

# **A National Plan for Carnivore Conservation in Tanzania**

**FINAL REPORT**

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In collaboration with

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# *Darwin Initiative for the Survival of Species*

## *Annual Report*

### **1. Darwin Project Information**

Project Ref. Number	162/11/007
Project title	A national plan for carnivore conservation in Tanzania
Country(ies)	Tanzania
UK Contractor	Institute of Zoology, Zoological Society of London
Partner Organisation	Tanzania Wildlife Research Institute
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### **2. Project Background/rationale**

#### **2.1 Location and circumstances**

Tanzania is recognised to be a hotspot for African carnivore biodiversity (Mills *et al.* 2000). Not only does the country contain one of the highest carnivore biodiversities in Africa, holding a total of 35 species, but it also contains significant populations of several threatened species, including cheetah; wild dog and lion. It is home to a third of the global estimate of 5700 wild dogs, which include the world's largest single population in the Selous Game Reserve, thought to hold 1000 individual dogs in itself over 15% of the world's population. Tanzania also holds the largest population of lions in the world and the fourth largest population of cheetahs, including one of the largest single protected populations of 250 cheetahs in the Serengeti ecosystem. However, despite its global importance for carnivore biodiversity, the country lacks information on population trends and distribution patterns of its carnivore species, particularly its smaller species, which are essential for effective conservation management and policy.

Carnivore conservation is often particularly problematic. Wherever carnivores occur, there are varying degrees of conflict with people. With large carnivores the causes of conflict are obvious, in terms of physical danger for people and livestock; however conflict often occurs even with smaller carnivores. For example, in the UK most carnivore species have been persecuted at some stage in their history, and many still face antagonism today. Badgers have been gassed, foxes and otters hunted, and wolves and bears eliminated. Even the smallest carnivores such as weasels and stoats have been trapped and poisoned by gamekeepers.

#### **2.2 Problem identification**

Given the long human history of persecution of carnivores in many parts of the world, countries like Tanzania which still support large and healthy carnivore populations are

unusual, and hence are critical to the conservation of this taxon. However, with human population growth and accelerating land use change, the future of Tanzania's carnivore populations cannot be guaranteed. If Tanzania is to be able to conserve its carnivore populations for the future, it needs to be able to monitor and manage them effectively in the face of increasing threats. However, an assessment of the national distribution and status of different species and the prioritisation of appropriate conservation and management action is critical to this. At the start of this project Tanzania lacked the capacity to do this. The overall aim of this project was therefore is to help build national capacity to monitor carnivores and to formulate an effective action plan for their long-term conservation.

This project planned to achieve this aim through the establishment of a Carnivore Centre at the headquarters of the Tanzania Wildlife Research Institute (TAWIRI) in Arusha. The Centre was to collect data from a wide range of sources and manage this information in a national database on carnivore distribution. It had four key national functions, all of which assist Tanzania in meeting its obligations under the Convention on Biodiversity: 1) to establish and monitor the current distribution of all carnivore species; 2) to monitor individually recognised cheetahs and wild dogs; 3) to train Tanzanian wildlife professionals in carnivore monitoring techniques; and 4) to increase national awareness of carnivore conservation issues. The three year objective was to establish an action plan for carnivore conservation in Tanzania which would prioritise actions for conserving threatened carnivores and hence safeguard carnivore biodiversity across the country.

### **2.3 Project need**

The project grew out of a collaboration between the project leader who, at the launch of the project had been working in Tanzania for over 11 years, and the Tanzania Wildlife Research Institution (TAWIRI). TAWIRI is a governmental institution which is responsible for all wildlife research in Tanzania and is the main project partner. TAWIRI is mandated by the Ministry of Wildlife and Tourism of Tanzania (MNRT) to supply wildlife research relevant to management issues within the wildlife sector and to advice on wildlife policy. At the time of the project's conception, although there were a number of projects on carnivores in Tanzania, there was very limited impact of these projects on conservation policy, although many of them were carrying out conservation relevant research. This was partly because such projects were largely expatriate driven and hence had objectives which are not necessarily those of the wildlife authorities in Tanzania, and there were also problems in communication and engagement of Tanzanians and that was due, in part, to a lack of capacity within the Tanzania wildlife sector. There was a clear need to 'institutionalise' carnivore research and conservation within government structures in Tanzania, which would also ensure the engagement of Tanzanians in their conservation. TAWIRI was an obvious partner in this, partly due to its mandate, but partly also due to a long term effective working association between the project leader and this institution.

The project developed further out of discussions with the then Director General, Dr. Charles Mlingwa, who was a Darwin Fellow, and who was eager to expand the capacity of TAWIRI to enable it to better fulfil its mandate. Carnivores were an identified gap in the activities of TAWIRI, and were seen as a priority taxon because of their importance in attracting wildlife tourism. The project was planned to provide capacity in the form of buildings, equipment, personnel and training, to enable TAWIRI

to fulfil its mandate in respect of carnivore research. Whilst TAWIRI agreed to provide land for the centre's offices, help with finding suitable personnel to work in the centre, administer salaries and personnel, and assist with permits for short term expatriate personnel associated with the project. TAWIRI funds were always limited, however there was always strong support and commitment from Dr. Mlingwa for the project.

### **3. Project summary**

#### **3.1 purpose and outputs of the project**

The project has achieved its main objectives (Appendix I). These can be summarised as:

- Carnivore Conservation Centre established at TAWIRI headquarters in Arusha, Tanzania.
- Capacity for carnivore monitoring within Tanzania established.
- Assessment of distributional range of all species of carnivore in Tanzania.
- Assessment of status of cheetah and wild dog in Tanzania
- Carnivore Conservation Action plan for Tanzania.
- A core of Tanzanian wildlife professionals trained as trainers in carnivore monitoring techniques.

#### **3.2 Modifications**

The modifications to planned progress are specified in detail in the log frame (Appendix I). These are:

- Cheetah matching software training

Sophisticated matching software was developed by an outside consultant devised and was highly effective in monitoring cheetah. The project manager was trained in its use. However, despite the sophistication of the matching software, which nearly always identified the closest match to a cheetah correctly, the program still relied ultimately on confirmation by eye, and hence personnel using the software needed to be skilled at individually identifying cheetah. This takes experience and hence depends on individuals with substantial experience, usually field based, for effective use. It is difficult to see that this situation is likely to change as it depends to a large extent on the quality of photographs which are sent in by tourists, which are unlikely to improve in the near future. The solution employed by the project was to make use of the strong collaboration between the Serengeti Cheetah Project (SCP) and the Tanzania Carnivore Program, whereby cheetah photos are sent to SCP personnel for matching, and the data maintained in a database available to both projects. Given the mutual interest in both organisations in continuing this – the TCP requires information about cheetah populations outside the Serengeti, whilst the SCP needs information about where Serengeti cheetahs go – it seems likely that this will remain a stable and productive long term collaboration, even if the leadership and personal of these projects changes.

- Training in carnivore monitoring techniques

Training needs were achieved although trainers differed from those laid out in the proposal, mainly due to logistical and timing difficulties in the original schedule.

- Training in GIS and database management

This was achieved, although there were differences in detail. Due to problematic WCS course timings, the GIS and database manager attended a Nairobi course instead of the planned WCS course early in the schedule. He was later competitively awarded a place on a WCS advanced GIS course in New York, towards the end of the project, where expenses (including airfare) were largely accounted for by WCS.

- Scientific outputs

These outputs cover activities 3.6, 6.1 and 6.2 in the logframe (Appendix I). The original aims of the project were ambitious and included a number of scientific publications to be accepted before the end of the project. It became apparent reasonably early in the project that it was necessary to prioritise activities if the overall aims were to be achieved. We therefore chose to concentrate on data gathering and capacity development activities, a shift that was requested in our first annual review, and was supported by our mid term reviewer. The scientific outputs were therefore dropped as priorities. In retrospect we believe that it was too ambitious to initiate and implement a major capacity development program in a country where there was virtually no capacity already existing in this field, and to produce major scientific publications within a three year time span. Nonetheless, an unpredicted publication documenting the development of the project has been accepted for publication (Durant *et al.* 2007), and the GIS and database analyst has conducted a detailed predictive analysis of cheetah and wild dog distribution. Finally, results from the camera trap surveys and the data from the cheetah watch campaign are currently being analysed and written up for scientific publication. The program has collected a wealth of data, and it is anticipated that more scientific outputs will be generated, and the program will continue to work with project collaborators and will ultimately achieve this objective, although beyond the life time of the project.

- Monthly newsletter

The newsletter was downgraded from a monthly production to a quarterly production on advice from the mid term reviewer. This was because efforts prioritised towards data collection were thought to be more important than spending a lot of time editing and compiling a frequent newsletter. It was thought that a less frequent quarterly publication would be just as effective as a monthly publication.

- Cheetah and Wild Dog demography

The cheetah and wild dog watch campaigns sought to encourage people to send in photographs of cheetah and wild dogs for individual recognition to enable the project to track these threatened species more accurately and to identify large scale movements of individuals to provide information on corridors. The schemes have worked well for cheetah, highlighting some important large scale movements, but not so well for wild dogs. This has been discussed in our annual reports, however we feel it is largely due to the fact that the good populations of wild dogs are mainly in the south where there are few observers. A lack of a reliable project vehicle (budget restrictions meant we could only afford an unreliable second hand vehicle) in a country with extremely poor infrastructure, meant we were unable to actively visit the remote southern areas to encourage photograph submission.

- Carnivore Conservation Action Plan

This was a major objective of the programme, and a major achievement, given that the country has no existing carnivore conservation action plan, and the only other in existence in the entire continent of Africa is in South Africa. However there were two modifications to the planned development of this plan. Firstly, rather than using a large final workshop to devise the plan over several days, it was decided that a sequence of workshops covering major species groups with a smaller group of participants at each would be more effective. The workshops were thus divided into five: Wild dog, Cheetah, Lion and Leopard; Hyaenas; and small carnivores. This process worked extremely well and had the added advantage in that it brought together the often disparate authorities in Tanzania, on a regular basis, leading to an increased mutual understanding and more effective working relationships as the workshops progressed. Secondly, the workshop process and hence the production of the plan was delayed. This was partly due to changing the process to five small workshops rather than a single large workshop, but also because, although we were fortunate to gain new funding support for the Tanzania Mammal Conservation Action Plan from the Darwin Initiative, we did not obtain continuation funding. In order to maintain our staff, who were already an effective team. We had to move most of them to the new project, with the database and GIS analyst the new project manager, whilst the previous project manager left to start a PhD research program. This meant our staff, and the project leader, were overstretched at the start of the new project and the finishing of the old, as both projects required substantial time investments but with no extra personnel support. We therefore chose to stagger our workshops across a year in order to ensure that we could continue to meet the objectives of the new project, resulting in a delay in finalising the old project. This strategy was effective, if a little slow, and we are now on course for finalisation of the action plan. The draft is written and is included with this report. Various sections are currently with expert editors, whose comments will be included and then it will be distributed to participants. Once accepted by all participants a letter of endorsement from the wildlife authorities will be requested. Endorsement was discussed at workshops and was expected to be straightforward, given that the workshops were highly participatory and the conclusions were thus a product of the wildlife authorities. This is likely to be aided by MNRT active interest in the process and encouragement to finalisation, and an conducive government environment which actively favours strategic planning, including conservation action plans. This process has paved the way for the mammal action plan which is planned for 2008.

- Wildlife authority meetings

Meetings and discussions with members of other wildlife authorities, particularly TANAPA, were frequent, but were conducted at a less formal basis than originally planned, and there are hence few formal reports, however the effectiveness of the projects good working relationships with the main authorities – TANAPA, Wildlife Division, FBD and Ngorongoro Conservation Area Authority is demonstrated by the fact that these authorities sent senior participants to all the workshops (FBD did not send a participant to the wild dog and cheetah meeting as these species do not occur in the areas under their jurisdiction). These relationships were also manifested by the fact that TANAPA, WD, NCAA and FBD granted fee waivers and access to parks and reserves on request. Such waivers are usually extremely hard to obtain and we were very grateful for this support.

- Training for masters students

Masters student training presented a major modification to our planned schedule, and came about in response to our mid term review. After discussion we agreed with our reviewer that the finances invested in master's student training would be better invested in training our own staff, and in existing wildlife professionals – such as park rangers and guides – since these staff were more likely to ensure that such training resulted in real improvements in monitoring on the ground. We therefore implemented a training program in the use of camera traps to monitor carnivore biodiversity that aimed to achieve this modified objective at the same time as gathering data. Camera trapping is increasingly being recognised as a means of monitoring rarely seen and/or nocturnal wildlife and is particularly useful for carnivores. The camera trapping program was extremely popular with all collaborating local institutions and at survey sites park ecologists, rangers and guides were keen to join the project for training. We felt that this provided substantially more value for money than the original plan, and was a much more productive use of Darwin Initiative resources. The survey program is now a core component of the new Mammal Conservation Action Plan project.

### **3.3 Relevance to CBD**

In order to assist Tanzania in meeting its obligations under the Biodiversity Convention the project has:

- surveyed and monitored carnivore diversity in Tanzania and maintain and collated all data into a central database (Article 7, Identification and Monitoring).
- identified areas and carnivore species which may be in need of further protection or management, and devised a conservation strategy to ensure their long term conservation (Article 8, In-situ Conservation).
- explored possible incentives to enhance carnivore conservation in the action plan (Article 11, Incentive measures).
- provided training in carnivore monitoring and promoted carnivore research (Article 12, Research and Training).
- promoted an understanding of the importance of the conservation of carnivore biodiversity both within the wildlife sector, with which the project has worked closely, and among the public through newsletters and press releases (Article 13, Public Education and Awareness).
- ensured that there has been a transfer of expertise and technological advances in carnivore monitoring techniques from developed countries to Tanzania (Article 16, Access to and Transfer of Technology).

### **3.4 Project achievements**

In summary the project has achieved its main objectives, although in some situations the means of achieving them has been modified, usually in response to reviewers. The project has created and developed a wholly new institution, the carnivore centre, within TAWIRI, and has developed infrastructure, hired appropriate qualified personnel and established networks of voluntary data contributors. In order to achieve data gathering objectives, the project has brought together the private and governmental sectors in the common goal of carnivore conservation. This is an innovative approach for Africa. Finally, the national carnivore conservation action plan brought together all the wildlife

authorities in Tanzania in the common goal of carnivore conservation, and serves as a strategic document and summary of the biology, status and threats for all carnivores in Tanzania. The document also includes a practical toolbox for monitoring. The project has proven to be highly effective in achieving its objectives and has potential to serve as a model for implementing similar programs for other countries or taxa, as indeed it is now doing for all medium to large mammals, in the Tanzania Mammal Conservation Action Plan.

## **4. Scientific training and technical assessment**

### **4.1 Research**

#### **Details of staff**

A total of 9 staff were employed on the project over its duration. Of these, the following were core project staff:

Maurus Msuha, project manager, three year contract at start of project starting in 2002, the first year spent ensuring that project infrastructure, the building, was developed to enable hiring of further staff.

Alex Lobora, GIS and database analyst, two year contract starting 2003.

Jerome Kimaro, PR officer, two year contract starting 2003.

Zawadi Mbwambo, project driver at start of project, field assistant at end of project, three year contract, starting 2002

Flora Kipuyo, Project Administrator, two year contract starting 2003.

The following also assisted the project for short periods, sometimes funded from external sources:

Chedieli Kazaeli, field assistant, joined project in 2004 and trained in camera trap survey techniques, funded mainly through extra funding from the Royal Society.

Jumanne Ramadhani, project driver, joined project in 2004 and funded by the Tanzania Cheetah Conservation Program. An extra driver was needed when Zawadi started to spend more time engaged in field activities.

Linus Minushi, temporary scientist, joined project in 2004 to conduct literature review. The data gathered in this process were essential to the action planning process.

Leah, office assistant, funded by TAWIRI but allocated to the project due to a need for more administrative support, in acknowledgement of the assistance provided by the project to TAWIRI institutional activities.

#### **4.2 training and capacity development activities**

The project addressed training needs on a case by case basis. In its conception, the project focussed on the professional community, and hence relatively well trained individuals. As a result, training needs were usually specific to particular staff. 'Course' selection and content of training was agreed in open quarterly meetings after in depth discussion. Assessment of the effectiveness of training was conducted by project leaders and project manager on the basis of improvement in staff effectiveness post training. As training was selected to address specific needs, this was generally obvious. The general

courses were accredited with certificates, however, for the purposes of this project, were generally less useful than one-on-one training targeted specifically at project needs. The latter, by its nature had no standardised accreditation scheme. Throughout the implementation of the project a high value was attached to one-on-one mentoring, which was achieved from the project leader, who spent at least 6 months a year resident in Tanzania, and from linkages to project leaders and staff in other projects based close to Arusha. Training can be detailed as follows:

All staff received one-on-one mentoring by the project leader, although Maurus was the main recipient.

Maurus Msuha, Alex Lobora, Chediell Kazaeli, Zawadi Mbwambo, received nearly two months on the job training in camera trap survey techniques from Marcella Kelly and Chris Carbone. Maurus and Alex were trained as trainers, Chediell and Zawadi as implementers. The success of this training program has been apparent by the successful implementation of a number of subsequent surveys many of which have had no involvement from the project leader.

Individual specific training:

Maurus Msuha, during the duration of the project, benefited from one-on-one training in effective management of the project, carnivore research, and the development of his PhD proposal – which he is now pursuing at ZSL and University College London. He also attended a number of international meetings, including the Wildlife Conservation Society strategic planning meeting for the Africa Program in Uganda (November 2003) and the wild dog conservation planning meeting in South Africa

Alex Lobora, benefited from one-on-one mentoring by project leader, but, more importantly, from Lara Foley, who was able to help further develop Alex's GIS and database skills. Alex also attended an advanced GIS and Database course at the Regional Centre for Mapping of Resources for Development Nairobi, and was also granted an award from WCS to enable him to attend a Geographic Information Systems for Wildlife Conservation course in New York in October 2005.

Jerome Kimaro, one-on-one mentoring by project leader, but also on the job training in poster design provided by a local qualified graphic designer, and web site development provided by a course at the University of Dar es Salaam Computing Centre in Dar es Salaam.

Flora Kipuyo, one-on-one mentoring by project leader, and a secretarial course in Dodoma.

Zawadi Mbwambo, one-on-one mentoring by project leader. The camera trap training as described above also enabled Zawadi to move from a driver position to that of a field assistant.

## **5. Project impacts**

### **5.1 Project impact and project purpose**

The stated project purpose was 'To establish a national Carnivore Conservation Centre that will conduct long term monitoring of carnivores and train wildlife professionals in carnivore monitoring techniques'. All modifications of the original logical framework were implemented so as to more effectively achieve this overall purpose, which was

achieved. Firstly it has established the carnivore centre, and provided all staff with sufficient training to act as trainers and implementers for conducting camera trap surveys of carnivore biodiversity. These surveys also provide a protocol for long term monitoring. Secondly, the carnivore atlas and cheetah and wild dog watch campaigns provide a means of acquiring further data with minimal investment.

The long term purpose of the program needs further testing. However its future is assured at least until mid 2008 (see below) and the core TCP staff, Maurus, Alex, Jerome, Zawadi and Flora have all been allocated permanent positions in TAWIRI staff, which provides testament to TAWIRI's commitment to seeing the programme continue. Finally, the project leader and many members of the project team have long term commitments to Tanzania and this program.

## 5.2 Project impact and CBD

The project has mainly contributed to article 7 of the CBD, in terms of establishing a national carnivore monitoring program, however it also made important contributions to 6 through the national conservation action plan, 12 through the training and development of capacity at TAWIRI through research and conservation, 13 through the newsletter and web site together with active promotion of carnivore conservation within the wildlife sector, and 17 through the constant collaboration between academic institutions within the UK and the host country institution. It also made small contributions to 8, principally via the action plan which promoted sound management and sustainable use of biological resources, 10 through the action planning process which sought to integrate conservation and sustainable use and enabled co-operation between governments and private sector (principally hunting and tourism), 11 through the action planning process which sought to identify incentives for biodiversity conservation, 14 again through the action planning process which paid some attention to current policies and their environmental consequences.

<b>Project Contribution to Articles under the Convention on Biological Diversity</b>		
<b>Article No./Title</b>	<b>Project %</b>	<b>Article Description</b>
<b>6. General Measures for Conservation &amp; Sustainable Use</b>	15	Develop national strategies that integrate conservation and sustainable use.
<b>7. Identification and Monitoring</b>	50	Identify and monitor components of biological diversity, particularly those requiring urgent conservation; identify processes and activities that have adverse effects; maintain and organise relevant data.
<b>8. In-situ Conservation</b>	3	Establish systems of protected areas with guidelines for selection and management; regulate biological resources, promote protection of habitats; manage areas adjacent to protected areas; restore degraded ecosystems and recovery of threatened species; control risks associated with organisms modified by biotechnology; control spread of alien species; ensure compatibility between sustainable use of resources and their conservation; protect traditional lifestyles and knowledge on biological resources.
<b>9. Ex-situ Conservation</b>	0	Adopt ex-situ measures to conserve and research components of biological diversity, preferably in country of origin; facilitate recovery of threatened species; regulate and manage collection of biological resources.
<b>10. Sustainable Use of</b>	3	Integrate conservation and sustainable use in national

<b>Components of Biological Diversity</b>		decisions; protect sustainable customary uses; support local populations to implement remedial actions; encourage co-operation between governments and the private sector.
<b>11. Incentive Measures</b>	1	Establish economically and socially sound incentives to conserve and promote sustainable use of biological diversity.
<b>12. Research and Training</b>	10	Establish programmes for scientific and technical education in identification, conservation and sustainable use of biodiversity components; promote research contributing to the conservation and sustainable use of biological diversity, particularly in developing countries (in accordance with SBSTTA recommendations).
<b>13. Public Education and Awareness</b>	10	Promote understanding of the importance of measures to conserve biological diversity and propagate these measures through the media; cooperate with other states and organisations in developing awareness programmes.
<b>14. Impact Assessment and Minimizing Adverse Impacts</b>	1	Introduce EIAs of appropriate projects and allow public participation; take into account environmental consequences of policies; exchange information on impacts beyond State boundaries and work to reduce hazards; promote emergency responses to hazards; examine mechanisms for re-dress of international damage.
<b>15. Access to Genetic Resources</b>	0	Whilst governments control access to their genetic resources they should also facilitate access of environmentally sound uses on mutually agreed terms; scientific research based on a country's genetic resources should ensure sharing in a fair and equitable way of results and benefits.
<b>16. Access to and Transfer of Technology</b>	0	Countries shall ensure access to technologies relevant to conservation and sustainable use of biodiversity under fair and most favourable terms to the source countries (subject to patents and intellectual property rights) and ensure the private sector facilitates such assess and joint development of technologies.
<b>17. Exchange of Information</b>	7	Countries shall facilitate information exchange and repatriation including technical scientific and socio-economic research, information on training and surveying programmes and local knowledge
<b>19. Bio-safety Protocol</b>	0	Countries shall take legislative, administrative or policy measures to provide for the effective participation in biotechnological research activities and to ensure all practicable measures to promote and advance priority access on a fair and equitable basis, especially where they provide the genetic resources for such research.
<b>Total %</b>	<b>100</b>	<b>Check % = total 100</b>

### 5.3 Capacity development

One of the major aims of the project was to build capacity for carnivore monitoring and conservation within Tanzania. This aim has been successfully achieved, both in terms of trained personnel, but also in terms of resources and facilities available for carnivore monitoring and conservation. Evidence for this includes the vibrant and active carnivore conservation centre, the ongoing survey program which now requires very little day to day input from project leaders, the office facilities, the database and the capabilities of the staff to achieve the objectives of the new Tanzania Mammal

Conservation Action Plan project, which although also ambitious, has the advantage of starting from a more advanced initial position.

As mentioned above, all the core staff on the project have been taken on as TAWIRI staff a year prior to the ending of the project. Current staff activities are all known and are as below:

#### Core staff

Maurus Msuha – engaged in PhD program on “ at the Institute of Zoology and University College London supervised by project leader and Prof. Katherine Homewood. Since starting his PhD Maurus has raised two grants from the International Foundation for Science and the British Ecological Society totalling \$25,600 for his PhD research.

Alex Lobora – Project Manager for the Tanzania Mammal Atlas Project initiated in November 2005. Alex has been performing excellently in his new role. He plans to start a PhD at the end of the project.

Jerome Kimaro – enrolled in a master’s course in wildlife management at university of Sokoine. Due to finish august 2007

Flora Kipuyo – project administrator for the Tanzania Mammal Conservation Action Plan project.

Zawadi Mbwambo – project driver and field assistant for the Tanzania Mammal Conservation Action Plan project.

#### Temporary staff

Chediell Kazaeli – now field assistant for the Tanzania Mammal Conservation Action Plan project.

Linus Munishi – now field assistant for the Tarangire Elephant Project.

Jumanne Ramadhani – driver for the Tanzania Cheetah Conservation Programme and assisting with the Tanzania Mammal Conservation Action Plan project.

All core and some temporary staff continue to assist with the activities of the Tanzania Carnivore Programme.

### **5.4 Project impact and in-country and UK-country collaborations**

The project arose directly out of a long term collaboration between the project leader’s institution, Institute of Zoology, and TAWIRI. These collaborations have been further strengthened and have engaged a wider component of IOZ, and currently involving 4 staff, and 1 PhD student, and Maurus is now resident at IOZ. The project has become a flagship project for ZSL, and is publicised on a number of attractions at London and Whipsnade Zoos.

Within Tanzania the project has worked with a wide range of stakeholders, and helped to improve linkages between them. In particular, the project has good collaborations with TANAPA, WD, NCAA and FBD. Representatives from all these organisations attended the project’s workshops, allowing further development of effective working relationships. This has also improved TAWIRI’s standing within the wildlife sector. Prior to this project, the collaboration between these organisations was limited, as there

were rarely opportunities for representatives from all organisations to meet and discuss overall conservation strategies.

## 5.5 Project social benefits

To achieve its objectives, the project targeted higher level capacity development, improving capacity of trained wildlife professionals. The project staff have reaped the most obvious benefits from this through positive impacts on their personal career development, which has also ensured that these talented people remain within the wildlife sector, continuing to contribute to biodiversity conservation. The indicators for this can be seen in terms of individual career advancements as listed in 5.3. On a broader level the project has managed to engage the private sector in carnivore conservation, particularly the photo tourism sector. The private sector has previously been wary of governmental initiatives, even though they have substantial contributions to make. Feedback from this sector has been very positive throughout the project. The hunting sector is especially wary of government, and hence engagement with this sector has been less successful, but the project has good relationships with several major hunting companies. The successful engagement of the private sector is evidenced by the frequency with which tour operators or driver/guides are seen at the carnivore centre. It can also be observed in the growing number of contributions to the project newsletter, Carnivore NewsBites, as well as the frequent contributions of data. There are no apparent negative impacts.

## 6. Project outputs

### 6.1 Project outputs

Project outputs quantified against table in appendix II

<b>Code</b>	<b>Total to date (reduce box)</b>	<b>Detail (←expand box)</b>
<b>Training Outputs</b>		
1a	Number of people to submit PhD thesis	0
1b	Number of PhD qualifications obtained	0
2	Number of Masters qualifications obtained	1
3	Number of other qualifications obtained	4
4a	Number of undergraduate students receiving training	2
4b	Number of training weeks provided to undergraduate students	16
4c	Number of postgraduate students receiving training (not 1-3 above)	0
4d	Number of training weeks for postgraduate students	0
5	Number of people receiving other forms of <b>long-term</b> (>1yr) training not leading to formal qualification( i.e not categories 1-4 above)	5
6a	Number of people receiving other forms of <b>short-term</b> education/training (i.e not categories 1-5 above)	5
6b	Number of training weeks not leading to formal qualification	4
7	Number of types of training materials produced for use by host country(s)	4
<b>Research Outputs</b>		
8	Number of weeks spent by UK project staff on project work in host	78

<b>Code</b>	<b>Total to date (reduce box)</b>	<b>Detail (←expand box)</b>
	<i>country(s)</i>	
9	<i>Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (s)</i>	<i>5 for 35 species</i>
10	<i>Number of formal documents produced to assist work related to species identification, classification and recording.</i>	<i>0</i>
11a	<i>Number of papers published or accepted for publication in peer reviewed journals</i>	<i>1</i>
11b	<i>Number of papers published or accepted for publication elsewhere</i>	<i>0</i>
12a	<i>Number of computer-based databases established (containing species/generic information) and handed over to host country</i>	<i>2</i>
12b	<i>Number of computer-based databases enhanced (containing species/genetic information) and handed over to host country</i>	<i>0</i>
13a	<i>Number of species reference collections established and handed over to host country(s)</i>	<i>0</i>
13b	<i>Number of species reference collections enhanced and handed over to host country(s)</i>	<i>0</i>

## 6.2 Outputs - differences against agreed schedule -

Most outputs were completed as planned, however there were some that were adapted to improve the project's ability to meet its overall objectives. In all cases these changes improved the progress of the project. These are as below:

- Masters student support and short courses in carnivore monitoring  
*Changed to:*  
Train wildlife professionals, such as parks ecologists and rangers, in practical carnivore survey techniques in conjunction with the development of a survey program – this was deemed to be a more useful and cost effective use of funds in our mid term review.
- Two month training period for staff in the use of matching software, database management and statistical analysis from Marcella Kelly.  
*Changed to:*  
Two month training program in camera trap survey techniques, together with database management and some statistical analysis ( limited time for this due to time restrictions). This was deemed to be more relevant and useful for long term carnivore monitoring, and was made possible by additional funding provided by WCS.
- Complete a Tanzania carnivore identification guide for distribution to individuals participating closely with the scheme.  
*Adapted to:*  
This was complicated by copyright issues, and so although the project has completed a carnivore identification guide, this has been used internally only.
- Workshop to disseminate findings of the centre and to identify priorities for conservation of carnivores within the country.  
*Adapted to:*

Five species based workshops – cheetah; wild dog; hyaenas (aardwolf, striped hyaena and spotted hyaena); lion and leopard; and small carnivores.

A few outputs were reduced:

- Demonstration as a model to KWS  
*Reduced:*  
Not pursued actively with KWS as leadership of KWS in state of flux during project. However representatives from KWS have been made aware of the project and the project leader is in frequent communication with predator projects in Kenya, particularly, key members of the Laikipia predator forum.
- Monthly A4 newsletter to inform participants of the progress of the project and to encourage future participation distributed to:
  1. Tourists and local staff associated with tourism development (5000 copies per month).
  2. Local resident experts targeted for contributions of distributional data (500 copies per month).*Reduced to quarterly*  
This was on advise of our mid term reviewer who felt that we would have trouble meeting our other outputs if we maintained a monthly level of production, whilst we would have limited gains from such a frequent newsletter.

A few further outputs were dropped completely, usually as a response to mid term or external reviews.

- Opening ceremony for the Carnivore Conservation Centre.  
*Dropped:*  
Not seen as a priority as does not contribute to overall project objectives.
- Scientific papers.  
*Dropped:*  
All scientific publications were dropped as short term targets as they did not contribute in a major way to our overall objectives, and this enabled the project team to concentrate on capacity development and information gathering and dissemination. These papers will still be pursued, but beyond the lifetime of this project.

A few further outputs were added, which were later seen to be necessary.

- Training in graphic design for Press Officer.
- Training in web site management and design for Press Officer.
- Training in secretarial support for project administrator.

<b>Dissemination Outputs</b>		
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	5
14b	Number of conferences/seminars/ workshops <b>attended</b> at which findings from Darwin project work will be presented/ disseminated.	5
15a	Number of national press releases or publicity articles in host country(s)	6
15b	Number of local press releases or publicity articles in host country(s)	6
15c	Number of national press releases or publicity articles in UK	2
15d	Number of local press releases or publicity articles in UK	0
16a	Number of issues of newsletters produced in the host country(s)	7
16b	Estimated circulation of each newsletter in the host country(s)	6500
16c	Estimated circulation of each newsletter in the UK	100
17a	Number of dissemination networks established	2
17b	Number of dissemination networks enhanced or extended	0
18a	Number of national TV programmes/features in host country(s)	1
18b	Number of national TV programme/features in the UK	0
18c	Number of local TV programme/features in host country	0
18d	Number of local TV programme features in the UK	0
19a	Number of national radio interviews/features in host country(s)	0
19b	Number of national radio interviews/features in the UK	0
19c	Number of local radio interviews/features in host country (s)	0
19d	Number of local radio interviews/features in the UK	0
<b>Physical Outputs</b>		
20	Estimated value (£s) of physical assets handed over to host country(s)	50,000
21	Number of permanent educational/training/research facilities or organisation established	1
22	Number of permanent field plots established	0
23	Value of additional resources raised for project	\$...

### 6.3 Publications and public accessed material

The table below lists published materials. The 5 sections of the Tanzania Carnivore Conservation Action Plan will also be posted on the web once edited and endorsed by the wildlife authorities and the MNRT.

<b>Type *</b> (e.g. journals, manual, CDs)	<b>Detail</b> (title, author, year)	<b>Publishers</b> (name, city)	<b>Available from</b> (e.g. contact address, website)	<b>Cost £</b>
Leaflet	Cheetah Watch	TAWIRI, Arusha	www.habari.co.tz/carnivores	Free

	Campaign			
Leaflet	Wild Dog Watch Campaign	TAWIRI, Arusha	<a href="http://www.habari.co.tz/carnivores">www.habari.co.tz/carnivores</a>	Free
Leaflet	Carnivore checklist	TAWIRI, Arusha	<a href="http://www.habari.co.tz/carnivores">www.habari.co.tz/carnivores</a>	Free
Poster	Cheetah and Wild dog watch campaigns	TAWIRI, Arusha	TAWIRI	Free
Poster	Carnivore Atlas	TAWIRI, Arusha	TAWIRI	Free
Sticker	Cheetah Watch Campaign	TAWIRI, Arusha	<a href="http://www.habari.co.tz/carnivores">www.habari.co.tz/carnivores</a>	Free
Newsletter (7 Issues)	Carnivore NewsBites	TAWIRI, Arusha	<a href="http://www.habari.co.tz/carnivores">www.habari.co.tz/carnivores</a>	Free
Leaflet	Tanzania Carnivore Programme fact sheet	ZSL, London	ZSL	Free
Report	Inception Workshop Proceedings	Arusha Printing Press, Arusha	<a href="mailto:carnivores@habari.co.tz">carnivores@habari.co.tz</a> <a href="http://www.habari.co.tz/carnivores">www.habari.co.tz/carnivores</a>	Free

#### 6.4 Information dissemination

Dissemination of information to stakeholders is an integral and essential part of this project. A key component of dissemination was the development of an extensive list of potential contributors of information to the project's data gathering activities. By the end of the project, this list totalled 479 individuals, including researchers, safari operators, lodge and camp managers and amateur naturalists. The project distributed carnivore atlas sheets to interested individuals within the wildlife sector, whilst its cheetah and wild dog watch campaign sheets were primarily distributed to tourists, who were more likely to be travelling with cameras with suitable lenses with which to photograph these animals. For the latter the project made use of links with Tanzania National Parks (TANAPA), Tanzania Association of Tour Operators (TATO), other tour operators, hunting companies, lodges and hotels to help with distribution. A total of 64,543 cheetah and wild dog leaflets have been printed over the course of the project, out of which 48,032 have been distributed to safari companies, park gates and lodges. A total of 7,252 Carnivore Atlas Packs were printed out of which 4,829 have been distributed to potential atlas contributors. Copies of these sheets were included in our previous reports.

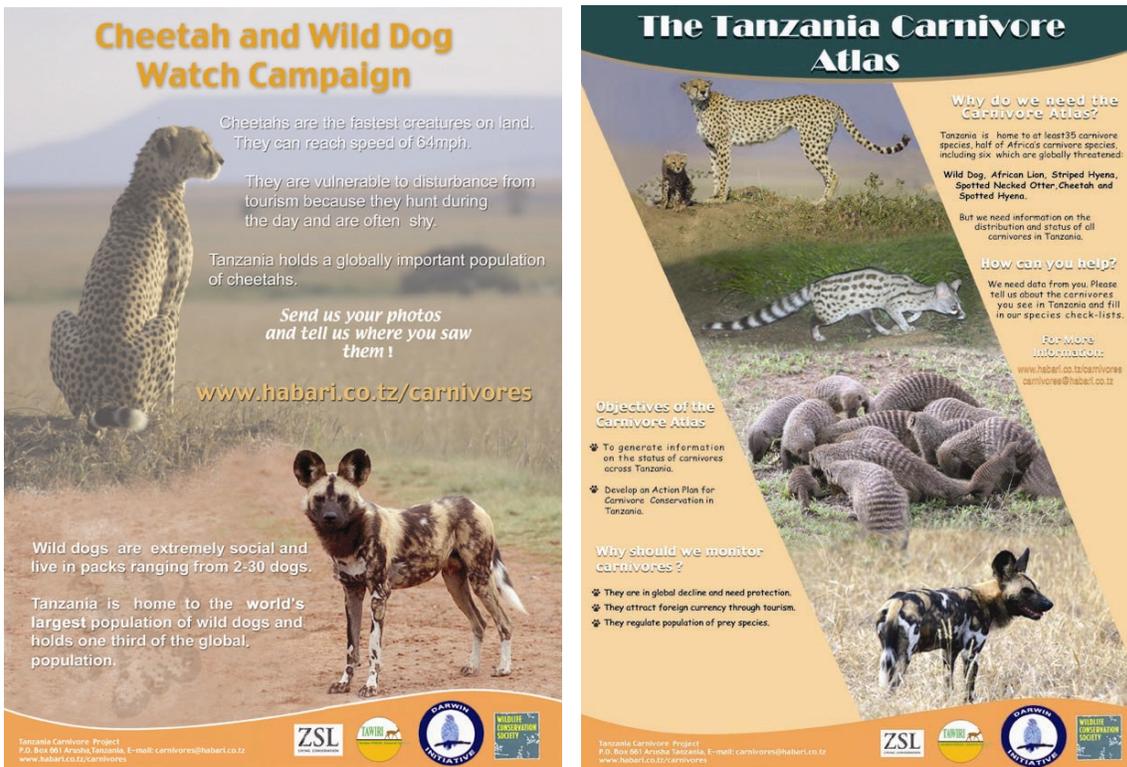


Fig. 2 The Wild Dog and Cheetah Watch Campaign and Carnivore Atlas posters

The project newsletter, carnivore NewsBites, was printed in colour and distributed to our list of contributors and was also posted on the web site. We encouraged contributions to the newsletter from stakeholders, and these contributions have increased over the duration of the project, allowing it to grow from a 4 page to an 8-page A4 format. Newsletter contributions included articles written by driver guides from tour companies, by researchers and by conservationists working on carnivores. The project website [www.habari.co.tz/carnivores](http://www.habari.co.tz/carnivores) was updated quarterly with new species distribution maps and with each new issue of our newsletter. It was also expanded by including the Cheetah Watch site previously hosted on the WCS website. Stakeholders were informed whenever updated maps and newsletters were posted on the website.

Posters for the Cheetah and Wild Dog Watch Campaigns and the Carnivore Atlas were designed, printed and distributed. A total of 1000 posters of each design were printed, out of which 607 have been distributed to parks, game reserves, campsites and lodges. Stickers for the Cheetah Watch campaign were also designed and a total of 1000 stickers were printed and distributed (Fig. 3). Unfortunately the quality of sticker printing in Tanzania is poor, and these stickers proved to be not very durable hence, although a wild dog sticker was designed, we have not been able to locate a suitable printer in Tanzania. An information sheet for the project was designed by the project team and printed by ZSL and was distributed both within and outside the country (Appendix 3).



Fig. 3 The cheetah watch sticker and the, as yet unprinted, wild dog watch sticker.

There has been substantial local media coverage of the project activities. The project activities were covered on national Tanzanian television in June 2004 as part of a series for TAWIRI "Publicity of TAWIRI's Activities". Members of the project team have also written a number of articles featuring the project both locally and internationally including WCS's magazine *Wildlife Conservation*, *Africa Geo*, ZSL's *LifeWatch* magazine, *Air Kenya in flight* magazine and the 'Twiga Times' - the newsletter for the Tanzania Tour Operator Association (TATO) (pdfs have been provided in previous reports).

Program visits to tour operators were an active feature of the project. Visits involved presentations to staff which helped to encourage drivers and guides to participate in data collection. The project made a total of 560 visits to tour operators. Repeat visits were made to tour operators which showed particular interest in the project, and from which we had obtained important data contributions. Repeat visits also increased the chance of meeting all the employees in a particular tour company, as during the high tourist season many driver/guides are out with clients, whilst in the low season many of them are on leave. A total of seven articles from tour guides and drivers were submitted for publication in *Carnivore NewsBites*.

## 7. Project expenditure

To be completed pending finances from TAWIRI

### 7.1 Grant expenditure

Tabulate against categories in original application

### 7.2 changes to budget

### 7.3 variations of more than 10%

## 8. Project operation and partnerships

### 8.1 Local partners

Partners working on the project were much as envisaged. Key partner institutions were TAWIRI (where the project was based), TANAPA, Wildlife Division, Ngorongoro Conservation Area Authority, Forestry and Beekeeping Division. The project maintained good relationships with all these institutions who participated in the

conservation action planning process. In addition, as already mentioned, the project worked actively with the tourism and hunting sectors, and with researchers and scientists, some of whom also attended the action planning workshops. It also worked closely with WCS Tanzania, benefiting from long term working relationships between the project leader and the field staff of this locally registered NGO. Most relationships worked extremely well, probably better than expected, even though expectations were already high. The only relationship that was at all problematical was that with the hunting industry. Whilst the project had good relationships with some hunting organisations, it was unable to connect with many operators. Nonetheless the operators with whom it had good relationships held many of the major hunting concessions in the country.

#### *Collaboration with existing projects and institutions in Tanzania*

**Tanzania Wildlife Research Institute (TAWIRI):** TAWIRI is mandated to carrying out and co-ordinating all wildlife research in the United Republic of Tanzania and dissemination of information on the same to the management authorities and the general public. This project involves building capacity of TAWIRI to fulfil its mandate with a special focus on monitoring carnivore biodiversity in the country. The project is based at the headquarters of TAWIRI and the main partner is its Director General. All members of TAWIRI have been extremely supportive of the project. TAWIRI provided funds for construction of a fence around the Centre and connection of a telephone extension to the administrative building. The staff on the project were under contract to TAWIRI and occasionally assisted with other duties of TAWIRI such as organising the annual scientific conference. All core project staff were provided permanent positions within TAWIRI effective from 1<sup>st</sup> January 2004, that ensured that their basic salary would be covered by TAWIRI, from funding from the Tanzanian government after the expiry of the project. This is a significant achievement as it supports the long term sustainability of the project and is a testimony to the support of TAWIRI for the project.

**Tanzania National Parks (TANAPA):** TANAPA has supported the project activities throughout, helping to distribute project leaflets and providing free entry permits to national parks for the project team to carry out carnivore surveys. TANAPA have also actively encouraged park ecologists and rangers to participate in training programs in carnivore monitoring.

**Wildlife Division (WD):** WD helped to distribute project cheeksheets to other stakeholders and also sent in data to the project. They also fully participated in the carnivore conservation action planning process.

**Ngorongoro Conservation Area Authority (NCAA):** NCAA supported the project activities by providing free entry permits to the authority for the project team to carry out carnivore surveys in their area. They also fully participated in the carnivore conservation action planning process.

**Forest and Beekeeping Division (FBD):** FBD supported the project activities by providing free entry permits to forest reserves and plantations for the project team to carry out carnivore surveys in their areas of jurisdiction. They also participated in the carnivore conservation action planning process particularly the “small to medium carnivores”.

**WCS Tanzania Program:** The project has strong links with the WCS Tanzania Program, and has obtained additional funding from WCS. Both the project leader and the project manager are in regular contact with all members of WCS Tanzania, who have all been extremely supportive of the project. Lara and Charles Foley of the WCS Tanzania Program have been particularly helpful in assisting data collection and training personnel at the centre in GIS and database management.

## **8.2 Collaboration with similar projects in host country**

There were no projects at this scale in the host country, however the project has collaborated with other projects working on similar ideas or taxa. These include the Southern Highlands Program run by WCS Tanzania, The Tanzania Bird Atlas Project, Frankfurt Zoological Society, The Serengeti Carnivore Disease Program, the Serengeti Lion Project, as well as a number of individual researchers. All these projects contributed data to the project, and the project tried to assist with any requests for information or loan of equipment. The project maintained close association with the project leader's projects on cheetah in Serengeti, Simanjiro and Ruaha region. Relationships with all projects were very positive.

Unfortunately the local Biodiversity strategy office is not active, and so there has been very little collaboration with this office.

**The Serengeti Cheetah Project:** This project has been instrumental in the genesis of the Carnivore project, and there continues to be strong on-going collaboration. It is led by the project leader, and includes project research assistant Anne Hilborn. The project has written the profiles for the cheetahs featured on the Cheetah Watch web site, and assists with matching cheetahs and managing the cheetah watch database. It also loaned a vehicle for use on carnivore surveys as the current project vehicle was too unreliable for survey work.

**The Serengeti Carnivore Disease Project:** This project is implemented by TANAPA in collaboration with the Universities of Edinburgh and Minnesota. The project leader and the project manager maintained regular communication with TANAPA and the carnivore disease project staff throughout the project and representatives from the project attended the wild dog workshop. Members of the project have been very diligent about sending in information to the Carnivore Atlas Database.

**Tanzania Bird Atlas Project:** This project has objectives similar to one of our key objectives that is, determining current distribution pattern of different species in Tanzania. We have therefore been in regular communication with this project from the beginning. The Bird Atlas Project staff regularly visit the centre and provide advice on the database. The Bird Atlas Project has also been of great assistance in establishing the protocol for the carnivore atlas as well as sending in data on carnivore sightings. Both the project leader and the project manager are in regular contact with the Bird Atlas Project.

**Other:** We continue to develop a network of people involved in carnivore research and biodiversity conservation projects who may be interested and keep them informed on our project activities. To this end we have established links with a number of other projects including the Serengeti Lion Project, the Serengeti Hyena Project, the Serengeti Jackal Project, the Serengeti Disease Project, the Serengeti Biodiversity Project, the

Southern Highlands Conservation Program, the Katavi Research Project, the Gombe Research Project and the Mahale Mountains Research Project. Links will also be developed with Tanzania Forest Conservation Group (TFCG) and Eastern Arc Mountains Conservation Endowment Fund (EAMCEF).

### **8.3 International partners**

The project, obviously, has a strong connection with ZSL, leading to several visits by Tanzania based members of the project team to ZSL in London, and to Tanzania by ZSL based members of the project team. The project has also collaborated closely with Marcella Kelly, from Virginia Tech University and Prof. Gus Mills, from south African National Parks. Other international partners include:

**Frankfurt Zoological Society (FZS):** FZS has had a strong historical association within Tanzania and operates a number of conservation programs within the country. The project manager and the project leader have continued to ensure that FZS is informed on the project activities. FZS fieldstaff in Mahale provide data from this remote area. FZS has also assisted in importation of project equipment.

**WCS International:** The project has collaborated closely with WCS New York. This has resulted in funding support in 2004, which is ongoing today, after a one year gap in 2006 after serious financial restrictions. The project continues to liaise with WCS's Africa and Global Carnivore Programs, and hosted the recent WCS Africa regional meeting which happens once every 4-5 years.

### **8.4 Activity post project**

The project has gone on to expand its remit to all medium to large mammals after a successful application to the Darwin initiative, whilst additional funding support from ZSL, WCS and TAWIRI has ensured that carnivore project activities can continue. All partnerships have therefore been active post project. The WCS support is due to increase from an annual \$10,000 per annum to a total of \$40,000 per annum in July 1<sup>st</sup> 2007. This level of funding support is sufficient to ensure annual operating of the programme. Finally, the Howard G. Buffett Foundation has provided funds for a new landrover stationwagon to be purchased in 2007, which will replace the aging Toyota pickup and allow the programme to be able to conduct an independent field survey programme.

Project staff have been extremely active during 2006, rounding up this project and launching the new mammal atlas project, however the new funds and vehicle in July 2007 will enable additional staff to be appointed who can focus entirely on the carnivore program, thus ensuring a smoother operation of the mammal project. This phase of the carnivore program will focus on action plan implementation. Many activities identified in the action plan required very little extra funding support or work, but did require implementation by relevant authorities. The carnivore program will concentrate on following up on these and other priorities targeted by the action plan to ensure that the plan remains a driving force in carnivore conservation.

## **9. Monitoring and evaluation, lesson learning**

### **9.1 Monitoring and evaluation**

The activities of the project were monitored against quarterly workplans drawn up at quarterly meetings attended by the entire project team. These workplans were based on the logical framework in the original proposal, and used the same indicators as in the original framework. The project manager submitted monthly reports to the project leader and ZSL in order to monitor progress against the workplans. The participatory manner of the meetings engaged all the members of the team, and hence dealt with difficulties as and when they occurred. In the same manner, all new developments were reached with the approval and support of the entire team. Problems have been dealt with in other sections. All quarterly meetings were minuted.

## **9.2 Internal or external evaluations**

In February 2004 the project underwent an extensive mid term review undertaken by an external reviewer contracted by the Darwin Initiative. The review evaluated all aspects of the project's activities, including its key data collection projects, dissemination, and training, and the reviewer produced a detailed report to the DI on his findings. The project has subsequently implemented most of the reviewer's recommendations, as has been documented here and in our annual reports.

## **9.3 Lessons to be drawn**

The quarterly meeting process employed by the project was highly effective. These meetings were like a mini-workshop, often taking up an entire day, and were treated seriously by staff and helped to ensure that everyone from administrator and driver to project manager and leader felt to be an integral part of the project team. The quarterly meeting process also demonstrated the value that a well constructed logframe can play in project implementation. The logframe for this project was more detailed than the one page logframe more recently requested in Darwin proposals. Both the Darwin Initiative and project leaders might benefit from a relaxation of the one page restriction to enable project leaders to submit logframes appropriate for day-to-day project management. Finally, the process also demonstrated the value of engaging project staff in the direction and implementation of the project and provided a good environment for more junior staff to learn the fundamentals of project management.

## **10. Actions taken in response to annual report reviews**

Most modifications to planned progress were taken in response to project reviews, as documented above, included an in-depth mid term review. Key issues raised were ensuring systems were in place to ensure a high return of data and web sites were kept up to date. These issues, together with means of addressing them, are discussed in the sections above, and nearly all recommendations were implemented. One recommendation that proved impossible to implement was to initiate a visiting regime to cover the southern sector. Whilst we were particularly keen to implement this activity, our second hand vehicle proved inadequate to cope with the appalling state of Tanzania's roads. After one particularly problematical trip to the Selous and a very long and difficult journey back, the team agreed that we needed a more reliable vehicle before we would be able to implement an effective visiting regime to the southern sector.

## **11. Darwin identity**

### **11.1 publicising the Darwin Initiative**

The project has advertised the Darwin Initiative in a number of ways:

- The project vehicle has used the Darwin logo and is seen regularly around Arusha and on visits to tour operators.
- All publicity materials display the Darwin logo prominently
- All scientific reports and publications arising from the work credit the Darwin Initiative
- All presentations given by the project team credit the Darwin Initiative and provide a short explanation of the Darwin Initiative program – time permitting.
- All popular articles have mentioned the Darwin Initiative.

In general all members of the project team were proud of the funding provided by the Darwin Initiative and used every opportunity to mention the support. The Director General of TAWIRI was a Darwin Fellow, and hence had a particular affection for the Darwin Initiative which doubtless helped this process.

Generally, most people the project came in contact with did not know of the Darwin Initiative beforehand. However they readily supported an initiative such as Darwin, that aims to support Tanzanians working for conservation rather than outsiders. By the end of this project term, we believe most people we worked with would be able to correctly answer basic questions about the aims of the Darwin Initiative.

Throughout, this project was seen as a major new initiative that was distinctive and different from anything else before. This was because it was national; it was lodged firmly within a Tanzanian Institution, TAWIRI; it aimed to develop sufficient capacity to enable its implementation by Tanzanians within a wholly new institution – the Tanzania Carnivore Program; and there was no existing Tanzanian driven monitoring program on carnivores prior to this project.

## **12. Leverage**

### **12.1 Additional funds**

The project has leveraged a substantial amount of additional funds during its implementation:

- A new Darwin initiative project to extend the carnivore program to cover all medium to large mammals and expand the camera trapping survey program.
- A total of \$30,000 from WCS.
- A total of £10,000 from ZSL
- A total of £ 12,000 from the Royal Society

### **12.2 Local capacity**

The project manager has gone on to a PhD Program at ZSL and University College London , where he is supervised by the project leader. He has received substantial one-on-one training in proposal development and writing and, since starting has successfully raised \$ 11,600 , from the International Foundation for Science (IFS), and \$ 14,000 from the British Ecological Society. These fundraising skills should stand him in good stead for when he returns to TAWIRI in 2008.

TAWIRI has limited funds, but has provided support in kind, including land for the Centre's building, administrative support and permanent contracts which cover the core salaries of all the staff at the carnivore program. In addition it has provided a small amount of cash funding from its core funds to a tune of US \$2,000. This is a testimony of substantial commitment of TAWIRI to this project.

### 13. Sustainability and legacy

The project has had considerable impact to date in terms of creating and developing a wholly new institution, the carnivore centre, within TAWIRI and in setting up systems to achieve the projects ultimate objectives including developing infrastructure, hiring appropriate qualified personnel, establishing networks. It is expected that the core activities of the project will endure – these include the cheetah and wild dog watch campaigns, the implementation and eventual revision of the action plan, the newsletter, the web site and the camera trap surveys. All these activities will provide a better baseline picture of carnivore biodiversity, and, in the long term, after repeat surveys, estimates of trends.

The following additional funds for operation have been secured for 2007:

- A new landrover stationwagon, fully kitted out for field work, worth \$44,000 from the Howard G. Buffett Foundation. This vehicle is currently being ordered and purchased and will be shipped to Tanzania in early 2007.
- Further funding for \$40,000, of which \$30,000 is already secured, from WCS to cover July 1<sup>st</sup> 2007 – June 30<sup>th</sup> 2008, for implementation of the action plan.
- Support for a international range-wide conservation planning exercise for cheetah and wild dogs centred at TAWIRI, including appointment of a project co-ordinator (Kenyan – which is hoped will encourage east African collaboration), and funding support of around \$22,000 from WCS and the Howard G. Buffett Foundation.

The project has also secured the following long term relationships:

- **TAWIRI** - TAWIRI has provided permanent contracts to cover the core salaries of all the staff at the carnivore program.
- **ZSL** - ZSL has linked its new Africa exhibit at Whipsnade Zoo, Lions of the Serengeti, to the Tanzania Carnivore Centre. Interpretative materials at this exhibit inform visitors about the centre and ask for contributions for the centre's activities. ZSL also staged a 'RAW' exhibit depicting the carnivore centre activities at London Zoo. Similar exhibits at other zoos have been successful in providing long-term funds for conservation activities.
- **WCS** - the project has strong links to WCS, who have provided funding to the project, this funding will be cut during the next reporting period due to funding problems at WCS, however it is likely that they will resume funding the project in the near future.

Whilst no project should be entirely dependent on a single project leader, this project can count on long term support due to the project leader's long term commitment to Tanzania, as well as the support of other external members of the project team, such as the members of WCS Tanzania.

## **14. Value for money**

The project was extremely ambitious, as commented on by project reviewers, yet has managed to achieve all of its key goals. It has thus delivered extremely good value for money. This is in part due to the experience of the project leader in operating in Tanzania. It would have been difficult to implement this project without having a solid number of years experience in country, and virtually impossible to make the progress that has been made. In particular, the project gained by:

- Drawing on the project leader's 11 years of experience in the country, as evidenced by the recruitment of an excellent team of project staff and the immediate support of the research community and the private sector.
- Taking advantage of a foundation of trust built up over many years through long term relationships and collaborations between the project leader with local governmental institutions and NGOs, as evidenced by the attendance of all the relevant wildlife authorities at the workshops.
- Being able to leverage additional funding through the contacts of the project leader. This enabled the implementation of the camera trap survey which gave substantial extra value for money.

The project was also able to draw on the international community for advice and support through the contacts of the project leader. This included key carnivore experts such as Gus Mills, Marcella Kelly and Chris Carbone. Finally, the long term commitment of the project leader and the project team has ensured that the project has been able to secure additional funding, leading to long term support for the program.