

Progress Report I

December 2020

The ecology of southern giraffe (*Giraffa giraffa*) in Savé Valley Conservancy and Gonarezhou National Park, Zimbabwe

Adriaan Jacobus Olivier

Summary

Although this year presented us all with a lot of difficulties, and the amount of time spent in the field was not as much as planned, myself, along with the Giraffe Conservation Foundation team, still managed to get research done in 2020. These involved a number of activities which is listed below:

GPS Satellite Unit Reports

In the initial months of the Covid-19 pandemic we shifted our activities to a desktop-based approach, working with the GPS satellite data from giraffe in the Savé Valley Conservancy. We used this data to analyse the spatial ecology and home ranges of giraffe across different seasons. As loss of habitat is currently the biggest threat to giraffe populations in the wild, it is critical that we understand their habitat requirements as this will drive future conservation management plans across Zimbabwe and Africa. So far, three seasonal reports have been produced and have been shared with various sources in Zimbabwe, such as ZimParks and the management teams of Sango Ranch and Savé Valley Conservancy.

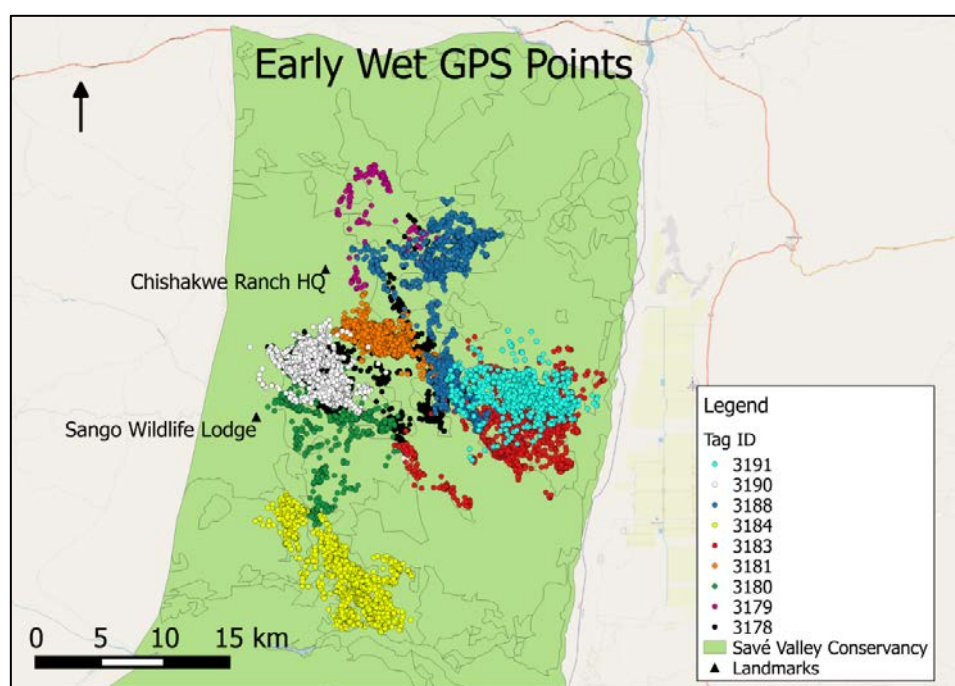


Figure 1: Representation of all the GPS data points per individual giraffe that was included in our Early Wet (November - January) seasonal report. This gives an indication of the distribution of giraffe across Savé Valley Conservancy.

Giraffe DNA Sampling

Once restrictions were lifted across the country, DNA sampling commenced in a number of areas in Zimbabwe. The GCF team, with the help of Dr Richard Hoare, have taken DNA biopsy (drop out darts) samples from giraffe in Hwange National Park as well as the following private concessions: Matetsi; Stanley and Livingstone; Matopos; Roselyn Safari area; and Debshan. These samples will be analysed to give us an idea of the genetic architecture of giraffe in Zimbabwe and distinguish which species and sub-species occur in the country as well as the distribution of these individual species and sub-species. In addition, historical samples have been taken from the museum in Bulawayo to determine if there has been a change in giraffe genetic structure over the past 50 years, and if so, to what extent.



Figure 2: Dr Richard Hoare, veterinarian, taking a DNA skin sample from a dead giraffe in Hwange National Park. This sample, along with others, will be used to determine the genetic structure of giraffe across Zimbabwe.

Field Research

In October 2020, field research started in the Savé Valley Conservancy, looking at basic ecological aspects of giraffe behaviour. These include studying giraffe population dynamics, their feeding ecology, browse availability and activity budgets. This data will give us a better understanding of giraffe ecology as well as the drivers of change in their behaviour. So far, 2 months of data collection has been completed in Savé Valley Conservancy and will continue until September 2021. Thereafter, field research will kick off in Gonarezhou National Park for another 10 months. This will also include the attachment of 14 more GPS satellite units to giraffe in the park and allow us to set up a comparative study between the two different areas.

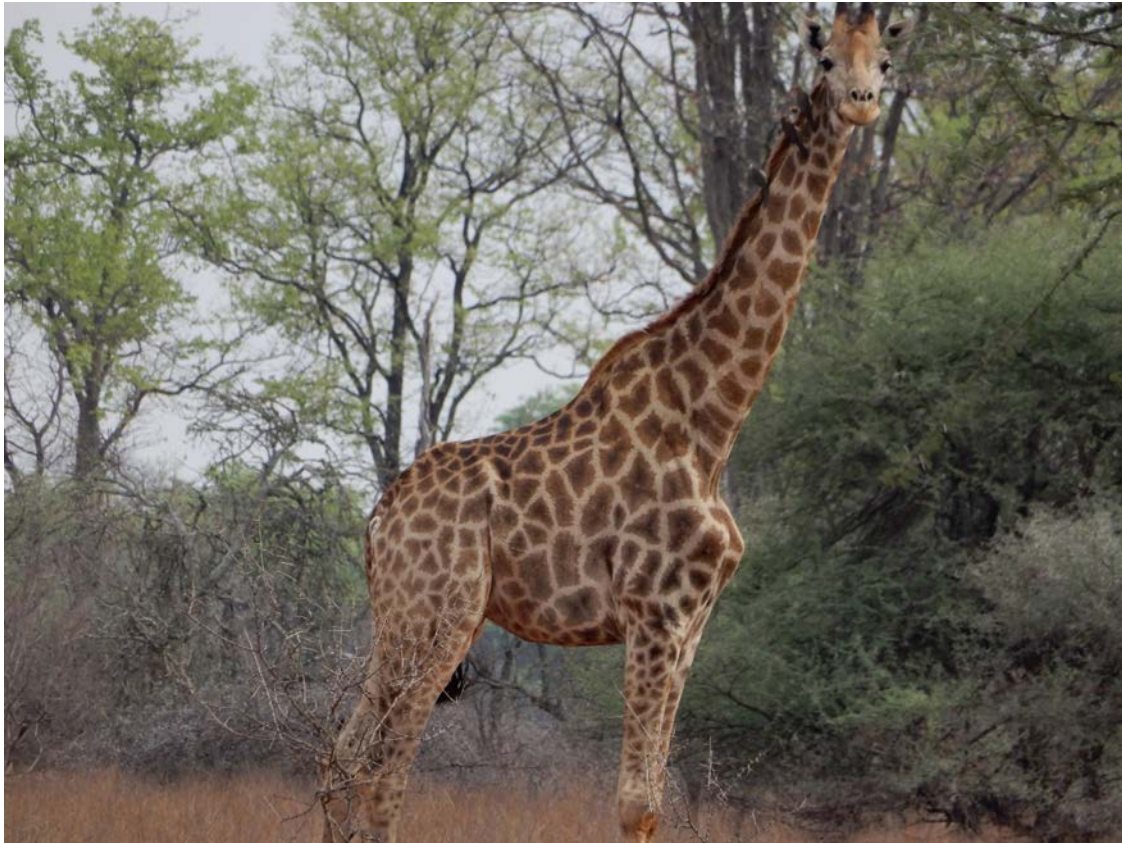


Figure 3: Photo taken of an adult female giraffe's right-hand side. Each giraffe has a unique coat pattern and will be used to set up a giraffe library of individuals across Zimbabwe.



Figure 4: A herd of giraffe, which is used to determine the population dynamics of giraffe in Savé Valley Conservancy.

Participant Recruitment

As education can be used as a power conservation tool, we find that it is extremely important to get local conservationists involved in our projects. This strengthens relationships and also allow for the development of workers within the country and surrounding communities. There are a number of local Zimbabweans that have since joined and benefit from this project. Details of our local members and staff that help out with work on the ground are outlined in the table below:

Name	Role	Affiliation	Year
Livingstone Hoda	Conservation officer	Giraffe Conservation Foundation	2019
Dr Richard Hoare	Veterinarian	Giraffe Conservation Foundation	2020
Moses Chitsaka	Game Scout	Sango Wildlife Ranch	2020



Figure 5: Our local conservation officer, Livingstone Hoda, enjoying his time out with the giraffe in the Savé Valley Conservancy.

Future Objectives

As we continue our research there are a number of different objectives that we would like to achieve by the end of the project. These objectives, as outlined in our original project proposal, are listed below:

- 1) Gain a greater understanding of giraffe numbers, range, ecology and distribution across Zimbabwe.
- 2) Determine the drivers of change in giraffe behaviour between Savé Valley Conservancy and Gonarezhou National Park.
- 3) Understanding of giraffe taxonomy in Zimbabwe and placed in context of ongoing efforts across Africa.

- 4) Submission of data to IUCN Giraffe & Okapi Specialist Group for future Red Listing assessments.
- 5) Development of an updated giraffe Country Profile for Zimbabwe.
- 6) Development of a Non-Detrimental Finding assessment of giraffe in Zimbabwe.
- 7) Development of first-ever National Giraffe Conservation Strategy and Action Plan for Zimbabwe.
- 8) To publish findings from research in peer review journals and popular press.



Figure 6: Lead researcher, Adriaan Jacobus Olivier, identifying trees in the Savé Valley Conservancy. This data will be used to determine the dietary preference and browse availability of giraffe in the conservancy.

It is critical that we achieve these goals over the next two years as the results from this research will play a vital role to help set up the first ever National Strategy and Action Management Plan for giraffe in Zimbabwe. This will ensure the future conservation of the species across the country and also across Africa. Therefore, it is critical that we continue our research and help ZimParks with the development of these strategies and conserve a species whose numbers are dwindling in the wild.

Acknowledgements

We are very grateful to The Rufford Foundation for giving us the support needed to conduct this research in Zimbabwe. We are grateful to Giraffe Conservation Foundation for its continuous support and efforts towards the project. We are also grateful to members of the Savé Valley Conservancy for access to their properties to monitor and study giraffe. We thank

the ZimParks for their support of, and permission, to conduct our research in Zimbabwe. Thanks also to Stellenbosch University for the support and technical assistance.