



SCIONA
BRIDGING THE KUNENE



Monthly report of GPS satellite tagged Angolan giraffe (*Giraffa giraffa angolensis*) in northwest Namibia

July 2020

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In July 2019, Giraffe Conservation Foundation (GCF) and the Skeleton Coast Iona (SCIONA) project fitted seven Angolan giraffe (*Giraffa giraffa angolensis*) across northwest Namibia with solar-powered GPS satellite transmitters (ossi-units). The ossi-units were designed by Savannah Tracking Kenya with support from GCF and are attached to a giraffe ossicone. One young bull and six cows were tagged. Immobilisation of giraffe and fitting of the ossi-units were conducted by a Namibian registered veterinarian under the careful ethical consideration of GCF who have fitted more than 200 units/collars across Africa. Each unit transmits hourly location and temperature data by satellite. The data is then analysed to assess giraffe's habitat use and spatial ecology in the arid to hyper-arid Kunene Region.

This report provides information on preliminary data from 1 to 31 July 2020 and a brief comparison with last month's findings. Only five ossi-units currently transmit data as two stopped working in January (KT IRI2016-3223) and March (Jackson IRI2016-3141), respectively. All other five remaining ossi-units successfully transmitted data in July 2020 without any gaps (see table 1).

All data analysis was conducted in QGIS 2.18.28 using the coordinate referencing system WGS84. As depicted in fig. 1, movement pattern of some giraffe appears to be different from the previous month (June 2020, fig. 2). The More specifically, Ceretops, ST2010-2959, and Supergirl, IRI2016-3220 who trekked southward from Onjuva and orupembe respectively, whilst the movement pattern of Marble (IRI2016-3218) and Dorothy (IRI2016-3222) remained similar. Interestingly, it is now a year since these giraffe were tagged in July 2019. The majority of the giraffe appear to have moved back into the main ephemeral rivers where they were originally tagged. As we have observed over the last year these riparian environments are the source of life for these large mammals (and others) occurring in the area, especially during the dry season. It is likely that as the season gets drier, fewer trees with leaves are available in areas where they roamed for the past months.



Similar to June 2020, Ceratops, ST2010-2959 moved the furthest (~215.4km); from the Sechomib River to the Nadas and Munutum Rivers and back to mid-Sechomib River. She was followed by Supergirl, IRI2016-3220 (~202.7km) who trekked from the Sechomib River to the Khumib River to join Dorothy IRI2016-3222, the mother to a young calf. Marble, IRI2016-3218 moved (~171.8km) around the Onjuva area. Tisa, ST2010-2958 trekked (~163.6km) from east of the Khumib River north-west to the Sechomib River where she overlap with Ceretops, ST2010-2959. The least travelled giraffe was Dorothy, IRI2016-3222, traversing approximately 120.6km and remaining within the lower Khumib River (see fig. 1).

All individuals moved on average considerably less in July 2020 (174.74km) than in June 2020 (190.16km) (see distances travelled in table 2).

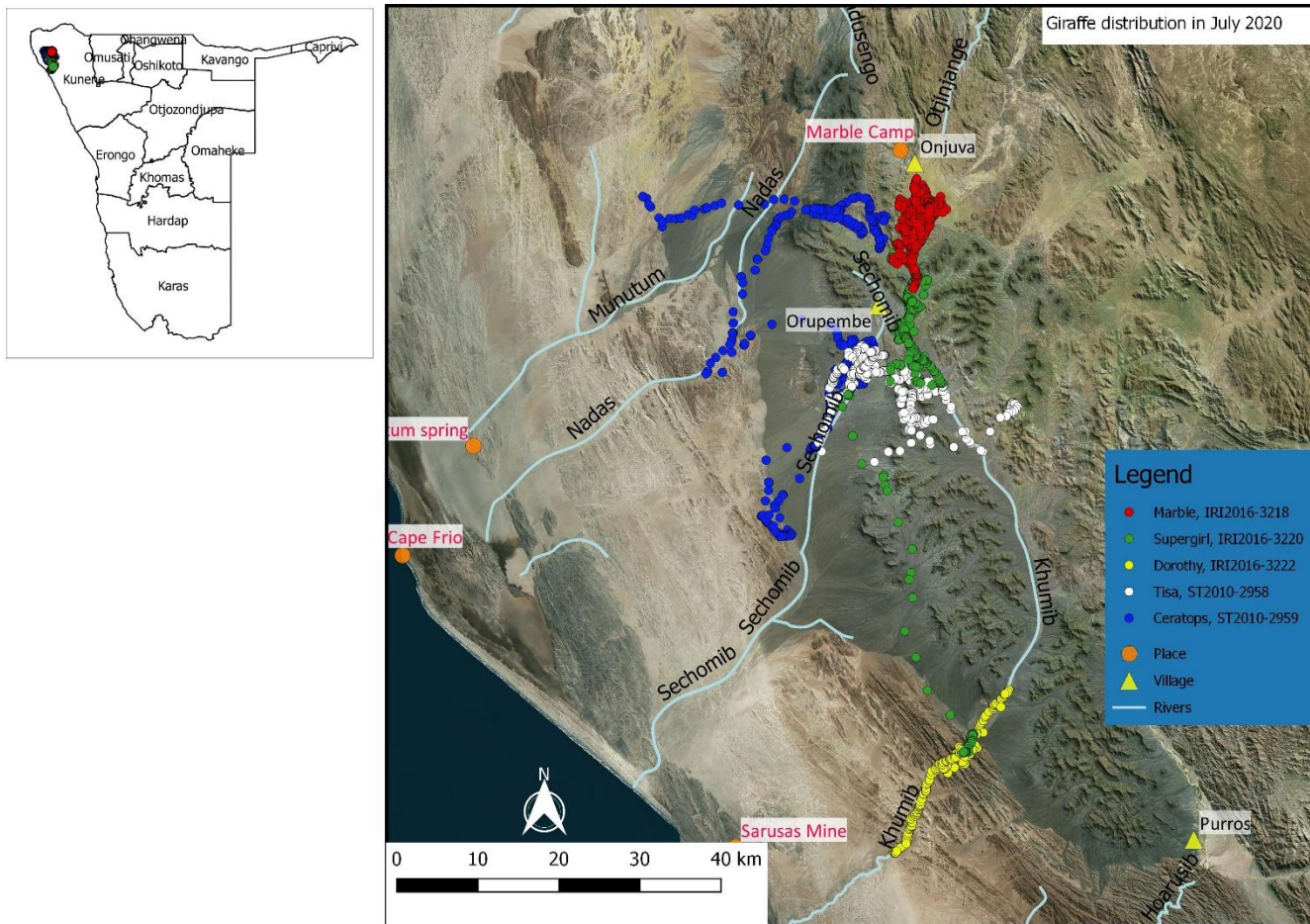


Figure 1: GPS satellite tagged giraffe movements in northwest Namibia during July 2020

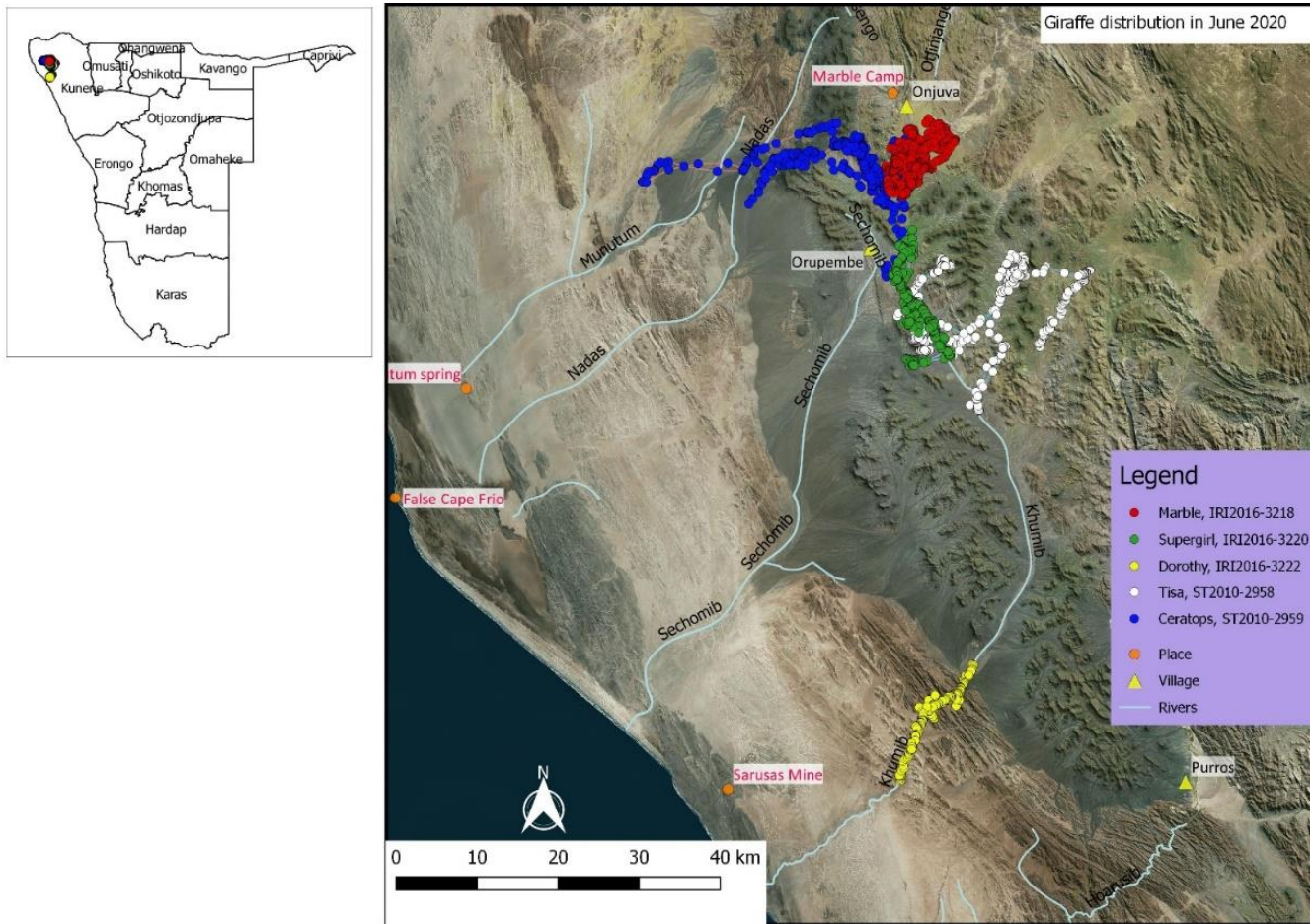


Figure 2: GPS satellite tagged giraffe movements in northwest Namibia during June 2020

Home Range (HR) preliminary results were estimated using the Animove plugin in QGIS to determine HR at 50% and 95% Minimum Convex Polygon (MCP) for each individual as well as the total population. The 50% MCP provides standard deviation core HR, while 95% provides the average HR. Home range sizes of giraffe in July 2020 were generally larger than in June 2020. The giraffe with the biggest recorded HR in July 2020 was Ceratops (ST2010-2959) – 759km² at 95% MCP, followed by Supergirl (IRI2016-3220) – 504km². Dorothy (IRI2016-3222) had the smallest HR at ~36km². All giraffe had HR overlaps, with Supergirl overlapping with all other tagged giraffe see fig. 3. All giraffe combined had an average core home range of ~636km² which was larger than June 2020 calculated at 50%, and ~2,085km² at 95% smaller than last month see fig. 5 & 6. For the rest of the HR records see table 2.

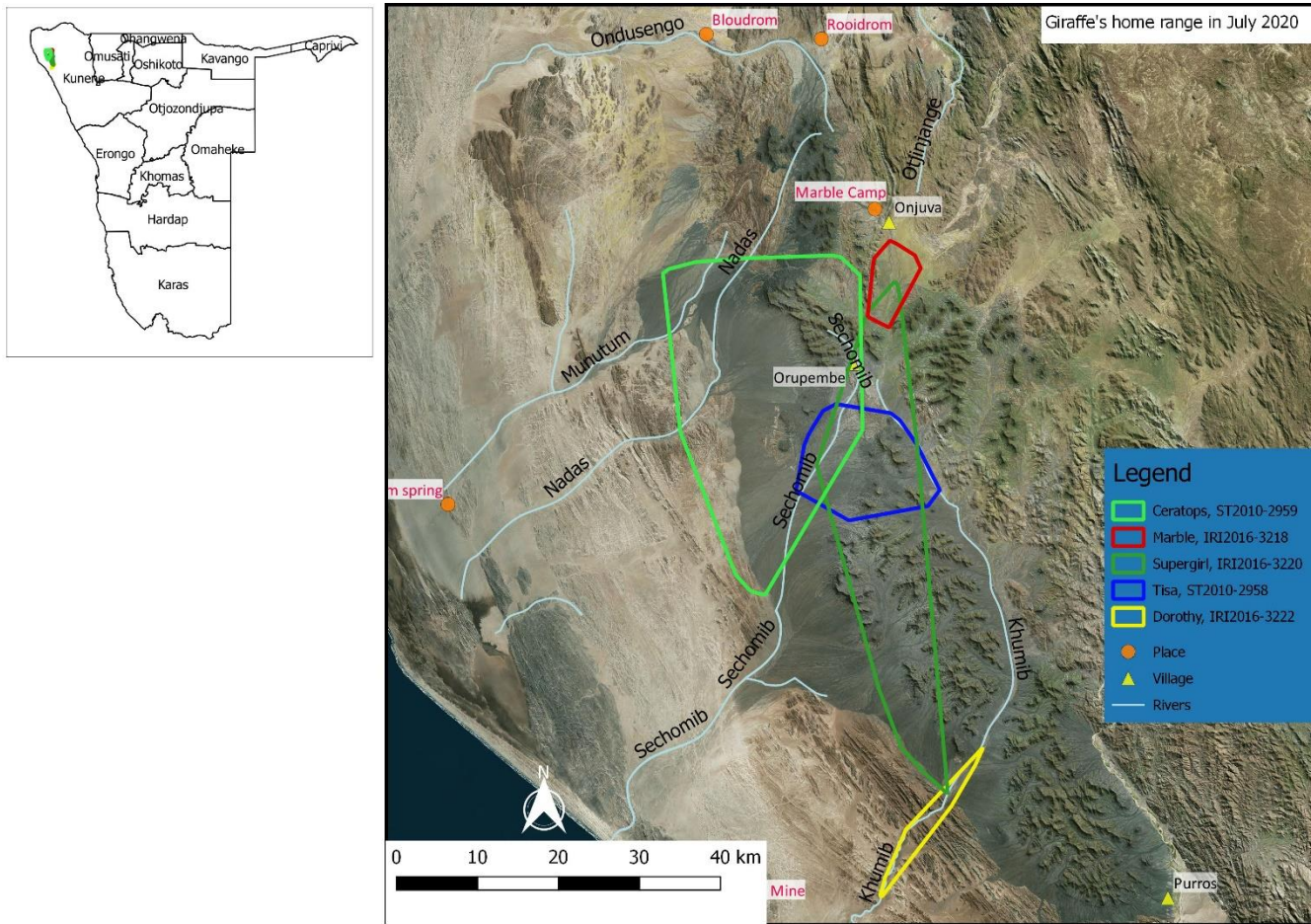


Figure 3: GPS satellite tagged giraffe's individual Home Range using 95% MCP in northwest Namibia during July 2020





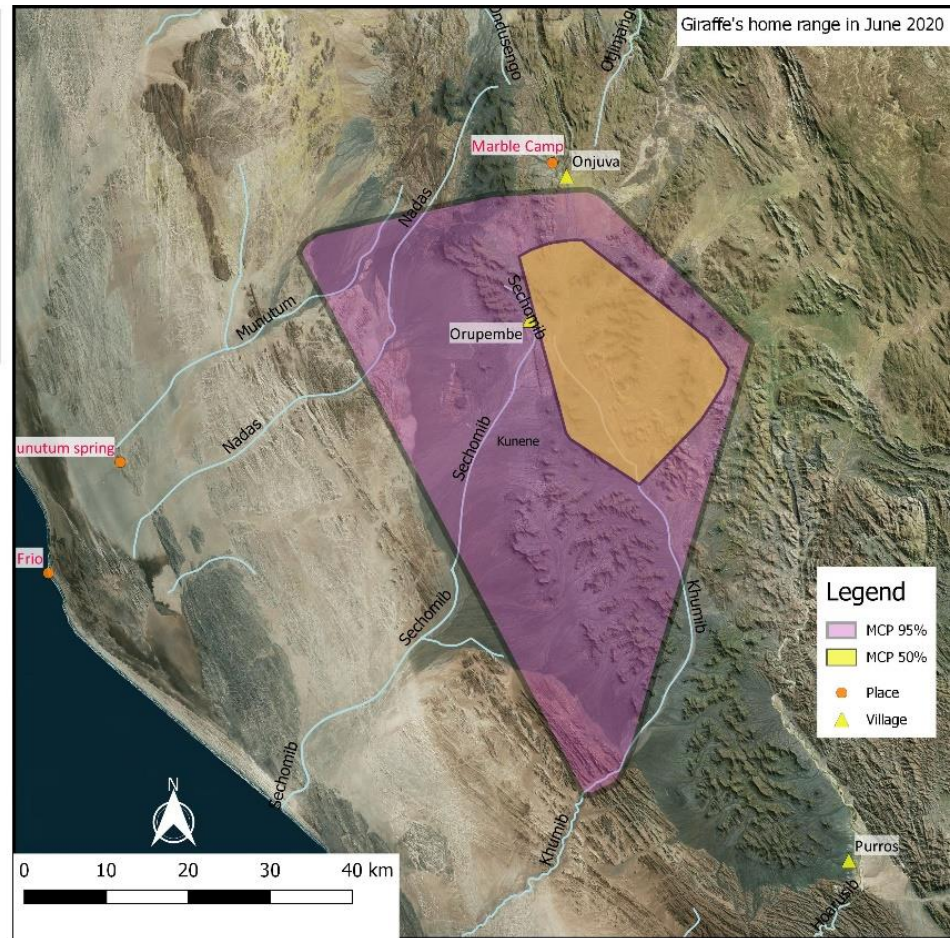


Figure 6: All GPS satellite tagged giraffe's combined Home Range using 50% and 95% MCP in northwest Namibia during June 2020

Acknowledgements

We acknowledge the Giraffe Conservation Foundation (GCF), SCIONA project and Namibia Chamber of Environment (NCE) for financial supports and other valuable support. We also express our special appreciation to game guard colleagues in the Orupembe Conservancy.



Table 1: Data transmission of GPS satellite tagged giraffe in northwest Namibia during July 2020

ID/Date	1	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Mable IRI2016-3218 (Female)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Supergirl IRI2016-3220 (Female)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dorothy IRI2016-3222 (Female)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tisa ST2010-2958 (Female)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ceratops ST2010-2959 (Female)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 2: Distance travelled by each GPS satellite tagged giraffe in June & July 2020

ID/Date	June 2020		July 2020	
	Distance travelled (km)	Home ranges (km ²)	Distance travelled (km)	Home ranges (km ²)
Mable IRI2016-3218 (Female)	158.6	45	171.8	43
Supergirl IRI2016-3220 (Female)	184.3	60	202.7	504
Dorothy IRI2016-3222 (Female)	132.4	24	120.6	36
Tisa ST2010-2958 (Female)	205.5	268	163.6	184
Ceratops ST2010-2959 (Female)	270	297	215	759



Appendix

