JAMES RENNIE BEQUEST

REPORT ON EXPEDITION/PROJECT/CONFERENCE

Expedition/Project/ Conference Title:	Conservation Techniques in South Africa
Travel Dates:	27th June 2016 – 28th July 2016
Location:	Mpumalanga and KwaZulu-Natal, South Africa
Group member(s):	Stephanie Turner
Aims:	To gain experience in the techniques used for conservation in South Africa with particular emphasis on Rhino.

OUTCOME (not less than 300 words):-

The aim of this project was to contribute to the conservation effort in South Africa with particular focus on the Rhino. All subspecies of black rhinoceros (*Rhinoceros bicornis)* are now listed as critically endangered on the IUCN red list. This is the result of habitat loss and poaching which have caused their numbers to fall from 850,000 in 1900 to around 2,000 in 1995 (Emslie, 2012). Although the numbers are slowly increasing there are still only around 5000 individuals (Emslie, 2012), therefore current conservation efforts are imperative for their survival. The position is even more dire for the northern white rhino (*Ceratotherium simum* ssp. *cottoni)* as only three individuals remain (WWF, 2016). Due to the severity of the threat these two species are facing, even the loss of a few individuals can have a profound effect on the population. Therefore, the conservation methods needed have been taken to the extreme with orphanages and rehabilitation centres being set up to care for individuals that are too young to survive on their own. I spent two weeks at one such organisation called Care for Wild Rhino Sanctuary in Mpumalanga.

In combination with this, it is crucial to preserve the rhino's habitat and the encompassing ecosystem, so that once the young rhinos are reintroduced they have the best possible chance of survival. This work is carried out by national parks and game reserves, many of whom are members of the Black Rhino Custodianship Programme, which works in collaboration with the government to increase eco-tourism through the reintroduction of black rhino. I spent a further two weeks at one such reserve called Phinda in KwaZulu-Natal where I was working with the Priority Species Monitor and the Head of Research to collect data about wild populations. Using these methods conservationists hope the black and northern white rhinos can make the same successful recovery as the southern white rhino which had only 20-50 individuals at the end of the 19th century and now has numbers exceeding 20,000 (WWF, 2016).

Rhinos are one of the few species where conservation has to be so hands on. At Care for Wild I was given lectures on hand rearing and infant care as well as the nutritional requirements for the different species and how these are adapted to take into account the fact they are

being cared for in a place which is not their natural environment. I was also taught to record and interpret their feeding behaviour, weight gain and development.

At Phinda Private Game Reserve I learnt skills such as footprint tracking and telemetry which are essential to the conservation effort as they allow populations to be closely monitored to ensure they are always as close to the carrying capacity as possible. This ensures stability within the reserve for all species. Camera trapping was also used to monitor populations and provide information about their movements. These were especially useful to keep track of nocturnal animals and those coming under the fence from other reserves. However, they were also used to check for stray dogs which may have come into the reserve. It was important these were humanely killed and burned as soon as they were discovered as they carried canine distemper which could be passed onto to the big cats and hyena if they were to catch and eat the dog. These traps also highlighted that social behavioural norms are not always adhered to in nature as closely as many textbooks suggest. Images were often captured of unrelated leopards (which are considered solitary) walking together or feeding on the same carcass quite peacefully.

Knowing the individuals is also important for some species, especially on small reserves. When collaring elephants, the aim was to maximise the quantity of information received whilst collaring as few animals as possible. Therefore, understanding the herd dynamics was imperative. This is also important from a poaching perspective; all rhinos on the reserve had to be sighted at least once a month and were identified using an ear notch system which is standard for South African game reserves. All rhinos were notched at a few months old; this involved being tranquilised via a dart from a helicopter with a mixture of M99 which belongs to the opium family, a tranquiliser and an enzyme to speed up the process so the animal does not run for too long. Once on the ground their eyes and ears were covered and blood, hair and horn samples were taken. Three microchips were also placed into the rhino - one in each horn and one in the back of the neck.

During these dartings the difference between the black and white rhinos became startlingly apparent. The black rhinos had a much more aggressive nature which presented another problem in their conservation as they could only be safely dehorned if all within the reserve were done at the same time. This is because mixing dehorned and intact rhinos would result in injury and possibly death to those unable to defend themselves. However, leaving the black rhinos intact but dehorning the whites makes the more endangered black rhino more of a target. This therefore is an issue which is much more complicated that I had previously assumed.

Another complication was the severe drought which is currently affecting much of South Africa. Many reserves were forced to sell their rhinos, as if they remained they would have died of dehydration. This is stressful for the animals but the preferable option. However, many of the black rhino belonged to the South African government and were loaned out to reserves under the black rhino custodian program. Therefore, they could not be shipped out so easily and could only be transferred to a handful of pre-approved locations. The drought also affected the local communities which increased poaching as people had no other source of money to buy water for their families.

For other species on the reserve there was the opposite issue with numbers. The elephants were part of a contraceptive program as the reserve had reached its carrying capacity but the growth rate was still at 15%. The drug used was called PZP and coats the egg to stop sperm from reaching it. This was administered after the female had had her first calf using a drop out dart. There are no known hormonal side effects of PZP, however mustang horses also on the drug have recently started becoming sterile, therefore researchers have now turned to the elephants to see if they are also showing this undesirable side effect. This was done by darting female elephants which had been on the contraceptive for a number of years and taking blood and DNA samples as well as performing an ultrasound when possible. The opportunity was also taken to take measurements from all the elephants whilst they were under anaesthetic.

I felt incredibly privileged to have been able to travel to South Africa and learn so much about conservation and the wider issues the country faces. I am incredibly lucky to be studying Zoology at Edinburgh University but the skills I have gained this summer cannot be taught via textbooks so I am delighted the James Rennie Fund saw fit to grant me this additional learning experience. This experience has given me so many invaluable skills which I will be able to carry forward into my further studies and career after university. However, it has also taught me many personal skills, namely the importance of being able to adapt to different situations and the importance of effective communication.

References

Emslie, R. 2012. *Diceros bicornis*. The IUCN Red List of Threatened Species 2012: e.T6557A16980917. . Downloaded on: 10 February 2016.

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