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Umphafa private nature reserve, South Africa

In July of 2014, I undertook a voluntary internship on Umphafa nature reserve in the Kwa-Zulu Natal region of South Africa. This was a month long programme on conservation in a 'vegetarian' nature reserve (with the exception of leopard) with the aim of developing crucial skills for a career in conservation amongst the interns.

My time at Umphafa was an incredibly practical and hands on experience; the staff were exceptionally helpful and open to sharing new experiences with us. The reserve had a rich diversity of fauna with particular species that were high priority research purposes. These included the white rhinoceros, the giraffe and the leopard, all of which had successfully bred on the reserve.

Umphafa is also being utilised as a bonding site for a pack of African wild dogs. All of these high priority animals needed to be regularly monitored and ethograms of their behaviour taken to ensure they are healthy and not stressed as both could affect their breeding success. The wild dogs required a lot of work. Dog teams would be assigned to the bomas twice a day to check the state of the fence, the health and behaviour of the animals and occasionally to feed them. Animals were Iidentified by taking ID photos for more meaningful data collection.

The rhino and giraffe were tracked on a daily basis. More emphasis was on the rhino as the poaching threat for them is exceptionally high in South Africa. Game guards would radio the interns to disclose the rhinos location and we would make our way over, perform an ethogram and brief health check and report back information. This was of utmost importance as a few miles away near the local town of Colenso, a white rhinoceros was poached so it was evident that poachers were operating in unnervingly close proximity.

We would sometimes observe behaviours of these animals on the camera traps which were set out in regular grids of nine in biodiversity hotspots, the camera facing towards any suitable game trails. It was the job of the interns to collect this footage and ensure the cameras were in working order and to clear vegetation from in front (swaying grass for example is ample movement to trigger the camera sensor). Using the camera traps and sighting cards that were taken with us, all unusual or significant tracks or sightings were recorded along with the time and grid reference to give the reserve coordinators a better idea of what was using the reserve.

As well as the high priority animal work, the rest of the reserve's biodiversity needed to be studied. This was done in three ways all from the back of a cruzer vehicle. These included game counts (numbers of different species in what areas), sex ratio counts (male to female of same species), and juvenile counts which were used to judge the success of breeding amongst prey species (many of which were regularly 'cropped' to be fed to the wild dogs). These counts covered the whole area of the reserve and helped provide valuable data as a male to female ratio that exceeds its optimum can result in less breeding success as males have to compete more intraspecfically (as is the case with the impala).

General maintenance of the reserve was equally as important and there was no shortage of this type of work. With the dry season at its peak, the interns were constantly on guard to fight any fires that threaten the reserve or produce fire breaks around the outside to minimize any potential

damage. Thankfully, most fires extinguished before they reached the outskirts of the reserve. Following a dust storm however, a fence was broken and havoc ensued as animals from inside and outside the reserve crossed over the border and so the fence was immediately fixed. Further to this, game counts of all species needed to be performed and the high priority animals identified to ensure that none had been lost.

As a result of the fence collapsing, it was decided that a perimeter check of the whole reserve was in order, which meant splitting into groups to cover more ground. This check involved removing snares and tangled wire, filling in holes under the fence formed by burrowing animals and persuading the odd trespassing goat back outside the reserve. A lot of fencing in the newest part of the reserve needed to be removed as it was formerly land designated for cattle. The combination of overgrown verges and exposed barbed wire led to a hazardous situation for any animals on the reserve and so the removal of this was vital.

Due to South Africa experiencing a wet and dry season, soil erosion can be a serious issue as surface run off from the hard soil can result in severe soil erosion. The staff at Umphafa taught us a technique to prevent this - known as 'brush packing' where acacia is removed by machete from an area it is encroaching on, and it is flattened into the gullies and bare surfaces to catch detritus and particles from the rain. This helps plant seeds to establish and the ground to recover and become vegetated again. Over the course of the year, the effectiveness of this technique was assessed with comparative photographs of the vegetation and the interns assisted with getting the correct frame of reference for a photo.

In conclusion, my trip to Umphafa has greatly increased my chances in achieving a career in the field of conservation as not only will the trip look good to prospecting employers, but I have learnt a huge variety of conservation techniques and skills. I have gained a knowledge of not only the organisms at Umphafa but also the complicated nature of conservation and what can be done to assist the conservation effort. And it is because of this that I would like to thank the Society of Biology for their generous travel grant as without this, I would never have been able to afford my travel expenses to pay for plane tickets and thus would be much less likely of having sufficient job experience for employment.