining mobile app-based data collection systems for these new protocols.

Conservation Outcomes and Next Steps

Ongoing post-translocation giraffe monitoring efforts provide critical data to inform the long-term plans to re-establish giraffe populations in suitable historical strongholds throughout Uganda, as outlined in the draft National Giraffe Conservation Strategy and Action Plan 2020-2030 for Uganda. As part of its country-level giraffe conservation programme, GCF will continue to support conservation initiatives in Pian Upe WR with the following activities:

- Providing additional technical and material support for ongoing post-translocation monitoring in Pian Upe WR;
- Supporting and enhancing monitoring and enforcement capacity in Pian Upe WR;
- Supporting UWA in planning, funding, and executing subsequent augmenting translocations in Pian Upe WR; and
- Supporting and promoting giraffe conservation in Karamoja and across Uganda by identifying private sector partners and outreach programmes.

Acknowledgements

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Partners & Supporters

