

# **CHIPANGALI WILDLIFE TRUST**

## **CARNIVORE RESEARCH INSTITUTE**

### **(CRI)**



**This folder contains details of the following documents :-**

- ***CARNIVORE RESEARCH INSTITUTE AND LIST OF RESEARCH PROJECTS***
- ***SURVEY OF THE DISTRIBUTION AND STATUS OF LEOPARD & CHEETAH IN ZIMBABWE***
- ***MEMORANDUM OF UNDERSTANDING BETWEEN CRI AND ZIMBABWE PARKS AND WILDLIFE MANAGEMENT AUTHORITY***
- ***CHILDREN'S WILDLIFE AND ENVIRONMENTAL EDUCATION PROGRAMME***

# **CHIPANGALI WILDLIFE TRUST**

**CARNIVORE RESEARCH INSTITUTE**

**(CRI)**

**By**

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## 1. **BACKGROUND**

The Carnivore Research Institute (CRI) of the Chipangali Wildlife Trust is a Wildlife Research Organization based in Bulawayo, Western Zimbabwe. The CRI is a direct result of research that has been undertaken by the Chipangali Wildlife Orphanage and Research Centre since 1973. The Organization then became the Chipangali Wildlife Trust in 1977 and was registered as a Private Voluntary Organization in the same year (PVO No. 38/77).

Besides caring for orphaned, abandoned, confiscated, sick and injured wild animals, which could not be returned to the wild immediately, if at all, the Chipangali Wildlife Trust has two other main objectives. These are a Children's Conservation Education Centre and a Wildlife Research Unit. The Research Unit has undertaken work on the captive animals in its care as well as carrying out wildlife surveys throughout Zimbabwe and the rest of sub-Saharan Africa. Since 1985 field survey and research have concentrated on the antelopes of Africa culminating in a seminal study of the duikers of Africa. This 800 page volume was published in 2002 and covered all 16 species of duikers that occur in Africa and involved work in more than 20 African countries, with special emphasis on the rain forest areas of Sierra Leone, Liberia, Ivory Coast, Ghana, Congo (Brazzaville) and Cameroon in which the bush-meat trade was also studied in detail.

The Trust has now shifted its attention to the mammalian carnivores, the Southern African python and biodiversity surveys of Zimbabwe and to that end has set up the Institute now described in this document.

In addition to a strong presence in sub-Saharan Africa the Research Unit (prior to the formation of The CRI in 2004) has been undertaking wildlife field research projects in Zimbabwe for over 30 years and has published a large number of scientific publications in recognized Scientific journals in different parts of the world. The Research Unit published the only Check-list and Atlas of the Mammals of Zimbabwe and two editions on the Mammals of the Hwange National Park.

The Zimbabwe Parks and Wildlife Management Authority (ZPWMA) is mandated by the Government through the Parks & Wildlife Act (Charter 20:14) to undertake scientific research and wildlife management in order to preserve indigenous species and habitats and protecting and managing the Parks and Wildlife Estates. Further the Authority is responsible for administering, developing and promoting wildlife management as an economically sustainable land use outside protected areas.

The Authority has long realized that not all research needs to be carried out by Government. There is need for engaging external researchers and collaborative arrangements with local and international inter-governmental and non-governmental organizations.

These organizations have a wealth of information and expertise, which if properly harnessed will contribute significantly to conservation efforts in developing countries such as Zimbabwe.

## 2. RATIONALE

The CRI and The Authority share a common vision with regard to the promotion of biodiversity, carnivore surveys, conservation and enhanced sustainable natural resource use as critical elements towards the goal of sustainable development. The authority approaches this goal through ecological research and monitoring resource protection and Park management, training, interpretation and extension. The CRI approaches this goal through fundamental and applied research, key aspects related to ecology and biodiversity, including viability of ecosystems and management of renewable natural resources and captive breeding programmes of endangered species. Methodologies employed are complimentary and could mutually reinforce the effectiveness and impact of programmes in the two institutions.

Both The Authority and The CRI recognize that there is a real need to better understand the functioning of natural ecosystems and biodiversity in Zimbabwe through research and monitoring leading to improved management of natural resources. To achieve these objectives The Authority and The CRI aim to develop appropriate data bases upon which management tools would be developed and operationalised.

## 3. MEMORANDUM OF UNDERSTANDING (MOU)

In order to implement the wildlife surveys, captive breeding programmes and other projects of The authority and The CRI the two parties signed a MOU on the Fifth day of June, 2006. This agreement will remain in force indefinitely and may be terminated by mutual consent of the two parties.

**A number of projects have been initiated on 1st July 2006 and will run for an initial period of 2½ years ending on 31<sup>st</sup> December, 2008.**

One of the most important projects will be a detailed survey of the Distribution and Status of the Leopard and Cheetah of Zimbabwe. This survey will be undertaken by the staff of the CRI and a Parks & Wildlife ecologist who has been seconded to The CRI for the duration of the survey. In addition to CRI and ZPWMA staff, volunteers and attachment students from The National University of Science and Technology (NUST) will also assist with all projects.

**Details of the projects and wildlife surveys to be undertaken from 1<sup>st</sup> July 2006 are given below:**

## 4. FIELD AND WILDLIFE RESEARCH PROJECTS

### 1. MATOBO HILLS WORLD HERITAGE SITE

#### 1.1. Leopards

- 1.1.1 Detailed study of the home range and movement of radio-collared leopards in the Game Park. **(Note 1)**
- 1.1.2 Distribution and numerical status of leopards in the entire Matobo National Park.
- 1.1.3 Food and feeding habits of the leopard in the Matobo Hills World Heritage Site as determined by scat analysis. **(Note 2)**

## 1.2 Brown Hyaena

- 1.2.1 Home range and movement of brown hyaena in the Matobo Hills World Heritage Site.
- 1.2.2 Distribution and status of brown hyaena in the Matobo Hills World Heritage Site.

## 1.3 Small Carnivores

- 1.3.1 Check-list and atlas of the small carnivores occurring in the Matobo Hills World Heritage site.

## 1.4 Biodiversity and Botanical Survey

In order to fully understand the distribution and status, biology and ecology, of the carnivores occurring in the Matobo Hills World Heritage Site a detailed knowledge of the geology, soils, vegetation and biodiversity of the area is essential. Therefore the following groups of plants and animals will be studied in as much detail as possible.

### 1.4.1 Invertebrates (Note 3)

It is going to be impossible to study all the invertebrate groups occurring in the Hills. Therefore the biodiversity survey will concentrate on the following groups, which will be fully researched and specimens collected. These will include:

Arachnids (scorpions, spiders, sunspiders and whipscorpions), *Ordonta* (dragonflies), *Lepidoptera* (butterflies and moths), *Coleoptera* (beetles) and *Isoptera* (termites).

In the case of moths the survey will concentrate on the Emperor Moths especially as the caterpillar of one species, the Mopane Moth (*Gonimbrasia belina*), is very important as a food item for a number of local people.

### 1.4.2 Reptiles, Amphibians and fish (Note 4)

Preserved specimens of all these groups are essential for accurate identification purposes. However, only a small representative research and study collection will be made and specimens preserved in formalin or alcohol.

Some reptile specimens will have to be collected by using a .22 dust shot pistol and fish will be collected with nets.

Easy to identify species, such as puffadders, mambas, monitor lizards, will not be collected.

### 1.4.3 Birds

A detailed note will be kept of all interesting birds seen as well as all breeding and feeding records.

In some instances, and particularly with some of the more difficult to identify warblers and other "little brown jobs", it will be necessary to use "mist nets" to capture and identify them.

Special emphasis will be made to determine the status and distribution of game birds, waterfowl, ostriches, bustards, oxpeckers, ground hornbills, all birds of prey and owls occurring in the Hills.

1.4.4 Small Mammals (*Insectivora, Chiroptera, and Muridae*) **(Note 5)**

Detailed small mammal surveys will be undertaken in as many different areas of the Hills as possible.

Specimens will either be caught in live traps or mist nets. All animals collected in live traps will be identified and released.

Bats will be “mist netted” and after detailed examination they will be weighed, measured, ecto-parasites collected and the bats released.

1.4.5 Medium sized Mammals and small Carnivores

Because of the importance of this group of mammals, a thorough survey of their distribution and status will be undertaken. Special emphasis will be placed on the two species of dassies, springhares, scrub hares and rock hares. These species are all very important as prey for leopards, large birds of prey and even pythons.

In addition to the species mentioned above, the small carnivores will also be studied in as much detail as possible.

In order to accurately identify the genets and some nocturnal mongooses, a few animals are important for identification purposes. These small carnivores will be collected in “drop door” traps and once examined, measured and weighed, they will be released again.

1.4.6 Large Mammals

The mini-antelopes such a common duiker, steenbok and klipspringer are very important prey species for the leopard and their young are also fed on by the large birds of prey.

Therefore, part of the Biodiversity Survey will be a detailed study of the mini-antelopes occurring in the Matobo National Park. Subjects to be investigated will include reproduction, food and feeding habits, predators, etc.

Permanent marked transects will be set out on a number of roads in the Park and these will be covered as often as possible in order to determine population trends of species such as kudu, eland, sable, wildebeest etc. Details of these “road strip” counts will be entered onto a special form designed for the project.

The food and feeding habits, movement and behaviour of Black Rhino and White Rhino will also be investigated.

Other methods to be used to establish population size and distribution will include night work with spotlights, aerial surveys and direct field observations.

#### 1.4.7 Botanical Surveys

At the present time no vegetation map of the Matobo National Park exists. A detailed knowledge of the vegetation of the Park is essential and as a very wide range of habitat types and plants occur in the Matobo National Park, these will be studied in as much detail as possible.

A number of plant specimens will be collected, pressed, catalogued and then sent to specialists for determination. Much emphasis will be placed on large trees, medicinal plants, edible fruits and grasses.

The help of several NGO's interested in the plant kingdom will be contacted and their help sought. Members of the Tree Society, Orchid Society and Aloe, Cacti and Succulent Society are just three N.G.O.'s that could help with the Botanical Survey of the Park.

#### 1.4.8 Soils and Geology

If we are to fully understand the distribution of the various vegetation types found in the Matobo Hills it is essential that we understand its geology and soils. In addition the climate of the hills is important. It is our intention to seek the assistance of a Geologist and a soil chemist to help catalogue and map the soils of the Park. The soils derived from the rocks determine the vegetation of the area and consequently the pattern and distribution of the wildlife.

#### 1.4.9 Climatic Data

Rainfall and temperature data will be collected from several "Weather Stations" in the Park.

## **2. HWANGE NATIONAL PARK**

### **2.1 Leopards and other Carnivores**

2.1.1 Monitoring the movement of radio-collared problem leopards, cheetah and brown hyaena released into the Park in order to determine the success of the release.

2.1.2 Detailed study of all carnivores occurring in the Park with special emphasis on leopard, cheetah and brown hyaena.

2.1.3 Home range and movement of radio-collared leopards in the Sinamatella and Robins areas of the Park. **(Note 6)**

## **3. CHILDREN'S WILDLIFE AND ENVIRONMENTAL EDUCATION PROGRAMME**

### **3.1 Interpretative Centres (Bulawayo & Chipangali Wildlife Orphanage)**

#### 3.1.1 Educational Centre

Establish a Children's Educational Centre at the CRI Offices at Matsheumhlope in Bulawayo. The Centre will contain a collection of live specimens such as reptiles, amphibians, fish, scorpions, spiders and mice for teaching purposes. Maps, posters and other educational material will also be included. A large collection of carnivore skulls will also be on display.

### 3.1.2 Aviary of Indigenous Birds

Establish a collection of as many different species of Zimbabwe birds as possible for children to identify and study. All birds will be kept in a very large flight aviary at the Education Centre in Matsheumhlope.

### 3.1.3 Indigenous Tree Nursery

Develop a nursery of indigenous trees occurring in the Bulawayo/Matopos area. Trees will be grown from seeds collected in the wild and germinated at the Centre. At a later stage trees will be planted out into selected areas in the field and at the Chipangali Wildlife Orphanage. Children will participate in the programme by collecting seeds in the field and helping to cultivate them at the Centre.

### 3.1.4 Pythons and Small Carnivore Research Collection

A collection of pythons and small Carnivores will be established at the CRI Offices in Bulawayo for research and breeding purposes. The children visiting the Education Centre will have the opportunity to see and learn what research, captive breeding and conservation projects are all about. Emphasis will be on small carnivores and the Southern African python.

### 3.1.5 Development of "Spotted Cats" Club

The Children's Education Centre in Bulawayo will be the headquarters of the "Spotted Cats" Club. At this Centre Children will have the opportunity to see all the specimens on display in addition to attending lectures on all aspects of wildlife, ecology, conservation and the environment.

### 3.1.6 Visits to Schools/Universities

Part of the Children's Wildlife and Environment Education Programme will be for the Education Officer to visit schools, universities, etc. in order to present lectures to the students. These visits will include demonstrations and the emphasis will be on carnivores and leopard and cheetah in particular.

### 3.1.7 Chipangali Wildlife Orphanage

Chipangali has a large collection of carnivores, rhino, reptiles, antelopes, primates and birds. All these animals are orphaned, abandoned, sick or injured animals or ex-pets that cannot be returned back into the wild.

In addition, a "Diana Princess of Wales Children's Education Centre" exists on the property and has beautiful education displays on all aspects of wildlife and the environment.

Part of the Education Officer's duties will be to take children and teachers visiting the Orphanage on conducted lecture tours around the facilities.

In many instances lectures will be given on specific topics such as rhino conservation, carnivores, etc. etc.

## 4. **LEOPARD AND CHEETAH SURVEY OF ZIMBABWE (Note 7)**

This major survey of the whole country will be undertaken by the CRI on behalf of the ZPWMA and in conjunction with that Authority. A full time ecologist will be seconded to the CRI by the Authority with the specific intention of undertaking this detailed survey.



During this 2½ year survey as many different areas of Zimbabwe as possible will be visited. These areas will include all Parks & Wildlife Estates, Forest Reserves, Commercial Farms, Communal Areas and all Private land and Conservancies. The main objective of the survey will be to establish as accurate a picture as possible of the distribution and status of leopard and cheetah in the country. In addition other wildlife surveys will be undertaken at the same time.

Several methods will be adopted in order to obtain the required information including questionnaires, night work with spotlights, spoor counts, hunting returns, etc.

#### 5. **SOUTHERN AFRICAN PYTHON SURVEY OF ZIMBABWE (Note 8)**

At the same time that the Leopard and Cheetah Survey of Zimbabwe is being undertaken a detailed survey of the distribution, and possibly status of the Southern African python will be carried out.

A special form has been printed for distribution throughout the country on which all sightings of pythons will be entered.

All records of pythons, leopards and cheetah sightings will be entered onto the special form and the details then recorded on a database established at the CRI Offices in Bulawayo.

#### 6. **CAPTIVE BREEDING PROGRAMMES**

##### 6.1 **Small Carnivores**

A number of small Carnivores will be kept at the CRI Offices in Bulawayo for Research and breeding purposes. Children visiting the Education Centre on the property will have the opportunity to see how a research and captive breeding project is being undertaken.

Species to be studied at the Centre will include servals, Wild cats, genets, mongooses, bat-eared foxes, etc.

##### 6.2 **Extinct Cape Lion (Note 9)**

A number of male lions which look remarkably like the magnificent extinct Cape Lion occur at the Chipangali Wildlife Trust's Wildlife Orphanage near Bulawayo. The Chipangali lions have very distinctive long, wide black manes that reach under the bellies to the testes.

The males at Chipangali have the physical features of the extinct Cape Lion. This subspecies was shot out of existence by white hunters and settlers during the colonial period.

Over the past 50 years I have seen hundreds of wild lions in game reserves, lots of captive lions in many zoos all over the world, as well as photographs of lions in books, but I have never seen anything as impressive, majestic and magnificent as some of the lions at Chipangali.

A few of the lions at Chipangali are exactly as I always visualized and pictured the Cape Lion, which became extinct about 150 years ago. Cape Lions were hunted by colonial farmers in the 19<sup>th</sup> Century and were thought to have become extinct in the 1850's.

A 19<sup>th</sup> Century account describes the males of the extinct Cape Lion as having “large manes that reach far behind the shoulders; belly manes developed; the yellowish colour of the mane around the face contrasts sharply with the blackish or pure black colouring of the mane on the neck, shoulders, throat and chest”.

The best way to begin unraveling the riddle of these animals is to conduct comparative genetic tests on them in addition to skins of the Cape Lion that exist in Museum collections. DNA analysis is going to be the only way to determine whether the Chipangali lions come from the extinct Cape Cats.

Work on the breeding of this “special” lion will continue at Chipangali and help is sought by any scientist wishing to undertake DNA analysis of these lions in addition to skins in Museums.

### **6.3 Southern African Python**

In addition to the Python Survey of Zimbabwe (5. above) a detailed study of the growth and development of the Southern African Python in captivity is underway at the CRI facilities in Bulawayo. It is intended to breed the species in captivity in order to establish accurate incubation periods and behaviour of breeding females, rate of growth and development of young, etc.

## NOTES

- Note 1 :** We already have a considerable amount of data on the home-range and movement of leopards in the Nswatugi/Maleme area where we have been studying five radio-collared animals for several years. In this area there is very little large game such as impala, kudu, sable, wildebeest etc. but plenty of dassies, hares etc. From July 2006 we intend putting five radio-collars on leopards in the Game Park area where a completely different prey base exists, e.g. Impala, zebra, wildebeest, etc.  
It is going to be interesting to compare these two areas as far as home-range and movement is concerned as well as the food and feeding habits of the two different populations.
- Note 2 :** The leopard scats collected in the Game Park will be kept separate from those from the Nswatugi/Maleme area.  
As from July 2006 we will concentrate on collecting leopard scats in the Game Park as we already have many hundreds from the Nswatugi/Maleme area.
- Note 3 :** We have already collected a large number of specimens of invertebrates. However, we now intend concentrating collecting in the Game Park area for the next 2½ years.
- Note 4 :** Work on the reptiles and amphibians is virtually complete and a scientific publication is now “in press”.  
As far as fish are concerned we really have not done much in the past, but a determined effort will be made in the next couple of years to sample all the water bodies in the Hills.
- Note 5 :** We already have a considerable amount of data on small mammals, which has been obtained over many years. When time permits a scientific publication will be written and published.
- Note 6 :** If at all possible and it would be important if we could fit radio-collars on a few leopards in the Robins/Sinamatella area of the Hwange National Park. This is a completely different habitat to the Matobo Hills and it would be important to know if the home-range of leopards is different in the two habitats.
- Note 7 :** A detailed document covering all aspects of this project is included in this folder.
- Note 8 :** As our survey teams will already be traveling around the country it will not be difficult to collect data on any pythons encountered at the same time.
- Note 9 :** The extinct Cape Lion is very important and if we could get funding in the future we should continue with this project.

# **CHIPANGALI WILDLIFE TRUST**

**CARNIVORE RESEARCH INSTITUTE**

**(CRI)**

**&**

**ZIMBABWE PARKS AND WILDLIFE  
MANAGEMENT AUTHORITY**

**(ZPWMA)**

**SURVEY OF THE  
DISTRIBUTION AND STATUS OF  
LEOPARD  
(*Panthera pardus*)  
&  
CHEETAH  
(*Acinonyx jubatus*)  
IN ZIMBABWE**

**By**

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**JULY 2006**

## 1. INTRODUCTION

There are still people who believe that there are thousands of cheetah left in Zimbabwe, but evidence obtained by the Carnivore Research Institute (CRI) of the Chipangali Wildlife Trust suggests otherwise. We are concerned about the future of this species in the country and strongly believe that detailed surveys are essential in order to establish the distribution and status of this species.

From data collected over the last two years it is obvious that there is a considerable amount of variation in the attitude of landowners of the presence of cheetah and leopard on their land.

In many areas farmers who will not tolerate the presence of cheetah are often bordered by landowners who welcome the cheetah and would like to see the species fully protected.

In areas where cheetah are not tolerated the species is hunted, snared and persecuted which means the animals move a great deal and this is especially the case where land ownership has recently changed. In addition cheetah often prey on domestic livestock and consequently landowners regard the species as a nuisance and then wish to have them removed from their properties.

In addition and under normal circumstances in protected areas cheetahs move a great deal and have very large home ranges. In places where they occur outside protected areas, such as private farm lands, they move from one farm to another and where they are today they may not be tomorrow.

The current "fast track" land redistribution programme recently launched by the Government of Zimbabwe further increases pressure on cheetahs and leopards as the once large scale commercial properties are rapidly converted into small scale livestock farmland. With these changes taking place cheetahs and leopards have to adapt very quickly to major changes or move. Those that do not move are often snared and eliminated.

Cheetahs and leopards do not occur in large numbers on communal lands and old settlement areas. Even in National Parks and other protected areas cheetah populations are very low. At the present time the distribution of cheetah in Zimbabwe is fragmented and getting worse all the time.

Communal lands, old resettlement areas, commercial farms and small scale farming areas are all interspersed from the perspective of the cheetah. Therefore in order for the overall cheetah population to survive it is essential that we ensure that large homogenous areas of suitable cheetah habitat remain. The possibility of this happening outside large National Parks and conservancies is unlikely.

In protected areas and National Parks cheetah numbers remain low and this could be as a result of several factors. For instance it is possible that cheetahs roam over vast areas in order to avoid other large predators such as lions and spotted hyaenas; and are very secretive and extremely shy. There is also considerable competition between the various large predators and the more timid cheetah is very often the loser.

UNTIL ACCURATE NUMBERS OF CHEETAHS PRESENT IN NATIONAL PARKS AS WELL AS ON COMMERCIAL FARMS, COMMUNAL AREAS AND RECENTLY

RESETTLED SMALL HOLDINGS ARE KNOWN WE HAVE TO ASSUME FROM THE EVIDENCE AVAILABLE THAT THE SITUATION IS NOT GOOD.

In order to obtain a more accurate and realistic picture of the number of cheetahs and leopards left in the country the Carnivore Research Institute has commenced a detailed country wide survey. The survey will also investigate the effects of changes in the use of the land on the distribution and status of leopard and cheetah.

The team will also use the opportunity to educate the new farmers (as they are now called) in the areas that they visit about the importance of Carnivores and how they act as indicators of a healthy environment. To this end the CRI has recently employed a full time Ecologist/Education Officer to undertake this educational programme.

## **PAST CHEETAH SURVEYS IN ZIMBABWE**

In 1985 I was a member of the Parks and Wildlife Board and at a meeting of Board Members held in November 1985 the then Director of National Parks and Wildlife Management (Dr. Graham Child), submitted a paper to the Board for consideration, namely, "A case to permit the hunting of Cheetah by high fee paying foreign sportsmen" (See Appendix "A").

The role of the Cheetah as a predator of domestic livestock on commercial farming land was discussed at that meeting and it was agreed by all Board Members present that Cheetah were in fact becoming a problem animal and were very often recorded killing domestic livestock on many ranches.

However, it was also agreed that as very little was known concerning the distribution and status of Cheetah in Zimbabwe, that a detailed survey be undertaken first before any decision was made to permit the hunting of a "Specially Protected Species".

As a result of my own personal interest in the large "Spotted Cats" and the fact that I was a member of the "Cat Specialists Group" of the Species Survival Commission of IUCN, I was tasked by the Board to undertake a survey of the "Distribution and Status of Cheetah in Zimbabwe".

I commenced my Cheetah survey in January 1986 and spent the entire year and most of 1987 studying the Cheetah throughout the country.

Two questionnaires accompanied by a letter were distributed to 850 ranchers, farmers and safari operators in areas where cheetah were thought to occur. In addition, another questionnaire was also sent to all Wardens and Research staff of the National Parks and Wildlife Management Department through their head office in Harare for their comments.

As a result of the very positive results obtained from so many landowners I then undertook 7 field trips to different parts of the country to interview people on the ground concerning the status of cheetah. Twenty-nine ranches and properties were visited over a period of 15 months. Very briefly the results of the survey indicated the following:-

- Of 850 questionnaires sent out 472 (55.5%) were completed and returned to me;
- Of the 472 returned questionnaires 92 (19.5%) of the landowners reported the presence of cheetahs on their land;

- The remaining 380 (80.5%) of the landowners indicated that cheetah were either absent on their properties or they did not know if cheetah were present or not;
- After a detailed analysis of all the completed questionnaires, and taking into account the fact that cheetah moved vast distances and often covered many ranches in their normal home range, it was **postulated** that the cheetah population was as follows:-

• North-west Zimbabwe	-	ca	120
• Midlands	-	ca	30
• Southern Zimbabwe	-	ca	250
• Middle Zambezi Valley	-	ca	30
• Gonarezhou	-	ca	20
• Other Areas	-	ca	<u>20</u>
	Total	ca	470 Cheetah

Ten years later (1997), a Wildlife Producers Association questionnaire was sent out to all commercial farmers seeking information on cheetah of which 210 responded. The results indicated that 728 cheetah were present on the commercial farms, as follows:-

• Matabeleland North & South	-		474
• Masvingo	-		169
• Midlands	-		64
• Mashonaland West	-		12
• Mashonaland East	-		<u>9</u>
	Total		728 Cheetah

In addition, the estimate of cheetah numbers in the Parks and Wildlife Estate indicated the following:-

• Hwange National Park	-		50
• Gonarezhou National Park	-		20
• Chizirira National Park	-		5
• Mana Pools National Park	-		5
• Matusadana National Park	-		20
• Hurungwe & Sapi Hunting Areas	-		150
• Matetsi Hunting Areas	-		20
• Chirisa Hunting Areas	-		<u>22</u>
	Total		292 Cheetah

The survey gave a total of 1,020 cheetah in Zimbabwe.

Two years later on 19<sup>th</sup> July, 1999 a workshop to discuss the distribution and status of cheetah in Zimbabwe was held in Bulawayo, which was facilitated by Dr. R. D. Taylor. Twenty-eight participants attended the workshop.

Two papers were handed out to participants and discussed. One paper titled "Cheetah Policy and Management Plan for Zimbabwe" (Anon, 1999) and the other "An Estimate of the Status of Cheetah in Zimbabwe" which was compiled by the Department of National Parks and Wildlife Management. Unfortunately it was not stated who produced the first paper, but it stated -

“In Zimbabwe there has been an estimated doubling of cheetah numbers in the last 10 years to an estimated 6,000 ( $\pm$  1,500) of which only 50 – 75 of these are within National Parks estates”. The same report goes on to say – “Although the National ranging population is above the 5,000 mark, the population is **NOT** secure”.

The second paper compiled by National Parks and Wildlife Management staff states – “An overall minimum estimate of about 1,200 cheetah on commercial farming areas and 320 cheetah in National Parks areas can be made, **but this is not based on fully comprehensive surveys**”.

It is of interest to note the two large differences in the estimates of cheetah numbers submitted at the same Workshop by different participants. One giving a cheetah population of  $\pm$  6,000 animals and the other 1,520.

The Table below gives a summary of estimates of cheetah numbers by different people over a period of the last 20 years (1986 – 2006).

DATE	AUTHOR	ESTIMATE OF CHEETAH NUMBERS		
		Parks Estates	All other Areas	TOTAL
1987	Wilson (1987)	180	290	470
1997	Wildlife Producers (1997)	292	728	1,020
1999	Anon (1999)	50 – 75	6,000 ( $\pm$ 1,500)	6,050
1999	Parks & Wildlife (1999)	320	1,200	1,520

In 1992, Zimbabwe (along with Namibia and Botswana) was granted permission to utilize 50 cheetahs a year as trophy animals as it was hoped that this would help compensate farmers who lost cattle and wildlife to cheetah.

For details of the biology and ecology of Cheetah see Appendix “E”.

## PAST LEOPARD SURVEYS IN ZIMBABWE

In 1984 Dr.Child estimated Zimbabwe’s leopard population at 35,000 animals (Child 1984) and in 1985 a questionnaire survey of the country carried out by Vernon Booth indicated that leopard still existed in every district and the only areas where it had been eliminated were in large commercial agricultural holdings where the natural habitat had been entirely removed.

During the period November 1986 to March 1987 (5 months) R. B. Martin and T. de Meulenaer (1988) undertook a leopard survey of sub-Saharan Africa during which time they spent between 2 – 7 days in each country.

In the abstract of their report – “Survey of the status of the leopard (*Panthera pardus*) in sub-Saharan Africa” they state: “Thus if leopard are present in an area, then their status is such that they are generally at the maximum density at which they could occur”. They go on to say – “However, predator densities are ultimately limited by their food resources and these in turn are limited in Africa mainly by rainfall. An indirect method of assessing leopard numbers has been used which relies on the relationship between leopard densities, rainfall and the amount of suitable habitat”.



On page 5 of Martin & de Meulenaer's report they say – "In an attempt to avoid the guesses which have bedevilled earlier work, we have used an objective method based on a relationship between leopard densities, habitat and rainfall".

Their results indicate a predicted leopard population of 16, 064 in Zimbabwe with a lower estimate of 8,835 and an upper limit of 29,236 animals.

## **LEOPARD HUNTING QUOTAS FOR ZIMBABWE**

In 1983 at the fourth meeting of the Conference of the Parties to CITES in Botswana, a Resolution was passed granting export quotas for leopard skins to Botswana (80), Kenya (80), Malawi (20), Mozambique (60), Tanzania (60), Zambia (80) and Zimbabwe (80).

In 1985 at the fifth meeting of the Parties to CITES in Buenos Aires an aggressive initiative on the leopard issue was proposed by Zimbabwe, Zambia and Tanzania. Increased quotas of leopard were requested by Tanzania (250), Zambia (300) and Zimbabwe (350).

"In supporting the Zimbabwe submission, Child argued the case mainly on the grounds of an increased quota required for sport hunting. He indicated that the previous quota of 80 was barely adequate to meet the needs of safari hunting on State Land, and did not cover the requirements of a growing wildlife industry on private land. It posed no threat to an estimated population of 35,000 leopard and was a preferable alternative to having the animal destroyed as vermin on commercial cattle ranches and in communal lands".

In 1992 the quota was increased to 500 leopards. This quota was set by using estimates of the possible number of leopards that were likely to be present in the country providing suitable habitat existed.

**At no time has a detailed scientific survey of the leopard population in Zimbabwe ever been undertaken.**

It is interesting to note that the quota set in 1992 of 500 leopards per year has never been met and the average number shot as trophy animals each year has been about 250 animals.

For details of the biology and ecology of leopard see Appendix "F".

## **2. PROPOSED SURVEY OF LEOPARD & CHEETAH IN ZIMBABWE**

In a letter to the Chipangali Wildlife Trust from Mr. T. Chimuti, Director of Conservation of the Parks & Wildlife Management Authority of Zimbabwe the Carnivore Research Institute was approached for assistance in conducting a National Survey of Leopard and Cheetah in Zimbabwe. (See Appendix "B".)

In addition the Authority has agreed to second a full time ecologist to the project.

## **3. AREA TO BE COVERED BY THE SURVEY TEAMS**

The entire country, covering all Parks & Wildlife Estates, all Forest Reserves, all Conservancies and other Protected Areas, all Commercial and Communal Lands and all areas recently settled as a result of the Government's new "fast track" land redistribution programme.

#### 4. **PERIOD OF SURVEY**

Two full years. 1<sup>st</sup> August 2006 to 31<sup>st</sup> July 2008 for the actual field work and an additional five months to analyse and write up the results and produce a detailed report. The entire project will end on 31<sup>st</sup> December 2008.

#### 5. **SURVEY TEAMS**

- Mr. Vivian Wilson will be the project leader and co-ordinator;
- He will be assisted full time by a Parks and Wildlife Ecologist, Miss Roseline Mandisodza, who will be seconded to the survey team for the duration of the actual field work and for a further period of five months in order to write up the results and produce a final report;
- Miss Joice Ndlovu (CRI Ecologist);
- Mr. Colin Khumalo (CRI Driver and Field Assistant);
- Occasionally Mrs. Paddy Wilson (CRI Patron); and
- Mr. Kevin Wilson (Director of Chipangali Wildlife Orphanage);
- National University of Science & Technology (NUST) attachment students and Volunteers will also assist with field work and surveys.

#### 6. **REPORTS**

Progress Reports will be issued at the end of each month giving details of areas visited, animals recorded etc.

A final report will be produced in December 2008.

#### 7. **OBJECTIVES OF LEOPARD, CHEETAH AND WILDLIFE SURVEY**

The following 14 questions require answers and these will be looked into by our survey teams :-

1. To determine the distribution and status of leopard and cheetah in Zimbabwe;

2. To determine if the population of leopard and cheetah in Zimbabwe is continuous or discontinuous;

3. To determine the favoured habitat requirements of each species;

4. To study inter-specific competition between the species as well as competition with other large carnivores;

5. To determine the availability of wild prey in relation to domestic livestock on privately owned land, and wildlife populations throughout the country;

6. To determine if cheetah numbers are declining in protected Parks and Wildlife Estates and if so the reason for that decline;

7. To determine why there is a low safari hunter success rate for hunting leopard and cheetah;

8. To formulate a general awareness and educational programme for leopard and cheetah. This will be undertaken as part of the CRI Wildlife Education programme;

9. To investigate the relationship between leopard and cheetah densities, rainfall and habitat;

10. To ensure that research activities and surveys are related to active management;

11. To determine best methods for monitoring populations of leopard and cheetah;

12. To examine as many dead leopard and cheetah as possible in order to obtain accurate body measurements and weights, body conditions, skull size, etc.;

13. To determine the extent of illegal off-takes of both species in non-protected areas;

14. To determine the attitudes of landowners to leopard and cheetah.

## 8. **METHODS OF SURVEY ON COMMERCIAL, COMMUNAL AND RECENTLY SETTLED FARM LANDS**

It is absolutely essential that as many farms and ranches as possible in Zimbabwe are visited. During the visits to these areas some time will be spent with the managers/owners discussing predator problems and other issues associated with large carnivores and especially leopard and cheetah.

During the interviews a comprehensive questionnaire (Appendix "C") will be completed in which a wide range of questions will be asked.

Wildlife populations will also be assessed at the same time and it is hoped that the manager or owner of each property would spend some time with our team visiting important areas where carnivores and other species are known to occur.

Once back in Bulawayo all the data obtained during the brief survey would be entered into a computer database for easy access and later analysis. A very detailed report of each property visited will also be produced at the end of each field trip. It is then important to monitor changes that may take place on the property visited and to gain the co-operation of the landowner in order to obtain additional data of the wildlife, livestock and predator populations on his land.

To this end a supply of a special form (Appendix "D") will be left with the landowner to complete for all large carnivore sightings. This data will also be entered into the computer database.

The success of the survey will depend entirely on the co-operation of the landowner for it is the accurate passing on of data by them that will help understand the role of the predators on private and communal properties.

Night work from the back of an open vehicle, with the use of a bright spotlight will also be carried out at some of the larger properties visited. In this way a clearer picture will be obtained of some of the smaller nocturnal animals occurring in the area.

Tape recordings of selected carnivores will also be "played back" to attract large carnivores such as hyaena and lion.

All night sightings of the large carnivores will also be entered onto the Carnivore Survey Form (Appendix “D”).

The methods of survey to be adopted in the National Parks and other protected areas will be completely different to that used on private, commercial and communal land. These are discussed below:

## **9. METHODS OF SURVEYS IN PARKS & WILDLIFE ESTATES**

The following survey methods will be employed in all Parks & Wildlife Estates, Forest Reserves and other Protected Areas in Zimbabwe in order to determine the distribution and status of leopard and cheetah.

It is absolutely essential that as much of each National Park as possible is covered by the survey teams.

### **9.1 Night work with spotlight**

Night work from the back of an open vehicle, using a bright spotlight, will be used to locate leopards at night. In addition to leopards details of all other carnivores will also be recorded;

### **9.2 Leopard and cheetah tracks**

Leopard and cheetah tracks will be recorded whenever seen and especially on swept transects on gravel roads in different places in each park;

### **9.3 Tape recordings**

Tape recordings of leopard and cheetah as well as other large carnivores will be used and “played back” to attract large carnivores;

### **9.4 Leopard and cheetah scats**

In addition to the collection of leopard and cheetah scats (droppings) all other carnivore scats will also be collected and preserved for prey analysis;

### **9.5 Visitors’ sightings**

A special form (See Appendix “D”) has been printed and will be widely distributed throughout Zimbabwe and especially in all Parks & Wildlife Estates for National Parks staff and visitors to the various Parks to record details of all sightings of leopard and cheetah. In addition, safari operators, hunters and researchers will also be requested to record all sightings of leopard and cheetah;

### **9.6 Leopard and cheetah prey remains**

An attempt will be made to locate as many carcasses as possible of prey killed by leopards and cheetah. This will obviously only be for large mammals killed as all small prey, such as dassies, game birds etc. will be completely consumed and nothing will remain of the prey;

### **9.7 Bait**

Fresh bait will be used from time to time to attract leopard and cheetah and other carnivores. Detailed records of all sightings will be recorded;

### **9.8 Road transects**

Transects along roads and bush tracks will be covered in as many different areas as possible in each Park surveyed. These will be undertaken in the very early

morning and late afternoon during which time all carnivores sighted will be recorded.

By using the eight techniques mentioned above over a period of two years we should have a very good idea of the distribution and status of leopards and cheetah in all of the Parks and other protected areas visited.

PAPER SUBMITTED TO PARKS & WILDLIFE BOARD  
19<sup>TH</sup> November 1985

Following the drought there has been widespread heavy predation on domestic livestock by hyaena, leopard and cheetah. The hyaena problem seems to be most serious on Communal Land and the problem-animal-control-units eliminated at least 58 in October alone. There have been few complaints against the leopard, but many against cheetah although stock losses, mainly calves, have been due to both species. Cheetah is a Specially Protected Species and some 200 are known to have been destroyed illegally and left to rot on the veld by generally conservation conscious farmers. It has been virtually impossible to obtain evidence against these farmers.

The divergence in landholder attitudes between leopard and cheetah appear to emanate from the difference in legal status of the two species. Whereas farmers have the right to use leopard and can thus compensate for the social cost of having the species on their land, this is not possible in the case of cheetah. As a consequence they tend to be destroyed on sight and this breach of legislation is condoned by public opinion which explains the withholding of evidence against the perpetrators.

Zimbabwe cannot afford to forego the loss of potential benefits represented by the wasteful destruction of 200 and perhaps more cheetah. While less attractive than a leopard as a hunting trophy it is nevertheless a valuable addition to the potential range of animals that could be hunted on many properties. The availability of this additional hunting would go some way to off-setting the financial losses from cheetah predation and to encouraging landholders to tolerate the species.

Cheetah is on Appendix 1 of CITES and it might be wise if hunting of the species is to be permitted to allow a limited off-take for commercial purposes. To this end it is proposed that Zimbabwe should apply a self imposed quota of no more than 100 skins to be exported from the country in any one year. Exports could then also be limited to no more than one skin per **bona fide** hunting client per year and could be limited to clients who declare at least ZW3 000 on their CITES 9 forms for hunting in this country. This would serve the dual purpose of ensuring that exports are limited to genuine sportsmen and that exports could not promote the spotted-cat skin fur trade. The last is a major fear of animal groups in major market countries.

Whether or not their home countries will permit sportsmen to import cheetah trophies will be a matter of negotiation between the sportsmen and their CITES Management authorities. If limited controlled exploitation is permitted Zimbabwe would certainly argue in favour of market countries permitting the import of hunting trophies.

Should the Board concur with the suggestion that strictly limited numbers of cheetah should be permitted to be hunted by foreign sportsmen then there are two methods by which this off-take could be regulated. They are:

1. The species could be retained as a Specially Protected Animal and landholders wishing to permit foreign clients could be issued with a permit to take one or two specimens for this purpose. CITES export permits would then be limited to 100 skins for these permit holders,

OR

2. The species could be de-listed as a Specially Protected Species but a high measure of control could still be effected through the control on exports.

While the second alternative may be preferably in the spirit of the Parks and Wildlife Act, 1975, it might lack credibility in the eyes of importing countries. The first method may therefore be preferable, at least while Zimbabwe seeks international acceptance of this limited and restricted trade in cheetah skins and while we gauge landholder reaction to the proposal at home.

In offering it's advice the Board should be aware that Zimbabwe is one of a group range states that are partly to CITES which have been criticized by importing countries for being "too use orientated" towards it's wildlife. Already we have successfully negotiated the controlled export and acceptability of crocodile and leopard parts and derivatives by importing states and the addition of cheetah might serve to "outlive our welcome".

Against this is that protectionism and attempts to destroy internal trade have failed as is well illustrated by the rhino saga in Africa. This is also well illustrated by the divergent attitudes to leopard and cheetah by landholders in this country, where the social costs of tolerating such predators is perceived to be high by the people best able to conserve them.

The Board's considered advice would be welcomed by the Department.

G.F.T. Child  
Director

GFT/CS

19<sup>th</sup> November 1985

## Appendix "B" Letter from Parks and Wildlife Management Authority



### PARKS AND WILDLIFE MANAGEMENT AUTHORITY

Telephone: 263-04-792786-9  
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Fax: 263-04-724914, 792782  
726089  
e-mail: [natparks@africaonline.co.zw](mailto:natparks@africaonline.co.zw)  
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Telegrams: "PARKLIFE HARARE"

HEAD OFFICE:  
Botanical Gardens  
Borrowdale Rd/Sandringham Drive

P.O. Box CY140  
Causeway  
Harare

All correspondence to be addressed to the Director General

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29 March 2006

The Chipangali Wildlife Trust  
P.O. Box AC 1310  
Ascot  
**BULAWAYO**

*To Whom It May Concern:*

**RE: NATIONAL SURVEY OF LEOPARD (*PANTHERA PARDUS*)  
AND CHEETAH (*ACINONYX JUBATUS*) IN ZIMBABWE**

The Zimbabwe Parks and Wildlife Management Authority has approached the Carnivore Research Institute of Chipangali Wildlife Trust for assistance in conducting a National survey of leopard and cheetah in the country.

The last cheetah survey was done twenty years ago by the same organization at the request of the then Department of National Parks and Wildlife Management. However, no survey of leopards has even been undertaken in the country. This project is one of the topmost priorities of the Authority given that the status of these species might have been affected by changes that have been happening in the former major areas of distribution. Zimbabwe has also the highest CITES approved hunting quota (500) for leopard in Africa and (50) for cheetah.

The Authority will second an ecologist to the Carnivore Research Institute to work full time on the project.

pp. *Sithole*.....  
T. Chimuti

**Director Conservation**

**For: DIRECTOR GENERAL**



**Appendix “C” Questionnaire – Distribution of large predators and other Wildlife in Zimbabwe**

1. **Your Name (Person being interviewed) :** .....
  2. **Position Held :** .....
  3. **Postal Address :** .....
  4. **Phone :** ..... **Fax :** ..... **E-mail:** .....
  5. **Name of Property :** .....
  6. **Size of Property** .....
  7. **Are you the Owner, Manager or Lessee of the Property? :** .....
  8. **How long have you lived on the property? :** .....
  9. **How was the Property acquired? :** .....
  10. **If farm once part of a commercial farm, please give original name of farm :** .....
  11. **Name of Previous Owner (if applicable) :** .....
- 
12. **Date Property visited :** .....
  13. **Duration of Visit :** .....
  14. **By whom visited :** .....
  15. **Accompanied by :** .....
  16. **Signature of Interviewee :** .....
  17. **Signature of person being interviewed :** .....
- 
18. **Do Cheetah occur on the property? : ..... If YES, approximate number on property? : .....**
  19. **Do Leopard occur on the property? : ..... If YES, approximate number on property? : .....**
  20. **If the answer to question 18 is NO, why do you think there are no Cheetah on your land? : .....**  
.....
  21. **If the answer to question 19 is NO, why do you think there are no Leopard on your land? : .....**  
.....
  22. **Are Cheetah numbers on your land Increasing, Decreasing or Static? : .....**
  23. **Are Leopard numbers on your land Increasing, Decreasing or Static? : .....**

- 24. Are Cheetah a nuisance on your Property? : .....
- 25. Are Leopard a nuisance on your Property? : .....
- 26. Do Cheetah move from your property to adjoining properties? : .....
- 27. Do Leopard move from your property to adjoining properties? : .....
- 28. How often do you see Cheetah tracks on your property?: Weekly : ..... Monthly : ..... Other : .....
- 29. How often do you see Leopard tracks on your property? : Weekly : .... Monthly : ..... Other : .....
- 30. If Cheetah or Leopard have been shot or captured on your property in the last 5 years, please give details below:

SPECIES	YEAR (GIVE MONTH IF POSSIBLE)	TOTAL NO. REMOVED	HOW REMOVED	SEXES OF CHEETAH/ LEOPARD	APPROX. AGES

- 31. Do you keep domestic livestock? : ..... If YES, do Cheetah prey on your livestock? : .....
- 32. Do you keep domestic livestock? : ..... If YES, do Leopard prey on your livestock? : .....
- 33. What types of livestock and numbers of each do you have? : .....  
.....
- 34. Please give details of livestock or poultry killed by predators over the last couple of years: .....  
.....  
.....
- 35. Is wildlife in general, plentiful on your property? : .....
- 36. Is all or any part of your property game fenced? (size of area fenced) : .....  
.....  
.....

**37. Population Estimates of Predators and other Wildlife on your property :**

<b>Large Mammal Species</b>	<b>Estimated Population</b>	<b>Absent</b>	<b>Number Introduced</b>	<b>Notes</b>
Pangolin				
Aardwolf				
Brown hyaena				
Spotted hyaena				
Lion				
Caracal				
Serval				
Wild Cat				
Bat-eared Fox				
Wilddog				
Side-striped jackal				
Black-backed jackal				
Clawless Otter				
Honey Badger				
Antbear				
Elephant				
White rhino				
Black rhino				
Zebra				
Bushpig				
Warthog				
Hippopotamus				
Giraffe				
Wildebeest				
Lichenstein's hartebeest				
Red hartebeest				
Tsessebe				
Blue duiker				



**Appendix “D”**

**CHIPANGALI WILDLIFE TRUST  
(CARNIVORE RESEARCH INSTITUTE)  
- LARGE CARNIVORE and PYTHON SURVEY -**

LION●LEOPARD●CHEETAH●BROWN HYAENA●SPOTTED HYAENA●WILDDOG●SERVAL●CARACAL●PYTHON

We welcome your participation in this survey. If you see any of the carnivores mentioned above please complete the form below and post it to Mr. Viv Wilson at the address below, or if you are in a National Park, hand it to the Gate Attendant when leaving the park.

SPECIES:		DATE:		TIME:	
<b>IF POSSIBLE GIVE SEX AND AGE CLASSIFICATION OF GROUP</b>					
Total Number Together	Adults			Subadults	Babies (approx age)
	Males	Females	Unsexed		
LOCALITY (in detail)					
HABITAT :					
NOTES : (If python give details of approximate size)					
Your Name (Print):			Address: E-Mail :		

N.B . Post to Mr. Viv Wilson, P.O. Box AC1310, Ascot, Bulawayo. Phone – 09 ● 286603. E-Mail - [duiker@ecoweb.co.zw](mailto:duiker@ecoweb.co.zw)

**THIS FORM IS SPONSORED BY: Columbus ZOO and Aquarium (USA)**

## CHEETAH (*Acinonyx jubatus*) Profile

### Taxonomic Note

This is a monospecific genus, being the only species occurring throughout its African, Middle-eastern and Asian range. Allen (1939) lists seven subspecies for Africa but only five are generally recognized (Smithers, 1975). However the validity of the subspecies is questionable. The nominate race, *Acinonyx jubatus jubatus* (Shreber, 1776) is the only one recognised as occurring in Southern Africa.

The so called “King Cheetah” was given specific status, *Acinonyx rex* (Peacock 1927), but it is now merely considered to be an abnormally marked form of *Acinonyx jubatus*. All known wild collected specimens or sightings come from a limited area of Southern Africa, with one recent record from West Africa.

### Description

The Cheetah, sometimes referred to as the “greyhound” of the cats, is probably the most elegant member of the cat family. It is tall and slender with long legs and a short muzzle with a rounded head. The body colour is off-white to pale fawn and it is liberally dotted with black, rounded spots more or less in uniform size. A clear black line (the “tear mark”) runs from the inner corner of each eye to the corner of the mouth. Numerous small black spots are present on the forehead and top of the head. The tips of the ears are white. The long tail is black ringed with a white tip. A short erectile crest is situated on the back and sides, but this is often very short and indistinct. The cubs, up to three months of age, have a long, grayish coloured mantle of hair on the back. This serves as a form of camouflage when they are most vulnerable to other predators. The cheetah is the only cat that does not have fully retractile claws and the impressions of the claws can be seen in their tracks. The total length measures about 2m, the tail 70cm and the mass ranges from 40 to 60kg.

### Reproduction and Development

Cheetah have a long drawn out and complex courtship and this has been described by a number of authors and is only given in summary here. A male or males approach a female to test her reproductive condition and when excited may mock charge her and she will in turn mock charge the male. Their excitement at this stage leads to much urine spraying and scraping by the male. After between seven and fourteen days of this initial period the female comes into oestrus and is then receptive to the male. Aggression between males now reaches a peak and mounting of the female may take place, the female may enter further oestrus periods. Aggression between males and between male and female plays a vital role in the mating process. Litters of between one and five kittens, usually three, weighing between 250 and 300g, are born after a gestation period of 90 – 95 days. For the first six weeks after birth they are usually hidden in dense plant cover, thereafter following the mother. The cubs are fully weaned at about three months after birth and at the age of between eight and twelve months they start to hunt and make their own kills. When the cubs leave the mother, they may do so as a group or singly.

### Behaviour

The cheetah is normally seen singly, in pairs or small family parties consisting of a female and cubs. Males may form bachelor groups, usually consisting of between four and seven individuals. Despite the fact that cheetah are principally diurnal they are rarely seen, except in conservation areas. This applies especially where they are hunted on farmland.

Work undertaken on farmlands in Namibia by Dieter Morsbach, has shown that male cheetah operate within an average home range size of 800km<sup>2</sup>, whereas females in his study covered

an average range of 1 500km<sup>2</sup>. Range size may vary considerably from area to area and season to season. To date, no such study has been undertaken in Zimbabwe. The same study showed that cheetah moved considerably between farms and seldom stayed in one area for an extended period. Females with small cubs would remain in the same area for several months until they were old enough to accompany the mother. Males are apparently not territorial and may move over areas held by several females. Favoured lying up spots are usually raised above the surrounding area and are urine-marked by both males and females. When hunting, cheetah stalk to within a short distance of their intended prey and then sprint in for the kill. Although they may top speeds of more than 70km per hour, this can only be sustained for a few hundred metres. In National Parks and other conservation areas, cheetah numbers are lower where other large predators such as lion, leopard and spotted hyaena occur, as these carnivores are not only competing predators but they will also catch, kill and eat young and adult cheetah.

### **Diet**

The main prey consists of medium to small ungulates, and the young of larger species, such as kudu. They also take ground living birds, including ostrich and a wide range of small mammals such as hares. In the Kruger National Park, impala and southern reedbuck are the most frequently taken prey with lesser numbers of waterbuck, kudu and tsessebe. Impala are the most frequently taken prey in the Gauteng Lowveld. Springbok form the bulk of ungulate prey over much of Botswana except in the north-east where impala is the principle food item. Records from Zimbabwe indicate that the main natural prey of the cheetah is impala, but as in keeping with other areas they also take young kudu, sable and tsessebe, as well as southern reedbuck, common duiker, steenbok and warthog. A similar picture emerges in Namibia with springbok, young kudu and other ungulates making up a large percentage of this cat's prey. On game and stock farms they are most unpopular as they tend to prey on a wide spectrum of game species including domestic livestock such as, sheep, goats and calves.

## LEOPARD (*Panthera pardus*) Profile

### Taxonomic Note

Although Smithers (1971) listed 13 subspecies of leopard as occurring in Africa, with only *Panthera pardus shortridgei* (Peacock, 1932) recognized for Southern Africa, the validity of many is questionable. The relatively small leopard inhabiting the coastal mountains of Cape Province (South Africa) is often erroneously thought to be a distinct subspecies but this is not the case.

### Description

The leopard is an elegant, powerfully built cat with a distinctly marked coat. The basic body colour varies from almost white to orange-russet, with black spots on the legs, flanks, hindquarters and head. The spots over the rest of the body consist of rosettes or broken circles of irregular black spots. The tail is about half of the total length, with rosette spots above and a white tip. The ears are rounded and white tipped. The underparts are usually white to off-white. Cubs have dark, woolly hair and less distinct spots. Total length ranges from 1,6 to 2,1m, tail 68 to 110cm, shoulder height 70 to 80cm. The mass of males ranges between 20 and 90kg, with females from 17 to 60kg. Leopards from the mountain ranges of the Cape Province are generally much smaller than those from further north. Males are considerably larger than females.

### Reproduction and Development

Being solitary felids, male and female leopards only come together briefly to mate. After a gestation of between 90 and 100 days a litter of two or three kittens is dropped. Although up to six cubs have been recorded in a single litter, this is very unusual. Cubs are born in dense cover, rock crevices and weigh between 500 and 600g. The cubs first accompany the mother on hunts when they are about four months old and remain with her for slightly less than two years. At this stage they are approximately two thirds of adult size. There is no fixed breeding season.

### Behaviour

Leopards are normally solitary except when a pair comes together to mate or when a female is accompanied by cubs. Although mainly nocturnally active, in areas where there is little disturbance, they may be seen moving during the cooler daylight hours. The leopard is mainly terrestrial but is a good climber and swimmer. Males mark and defend a territory against other males, and a males territory may overlap that of several females.

Territories are marked with urine, droppings and tree scratching points. Home ranges vary considerably in size. In Southern Africa home ranges studies have been undertaken in two areas of the Cape coastal mountains; in the Cedarberg the average male range covers some 50km<sup>2</sup> and in the Stellenbosch mountains approximately 400km<sup>2</sup> but a study in the Matobo National Park in Zimbabwe revealed an average range extent of between 10 and 20km<sup>2</sup>. Home range size is largely dependent on the availability of food. Although normally silent, the leopard does have a characteristic call that has been likened to the sound of a coarse saw cutting wood. Leopard stalk and then pounce on their prey.

### Diet

Leopards take a very wide range of prey species and it is this adaptability that helps explain their ability to survive in areas where other large predators have long disappeared. Their food ranges from insects, rodents, birds to medium-sized and occasionally large antelope. In some rocky mountainous areas rock hyrax (dassies) make up an important part of it's diet. Studies in Matobo National Park, Zimbabwe, showed that hyrax and klipspringer had the highest percentage occurrence; 78 per cent of the leopards diet in Kruger National Park



consists of impala. Studies in the coastal mountains of Cape Province have shown that hyrax is the most important species in the diet of leopard in this area.

### **Habitat**

The leopard has an extremely wide habitat tolerance, from high mountains to coastal plains and low or high rainfall areas. This adaptability has ensured that the leopard is still the most wide-spread of the three large Southern African cats.

### **Distribution and Status in Zimbabwe**

While the Leopard is not nearly as controversial as the Cheetah it is still nonetheless an extremely important and very valuable predator.

Perhaps the reason why the leopard is not considered a problem animal to farmers, is that it is far easier to hunt and the financial returns from hunting leopards are far greater than for a cheetah.

The cheetah is very often accused of killing large numbers of domestic livestock on commercial farms but very often the culprit is the leopard and this often goes unnoticed.

However, if it is discovered that the leopard has killed livestock, it can easily be hunted with or without dogs, and the value of the trophy animal far exceeds the value of the domestic animal killed.

While the leopard is not an endangered species in Zimbabwe, and in some areas they are reasonably common, we still nonetheless, have no idea what the actual population in the country is.

At the present time, there is no practical, direct method to count leopard or for that matter cheetah in Zimbabwe, and Martin & de Meulenaer (1988) used what they called an objective method based on a relationship between leopard densities, habitat type and rainfall. They believed that if leopard are present in an area then they are thus at saturation density.

Wynne-Edwards (1970) says – “One expects animals to live at higher densities in richer and more productive habitats than they do in marginal and unproductive ones; and there is no reason to doubt that food and habitat is for most species the ultimate determinant of population density”.

Predators are ultimately limited by their food supply and while density dependent, large carnivores may use territory as a regulating factor, the main determinant is a food supply. For this it would appear that one of the major factors of influencing home range sizes of the large predators and therefore of leopards, lies in the seasonal availability and distribution of prey. It has been mentioned that the density of leopards in the Matobo National Park in Matabeleland is as high as 2 to 3 animals per sq.km (Grobler in Martin & de Meulenaer 1988), but this has been revised to 1 leopard to 5 per sq.km.

Smith (1977) estimated leopards at a density of 1/5 sq.km in the Matobo National Park in a preliminary study based upon sightings and faecal deposits.

However, the Matobo Hills contain vast numbers of granite kopjes with high populations of dassies, duiker and klipspringer and is therefore an unusually suitable habitat for leopard.

Booth (1987) on the other hand, estimated leopard density in the Matetsi Safari area as 1 leopard to 5.5 sq.km while Hamilton (1976) gives a density 1 leopard in 8.1 sq.km as a minimum estimate in the Tsavo National Park in Kenya. There are many other records of leopard densities of about 1/10 sq.km in different parts of Africa and even up to 1/20 sq.km in Ethiopia.

As mentioned before they are common in the undisturbed Matobo National Park where the population is thought to be about 100 + animals and in the Hwange National Park, the population could reach over 500 animals.

MEMORANDUM OF UNDERSTANDING  
(hereinafter referred to as “the MOU”)

between

PARKS AND WILDLIFE MANAGEMENT AUTHORITY  
(hereinafter referred to as “the Authority”)

represented by

THE DIRECTOR-GENERAL, PARKS AND WILDLIFE MANAGEMENT  
AUTHORITY

and

THE CARNIVORE RESEARCH INSTITUTE  
(hereinafter referred to as “the CRI”)

represented by

THE RESEARCH DIRECTOR OF THE CARNIVORE RESEARCH INSTITUTE

**PREAMBLE**

**WHEREAS** Africa benefits from an exceptional biodiversity of world importance, which is clearly under threat. The degradation of the natural environment is exacerbated by rapid population growth especially in the rural areas compounded by the difficult living conditions (extreme poverty on the increase, periodic famines, HIV/AIDS epidemic, and chronic malnutrition). This degradation has been amplified by the instability of agricultural systems, unsustainable agricultural practices, exacerbated by population movements triggered by conflicts prior to independence.

**AWARE** that the failure to implement sustainable natural resource management strategies at local and community levels leads to resource exhaustion as well as fragmentation of natural habitats and the erosion of the genetic diversity of wild and cultivated plants;

**WHEREAS** in the last decade, there has been a general agreement that priority should be given to conservation activities as tools for development. Over and above the ecological knowledge of local communities, these initiatives should form the basis for innovative methods of access to, and the utilisation of, natural resources. The objective is to provide sustainable alternatives to the natural exploitation of the environment, whilst favouring the maintenance or the restoration of greater biodiversity. This calls for collaborative efforts amongst all stakeholders to ensure that available resources are harnessed to meet this objective;

**WHEREAS CRI** is a registered Private Voluntary Organisation registered in 1977 (No. PVO 38/77 as a Wildlife Research Organisation based in Western Zimbabwe, which is a direct produce of research that has been undertaken by the Chipangali Wildlife Orphanage and Research Centre since 1973.

**ACKNOWLEDGING** that besides caring for orphaned, abandoned, confiscated, sick and injured wild animals which could not be returned to the wild immediately, if at all, the Chipangali Wildlife Trust's other objectives are a Children's Conservation Education Centre and a Wildlife Research Unit. Since 1985 the Research Unit has undertaken work on the captive animals in its care as well as carrying out wildlife surveys throughout

Zimbabwe and the rest of sub-Saharan Africa. The Trust has now shifted its attention to the mammalian carnivores and biodiversity surveys of Zimbabwe and to that end have set up the Institute now described in this MOU ;

**AND WHEREAS** in addition to a strong presence in sub-Sahara Africa the Research Unit (prior to the formation of the CRI in 2004) has been undertaking Wildlife field research projects in Zimbabwe for over 30 years and has published a large number of scientific publications in recognised scientific journals in different parts of the World.

**NOW THEREFORE** the Parties have agreed as follows :

### **Article 1**

#### **Object of the MOU**

The object of the MOU shall be to provide substantial alternatives to the natural exploitation of the environment, whilst favouring the maintenance or the restoration of greater biodiversity.

### **Article 2**

#### **The Authority**

2.1 The Authority is mandated by the Government through the Parks and Wildlife Act (*Chapter 20:14*) to undertake scientific research and wildlife management in order to preserve indigenous species and habitats and protecting and managing the Parks and Wildlife Estate. Further the Authority is responsible for administering, developing and promoting wildlife management as an economically sustainable land use outside the protected areas.

2.2 The Wildlife Policy in Zimbabwe emphasizes the strategic thrust towards sustainable use of wildlife resources, employment creation and foreign currency earnings. In line with the expectations of balancing the conservation and commercial activities, the Authority has defined strategic direction and positioning within a global competitive tourism and wildlife industry. The overriding aim is to enhance rural prosperity and empowering the previously excluded majority of the population by guaranteeing the equitable distribution of

resources and access to opportunities in the country's protected areas and wildlife industry.

- 2.3 The Authority has a history of promoting systematic approaches to ecological assessments and monitoring based on the strong belief that scientific assessments must form the basis for technical advice, policy formulation and intervention. Research is taken as an integral part of management. Over time the research agenda has shifted from a strategic focus to an applied approach consistent with policy thrusts outlined above.

### **Article 3**

#### **The Rationale**

- 3.1 The CRI and the Authority share a common vision with regard to the promotion of biodiversity surveys and conservation and enhanced sustainable natural resource use as critical elements towards the goal of sustainable development.
- 3.1.1 The Authority approaches this goal through ecological research and monitoring, resource protection and park management, training, interpretation and extension.
- 3.1.2 The CRI approaches this goal through fundamental and applied research into key aspects related to ecology and biodiversity, including viability of ecosystems and management of renewable natural resources and captive breeding programmes of endangered species. Methodologies which shall be employed are complementary and could mutually reinforce the effectiveness and impact of programmes in the two institutions.
- 3.2 Both the Authority and the CRI recognise that there is a real need to better understand the functioning of natural ecosystems and biodiversity in Zimbabwe through research and monitoring leading to improved management of natural resources. To achieve these objectives the Authority and the CRI aim to develop appropriate environmental databases upon which management tools would be developed and operationalised.

- 3.3 The CRI and Authority acknowledge that sustainable natural resource management requires adopting an inter-disciplinary, multiple-stakeholder approach. Both Parties seek to build strategic alliances with other interested partners locally and internationally to enhance their scope and thrust thereby making interventions more holistic and integrated.
- 3.4 The CRI recognises that its partnership with the Authority shall contribute to strengthening its capacity to promote policies, projects and programmes in support of environmentally and socially sustainable ecosystems in Africa. Similarly, the Authority recognises that this partnership provides an opportunity to network with the CRI's experiences, as well as sharing its own conservation philosophy and how its relationship to development can contribute to sustainable management of Wildlife and ecosystems in Southern Africa.

#### **Article 4 Organisation of the Collaboration**

- 4.1 The Parties shall set up a National Co-ordinating Committee (hereinafter referred to as "the NCC") with two (2) members from each Party and the Programme Co-ordinator who shall be nominated by the Authority.
- 4.2 The NCC will be in charge of defining scientific orientations, and budget to the projects.
- 4.3 At national level, the project shall be managed as a programme by a Programme Co-ordinator whose costs will be co-funded by the Parties.
- 4.4 At local level activities will be managed as projects by co-managers from both Parties with defined objectives, means, budget and schedule.

#### **Article 5 Obligations of the CRI**

The CRI shall through the NCC:

- 5.1 provide qualified experts whose work shall be to produce required results;

- 5.2 Provide adequate means such as vehicles, fuel and computers to allow the above experts to carry out their duties;
- 5.3 and in co-operation with the Authority, facilitate the production of reports, posters, publications in accordance with the intellectual property agreement in terms of Article 7 below.
- 5.4 organise an annual workshop to inform the Authority and other partners of ongoing activities;
- 5.5 produce progress reports as defined by the NCC;
- 5.6 facilitate the use of results and information by providing adapted tools for research and management;
- 5.7 provide enough funding to fulfil its obligations as provided for in this MOU;
- 5.8 involve the Authority staff in data collection and analysis;
- 5.9 facilitate in the organisation of regular training sessions when a specified need has been identified by the Authority at local and international levels;
- 5.10 host Zimbabwean university students;
- 5.11 assist the Authority with specialised management activities.

## **Article 6**

### **Obligations of the Authority**

The Authority through the NCC shall:

- 6.1 assign counterparts for each research and management activity;
- 6.2 provide yearly research permits and free entry fees for the CRI experts, volunteers and field assistants whose names will be given as and when necessary;

- 6.3 provide temporary research permits and free entry fees to external experts whose names and work duration will be communicated in advance to the Authority by the CRI;
- 6.4 provide adequate means to allow the above experts, its counterparts, volunteers and field assistants to carry out the duties, for example cars, fuel, computers, and accommodation, in the Hwange and Matobo National Parks and temporary accommodation in the other areas of the Parks and Wildlife Estates to be surveyed;
- 6.5 provide competent personnel to protect the CRI experts, volunteers and field assistants against wild animals during fieldwork;
- 6.6 authorise the CRI experts, volunteers and field assistants to drive off-road and work at night with spotlights if necessary for their activities, and to allow camping in any of the parks free of charge provided that the CRI shall provide a programme of its activities which shall be subject to approval by an officer of the Authority;
- 6.7 provide workshop facilities for the CRI vehicles;
- 6.8 provide bait animals to the CRI specifically for the carnivore research programmes in the Matobo and Hwange National Parks;
- 6.9 facilitate the production of reports, posters, publications in cooperation with the CRI in accordance with the intellectual property agreement in terms of Article 7 below;
- 6.10 organise an annual workshop with the CRI to inform other partners of ongoing activities;
- 6.11 accord library access to the CRI experts and assistants on the same terms and conditions as the Authority's counterparts.



**Article 7**

**Intellectual property**

Any Party seeking to make a publication on the information related to the project shall seek consent in writing from the other Party. The other Party shall give a decision within two (2) months of which failure to do so within the stipulated period shall be deemed as consent.

**Article 8**

**Confidentiality**

8.1 All information accessed by either party to this MOU shall be treated as confidential, unless a Party gives its written consent waiving its claims to the confidential nature of such information.

8.2 A breach of confidentiality clause gives the affected Party the right to withdraw from this MOU after giving fourteen (14) days written notice to the other Party.

**Article 9**

**Applicable Law**

This MOU shall be governed and construed in accordance with the laws of Zimbabwe.

**Article 10**

**Entry into Force**

This MOU shall enter into force on the date of signature by both Parties and if not signed simultaneously, the date of the late signature.

**Article 11**

**Breach of MOU**

Any breach by a Party to this MOU which results in financial prejudice to the other Party shall bind the Party at fault to make good such prejudice.

**Article 12*****Force Majeure***

Neither Party shall be in breach of this MOU if it is prevented from performing any of its obligations, by reason of strikes, boycotts, act of God, wars, sabotage, acts of public enemy, weather conditions or any other circumstances of a similar nature provided that prompt written notice is given by such Party in the most expeditious manner, setting forth the circumstances or inability giving rise to the failure to fulfil such obligations.

**Article 13****Dispute Resolution**

Disputes in connection with the interpretation or other matters pertaining to this MOU shall be resolved by the Parties through amicable negotiation and discussion failure of which the dispute shall be referred to an arbitrator in terms of the Arbitration Act [*Chapter 7:02*].

**Article 14****Good Faith**

The Parties undertake to act in good faith with respect to each other's rights under this MOU and adopt all reasonable and practicable measures to ensure the realisation of the object of the MOU.

**Article 15****Disposal of Assets**

The Parties agree that at the end of each project, all the equipment (except vehicles which are privately owned) procured for the implementation of the Project shall become the property of the Authority.

**Article 16****Amendment(s)**

This MOU may be revised or amended from time to time by mutual consultation and consent of the Parties.

**Article 17**

**Termination of MOU**

This MOU shall remain in force indefinitely and may be terminated by mutual consent of the Parties, or by one of the Parties providing the other Party with six (6) month's written notice of its intention to terminate it.

**Article 18**

**Entire MOU**

This MOU constitutes the entire agreement, and understanding between the Parties in respect of the subject matter.

**Article 19**

***Domicilium Citandi Et Executandi***

The Parties choose the following as their *domicilium citandi et executandi* for the service of all notices issued in connection with this MOU.

1. **For the Authority**  
The Botanical Gardens,  
Corner Borrowdale Road and Sandringham Drive  
P.O. Box CY 140  
Causeway  
Harare
  
2. **For the CRI**  
Research Director of the Carnivore Research  
123 Edenfield Road  
Matsheumhlope  
Bulawayo

**IN WITNESS WHEREOF** the undersigned being the duly nominated and authorised representatives of the Parties hereto have signed this MOU.

**THUS DONE AND SIGNED** at ..... **HARARE** .....this..... **5<sup>th</sup>** .....day  
of..... **JUNE** .....200<sup>6</sup>....., in duplicate in the English language.

..... **V.J. WILSON** .....

..... **DR. M. MTSAMBIWA** .....

**For the CRI**

**For the Authority**

As witnesses

As witnesses

1. ... **C.L. MACKLIN** .....

1. ... **C. CHIMUTI** .....

2. ... **P.A. WILSON** .....

2. ... **R. MANDISODZA** .....

**CHIPANGALI WILDLIFE TRUST**  
**CARNIVORE RESEARCH INSTITUTE**  
**(CRI)**

**CHILDREN'S WILDLIFE AND ENVIRONMENTAL  
EDUCATION PROGRAMME  
(JULY 2006 TO DECEMBER 2008)  
2<sup>1</sup>/<sub>2</sub> YEARS**

**By**  
**JOICE NDLOVU**  
**Ecologist/Wildlife Education Officer**  
**Carnivore Research Institute**

**JULY 2006**

## **1. INTRODUCTION**

Carnivore research and conservation is believed to be the key in our ongoing efforts of biodiversity conservation. Carnivores being at the top of the food chain offer a more realistic approach in conservation than any other species. This is especially true for large carnivores, which can be said, have an umbrella role in conservation. Focus on large carnivores will provide an integrated biodiversity conservation management plan that will incorporate all organisms below the carnivore in the food chain. Because large carnivores can be used as bio-indicators of ecosystems in decline, improving or static they provide keys to our efforts of biodiversity conservation.

The Carnivore Research Institute and the National Parks and Wildlife Management Authority of Zimbabwe are currently engaged in a survey of leopard and cheetah. The survey will cover the whole of Zimbabwe. From previous cheetah surveys conducted in Zimbabwe, Wilson, (1987) reports that 70% of the cheetah population is found outside National Parks. Wildlife producers and the National Parks and Wildlife Authority also reported the same trend in 1997 and 1999 respectively. Anon, (1999) reported a 99% population in areas outside the National Parks though this is an unlikely situation. Though detailed leopard surveys have not been carried out the same data could be true for leopards considering that they are more adaptable to different environments than cheetah.

Results from the past surveys indicate that larger populations of the cheetah are found in the unprotected areas and thus the need to educate people on the importance of this species. Education programmes will empower the new landowners on how to conserve their biodiversity while focusing on the large carnivore as the key species. The last few years in Zimbabwe have seen unprecedented changes in land tenure and human populations. Formerly open grazing lands have been transformed to settlements of small-scale farmers engaged in unsustainable cultivation and livestock grazing. Wildlife populations have been adversely affected by these changes and also the widespread veld fires in these areas have affected wildlife populations drastically. In a situation like ours there is therefore great potential for mutually damaging conflicts between wildlife and people. This potential is being realized in the form of competition for grazing and wildlife predation of domestic livestock especially by large cats that were originally inhabitant in the newly resettled areas. As pressure of land becomes more intense it is sure to increase.

However, the traditional pastoral approach to livestock husbandry can be used and is more compatible and complementary to wildlife. More recent research in Kenyan rangelands has indicated that returns from integrated wildlife and livestock production can be higher than returns to either enterprise on its own. In theory it is believed that properly balanced mixed livestock-wildlife enterprises could increase revenues and at the same time conserve animal and plant biodiversity on the rangelands. These enterprises will also reduce predation of livestock as they offer alternative diets to predators. Outreach education to children who will be heir to our land, current landowners and other communities will help conserve biodiversity and ultimately the ecosystem.

## **2. OBJECTIVES OF THE CHILDREN'S WILDLIFE AND ENVIRONMENTAL EDUCATION PROGRAMME**

- 2.1. To make children and the community aware of the plight of the large carnivores especially leopard, cheetah and brown hyena and the role that they play in the ecosystem.
- 2.2. To promote, support and encourage habitat restoration and environmental education programmes in areas where there is high leopard and cheetah densities.
- 2.3. To make school children and rural communities aware of the consequences of depleting the prey base of carnivores.
- 2.4. To arrange film, slide shows and lectures at schools and at the Carnivore Research Institute offices in Bulawayo and Chipangali Wildlife Orphanage covering all aspects of carnivore conservation especially of leopard, cheetah and brown hyena.
- 2.5. To use the Education Centre at Chipangali Wildlife Orphanage and its collection of animals to teach children how to identify different carnivores and other wildlife.
- 2.6. To take children on well organized field trips into the Matobo and Hwange National Parks to participate in radio tracking of radio collared animals.
- 2.7. To fully develop a large and comprehensive Education Centre at the CRI offices in Bulawayo where wildlife and conservation displays will help children understand the importance of carnivores and wildlife in general.
- 2.8. To establish a collection of tame hand reared carnivores which will be used for educational purposes.
- 2.9. To establish an indigenous plant nursery in order to supply trees to people in rural areas for reforestation.

## **3. CHILDREN'S WILDLIFE AND ENVIRONMENTAL EDUCATION PROGRAMME**

The education programme will comprise of the following:

- 3.1. Interpretative Centre in Bulawayo and at Chipangali Wildlife Orphanage.
- 3.2. Aviary of indigenous birds at CRI offices in Bulawayo.
- 3.3. Indigenous Tree Nursery at CRI offices in Bulawayo.
- 3.4. Pythons and small carnivore Research Collection at CRI offices in Bulawayo.
- 3.5. "Spotted Cats" Club.
- 3.6. Visits to Schools/Universities.

The above mentioned will operate in the following ways:

### **3.1 Interpretative Centre in Bulawayo and Chipangali Wildlife Orphanage**

The interpretative center at the CRI offices in Bulawayo will be made into comprehensive displays that will show the importance of carnivores in the following ways:

- a) Exhibits - in the form of a food chain for simple comprehension by children. The food chain will show different feeding levels of organisms. It will also try to bring out the importance of each trophic level and finally it will be exhibited in such a way that the importance of conservation of all organisms below the carnivore in the food chain conserves all forms of biodiversity.
- b) Collections of live animals including snakes, lizards, spiders and insects will be reared for use in the Interpretative Centre.
- c) Carnivore skulls to show how animals use their teeth and jaws and also how they are adapted for a meat and bone diet.
- d) Distribution maps of leopard and cheetah, which will be updated as the leopard and cheetah survey progresses.
- e) A library with carnivore profiles and different educational materials including educational games and puzzles will be set up in the Interpretative Centre. Collections of educational videos for children and other interested people will form part of the collection.
- f) A small laboratory with preserved animal specimens; skulls and other educational material for use by university students and other tertiary institutions will be set up as part of the Interpretative Centre.
- g) Other material like scats, paintings of spoor for carnivores and other animal groups will also form part of the laboratory and the exhibit mentioned in (a) above.

### **3.2 Aviary of indigenous birds**

The aviary will be established at the CRI offices in Bulawayo. This will consist of the following:

- a) Collection of indigenous birds occurring in Zimbabwe.
- b) Bird identification by children will be done for birds in the aviary and in the field.
- c) Information profiles of many species of the birds will be produced.
- d) Children will be taught bird identification techniques.
- e) Children, through their wildlife clubs at schools will be helped to make bird tables so that they identify different types of birds, occurring in their school grounds.

### **3.3 Indigenous tree nursery**

An indigenous tree nursery of trees occurring in Bulawayo and the Matopos World Heritage Site will be established at the CRI offices in Bulawayo.



- a) An indigenous tree nursery of threatened species in the Matopos World Heritage Site area will be established. Threatened species include the trees that are used for woodcarving and traditional medicines.
- b) The trees will be propagated at the CRI offices in Bulawayo.
- c) Seedlings will be planted at a later stage at Chipangali Wildlife Orphanage and selected areas in the Matopos World Heritage Site.
- d) Seeds and propagation material will be collected from the field.
- e) Participating schools will have an opportunity to participate in the National Tree Planting day.
- f) Awareness/ teaching people on the importance of trees as carnivore habitats, medicines and their economic value.

### **3.4 Python and small carnivore research Collection**

- a) Children will be given the opportunity to participate in the ongoing python breeding and research project. Activities such as cleaning python houses, feeding pythons and measuring length to investigate python growth rate will be carried out.
- b) Children and the community will be taught about the dangers that pythons are facing because of the random harvesting of this species for use as food and medicines.
- c) People will also be enlightened on the goals of the python breeding project and the possible benefits that they can derive from such research.
- d) Small carnivores will be bred and researched in captivity. These will be used as part of the education programme.

### **3.5 Development of “Spotted Cats” Club**

- a) Conservation Clubs at participating schools will be set up and these will be called “Spotted Cats” Clubs.
- b) Clubs will be given the chance to participate in environmental events all year round.
- c) The “Spotted Cats” Clubs will focus mainly on the leopard, cheetah and servals.
- d) The Club will be open to everybody.
- e) A “Spotted Cats” Newsletter with details and happenings of the education programme will be established and distributed to schools, etc.

### **3.6 Visits to schools and Universities**

- a) Schools, universities and other tertiary institutions will be visited and lectures on carnivore conservation will be delivered.

- b) Demonstrations, lectures and slide shows will be given at Chipangali Wildlife Orphanage Interpretative Centre and at the CRI offices in Bulawayo.

#### **4. REPORTS**

- a) Monthly reports will be produced at the end of each month.
- b) Quarterly progress reports will be produced every three months.
- c) Animal reports will be produced each year.
- d) A "Spotted Cats" newsletter will be produced for distribution to schools.

