



Darwin Initiative for the Survival of Species

Annual Report:

***BIG CAT CONSERVATION AND SUSTAINABLE
MANAGEMENT IN SOUTHERN AFRICA***

D.W. Macdonald

09/015

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Annual Report

1. Darwin Project Information

Project title	<i>Big cat conservation and sustainable management in Southern Africa</i>
Country(ies)	<i>Zimbabwe</i>
Contractor	<i>D. W. Macdonald</i>
Project Reference No.	<i>09/015</i>
Grant Value	<i>£154 237</i>
Start/Finishing dates	<i>April 2000 – April 2003</i>
Reporting period	<i>End year 1</i>

2. Project Background

Big cats are emblematic species in the tourist industry in Africa and along with other conspicuous and charismatic species are crucial to the long term viability of tourism and related development, which is a major source of revenue for developing countries. Big cat populations are commercially exploited, mostly through tourist hunting. In Zimbabwe and other countries in the region, concern is mounting over possible overexploitation of big cat populations by sport hunting.

Lions and other charismatic species are valuable both to photo-tourism and hunting tourism in Zimbabwe. These industries contribute considerably to the local economy, providing jobs and foreign currency to an area of Zimbabwe that is otherwise relatively poor. There is little legislation to ensure that these activities and the wild populations that they exploit remain sustainable in the long term.

Lions are one of the major attractions for photo-tourism in a national park such as our Hwange study site. However, lions are also extensively hunted on the periphery of the park by foreign sport hunters, as well as coming into conflict with local communities. A large part of our study looks at the impact of human (hunting, poaching, problem animal control) on the national park population.

Responsible conservation of key species, such as lion, through sustainable use ensures that the economic benefits of tourism continue to contribute to conservation of habitat and biodiversity. Many problems in large carnivore conservation are not isolated problems, but issues that recur wherever carnivores are in conflict with human populations.

3. Project Objectives

This project is aimed at instigating a more sustainable approach to management of big cat populations in southern Africa. The project functions at two levels. First, there is a specific case study of the behaviour of an exploited lion population in and adjacent to Hwange National Park, Zimbabwe. For this part of the project our aims are to:

- *Contrast social behaviour and population status of lions on the periphery of the park with lions, which are undisturbed by human activities, in the centre of the park.*
- *Contribute directly to a management document for the lions of the Hwange area. We hope that conservation of a large keystone species will in turn further the conservation of biodiversity in the area.*
- *Facilitate communication between stakeholders in the wildlife industry in the area (photographic safaris, hunting safaris, local people, National Parks and Wildlife department). Through communication, problems of sustainable use of the lion population versus overexploitation can be resolved. Data collected by this project will contribute to understanding of the issues involved.*
- *Run quarterly operational workshops and informal meetings with National Parks staff and local safari guides to stimulate awareness and understanding of the issues involved in carnivore conservation. Training in research techniques will be undertaken for interested parks staff and guides from time to time.*

The second level at which this project functions is at a regional level, where project personnel are involved in actively facilitating co-operation between the various big cat research projects in the sub-region and beyond. At this level, our aims are to:

- *Set up an international network of projects on related subjects to foster communication and facilitate co-operation between the various big cat research projects in the sub-region and beyond. One way of doing this will be to hold annual workshop, with specific issues discussed at each one.*
- *Contribute directly to the knowledge and skills base of local wildlife managers, including National Parks research staff.*
- *Produce an integrated regional policy document for management of big cats in southern Africa with the extensive co-operation between researchers and managers throughout southern Africa. We hope that this output will be a landmark document in conservation management of large carnivores and one that can be used by wildlife managers, both as a practical tool and as supporting material in dealings with government ministries and NGOs. We hope that in taking a regional perspective and with regional co-operation between related big cat projects common approaches to common problems can be implemented.*

There has been no modification of the projects aims and objectives over the last year.

4. Progress

The organisation of pre -project permissions and an on site investigation began in early 2000. A study site was selected and informal meetings held with landowners, National Parks personnel and safari operations managers. A 'Dangerous drugs' course was attended by a Zimbabwean post-doctoral researcher in March 2000. Purchase of project equipment and pre-project planning was undertaken once Darwin funding had been secured. June-December 2000 was spent capturing and radio-collaring lions and radio-tracking, identifying and cataloguing various prides. (This will be ongoing for the duration of the project). Meetings with Parks research staff is undertaken on a regular basis to inform and update progress on the project. A radio-tracking workshop was attended by National parks staff and safari guides. Meetings with commercial safari hunters have been ongoing throughout the project. An international workshop was held in October and attended by 15 people, 14 of which were biologists from southern Africa. A workshop Proceedings is currently being synthesised. A Zimbabwean post-doctoral worker has gained a microlight pilots licence in order to use aircraft for fieldwork and has gained much experience with dangerous drugs and carnivore capture methods. Safari guides have been encouraged to participate in the project by collecting data of lion sightings on supplied data sheets. Likewise National Parks staff are included wherever possible in research activities and given continuous practical training and experience while undertaking research.

Apart from initial difficulties in capture and monitoring lion prides, research activities been undertaken and expected landmarks achieved according to the timetable period agreed.

Research, training and technical progress is as follows:

- Organisation of a three-day workshop ("Policy and Management of big cat populations") in collaboration with Tropical Resource Ecology Programme and Norwegian aid (NUFU) was organised with delegates from eight southern African research projects. A preliminary paper was prepared focussing on methods of surveying population size of African lions. Further workshops are planned for 2001 and 2002. A proceedings of the latest publication is currently being synthesised and will be available in published form and on a website dedicated to the Darwin Project.*
- Data on the Hwange lion project is being collected. Animals have been and will continue to be captured and marked and monitored. Data is shared with National Parks research staff and on-the-job training provided.*
- Data on management of the population including important sources of mortality, including sport hunting and illegal poaching is being collected and will contribute to our final output of a management plan for the Hwange area. It is clear that the current hunting quota is far too high to be sustainable. Discussion with local hunting guides has resulted in a positive feedback for the project and agreement that management is necessary. We believe that biodiversity will be maintained in the area if management of important populations is instituted.*
- The project is actively disseminating the aims and results of the work as detailed below. Likewise formal and informal training of National Parks staff and local safari guides is ongoing. Meetings with the new Warden of Hwange National park have been undertaken to appraise him of developments in the project and to foster communication and cooperation with the department.*

- *Discussions have taken place with hunters, guides and safari operations stressing the need for active management of local lion populations. Support for this work has been considerable from within the safari hunting and guiding community in the Hwange area and in Zimbabwe generally. This work is all the more vital due to the catastrophic turbulence in Zimbabwe's circumstances, which threatens the tourist market, and thus threatens conservation. Our project is even more needed now than when we first conceived it.*
- *Within the umbrella of our Darwin Initiative project we are seeking to develop several affiliated field studies. We have already established a field project in Makgadikgadi Pans National Park in Zimbabwe, and another at the Cheetah Conservation Trust in Namibia. In addition, we have established links with the National Parks project in Mana Pools National Park (Zimbabwe) which has similar objectives, and with parallel work in the Laikipia district of Kenya.*

Zimbabwe's economic and political circumstance has imposed certain logistical difficulties on the project, such as shortage of fuel vehicle spares, however this has not seriously curtailed the functioning of the project.

Lessons have been learned about research on far ranging carnivores in thick bush conditions. A microlight has been purchased, with funds raised using the Darwin Initiative Award as leverage, in order to effectively monitor the prides of lions that are currently radiocollared.

Our workplan for May-December 2001 is as follows:

- *May- December 2001 - continued capture, radio-collaring and radio-tracking of study lion prides on the periphery and in the hinterland of the National Park. An additional fieldworker is scheduled to join the project in August 2001.*
- *September 2001 - UK project personnel to spend approx 3 weeks with southern African cat projects.*
- *October- 2001 - second southern African Researchers workshop to be held in Maun, Botswana.*
- *Informal meetings with safari operations and commercial sport hunters to be held throughout.*

5. Partnerships

A Zimbabwean post-doc has gained considerable experience on the project and has benefited by a close association with Oxford University. Prof. David Macdonald has contributed his experience of fieldwork and raised additional parallel funds for the project.

Strong links and collaborations have been forged with other researchers working in the Hwange area. A number of these projects are on other carnivores (hyaena, African wild dog).

The Tropical Resource Ecology Programme at the University of Zimbabwe (TREP) was approached to host the lion research workshop held in October 2000. A strong link has been formed with this institute. A University of Zimbabwe registered student is currently working in the Hwange area. Another student is expected to join the project in association with TREP.

A student from development studies at UZ joined the project for a week to gain experience.

A network of collaboration with other projects in Africa has been set up. Cross fertilisation of ideas, research methods and management strategies has been facilitated. The specific projects are:

- *Botswana, Makgadigadi lion research (G. Hemson, a WildCRU project)*
- *Botswana, Okavango lion research (C & H Winterbach)*
- *Kenya, Laikipia Predator Project (Dr L. Frank)*
- *Namibia, Africat foundation (L. Hansen)*
- *Namibia, Department of Environment (Dr P. Stander)*
- *Namibia, Cheetah Conservation Foundation (L. Marker)*
- *South Africa, Kruger National park (Dr G. Mills)*
- *South Africa, Kalagadi Transfrontier lion project (Dr P. Funston)*
- *Zambia/ Zimbabwe, Matusadona and Liuwa Plains predator project (G. Purchase)*
- *Zimbabwe, Mana Pools lion project (N. Monks, TREP)*

A further collaboration has been formed with the local Dete Animal Rescue Trust (DART), a registered charity. Personnel from the trust have been assisting with lion capture.

6. Impact and Sustainability

The Wildlife Society of Zimbabwe has agreed to act as a vehicle for project information dissemination. To date a talk has been given to the Matabeleland Branch of the Society in Bulawayo, a short article aimed at school children (readership 5000) and a longer article for the society's glossy publication (readership 3000) have been submitted. A series of articles in the wildlife newsletter and a follow-up talk have been planned.

A radio talk was recorded about the project. This has been broadcast twice on a weekly wildlife radio show.

A German TV crew has filmed aspects of the project and this is expected to be screened in Germany and elsewhere in late 2001, early 2002.

A newsletter aimed at local safari guides has been produced for distribution locally, a talk and slide show has been planned for later in year, gain aimed at safari guides to disseminate information about the project.

The planned exit strategy includes delivery of a management plan for lions in the Hwange area to the Department of National Parks and to local landowners. Training provided to National Parks research staff will allow continued monitoring of the lions radio-collared in the National Park. An ID database currently updated and lodged with the Research section of National Parks will allow continued data collection on the local lions by National Parks staff. As lions are long-lived further research is anticipated by the current researchers after the end of the Darwin Project.

7. Outputs, Outcomes and Dissemination

Table 1. Project Outputs (According to Standard Output Measures)

Code No.	Quantity	Description
14A	1	Wildlife society talk
16A	2	Articles in popular wildlife publications
16A	1	Workshop proceedings (currently being produced)
3	1	Zimbabwean qualifies for Dangerous Drugs Certificate
3	1	Zimbabwean gains Pilots licence
4A	1	Undergrad gains experience of fieldwork
4B	2	Training weeks provided for Parks staff
6A	4	Number National Parks staff gaining continued practical fieldwork experience.
8**	2	Dr Macdonald's time on southern African projects
12A	1	Lion ID database established
14A	1	Lion research workshop held
16A	1	Guides newsletter produced
17A	1	Southern African Big Cat researchers
18B	1	TV documentary (German).
19A	2	Wildlife radio show (broadcast twice)
20		Not yet clear
23	c. £25K	Value of resources raised from other sources

Table 2: Publications

Type *	Detail	Publishers	Available from	Cost £
(e.g. journals, manual, CDs)	(title, author, year)	(name, city)	(e.g. contact address, website)	

Dissemination of the aims and results of work undertaken by this project will be in various forms, including: a management document for the lions of the Hwange area; an integrated regional policy document for management of big cats in southern Africa; a Proceedings of a final conference on big cat conservation, a Proceedings of annual regional big cat research workshops; articles in the Wildlife society of Zimbabwe's magazine (3000 readers), newsletter (500 readers) and children's outreach (1000 readers); talks given to interested conservation groups; scientific papers in refereed journals. Regional workshops have disseminated the Darwin Project aims and activities to professionals throughout southern Africa. Continued communication, originally facilitated by this project is expected to continue.

8. Project Expenditure

Table 3: Project expenditure during the reporting period

Item	Budget	Expenditure
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9. Monitoring, Evaluation and Lessons

We have been enormously fortunate in this project. Not only have we been able to make a good start with the fieldwork, which has gone better than expected, but we have also enjoyed additional sponsorship from the Mitsubishi Corporation and we have been able to build collaborations alongside the Norwegian Aid Initiative through the University of Zimbabwe. We have scheduled, for early October, a meeting of all the lion researchers in Southern Africa (to be held in Botswana) and we have sponsorship in kind to support this meeting from our hosts there. We have monitored our progress in the field in terms of numbers of lions tagged, and the flow of data, and we have monitored the success of our many collaborations. Within a few weeks we will publish an account of our workshop.

Although we have been nervous of political developments in Zimbabwe, with hindsight we can see that little has actually gone wrong. Of course, one is always surprised afresh by bureaucratic and logistical difficulties of working in Africa, but we try to prepare ourselves for this.

10. Author(s) / Date

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