Factsheet #1

The ORYCS project – a German-Namibian research cooperation

Aims

The scientific research project ORYCS investigated the suitability of wildlife-based management strategies in Namibia as options for adapting land use to climate change in savanna ecosystems (project time: Feb 2019 – Jan 2023). The research program was tailored to improve the ecological basis for effective wildlife management by explicitly analysing the feedbacks between management decisions, wildlife movements and resource use, vegetation, water, soil, and climate (Fig. 1).

As a German-Namibian collaborative research project, ORYCS explicitly pursued an inter- and transdisciplinary research approach where scientists from fields of wildlife ecology, vegetation dynamics, hydrogeology, plant physiology, ecological modelling, and social-ecological research cooperated with actors at local, regional and national levels. These include private farmers, communities, NGOs and public authorities.

Study area

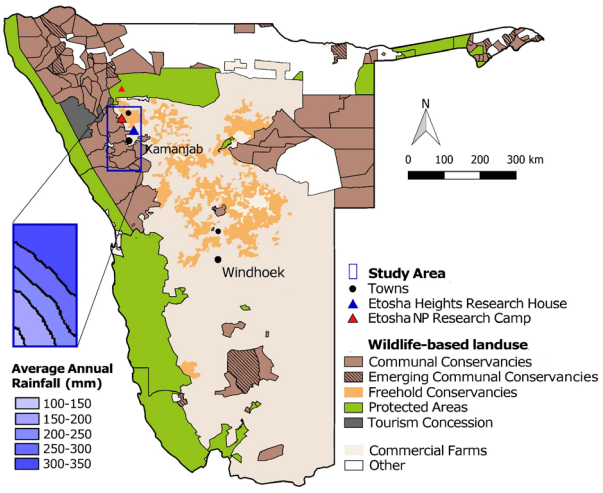

Figure 2: Study area of the ORYCS project. The research focuses on the semi-arid Mopane savanna south-west of and including the western part of Etosha National Park, Namibia.

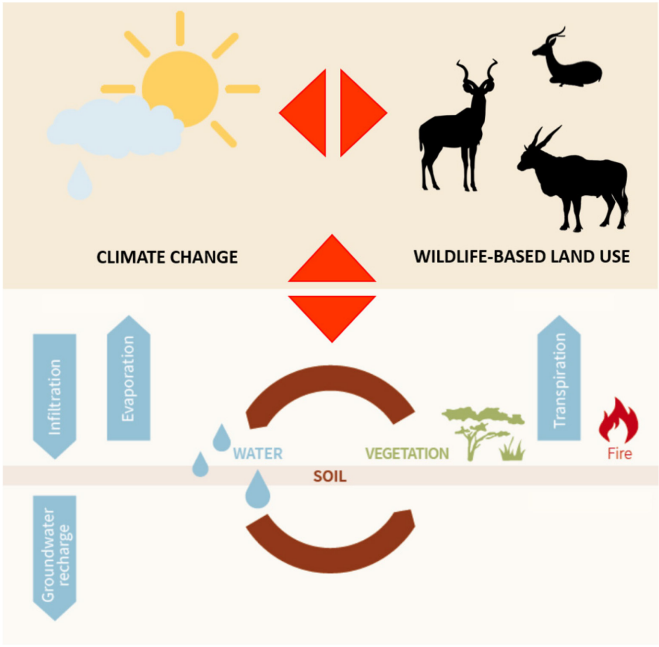

Figure 1: The ORYCS research program focused on the feedbacks between wildlife-based management, wildlife movements and resource use, vegetation, water and soil and climate in Namibian savanna ecosystems.

ORYCS fact sheets

- Impact of wildlife on water quality
- Animal movements across the red line
- News on animal behaviours
- Simulation models as tools for rangeland management
- Divers of water cycles
- Responses of African antelopes to temperature extremes
- Effects of wildlife on soils
- Vegetation structure and small African antelope site selection
- Remote sensing tools for large scale monitoring
- Farmer's perception on wildlife

Cover photo: Stefan Liehr; Figure 1: Niels Blaum; Figure 2: Nichola M. Knox

Field data

Photo: Robert Hering

- Field data on wildlife numbers, plant/ insect/ mammal diversity, soil condition and moisture, weather, water quality
- Experimental data on water use of 4 encroacher species (Mopane, black and red thorn acacia, trumpet thorn)
- Interview data on management practices and their embeddedness in policies and socio-economic conditions
- Movement and activity data of 40 animals of three African antelope species: Springbok, Kudu, Eland
  - > 16,000 tracking days
  - > 2.5 Million GPS localisations
  - > 4 Million activity records
  - > 120,000 km total distance (3 times around the world)
- Giraffe and elephant movement data provided by Giraffe Conservation Foundation and the MEFT.

Capacity building

ORYCS short courses focused on

- Data analysis and statistics (Namibia 2020)
- Ecological modelling (Namibia 2022)
- Scientific writing (virtual course 2022)
- Intercultural competences/ communication (Namibia 2022)

German-Namibian Co-supervision of students

- 27 awarded Bachelor, Honours and Master and theses including 4 Namibian-German Tandem projects
- 6 PhD projects (2 Namibian and 4 German students)

Photo: Dirk Lohmann

Figure 3: Participants of the ORYCS short course on ecological modelling in Namibia.

Photos: Katja Geißler

Installation of data logger and sensors to measure water use of trees.

Springbok (mixed feeder)

Kudu (browser)

Eland (mixed feeder)

Photos: Robert Hering

Development of scientific tools & maps

- Remote sensing tools to map changes in vegetation greeness and height, and water availability
- Simulation models for testing wildlife management strategies at low costs
- Maps of vegetation type, vegetation cover and animal tracking visualizations

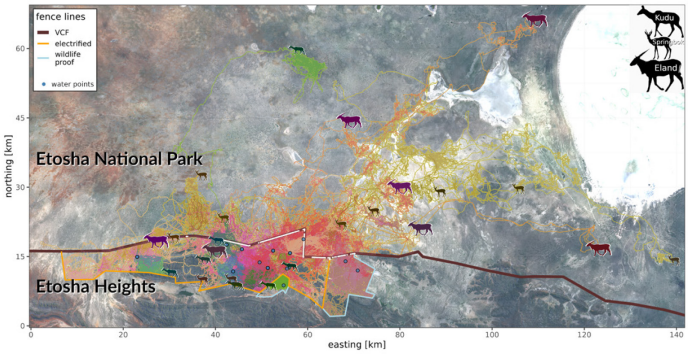

Figure: Robert Hering

Figure 4: Map with movement tracks of Springbok, Kudu and Eland in the study region.

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The ORYCS Project

The German-Namibian research project "ORYCS – Options for sustainable land use adaptations in savanna systems" aims to assess the suitability of wildlife management strategies in Namibia as options for adapting land use to climate change in savanna ecosystems.

www.orycs.org

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