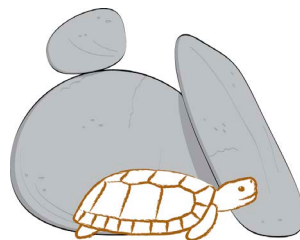


Ecology of the Karoo dwarf tortoise, *Chersobius boulengeri*



Fourth Progress Report



Dwarf Tortoise Conservation

Victor Loehr
18 October 2019

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Dwarf Tortoise Conservation (previously Homopus Research Foundation) is a non-commercial organisation entirely run by volunteers. The aim of the foundation is to gather and distribute information on dwarf tortoises, to facilitate their survival in the wild. This aim is achieved through scientific field studies, and through the development and study of captive studbook populations. Our results are published in scientific and popular outlets.

Introduction

In 2018, the precursor of Dwarf Tortoise Conservation, the Homopus Research Foundation, initiated a [field study on the Karoo dwarf tortoise](#), *Chersobius [Homopus] boulengeri*. This study is funded by several donors. The current progress report provides an update about the study for donors and updates an earlier progress report dated 31 March 2019.

The following organisations and individuals have allocated funds, discounted prices, or in-kind contributions to the project:

- [Turtle Conservation Fund](#) and [Conservation International](#)
- [Knoxville Zoo](#)
- [Holohil Systems Ltd.](#)
- [British Chelonia Group](#)
- [Turtle Survival Alliance EU](#)
- [Dutch-Belgian Turtle and Tortoise Society](#)
- [Soek 'n Slapie](#)
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- Uwe Seidel
- Paul van Sloun
- Lars en Petra Wolfs



Summary of study objective

A full description of the study is available in the main [project proposal](#). In summary, the study objective is to gather and publish ecological information that is relevant for the conservation of *C. boulengeri*:

- population structure and dynamics
- tortoise growth rates
- activity and movements
- home ranges
- diet
- reproduction

To meet this objective, three sampling periods have been proposed, in:

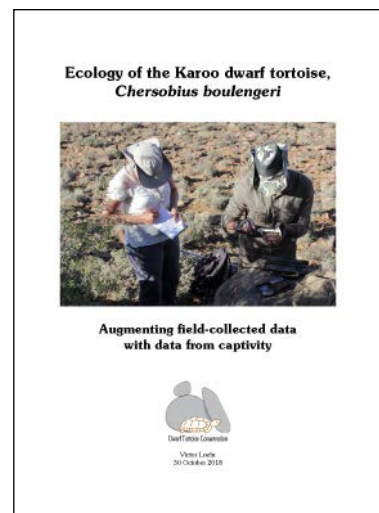
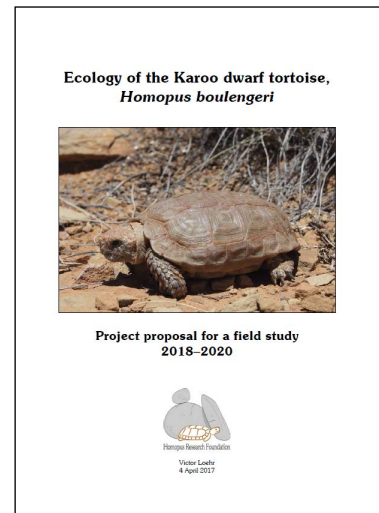
- February–March 2018 (6 weeks);
- October 2018–March 2019 (12 weeks);
- October–March 2020 (5 weeks).

When it became clear in November 2018 that the original study approach would not be able to generate sufficient data on reproduction and tortoise growth rates, a supplemental project proposal was drawn up. This second project proposal seeks to augment field-collected data with data from captivity, which will be reported in the annual reports of Dwarf Tortoise Conservation.

Progress from 31 March until 18 October 2019

Preparation

When the drought at the study site appeared to continue after the sampling period in February–March 2019, it was decided to add an extra 1-week sampling period to the study in October 2019. This sampling period would enable us to radiograph transmittered females to evaluate their reproductive status during drought. Relatively little



preparation was required. Meanwhile, preparations were made for a genetic approach of the dietary study. Arrangements were made with a laboratory, containers and storage media were purchased, and a procedure to obtain faecal material was developed. In addition, a permit application was submitted to transport faecal and plant material to the laboratory in Europe. The October 2019 sampling period enabled us to collect faecal material in spring, which will be compared with material collected in summer.

Sampling

This sampling period had only three field days. Consequently, it was stressful for the field personnel to complete radiography and collecting faecal material in such a short period. The study site was very dry (see vegetation plot below) and had received little rain since the February–March sampling period. Sixteen females were tracked for radiography, but two had died. Few females were gravid. Nine females produced faeces, as well as three males that were opportunistically found. In addition, an unmarked female and an unmarked hatchling (the first at the study site) were located. A dead marked male was also recovered.



Due to the drought, tortoises that urinated during handling were rehydrated by administering water. Most tortoises had full bladders and reasonable body conditions, probably as a result of the rainfall in previous months.

This sampling period was completed with volunteer Mark Klerks.

Dissemination of results

The majority of the results will be processed and published in peer-reviewed journals as combined results for the 2018–2020 period. However, one life-history note was published in 2018:

Loehr, V.J.T. 2018. *Chersobius boulengeri* (Duerden, 1906), Karoo Padloper, Reproduction. *African Herp News* 68: 37–39.

Furthermore, a full manuscript on behaviour and thermoregulation in



spring was almost finished. Movie clips on [feeding](#), [egg-laying](#), [drinking](#) and [general behaviour](#) of Karoo dwarf tortoises, and on [cloud formation](#), have been published online. This progress report will also be distributed and posted on the website of the Dwarf Tortoise Conservation.

Continuation of the study

The study will continue as drafted in the [project proposal](#) with a final sampling period in February–March 2020.