



Giraffe conservation trip to northwest Namibia

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Viewpoint at the Hoarusib River (Photo: Albertina Fillipus)

Contents

| | |
|---|----|
| Introduction | 3 |
| Trip members/participants | 5 |
| Route and activities..... | 5 |
| Logistics..... | 7 |
| Thematic results..... | 7 |
| Giraffe data | 7 |
| Occurrence data for species distribution modelling..... | 7 |
| Other mammal and bird sightings | 8 |
| Conclusion and recommendations | 8 |
| Appendix 1: List of woody plant species..... | 9 |
| Appendix 2: List of mammal species..... | 9 |
| Appendix 3: Bird list | 10 |



Commiphora wildii (Photo: Albertina Fillipus)

Introduction

The Giraffe Conservation Foundation (GCF) is the only Non-Governmental Organisation (NGO) in the world with an ultimate focus on the conservation and management of giraffe across Africa. GCF's programme in north-western Namibia was initiated as a long-term ecological monitoring effort for the desert-dwelling Angolan giraffe (*Giraffa giraffa angolensis*). This programme collects, collates and disseminates popular and scientific information on the giraffe for local and international use by for governments, NGOs, communal conservancies and other interested partners to help with their conservation and management. Surprisingly, this programme is one of the first ever long-term ecological monitoring efforts of giraffe in Africa.

Namibia's northwest is one of the last remaining wildernesses on the continent and home to a plethora of desert-adapted wildlife including elephant, black rhino, lion, leopard, cheetah, mountain zebra, oryx, springbok, and of course, giraffe. Giraffe roam widely in the region and evidence of their long-term existence can be found in the rock engravings by the indigenous San people, as well as genetic evidence dating back to ~40,000 years.

Giraffe occur throughout the northern river catchments of the twelve major westerly flowing ephemeral river systems that occupy the hyper- to semi-arid areas of western Namibia. Many of the ephemeral rivers end in the Namib Desert within the Skeleton Coast Park. Seasonal rainfall in these catchments is the major driving force behind their occasional flow, and when strong enough, results in the rivers flowing into the Atlantic Ocean. The project study region covers approximately 7,500 km² across several catchments which are ecologically linked as wildlife migrates between them. The riparian woodlands of the catchment areas are the main source of life for all larger mammals of the region, from wildlife to domestic stock, as well as humans. The area predominantly comprises communal farmland (community conservancies), although it extends into protected areas in the extreme west of the Hoanib and Hoarusib Rivers. The lack of fences allow for the free movement of wildlife between communal farmland and the protected Skeleton Coast Park.

The SCIONA or "Co-designing conservation technologies for Iona-Skeleton Coast Transfrontier Conservation Area" project is funded by the European Union and started on 1 February 2018. It was awarded to the Namibian University of Science and Technology (NUST) in partnership with the Angolan institute ISCED Huíla. The project aims to strengthen cross-border ecosystem management and wildlife protection in the Iona – Skeleton Coast Transfrontier Conservation Area (TFCA) through co-designing and implementing conservation monitoring technology with the park authorities and surrounding communities. More information can be found at the project website (sciona.nust.na). GCF is a stakeholder and partner of the SCIONA project.

The broader GCF programme in northwest Namibia and the SCIONA project share part of their study area. This GCF initiated field trip was aimed at collecting giraffe (and elephant) data in the Hoanib and Hoarusib Rivers, as these mega-mammals share the same habitats in this arid part of the country. The field work forms part of Emma Hart's final season of fieldwork for her PhD research at the University College Dublin, Ireland, in collaboration with GCF and NUST. Emma studies the population ecology of the giraffe of north-western Namibia. She investigates a variety of factors – including movement ecology and social dynamics and impact of other mega-fauna - affecting the conservation of this unique giraffe population.

Whilst on the field trip, data on woody endemic plant occurrences was also collected for the SCIONA project. This data will feed into the Master's thesis of Albertina Fillipus that aims to map and predict the distribution of endemic woody species in Northern Kunene, Namibia.

The trip was entirely sponsored by GCF through a grant generously provided by Columbus Zoo and Aquarium. Albertina was invited along as a NUST student and also represented the SCIONA project. SCIONA is grateful for the opportunity to collaborate.



Hoarusib river landscape (Photo: Renee Sturch)

Trip members/participants

- Emma Hart (PhD Researcher, GCF/NUST/UCD)
- Renee Sturch (GCF Conservation Supporter, New Zealand)
- Sue Stewart (GCF Conservation Supporter, England)
- Albertina Fillipus (Student, NUST-SCIONA)

Route and activities

| Day | Date | Activity | Overnight |
|-----|-------------|---|------------------------------------|
| 1 | 04/09/18 | Windhoek to Palmwag via Kamanjab | Palmwag Lodge & Campsite |
| 2 | 05/09/18 | Drove from Palmwag to the Hoanib River via the Palmwag Concession area and Mudorib (a tributary of Hoanib River). Collected endemic woody plants occurrence data. | Wild camping in Mudorib River |
| 3,4 | 06-07/09/18 | Drove down the Hoanib River from the President's waterpoint into Skeleton Coast Park and upstream toward the Hoanib Valley Camp. Collecting data on giraffe and elephant along the riverbed, taking photographs of individual giraffe for identifications and biopsy darting giraffe for DNA samples. | Mudorib River wild camp |
| 5 | 08/09/18 | Drove to Purros via Okongwe valley (a tributary of Hoarusib River). Collected endemic woody plants occurrence data as well as giraffe data. | Purros Community campsite |
| 6,7 | 10,11/09/18 | Drove along the Hoarusib River. Collecting data in the same fashion as in Hoanib River. | Purros community campsite |
| 8 | 11/09/18 | Left Purros to Giribis plains via the Sesfontein road D3707. Collected data along the road. | Wild camping in the Giribis plains |
| 9 | 12/09/18 | Drove from the Giribis plains to Kamanjab via Sesfontein and Palmwag. | Oppi-Koppi Rest Camp in Kamanjab |
| 10 | 13/09/18 | Drove from Kamanjab to Windhoek | Windhoek |



Mudorib wild camp (Photo: Albertina Fillipus)



Elephant at Palmwag campsite (Photo: Albertina Fillipus)

Logistics

Fortunately, the trip did not experience any logistical problems. However, we had a rather fun encounter when a Kalahari sand snake entered the vehicle at Purros community campsite. It had been in the car for at least 2 days.

Thematic results

Giraffe data

The team collected relevant data required to monitor these desert-adapted large mammals. The location GPS points were recorded for all giraffe herds seen during the trip, photographs were taken and the identifications were done. The data were entered into the database daily to avoid work piling up after the trip. There are giraffe which are resident to the Hoanib and Hoarusib Rivers respectively, however, we also found that some individual bulls that migrate between the two rivers. The desert-adapted elephant sightings were also recorded as it is known that the Hoanib River consist of two breeding herds and two bulls. Moreover, we didn't see many elephant in the Hoarusib River but we did see signs e.g. tracks and dung.

Occurrence data for species distribution modelling

The SCIONA project aims to model the distribution of several endemic woody species of the study area. The endemic woody species occurrence data were collected by recording GPS points of latitude and longitude in WGS84 datum. These presence and absence points will be used for modelling purposes. The woody plant species observed during the trip are listed in Appendix 1.



Welwitschia mirabilis (left); Elephant and giraffe in Hoarusib River (right) (photos: Albertina Fillipus)

Other mammal and bird sightings

We also collected mammals' data for the Epicollect 5 app (Appendix 2). These data are joined with other SCIONA observations and can be viewed at: <https://five.epicollect.net/project/sciona-mammal-and-reptile-recording/data>.

Generally, we spotted interesting signs of black rhino and lion in the area. We also did bird identification (Appendix 3).

Conclusion and recommendations

In conclusion, the trip was a success; all data collection went according to plan. We recommend that these kind of collaborations should be encouraged for knowledge sharing and to craft opportunities for students' exposure to practical experiences in the field of natural resources management. We thank GCF for the opportunity offered to travel along and collect data for SCIONA.



The snake leaving the car (left); the team group photo (right) (Photos: Renee Sturch and Emma Hart)

Appendix 1: List of woody plant species

| |
|--------------------------------|
| <i>Acacia erioloba</i> |
| <i>Acacia montis-usti</i> |
| <i>Acacia robynsiana</i> |
| <i>Acacia tortilis</i> |
| <i>Balanites angolensis</i> |
| <i>Boscia albitrunca</i> |
| <i>Colophospermum mopane</i> |
| <i>Combretum imberbe</i> |
| <i>Commiphora giesii</i> |
| <i>Commiphora kaokoensis</i> |
| <i>Commiphora kuneneana</i> |
| <i>Commiphora saxicola</i> |
| <i>Commiphora wildii</i> |
| <i>Euclea pseudebenus</i> |
| <i>Euphorbia damarana</i> |
| <i>Euphorbia virosa</i> |
| <i>Faidherbia albida</i> |
| <i>Hyphaene petersiana</i> |
| <i>Maerua schinzii</i> |
| <i>Parkinsonia africana</i> |
| <i>Salvadora persica</i> |
| <i>Sesamothamnus guerichii</i> |
| <i>Sterculia africana</i> |
| <i>Sterculia quinqueloba</i> |
| <i>Tamarix usneoides</i> |
| <i>Terminalia prunioides</i> |
| <i>Welwitschia mirabilis</i> |

Appendix 2: List of mammal species

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|---------------------|
| Black rhino |
| Black-backed jackal |
| Elephant |
| Gemsbok |
| Giraffe |
| Springbok |
| Steenbok |

Appendix 3: Bird list

- White-backed mousebird
- Rock martin
- Grey go-away bird
- Namaqua dove
- Laughing dove
- Namaqua sandgrouse
- Double-banded sandgrouse
- Augur buzzard
- Lappet-faced vulture?
- Southern pale chanting goshawk
- Helmeted guineafowl
- Red-billed spurfowl
- Rüppel's korhaan
- Ludwig's bastard
- Black smith lapwing
- Crowned lapwing
- Swallow-tailed bee-eater
- Mountain wheatear
- Southern yellow-billed hornbill
- Capped wheatear
- Crimson-breasted shrike
- Yellow-billed oxpecker
- Violet wood hoopoe
- Carp's tit
- Red-eyed bulbul
- Pied crow
- Cape starling
- White-tailed shrike
- Damara hornbill