ZIMBABWE PARKS AND WILDLIFE MANAGEMENT AUTHORITY

STATUS OF THE WILD CROCODILE POPULATIONS IN ZIMBABWE

May 2006

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1.0 INTRODUCTION

This report is made in accordance with Resolution Confs 3.15, 6.22 and 9.22.

Taxonomy

1. Class	**Reptilia**
1.1 Order	**Crocodylia**
1.2 Family	**Crocodylidae**
1.3 Species	***Crocodylus niloticus Luarenti***

In Zimbabwe there is limited consumptive use of the crocodile. Hunting of crocodiles is controlled by annual quotas from CITES (Convention of International Trade in Endangered Species) of which Zimbabwe is a signatory. There is also crocodile ranching in which crocodile farmers collect eggs from the wild and incubate these under controlled conditions.

Zimbabwe Parks and Wildlife Management Authority (ZPWMA) carries out regular inspections of the crocodile ranches. Collection of the eggs from the wild on state, private and communal land is strictly regulated through permits. Through economic incentives for the local community there are programs to conserve the riverine habitats and breeding areas of the crocodiles. The local community also benefits through the CAMPFIRE programs (Communal Areas Management Programs for Indigenous Resources) whereby revenue from crocodile sport hunting and levies from crocodile eggs collection are paid directly to them .The revenue is used for infrastructural projects and as household dividends. Most of the threats to crocodiles had been due to destruction of crocodiles and eggs by communities who viewed these as problem animals.

Hunting and egg collection in Zimbabwe is limited to Safari Areas, Communal areas, Forestry areas and Private land. Both hunting and crocodile ranching are lucrative businesses with the income generated being shared by the Safari operators, landowners, crocodile farmers and the rural communities. National Parks and Wildlife Management Authority collects information on all aspects of the industry. Park's personnel accompany egg-collecting teams when collection is carried out within the Parks estate, where over sixty percent of the wild eggs are collected. Crocodile Farmers Association Of Zimbabwe

(CFAZ) is also expected to send a return of the eggs collected every year to ZPWMA. In this way any drastic changes in nesting effort are quickly noticed.

ZPWMA issues CITES tags for crocodile trophy export thus ensuring that the hunters stick to the quota. As another measure of protecting the wild crocodile population, the permits for wild crocodile egg collection have a condition to the effect that 2% of the wild crocodile eggs harvested in a year be made available to ZPWMA for restocking as crocodiles two years after the harvest for release into the wild. These crocodiles would be supplied at the ratio 1 male to 3 females and be at least 1.2 m total length. This condition makes these crocodile farmers an effective reservoir for crocodiles.

2.0 METHODS OF COLLECTING INFORMATION

Crocodile populations can be estimated using several methods. The first method that can be used is the aerial survey. In this instance the aircraft is flown over the survey area and the crocodiles seen may be counted. The aircraft choice will depend on the funds available. Helicopters or aero- planes can be used in the surveys.

The second method is the spotlight survey in which the crocodiles can be counted at night from a boat. A spotlight is shone and the reflections from the crocodile eyes counted. Where possible the crocodiles are approached to determine the size class of the crocodile.

The third method is the estimation of nesting effort. In this instance the total number of nests or a representative sample is determined. Nesting effort may be determined when the eggs are being collected or by identifying and enumerating the nests encountered.

All the three methods can give an estimated crocodile density per kilometer of river. Using a method by Graham (1988) the nesting effort may be used to estimate the population of crocodiles. For this report the estimates were determined from the nesting effort while the managers on the ground provided some of the information from guesstimates.

It has not been possible to carry out aerial and spotlight surveys for the whole country and most of the information has been from the wild egg collection as well as limited carried out in some of the Parks Estate. Research proposals are being drafted to carry out surveys in some of the areas where crocodile consumption is not occurring.

3.0 DISTRIBUTION

The Nile crocodile (*Crocodylus niloticus*) is found in most water bodies (habitat) throughout the country. Most of the populations of the crocodile are found in the warmer areas with most of the concentrations being in the Northern part of the country namely Lake Kariba (see figure 1). The crocodile populations may be divided into two main populations separated by the watershed. One population concentration being on the Zambezi catchment while the other being on the Save- Runde catchment. The Midlands area also has a population of crocodiles but this has not been adequately studied.

Neither hunting nor egg collection is allowed in some of the protected areas such as National Parks, Recreational Parks and Sanctuaries unless these activities are being done for research purposes. Some of the areas, which can be considered to be reserve areas for crocodile populations, are listed below and can also be seen on the map.

Figure 1: Map of Zimbabwe showing some of the protected areas.

- Ngezi Recreational Park
- Gonarezhou National Park
- Matusadona National Park
- Sinamatella IPZ (Intensive Protection Zone)(Mandabvu Dam)

- Sebakwe Recreational Park
- Matopos National Park
- Mana Pools National Parks
- Zambezi National Park
- Manjirenji Recreational Park

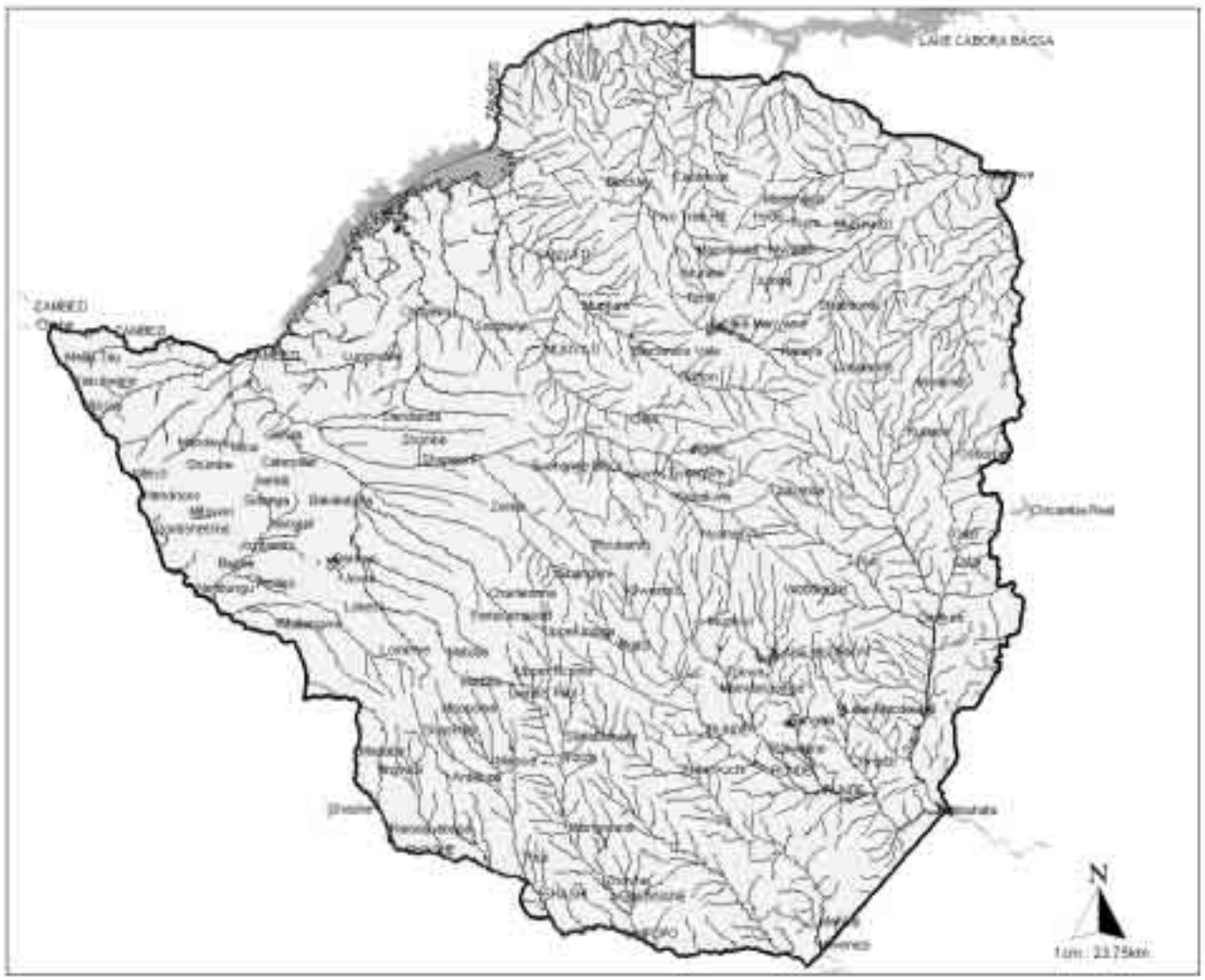


Figure 2: Map of Zimbabwe showing river networks

In the above-mentioned areas the crocodiles enjoy total protection, as movement within the parks estate is limited. As such these areas form reservoir populations for the crocodiles within the country. The permit condition for egg collection also has a provision for a percentage of the eggs collected to be released into the wild as adult crocodiles should the need arise.

4.0 POPULATION STATUS AND TRENDS

ZPWMA in conjunction with the CFAZ, routinely monitor the crocodile population in the wild. This is done by spotlight counts and nesting effort, which gives an indication of the population status. The results of the nesting effort derived from the CFAZ egg collection gives a very good indicator of crocodile population since the collections are carried out every year. Using Grahams (1988) method, populations index of crocodiles >1.2m can be derived using population parameters and nesting effort.

Below are tables showing figures for some crocodile's populations from nests encountered during wild egg collection by crocodile ranchers

Table 1: Crocodile nests and estimated crocodile population for the Year 2000

Region	**Egg count**	**Estimated nests**	**Estimated population**
Kazungula	494	15	93
Upper Zambezi	2409	73	453
Kariba	37209	1129	7 000
Lower Zambezi	18853	574	3 559
Mat North	47	2	12
Lowveld	545	17	105
Total	**59557**	**1810**	**11 224**

Table 2: Crocodile nests and estimated crocodile population for the Year 2001

Region	**Egg count**	**Estimated nests**	**Estimated population**
Kazungula	119	4	25
Upper Zambezi	3191	96	595
Kariba	41000	1 243	7 708
Lower Zambezi	16473	500	3 100
Mat North	1265	38	237
Low-veld	541	17	105
Total	**62589**	**1 848**	**11 460**

Table 3: Crocodile nests and estimated crocodile population for the Year 2002

Region	Egg count	Estimated Nests	Estimated population
Kazungula	94	3	19
Upper Zambezi	2695	82	509
Kariba	46833	1 391	8 626
Lower Zambezi	16004	486	3 014
Mat North	692	21	130
Low-veld	504	15	93
Total	**66822**	**1 898**	**11 211**

Table 4: Crocodile nests and estimated crocodile population for the Year 2003

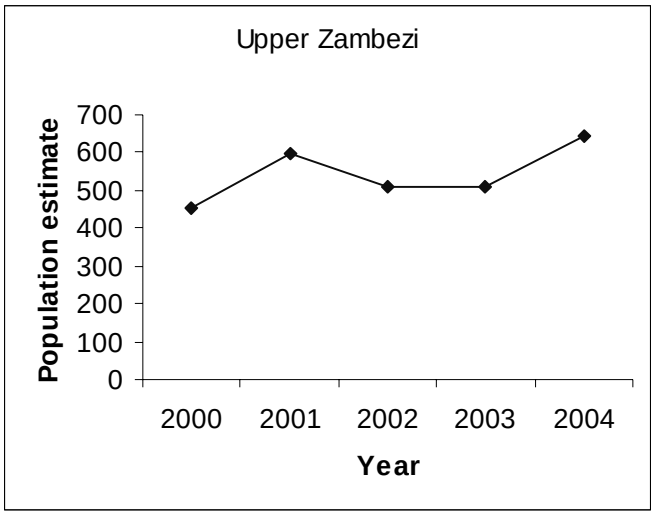
Region	Egg count	Estimated nests	Estimated population
Kazungula	-	-	-
Upper Zambezi	3498	82	509
Kariba	49599	1 480	9 177
Lower Zambezi	16421	407	2 523
Mat North	305	9	56
Lowveld	-	-	-
Total	**69823**	**1 978**	**12 265**

Table 5: Crocodile nests and estimated crocodile population for the Year 2004

Region	Egg count	Estimated nests	Estimated population
Kazungula	-	-	-
Upper Zambezi	3424	104	645
Kariba	53273	1 616	10 021
Lower Zambezi	11764	357	2 214
Mat North	308	9	56
Lowveld	54	2	-
Total	**68823**	**2 081**	**12 906**

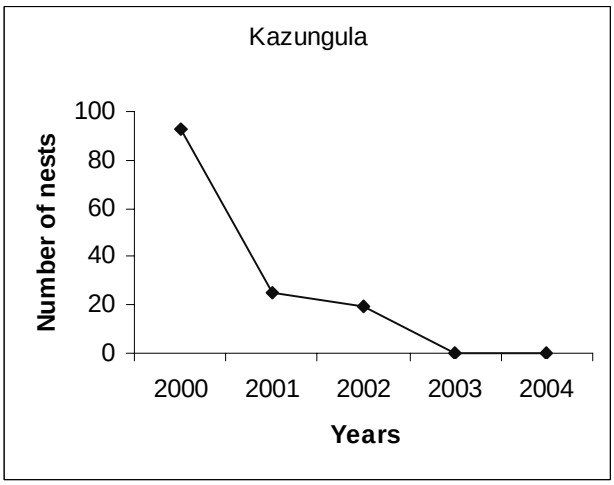
The results of the crocodile estimate populations are shown graphically below.

Graph 1: Showing population Estimates of crocodiles in the Upper Zambezi from Year 2000 to 2004



The above graph shows that the crocodile population in the Upper Zambezi area has not been declining and the population seems to be robust.

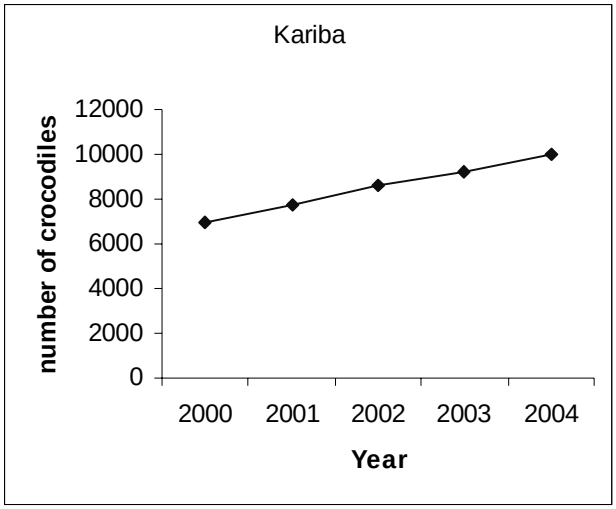
Graph 2: Population Estimates of crocodiles in the Kazungula from Year 2000 to 2004



Graph 2 shows that the population for Kazungula has declined. However this is not exactly a true picture of the crocodile populations within this area. The crocodile estimates in this report are derived from the number of eggs collected during the egg-collecting period. Due to a rise in costs there has been less interest in this area, as it has become uneconomic to collect the few nests in this area. The crocodile population is

stable even though no egg collection has been carried out. Managers on the ground report stable crocodile populations.

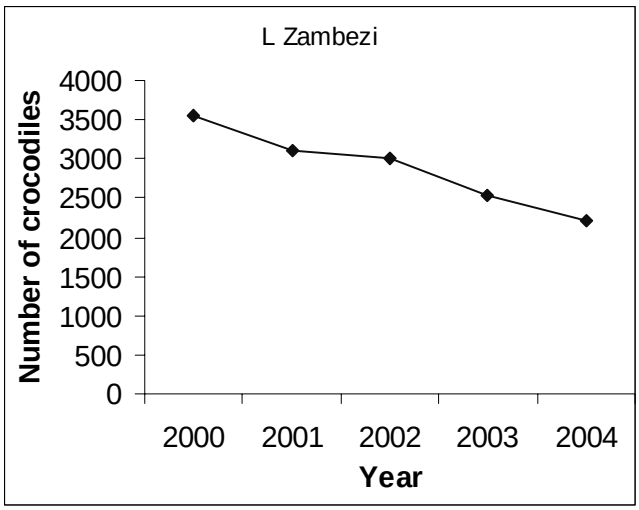
Graph 3: Population Estimates of crocodiles in the Kariba from Year 2000 to 2004



The Kariba shoreline is the dominant supplier of crocodile eggs in the country. The estimated number of crocodiles on the Kariba shoreline has been increasing as evidenced by the increase in the number of nesting females (Graph 3). This area is the most important source of wild eggs and produces over 70% of the eggs in the country. In this Kariba area there have been numerous reports of human crocodile conflict. The statistics are being gathered and a report will soon be produced. The Zimbabwean shoreline of Lake Kariba extends for over and this has many areas suitable for breeding. There have been large numbers of complaints by fishermen who are having their nets destroyed by the crocodiles.

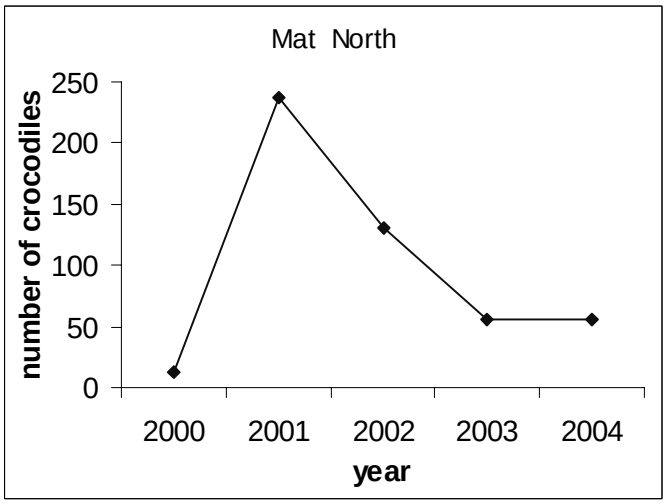
Crocodiles do very well in the Kariba area due to the high temperatures and the abundance of fish for the adults and kapenta for the juveniles. In the recent areas before the crocodiles had a monetary value they were looked upon as a nuisance. Local fishermen used to dig up crocodile eggs and leave them in the sun. However due to the efforts of Crocodile farmers who give a reward for every nest that is collected in an area the locals now locate and protect the crocodiles from disturbance.

Graph 4: Population Estimates of crocodiles in the L Zambezi from Year 2000 to 2004



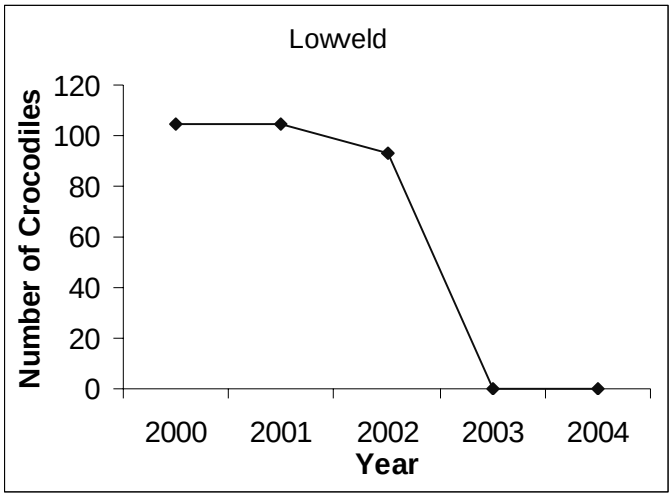
The population of the crocodiles in the L. Zambezi has been declining (Graph 4). This slight decrease in the number of nests may have been caused by the water fluctuations. The sluice gates at the Kariba dam wall were opened in 2000 and this led to flooding of some of the crocodile breeding areas. The high volume of water flowing down the Zambezi also led to a change in channel topography and hence negative effect in the breeding area and ultimately a reduction in the breeding effort. So even though the population may be stable, this may not be evident since this report bases its estimates on the nesting success of the population.

Graph 5: Population Estimates of crocodiles in the Matebeland North from Year 2000 to 2004



The estimated population for crocodiles in Matebeland showed a peak in 2001 and has been going down since 2001 (Graph 5). Matebeleland has always had a low crocodile population because of the general lack of water in the region. The egg collection in the area has been further hampered by the lack of fuel and the sharp increase in costs of locating the nests and collecting the eggs. This decrease in egg collecting effort directly translated to fewer nests, therefore an assumption that fewer crocodile are nesting. The past four years have been difficult for the crocodile industry and low nest collection effort must not be considered to be a true picture of the crocodile population status in this case.

Graph 6: **Population Estimates of crocodiles in the Lowveld from Year 2000 to 2004**



There has been a sharp decrease in the eggs collected in the Lowveld. This has been caused by the sharp increase in the cost of collecting the eggs. The non availability of fuel have led to some farmers preferring to buy hatchlings from those farmers who would have an excess of their requirements. Graph 6 may therefore be misleading since in the Save and Runde Rivers in the Lowveld there are always reports of human crocodile conflict. The sharp drop has been due to reduction in collection in these areas. There are some farms in the Lowveld, which are finding it more cost effective to have breeders on site rather than to collect eggs from the wild.

5.0 HABITAT TRENDS

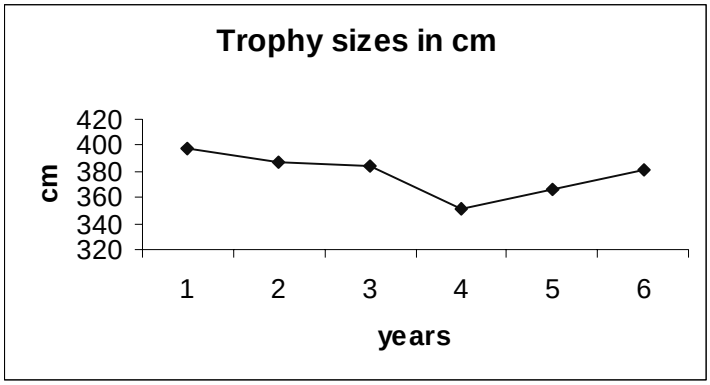
As the populations have been increasing there has been encroachment by people into the crocodile breeding areas. This has been in the form of cattle trampling the sandy banks, as they are watered on the rivers. In Lake Kariba there have been fishing camps that use some of the bays as areas where the fish are landed. These disturbances make these areas unsuitable for crocodile breeding. However the extent to which habitat destruction has occurred has not been measured. However since it has taken place in communal areas it will not have a significant impact on the crocodile populations since most of the crocodiles are within the parks estate. Flooding following the opening of the Kariba dam wall also led to some changes in the channel morphology of the Zambezi river and may have altered the breeding areas.

6.0 CROCODILE SPORT HUNTING

Crocodile hunting is limited to the Safari areas, communal areas, forestry areas and private land. Zimbabwe has had a quota of 150 crocodiles up to 2005 when the quota was increased to 200 crocodiles for the whole country. The minimum size hunted is 3.2 m total length.

- Rifa Safari Company has a concession to hunt crocodiles in Nyamombe, from the mouth of the Kariba Gorge to the Rifa education Camp. For the past five years they have managed a 100% success rate on their seven- (7) crocodiles on quota. All the crocodiles have been all male. The trophy size of the hunted male crocodiles has been fairly static at 13 feet 5 inches (409 cm) for the five years. The largest crocodiles taken out of the concession have been 16 feet 6 inches (503 cm) and 15 feet 5 inches (470cm) respectively.
- HHK safaris have a concession to hunt crocodiles in Dande North. They have had a quota of four crocodiles and have enjoyed an average of 85% over the past six years. Graph 7 shows the average trophy quality of the crocodiles hunted in Dande North. The largest crocodile taken on the concession was 14 feet (427 cm)

Graph 7: Trophy quality trends of crocodiles hunted in Dande North



There have been no significant changes in the trophy quality of the crocodiles hunted during the past six years.

From the data for crocodile hunts that has already been entered into the Parks and Wildlife Management Authority Hunting Database for the year 2005 hunting season, forty entries have been made so far. Of the forty-two entries made only two were for female crocodiles. The smallest crocodile hunted and recorded was coincidentally female measuring ten feet seven inches (10 feet11inches) .The largest crocodile recorded was male and measured fifteen feet eleven inches (15 feet 11 inches). The average trophy size for the crocodiles recorded was for the males twelve feet and five inches (12 feet 5 inches) and for the females ten feet and three point five inches (10 feet 3.5 inches).

Hunting in Zimbabwe has therefore been targeting the males. This means that there is relatively low impact on the breeding females, which are responsible for perpetuating the population. By targeting the males this also allows for removal of the dominant males and allows other males to contribute to the gene pool.

Table 6: Crocodile quotas allocated to different land categories 2000-2004

Year	State Safaris	Campfire Areas	Forestry Areas	Private Land	Others	Total
2000	44	49	0	57	0	150
2001	48	65	0	34	0	150
2002	49	65	0	36	0	150
2002	50	6	0	88	6	150
2004	47	82	6	34	0	150

Table 6.1: Distribution of crocodile sport hunting quotas

Region	% Of hunting quota
Northern part of Zimbabwe	66
Southern part of Zimbabwe	44

Table 6.1 shows the distribution of hunting permits. The watershed divides the areas. Midlands has been added to the Southern part of the country. The permit distribution also follows the crocodile distribution. Areas with higher crocodile populations are also allocated higher crocodile sport hunting quotas.

7.0 RESEARCH WORK DONE ON WILD POPULATIONS

7.1 Zambezi National Park Survey (2001)

The entire section of the river within the Zambezi National Park was searched; from Tsowa Island on the western boundary down to the Boat Club on the eastern boundary of the park.

Results

The egg collection results for Zambezi National Park (ZNP) are shown below:

Total nests found	3
Total eggs found	140
Nest density / km river	0.09

The length of river in the ZNP is approximately 35 km.

All the nests were found on Tsowa Island, and although spoor and signs of nesting were observed on Chundu Island, no eggs were recovered from there. The collectors noted a high prevalence of monitor lizards along the riverbank and on Tsowa and Chundu Islands. They also noted heavy elephant pressure within the park and high levels of human and cattle disturbance on the islands that are shared with Zambia. A foot survey of the National Park riverbank from Tsowa Island to the Boat Club found no nests sites or spoor of breeding size crocodiles. There was no sign of any nest sites on Kandahar Island.

The foot and boat survey results confirm those found in the earlier aerial survey: a total of 23 adult (>2.5 m length) crocodiles were observed from Zambezi River Lodge to Tsowa Island (40 km of river): a population density of 0.58 crocodiles per km.
Egg collections along the 26-km of Upper Zambezi river from Kazungula to the western boundary of the ZNP (i.e. within the Matetsi Safari Area), have been made annually by Spencer's Creek Crocodile Ranch. Their collection results for the 6 years are summarized below.

	1996	**1997**	**1998**	**1999**	**2000**	**2001**
Total nests found	2	7	8	13	10	4
Total eggs found	124	345	402	626	515	173
Nest density/km river	0.08	0.27	0.31	0.50	0.38	0.15

The data also show a marked decrease in number of nests found. Two aspects are involved:

- There are fewer females breeding, and they are smaller / younger than in the past;
- Predation has increased and fewer nests are being found

High numbers of elephant and cattle along the riverbanks and islands, in the park and in Zambia respectively, mean that the nest sites are trampled. All these factors are contributing to the low and declining crocodile population.

7.2 Spotlight survey of the crocodile population in Chewore Safari Area 2001.

A brief survey was conducted on the Zambezi River between H Camp and Kapirinengu in the Chewore Safari Area. The crocodiles were surveyed at night using a spotlight.
The results are summarized below.

Table 7: Distribution of crocodiles according to size class

Large = adult	Medium 1-2.5m	Small = <1m	Tiny = hatchling	Unclassified
55	22	17	3	0

A total of 97 crocodiles were seen during the 10km long survey

This survey shows the density of adults to be 5.5 per km for both sides of the river, i.e. 2.75 per km of Zimbabwean shoreline. Density = 9.7 crocodiles per km (for both sides of the river).

Table 1 shows the frequency distribution of the surveyed population. The distribution is skewed towards the adult size class, *suggesting that there is poor recruitment from the smaller, younger size classes.* If this distribution is a true reflection of the Chewore population then the reasons need to be investigated further. It is possible that the smaller crocodiles were missed during this survey, but it is also possible that the smaller crocodiles are being caught in fishing nets, particularly on the Zambian side.

7.3 Crocodile population survey at Matusadonha National Park (2000)

The survey was limited to 34 sample sites of the Lake Kariba frontage. A total of 212 crocodile nests were found in this area

It is very difficult to calculate the density of nests i.e. number per km because the shoreline is convoluted and very difficult to measure. Assuming that there were approximately 3km of shoreline in each sample site, this gives a total of 212 nests in 99km of survey area or 2.14 nests/km. A rough approximation of the total number of nests on the whole shoreline of MPNP can then be made as 212 x 3 = 636 nests. It is interesting to note that this is higher than the density of nests found in recent years in neighboring communal land and state land (1996 - 1999: 0.8 to 1.4 nests/km)

The average clutch size for the nests collected in this area was 40.43 eggs/nest.

7.4 Research Collection of Crocodile Eggs in the Gonarezhou National Park, 2001.

The collection of crocodile eggs in the Gonarezhou National Park in the south east Lowveld of Zimbabwe was undertaken during the period 28 October - 6 November 2001. Staff from Chiredzi Wildlife Investments (CWI) and Buffalo Range collected the eggs,

and were accompanied by representatives from the Department of National Parks and Wild Life Management.

The survey for wild eggs followed the usual procedure of walking the sand banks and checking for crocodile spoor and signs of digging. Once a possible nest had been located the sand was probed carefully to check for eggs. The nest was then excavated and the eggs examined for signs of fertility (circular bands) or damage. Only the viable eggs were placed in kaylite boxes for transfer to the incubators.

The entire length of the Runde River within the National Park was inspected. Most of the nests were found in the lower section of the river. The collectors made the following comments about the survey: "Most of the national park had been burnt out resulting in large concentrations of Elephant and Buffalo converging on the river, obliterating the spoor of some nests and destroying others. Fish poaching with nets was rife. Very few crocodiles were seen as they were overly shy due to the human disturbance".

Results

The collection results are presented in the table below.

	Buffalo Range	**Chiredzi Wildlife Investments**	**Overall Total**
Total nests found	8	20	28
Total eggs found	409	1054	1463
Mean clutch size	51.13	52.70	52.25

The section of the Runde River in the Gonarezhou National Park is approximately 70 km long. The previous survey done in 1989 found 24 nests along the river, giving a density of 0.34 nests/km and a mean clutch size of 54.92 eggs/nest. This 2001 survey showed a slight increase in the density of nests (0.40 nests/km) and a decrease in the mean clutch size (52.25 eggs/nest).

Using the index of nest density and mean clutch size, the wild population of crocodiles in Gonarezhou in 2001 appears to be similar to that in 1989.

7.5 Crocodile Research Carried out In Mana Pools National Park (2001)

A nesting survey was carried out in Mana Pools National Park in 2001. A spotlight survey had been attempted but the weather conditions were not conducive. The Zambezi

River separates Mana Pools from Zambia. It is on the Zambezi River that most of the crocodiles are found. Unfortunately this survey only determined the nesting population of the crocodiles on the Zimbabwean side. The crocodile population is shared between Zimbabwe and Zambia.

The nesting density was found to be 4.25 nests per kilometer on the Zimbabwean side.

7.6 Monitoring of the Ngezi crocodile population

The crocodile population has been monitored since the time of Hutton (1984). During the past five years, spotlight surveys and nest counts have been carried out. The nest density in the park has ranged around twenty-seven (27) for the past five years. Most of the nests are found on the south facing side of the riverine area of the dam. The population has remained stable with no significant changes in the nest density. These crocodiles enjoy total protection within the park estate; however there have been conflicts with the rural communities when the crocodiles have ventured out of the Park area into the adjacent communal lands. Every year a spotlight survey and a nest survey are carried out. This area has been set aside for monitoring crocodile populations.

8.0 UTILISATION AND TRADE

Table 7: Utilization of eggs collected from the wild

Year	Nests	Eggs collected	Eggs rejected	Eggs incubated	Number hatched	% Hatched
2000	1822	75 266	4 868	70 398	58 131	82.57
2001	1622	67 771	4 683	63 088	49 416	79.07
2002	1766	72 987	5 774	67 213	55 122	84.59
2003	1796	71 800	4 908	66 892	56 063	82.4
2004	1753	72 396	3 106	69 290	57 315	75.8

The above table refers to the eggs collected from the wild. Over 60 % of these eggs are collected within the Parks Estate with Kariba producing over 70 % of the crocodile eggs. The number of nests found has not drastically reduced over the period under review. The fluctuations have been caused by some logistical problems such as the unavailability of

fuel. The percentage of eggs hatched has been around 80 % showing that care is being taken to try and fully utilize the wild crocodile population.

Table 8: Utilization of eggs collected on farms

Year	Nests	Eggs collected	Eggs rejected	Eggs incubated	Number hatched	% Hatched
2000	1 741	72 083	5 092	66 990	50 981	76.1
2001	1 507	70 635	614	70 021	54 420	74.72
2002		72 987	12 512	60 475	41 795	69.11
2003		77 776	10 817	66 959	55 191	82.4
2004		84 099	6 874	77 225	58 527	75.8

The eggs being collected on the farms are increasing on the period under review. However the percentage of eggs being hatched is lower than those for the wild crocodile populations. There may need to be more research as to these differences.

Table 9: Survival of hatchlings from farmed and wild eggs

Year	Number at year start	Mortalities	% Mortalities	Runts culled
2000	108 339	11 835	10.9	9 945
2001	101 403	27 277	26.9	no info
2002	99 042	12 271	12.39	
2003	98 779	12 940	13.1	
2004	108 632	7 713	7.1	

The mortalities of the hatchlings range from 26% to 7.1 % in the period under review. There are efforts by the Veterinary department in conjunction with the CFAZ to reduce the numbers of mortalities of hatchlings on the ranches. National Parks also carries out spot checks to find out the conditions these crocodiles are being subjected to. The crocodile farmers themselves try to reduce the number of deaths as this also has cost implications on their business.

Table 10: Cropping and Mortalities of yearlings

Year	Number at year start	Cropped	% Cropped	Mortalities	% Mortalities
2000	108 339	80 318	44.58	3 354	3.10
2001	192 832	77 197	40.03	3 988	2.07
2002	202 282	91 408	45.19	5 710	2.83
2003	180 409	73 778	40.89	8 948	4.96
2004	175 868	69 534	37.6	5 380	3.06

The crocodiles are cropped when they are approximately two years old, depending on whether they have attained the required market sizes. Mortalities in this size class have been low with the highest being 4.96 of the total population of crocodiles in captivity.

Table 11: Breeding stock on crocodile farms

Year	Number of breeding animals
2000	3 977
2001	3 165
2002	3 110
2003	3 079
2004	3 157

There was a reduction in the numbers of breeding stock in the year 2000. This may have been caused by the farmers disposing some of their stock because of the land redistribution exercise. The number has never risen to the levels of 2000 but has maintained at about 3 100.

Table 12: Volume of skins exported

Year	Belly skins and horn backs	Back skins	Total pieces
2000	81 981	15 934	97 172
2001	76 657	28 923	105 580
2002	73 707	22 291	95 998
2003	85 335	70 538	155 873
2004	68 534	21 119	89 382

The volume of skins exported is the whole reason for the existence of the crocodile farms and also a major drive to the conservation of the crocodiles by giving them a dollar value.

Table 13: Meat exports

Year	Kilograms
2000	169 135
2001	158 529.8
2002	226 100
2003	124 760
2004	251 305

Meat exports have been generally increasing since the year 2000. This has been because of the increased acceptance of the meat. Also the veterinary requirements are being met therefore enabling the meat to access more markets

9.0 CONCLUSION

There are many gaps in the information provided**.** The information is mostly for the Northern crocodile populations, which are being actively exploited. There is limited exploitation of the populations in the South where there is limited exploitation. Most of the National parks are practicing zero management of the crocodile population. In this case there are no efforts to increase or decrease the crocodile populations. There is need however to carry out censuses of these crocodiles which are under zero management.

In Zimbabwe there is no documented evidence of illegal trade in crocodiles or crocodile products, though some farmers have reported theft of some of their hatchlings. There is no market for adult crocodile skins in Zimbabwe and no cases have been detected of illegal trade in adult crocodile skins.

The information on human crocodile interaction could not be included in this report as it still being compiled. Problem crocodiles are often captured and translocated to national parks. However, when the crocodiles have caused the death of humans there is no choice but to put down these animals.

Surveys are also being planned for some areas on the Kariba Lakeshore to try and add to the existing information available.

From the information gathered the Nile crocodile is not threatened except in some local areas where there has been habitat loss as people were resettled there and have been undertaking stream bank cultivation. A high number of cows drinking from the sand banks have affected the nesting sites of crocodiles.

All the farmed crocodile exports have been tagged according to the requirements of CITES. The serial numbers for the exported products can be made available to CITES if so required.

However National Parks still remains the main natural reservoir of crocodile's population in the country. It should be noted in the wild hatchling mortality can be as high as 95%. Games (1990) suggests that predation of crocodile nests may be as high as 20% of the total nests.

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