Walking with African Wildlife

2012 FIELD REPORT

Background Information

Lead PI: Dr Dave Druce

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Report completed by: Dr Dave Druce

Period Covered by this report: 13 July 2012 to 22 September 2012

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Research site: Hluhluwe-iMfolozi Park

Research site latitude / longitude: Hluhluwe-iMfolozi Park

Protected area status: Ezemvelo KwaZulu-Natal Wildlife game reserve

Dear Volunteers,

The 2012 fielding season was a great success as a result of you volunteering your time, legs, eyes and expertise in order to complete a massive number of transects throughout Hluhluwe-iMfolozi Park (HiP). All the transects that you walked were repeated between 13 and 16 times during the season, with 21 942 individuals being seen in 4082 different sightings! Without you coming to HiP, we would not have been able to repeat the transects as many times as was achieved with you here. We need enough repetition of transects to have a large enough sample size to produce accurate estimates.

As well as for various research projects that are undertaken within HiP, one of the main reasons for conducting the census is to monitor long-term trends in the large herbivore population and to use the information in more effectively managing these species within an "small", enclosed protected area. During November 2012, we held the annual Animal Population Removals meeting in Hluhluwe. The aim of this meeting is to debate population estimates, assess population trends and determine offtakes of each species for the following year. As you can imagine, this is a very important meeting and requires excellent information. The park management team was very impressed with the amount of data collected during the census this year. Unfortunately, all of the species, with the exception of buffalo, white rhino and black rhino, are decreasing in number. As a result, only white and black rhinos will be removed from the park next year, both as part of the ongoing provincial and national strategy to increase the distribution of these species.

In 2008, many of the large herbivore species had reached 10 year high figures, but most have now dropped to lower levels. We are not sure exactly what has caused this decrease, but some of it could be as a result of natural downward fluctuations after a peak, others could be caused by a prolonged period of below average annual rainfall and yet other decreases could be a result of high numbers of predators such as wild dog and lion. However, as the last groups would know, we have now had some really good rains, some of the highest monthly totals for more than 10 years. Next year there are various research projects beginning in the park which will focus on lion, wild dog, cheetah and leopard. Hopefully these projects, in conjunction with the ongoing monitoring in the park, will provide some idea of what numbers of various ungulate species are being removed as prey on an annual basis.

On a positive note, the white rhino numbers have remained almost exactly the same as in 2010, despite the poaching threat that these animals face in South Africa at the moment. We conducted the aerial census of white rhino in iMfolozi in September and this gave us the distribution of white rhino in this section of the park. As a result, we've been able to put up 91 animals for removal next year, the highest number that will have been removed from HiP for a number of years. These animals will be donated to new conservation areas and/or auctioned to game reserves next year.

The data that you collected will also continue to be used in various external research projects and scientific papers which are planned for the next few years! Thanks again to all for your assistance with this project, the results of which are used directly by the management team as well as other researchers. Thanks also for entering the data immediately after you had completed the transects. It made Geoff's job of analysing the data very easy after you had left. The entire job was done successfully and extremely well!

Regards Dave

SECTION ONE: Scientific research achievements

Reporting against research objectives

Objective 1: Count the large herbivore component of game in Hluhluwe-iMfolozi Park This was successfully completed by the volunteers, staff and students between July and September 2012. All the species that were targeted were counted, although some of the less common species were not seen often enough to be included in the analysis. After the volunteers had left, we analysed the data and produced estimates for 10 of the most common large herbivore species. This was then used to produce the Annual HiP Game Count Report.

Objective 2: use the data to establish long term trends in herbivore populations and ensure this data accessible to research projects. The 2012 field season added another year of data to the growing database we have on large herbivore numbers every two years. Because of the number of years of data that we now have, we are able to determine trends in the different species numbers. Where the data indicates areas for concern for management, the necessary management actions are taken. Currently, the only populations that are not in decline are the buffalo, white rhino, black rhino and elephant populations. In 2013, various PhD and MSc research projects are beginning in the park to look at the effect of various predators on the ungulate population. This should provide the management team with some idea why most of the ungulate populations are in decline. Since the 2010 fielding season, a paper looking at the effect of lions on the ungulate population was accepted. This shows, based on the available data, that lions are not impacting their prey populations. However, more intensive studies in the coming years may provide a different answer.

SECTION TWO: Impacts

Partnerships

In addition to the Earthwatch Institute supporting this project though financial support and the support of volunteers to do the actual work on the ground, the only other support that was received was from colleagues within Ezemvelo KZN Wildlife. This was through assistance with sourcing people to clear transects, supervising these people, assistance with accommodation and other logistics and provision of field rangers for escorting the volunteers. No other external organisations assisted with this project.

Contributions to conventions, agendas, policies, management plans

- **National or regional**

The census results for white rhino are shared with the KZN Rhino Management Group which reports to the national body. However, the results from this study have not contributed to changing the provincial strategy.

- **Local**

The results are also shared with the local managers, who then implement the current removal strategy based on the results. An inaccurate census of any species could result in too many individuals being removed from the population the following year, which would have a detrimental effect on the population within the park.

Conservation of Taxa

1. Ceratotherium simum - white rhinoceros
2. Globally threatened & ecologically significant
3. IUCN status - Near threatened
4. At last census the population within HiP was increasing slowly.
5. Population size increased over the past 12 years within Hluhluwe-iMfolozi Park. However, the population has remained stable since the last count in 2010. We are still able to remove white rhino individuals from the park in order to seed new populations and to add to existing populations, thereby increasing the genetic diversity of these areas.

Impacting Local Livelihoods

Sixty-two members of the local communities directly surrounding HiP benefited from temporary work for a month when they were employed to help clear and cut the transects prior to the volunteers arriving. Four members of the local communities were employed as cooks and cleaners for the duration of the project. One member of the local community was employed as a field guide for the duration of the project.

Local community activities

The Local Board, a group of people from the local communities who are elected to pass on information from the park management team to the local communities (as well as other functions), were informed of the project before it began and were also informed of the results at the end of the project. Earthwatch Volunteers are encouraged to visit one of the schools in the local community, along with one of the permanent park staff members, while they are on the project to see how the schools work, what their needs are and to donate school equipment.

Dissemination of research results

Scientific peer-reviewed publications

Sophie Grange, Norman Owen-Smith, Jean-Michel Gaillard, Dave J. Druce, Marcos Moleón, Mandisa Mgobozi. 2012. Changes of population trends and mortality patterns in response to the reintroduction of large predators: the case study of African ungulates. Acta Oecologia 42: 16-29.

Grey literature and other dissemination

2012 Hluhluwe-iMfolozi Park - Game count report 2012 Game Count Figures - presented on all sightings boards (gates and camps) within Hluhluwe-iMfolozi Park. Results are shared with Community Conservation Officers who undertake environmental education work in the communities surrounding HiP.

Table 1. Trends in the large herbivores counted during the biannual game censuses within HiP since 2000.

	2000	**2002**	**2004**	**2006**	**2008**	**2010**	**2012**
Buffalo	2865	3430	3553	4072	6082	4789	5468
Giraffe	657	748	649	687	793	874	515
Impala	24827	23622	19493	18388	23133	14054	11365
Kudu	1528	1112	974	1013	800	717	757
Nyala	9543	7607	6439	5697	6640	4082	3609
Waterbuck	792	618	436	340	118	136	82
Warthog	4072	3543	2023	1997	2049	1531	1217
White Rhino	1687	1802	1924	2090	2038	2312	2306
Wildebeest	3364	3270	2965	3901	4399	3002	1179
Zebra	3124	3435	3444	3554	4133	2749	1779