

Recruitment rates, habitat selection and diet of springbok (*Antidorcas marsupialis*) in the Southern Kalahari, Botswana



The study investigates factors contributing to the springbok population decline in the southern Kalahari of Botswana by studying seasonal recruitment rates, habitat selection and diet composition.

Progress Report

Assesing seasonal changes in recruitment rates

In the last few months the project made some great progress. Some fieldwork aimed at being part of the Master of Science Degree were completed in July 2018. We have analysed the data looking at seasonal changes in recruitment rates of the population as a measure of young survival. The results show a high ratio of young to adult females in the wet season and a decline in the dry season (Figure 1). This indicate that the survival rate is low of the young springbok, and this could explain some of the springbok population decline. During the wet season when there was a high proportion of young. We also recorded a high number of black-backed jackals near or among the springbok herds. The jackals most likely prey on young lambs and this may contribute to the low survival of the lambs, and therefore the low population recruitment. Predation of lambs by jackals and low forage quality outside the raining seasons could be some of the factors contributing to this low rates. Details of the factors that could be contributing to the low recruitment rates will continue to be investigated further.

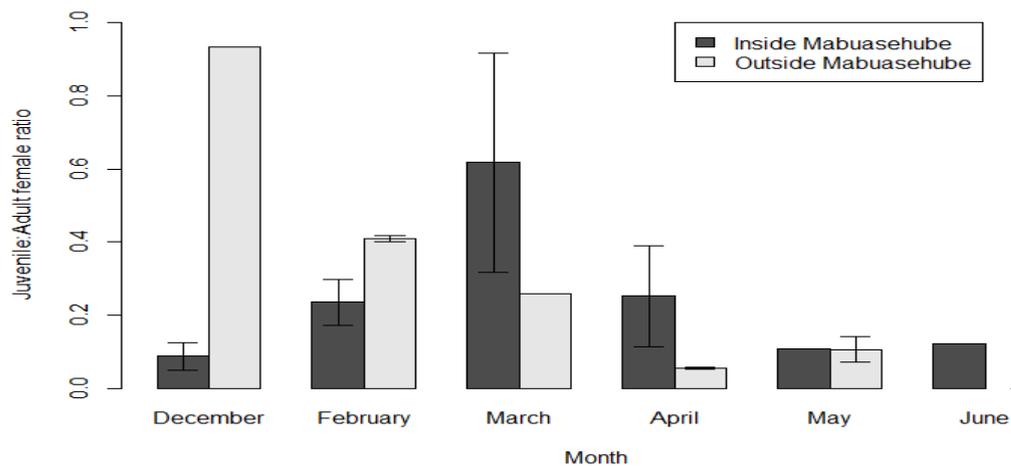


Figure 1. Recruitment of springbok inside and outside Mabuasehube part of the Kalahari Transfrontier Park.

Assesing seasonal changes in habitat selection

Five satellite collars were deployed onto springbok, four inside the park and one outside. Efforts to deploy more collars outside the park were unsuccessful as the animals could not allow the team to get close enough for darting. We are exploring alternative methods to capture and collar the animals. The first two collars were deployed November 2017, the other three in February 2018. The movements of these animals have been fascinating to see. They demonstrated some importance of pans as habitats for the population. One of the collars sent a mortality signal, suggesting that the springbok died. We could not recover the collar or the animal. We suspect the animal may have been killed and the collar destroyed by carnivores. The other collars has stopped sending signal and efforts are ongoing to locate the animal, as we suspenct the collar is malfunctional.



Figure 2. One of the collared springboks in the Kalahari Transfrontier Park

Before this study it was not known how far the Kalahari springbok can move in the landscape and the extent they use non-pan vegetation type. Generally springbok were believed to be confined to one pan. The data from the collars show that springbok move between pans and they are confined to pans which is believed to provide a high level of forage productivity during wet seasons, and providing some safety against predation. However, we see Mpayathutlwa pan as an important habitat for springbok in the eastern KTP (figure 3). The collared animals spent most of their time in Mpayathutlwa pan despite the availability of different pans in the park. We would like to continue to monitor the collared springbok and those we intend to collar to maintain adequate sample size.

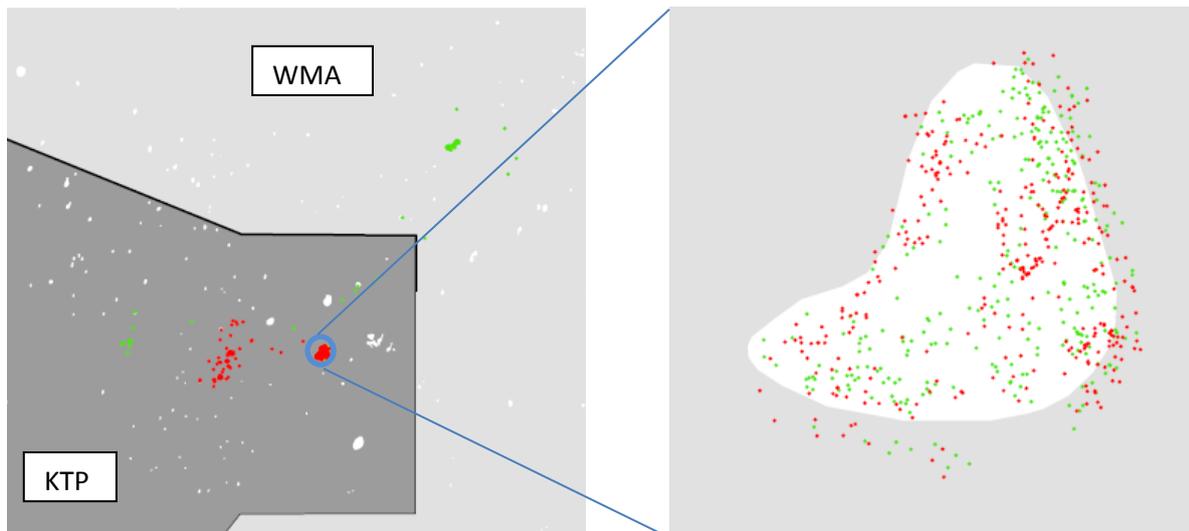


Figure 3. Springbok seasonal locations in the Mabuasehube part of the Kalahari Transfrontier Park. Green and red dots represent wet and dry season locations, respectively. The white patches represent pans in the study area.

Springbok diet selection

We are in the process of analysing vegetation data to identify the seasonal forage selection of springbok. Results will help us understand the characteristics of plant species that springbok prefer (or select), avoid and use. Following the recent study we did in the Central Kalahari Game Reserve, we would like to investigate the landscapes forage quality and quantity that could be driving the habitat and diet selection of the springbok and the other ungulates in the landscape. The results of the study will inform the development of sustainable intergrated landuse plans that protects key habitats for declining springbok populations.

Community engagement efforts

The project community engagement team establish initial relationships with the community mid 2018. The community engaged in the area involved government departments, traditional and government leaders in Hukuntsi, Zutshwa and Ngwatle, schools in Zutshwa and Ngwatle. The community and satakeholders were made away of the efforts to understand the ecology of the springbok area and determine factors that could contribute to the decline of the population.

The engagement will continue through out the study period with presentation of the outcome and suggested interventions.

Investigations on the springbok movement outside the reserve, predation rates of lambs by carnivored (especially jackals) and forage quality and quantity across the landscape will be considered as the study progresses.