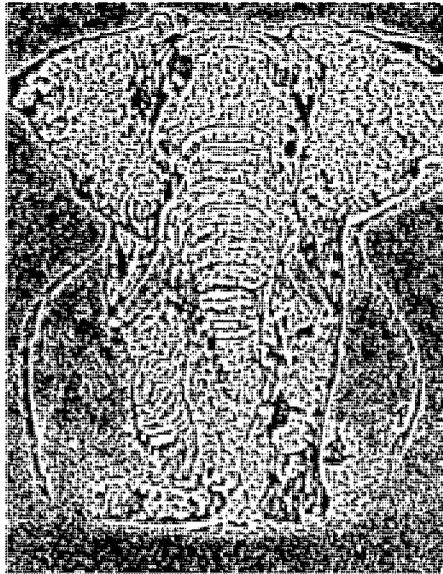


PN ABP-821

ELEPHANT CONSERVATION PLAN

MALAWI



November 1991

**Department of National Parks, Wildlife and Tourism
P.O. Box 30131
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MALAWI**

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**ELEPHANT CONSERVATION PLAN
MALAWI**

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The following DNPW&T staff were involved in the collaborative development of the plan;

Matthew Matemba	Acting Chief Parks and Wildlife Officer
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Leonard Sefu	Senior Parks and Wildlife Officer
John Mpande	Senior Parks and Wildlife Officer

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ELEPHANT CONSERVATION PLAN : MALAWI
SUMMARY

Elephant Status

Malawi's total elephant population of 2,200 occupies a range of 9,000 sqkm restricted within the protected areas of the National Parks, Game Reserves and Forest Reserves. While there has been a decline of around 19% in the national population in the past decade, the status since 1985 has been relatively stable. There is considerable variety in trends between individual protected areas with border areas (Kasungu NP, Majete GR) being particularly subject to illegal hunting. In contrast, some areas have stable (Nkhota-Kota GR) or increasing populations (Liwonde NP, + 48% increase in the past decade). An additional source of mortality is from crop protection.

Constraints on Elephant Conservation

Malawi has a rapidly increasing human population, a shortage of agricultural land and one of the highest population densities in Africa. There is thus considerable pressure on the 20% of the country set aside for conservation and this growing conflict over land-use is the major problem facing protected area management and elephant conservation in Malawi. Approximately 11% of the elephant range has been encroached in the past decade. An additional problem is that, although the DNPW&T has been remarkably effective in managing protected areas and their elephant populations, this has been achieved over the past decade despite restrictive levels of staff, equipment and, most importantly, recurrent funding.

The priorities for elephant conservation in Malawi are to resolve conflicts over protected areas through the wider promotion of utilization schemes and to increase the levels of recurrent funding available for management and thus reverse the under-investment in protected areas.

Elephant Conservation Programme

This plan presents a strategy and conservation programme developed to address these priorities. The programme comprises 8 projects, all requiring funding, to be implemented in three phases. The projects range from research to rural development and vary in funds required from US\$ 15,000 to US\$ 2.5 million. The programme requires external funds of US\$ 4.5 million over a period of 5 years; a relatively minimal investment in an elephant range state that has clearly demonstrated its effectiveness and commitment to elephant conservation and which is a test case within the region for approaches to resolving human-elephant conflicts over land-use.

Project Type	Number of Projects	Funds Required US\$
Survey	1	30,000
Park Management	3	1,300,000
Security	1	500,000
Rural Development	1	2,500,000
Monitoring	1	85,000
Ivory Trade	1	15,000
TOTAL	8	4,470,000

ELEPHANT CONSERVATION PLAN

MAENI

SECTION I

INTRODUCTION

November 1991

**Department of National Parks, Wildlife and Tourism
P.O. Box 30131
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Malawi**

SECTION 1.

INTRODUCTION

1. ELEPHANT STATUS IN MALAWI

1.1 DISTRIBUTION AND NUMBERS

The elephant range in Malawi is restricted to the protected areas of the National Parks, Game Reserves and Forest Reserves (see Map 1) and has been for the past two decades. The range covers approximately 9,000 sqkm (10% of the country) and the total population of 2,200 elephants is subdivided into 8 isolated sub-populations

Table 1 Elephants - Distribution and Numbers.

Location	Range (sqkm)	Numbers	Type	Survey Source
Nyika N.P.	1145	>108	DC	NWRU 1990
Vwaza G.R.	986	>300		Educated Guess
Kasungu N.P.	2316	500		Educated Guess
Nkhota-kota G.R.	1802	>400		Educated Guess
Liwonde N.P.	548	371	AS	LWRU 1989
Majete G.R.	700	300	DC	Sherry 1989
Forest Reserves *	1500	>250		Educated Guess
TOTAL	9,000	2,200		

DC = Dung Count; AS = Aerial Survey; NWRU = Nyika Wildlife Research Unit; LWRU = Liwonde Wildlife Research Unit.

* comprising following units; 1/ Tuma/Dedza-Salima F.R.; 2/ Phirilongwe F.R.; 3/ Mangochi/Namizimu F.R.- associated with Liwonde N.P.

Table 1 and Map 1 illustrate some important aspects of Malawi's elephant population.

1. The sizes of the sub-populations are small; between 50 and 500 elephants.
2. These sub-populations are isolated and widely dispersed throughout Malawi and individual ranges are very limited in size. Only Kasungu NP elephant range is over 2,000 sqkm and the majority of ranges are less than 1,000 sqkm.
3. The key sites for elephant conservation, in terms of range size and population are; Vwaza G.R., Kasungu N.P., Nkhota-kota G.R. and Liwonde N.P.
4. Table 1 illustrates that for more than half of the sites there is no recent survey data and estimates have had to be based on informed guesses. There is also a shortage of information on the basic population dynamics of elephants in these sites.

The status of the approximately 250 elephants in Forest Reserves is particularly vulnerable. The ranges are effectively declining, as corridors between individual Forest Reserves or between Forest Reserves and National Parks (Mangochi/Namuzima FR and Liwonde NP) are settled. The most vulnerable of the Game Reserves is Majete GR, where most of the elephants are distributed outside the reserve in an area of particularly high settlement pressure.

1.2 TRENDS

The trend in the national elephant population over the past decade is shown below:

<u>1980</u>	<u>1985</u>	<u>1991</u>	<u>% Decline 1980-91</u>
2,700	2,177	2,200	19%

While there has been a decline in the overall population since 1980, Malawi's elephant population has remained relatively stable since 1985. There are also considerable variety in trends between individual protected areas.

1.2.1 Declining Populations

During the last decade elephants in Kasungu National Park and Majete Game Reserve have been subject to heavy illegal hunting pressure. Both are border areas (Zambia, Mocambique) Kasungu NP. The most significant decline has been in Kasungu where the 1980 population of 1000 elephants was reduced to around 500 animals by the late 1980's. Although considerable success was achieved in containing the major wave of elephant poaching in the early 1980's, illegal offtake has remained a persistent problem. The annual loss to poaching since the mid 1980's has remained relatively constant (20 - 40 animals/year) and is the highest of all the protected areas. The key threat is from poachers with dual residence (Malawi and Zambia) but there is currently limited cross-border assistance from Zambia in the control of this problem.

Majete GR. At Majete GR there has been a large influx of Mocambican refugees in the surrounding area. The encroachment on the elephant range and the illegal hunting of the elephants forced out of the reserve, has reached a critical level.

Forest Reserves. The Forest Reserves are the least protected elephant ranges with effectively no law enforcement personnel – hunting pressures are consequently high. For example, in December 1990 around 50 elephants were killed in Tuma FR (up to half the population). Although the perpetrators in this instance were stopped, the elephants in other reserves face similar declines – particularly as the areas are so small that movements outside the reserves and resulting conflict with surrounding farm-land is inevitable.

1.2.2 Stable or Increasing Populations

Where illegal hunting is minimal (Liwonde NP, Vwaza GR, Nyika NP, Nkhota-Kota) elephant populations are stable or increasing.

Liwonde NP. The population has increased since 1980 from 250 to 371 elephants (a 48% increase). Liwonde is the best protected NP in Malawi and although there was a major poaching wave in 1987 – 1989 (over 25 animals killed) this was quickly controlled and only 2 elephants were poached in 1990.

Nyika NP and Nkhota-Kota GR. There has been no recorded elephant poaching in Nyika NP since 1989 (a total of 3 killed since 1986) and the population has grown from 70 in 1980 to present level of 100. Nkhota-Kota has had minimal poaching since 1986 (1 shot in 1990) and the population is stable and probably increasing.

Vwaza GR. The population is thought to be stable, although surveys are required to clarify this. Poaching in the late 1980's was between 3 and 5 elephants/year but this threat has declined – only one elephant was poached in 1990.

1.3 CROP PROTECTION AND LAND-USE PRESSURES

An additional source of mortality are elephants shot for the purpose of crop protection. The number shot on control has declined this decade from 23 in 1986 to 4 in 1990, while the illegal offtake has remained relatively consistent – 46 in 1986, 47 in 1990.

The need to shoot significant numbers of elephants for crop protection is a symptom of the major underlying threat facing elephants in Malawi – conflict over land-use. All protected areas are closely bordered by agricultural settlement and movements of elephants outside these often small areas results in major conflicts. Elephants are estimated to cause around US\$ 1 million of crop damage. While this conflict could be resolved through fencing, the resources needed to fence, for example, the Forest Reserves would be enormous and disproportionate to the conservation benefits.

A similar problem exist in relation to the other land-use threat – human encroachment on elephant range. The high demand for agricultural land is a growing pressure on protected areas and recent estimates are that up to 11% of the elephant range has been encroached, including 10% of Liwonde NP. The major encroachment pressures are on Majete GR and the Forest Reserves.

1.3 IVORY

Malawi is a party to CITES and also to an agreement to establish a "Southern African Centre for Ivory Marketing" (SACIM). A Regional TRAFFIC Office will be established in Lilongwe, Malawi by the end of 1991.

The policy of the Malawi Government to ivory harvesting and trade is;

- 1/ Malawi will fully protect elephant populations until there is an increase to levels where sustainable offtake is possible
- 2/ prior to any resumption of trade, Malawi aims to set up a trade monitoring unit
- 3/ when trade resumes a specific volume of ivory will be sold through SACIM and the rest to the local ivory industry
- 4/ a significant proportion of the proceeds will be allocated to benefit rural communities surrounding elephant areas.

Malawi, although not a significant ivory producer, has a well established ivory carving industry and also a history of effectively controlling internal illegal ivory trading. Illegal ivory trafficking peaked in 1986/87 (2 tonnes confiscated) but since then trends have declined (less than 250kg in 1990). The current drop is believed to be attributable to effective urban law enforcement and particularly the use of an informant network.

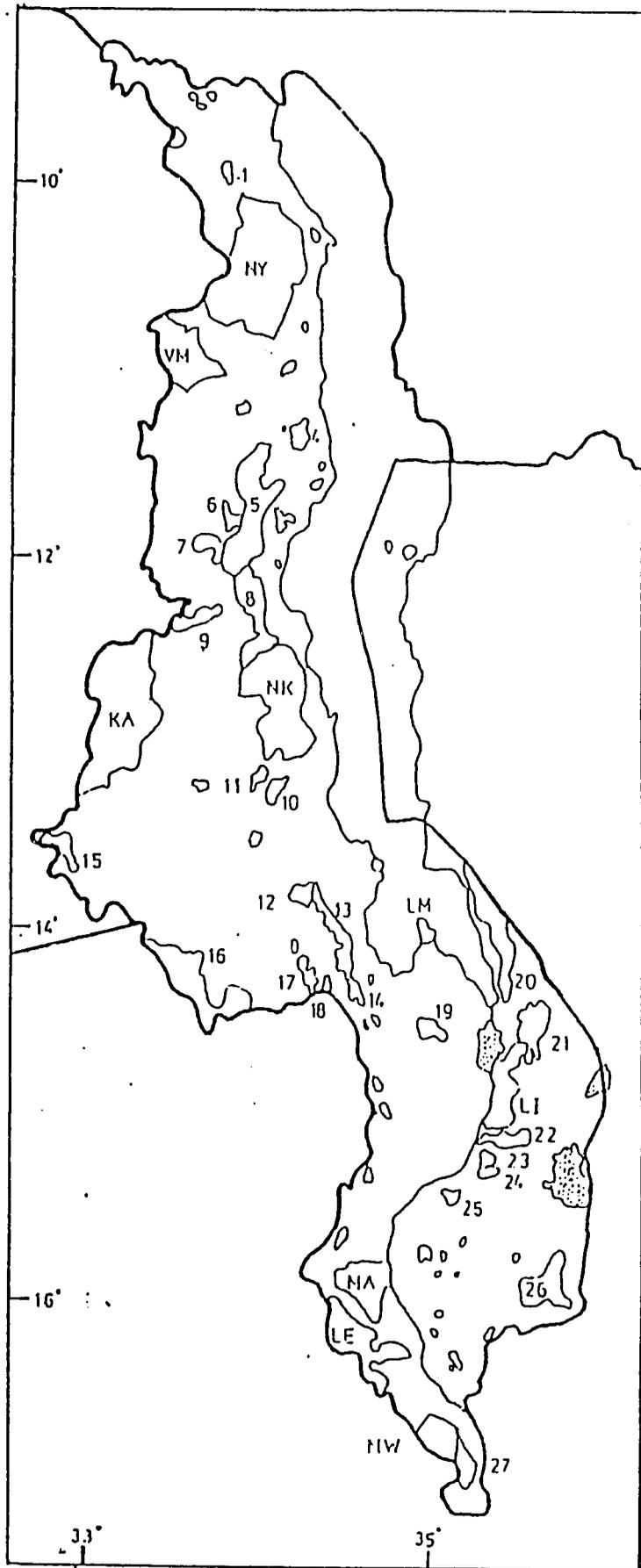
The international ban on the ivory trade has had no apparent impact on poaching pressures or illegal ivory trading in Malawi.

2. CONSERVATION SYSTEMS

2.1 DEPARTMENT OF NATIONAL PARKS, WILDLIFE AND TOURISM

The Department of National Parks and Wildlife and Tourism (DNPW&T) is the Malawi Government agency responsible for the conservation of wildlife in the country and the management of 5 National Parks and 4 Game Reserves (Map 2) covering 10,500 sqm (11% of the country).

The DNPW&T was established in the early 1970's and was one of the pioneers in the promotion of a unified approach to wildlife management, land-use planning and rural development. It is now widely regarded as one of the most effective and independent conservation agencies in Africa and has achieved this status with minimal external funding. The DNPW&T is organised into sections for Administration, Management, Research, Education and Tourism. The policy of the DNPW&T recognises three classes of wildlife management; Conservation, Control and Utilization. Conservation aims at preserving Malawi's biotic diversity, Control at reducing man/wildlife conflicts and Utilization is a management option that aims to ensure benefits from wildlife resources (consumptive or non-consumptive) on a sustainable basis.



National parks and game reserves

- NY Nyika National Park
- VM Vwaza Marsh Game Reserve
- KA Kasungu National Park
- NK Nkhotakota Game Reserve
- LM Lake Malawi National Park
- LI Liwonde National Park
- MA Majete Game Reserve
- LE Lengwe National Park
- MW Mwabvi Game Reserve

Forest reserves

- 1 Musisu
- 2 Jembya
- 3 Nyika
- 4 Kaning'ina
- 5 South Viphya
- 6 Mtangatanga
- 7 Perekezi
- 8 Dwambazi/Dwangwa
- 9 Chimaliro
- 10 Ntchisi
- 11 Kaombe
- 12 Tuma
- 13 Dedza/Salima escarpment
- 14 Mwa Livulezi
- 15 Mchinji
- 16 Dzalanyama
- 17 Chongoni
- 18 Dedza Mountain
- 19 Phirilongwe
- 20 Namizimu
- 21 Mangochi
- 22 Liwonde
- 23 Malosa
- 24 Zomba mountain
- 25 Chingale hills
- 26 Mulanje Mountain
- 27 Matandwe

While considerable success has been achieved in promoting and implementing these policies, the DNP&W has been functioning for the past decade on restrictive levels of funds, equipment and staff.

FUNDS Over the past decade annual recurrent funding for NP and GR's has averaged around US\$ 36/sqkm of protected area. In 1989/90 funds available were US\$ 277,000 (US\$ 26/sqkm), for 1991/92 US\$ 456,000 (US\$ 43/sqkm). This is compared to the recommended threshold for effective management of US\$ 200/sqkm. The key point is that the DNP&W has had to function on only around 20% of the recommended level of recurrent funding for protected area management.

EQUIPMENT **Vehicles.** The 9 National Parks and Game Reserves have available to them for management a total of 6 functioning four wheel drive vehicles, 3 trucks and around 10 motorcycles. This is less than half the requirements for basic management and allows minimal mobility for anti-poaching. Some areas have no vehicles at all (Nyika NP and Vwaza GR) and only Liwonde NP has an adequate complement. Shortage of vehicles is due to lack of recurrent funds for replacement and maintenance.
Field Equipment. There is a particular shortage of tents (old issue), backpacks, field uniform issue, firearms/ammunition (1940's vintage - all condemned stock, very limited rounds issued) and radios. This limits the effectiveness of patrols and has a serious impact on staff morale.

STAFF The quality of staff in the DNPW&T and their level of technical skills is high (all senior staff have degree or post-graduate qualifications, all scouts receive regular training) but there is a shortfall in quantity. Total field patrol staff levels are 142 men which equates to 1 field staff per 70 sqkm of protected area. This is under the recommended staff threshold for adequate protection of 1 scout per 30 sqkm.

The priority development needs of the DNPW&T are;

- 1/ to increase its capacity to generate revenue - to ensure adequate levels of recurrent funding and reverse the trend of under-investment in protected area management and;
- 2/ to promote and invest in the utilization of protected areas - to counter increasing pressures and conflicts over land-use.

This development will require, in the initial phase, funding assistance from international donors.

2.2 FORESTRY DEPARTMENT

The Forestry Department is responsible for the management of Malawi's forest resources and the protection of Forest Reserves (see Map 2) - which cover 8,500 sqkm.

Management of wildlife (including elephants in at least 5 reserves) is regarded as primarily the remit of the DNPW&T and there are only a few Forestry staff trained in basic anti-poaching. Forest Reserves are thus the least protected of all the elephant areas and also the most vulnerable in terms of small ranges, small populations and high human conflicts. Priority needs are to increase the training of Forest Guards in wildlife management, increase the cooperation between the Departments and clarify a feasible policy for the management of elephants in Forest Reserves.

2.3 WILDLIFE SOCIETY OF MALAWI

The Wildlife Society of Malawi (WSM) is a non-governmental agency, established in 1947. The aims of the Society are to assist conservation of wildlife resources in Malawi through support to the DNPW&T, conservation education, limited wildlife research and monitoring, and policy advocacy. The Society is decentralised, with 4 active branches across Malawi and has around 600 members.

The Society is now in the process of greatly developing its institutional capability to manage and implement conservation programmes. A proposal has been submitted through WWF to Malawi USAID/Shared Project and Experiment in International Living (EIL) for support to institutional building and to implement an integrated conservation and development programme entitled – "Conservation and Development in Malawi: Increased Food Security and Income Generation for Grassroots Communities through Sustainable Natural Resource Utilization".

2.4 OTHER AGENCIES

Other agencies involved in wildlife conservation in Malawi include;

1/ UN Food and Agriculture Organisation (FAO) which has been involved in a wildlife management and crop protection programme jointly with the DNPW&T .

2/ World Wildlife Fund; WWF which is involved with programmes to develop Lake Malawi NP and support of bee-keeping clubs associated with protected areas.

3/ Southern African Development Coordination Council (SADCC). Malawi is the Sector Coordinator for the Forestry, Fisheries and Wildlife Sector of SADCC and the SADCC Wildlife Coordinating Unit is attached to the DNPW&T.

4/ National Parks Board of South Africa which is providing technical and funding assistance to the general development of Liwonde NP and particularly the construction of fencing.

ELEPHANT CONSERVATION PLAN

MALAWI

SECTION II

CONSERVATION STRATEGY

November 1991

**Department of National Parks, Wildlife and Tourism
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Malawi**

SECTION II.

ELEPHANT CONSERVATION STRATEGY

This section summarises the key problems facing the conservation of elephants in Malawi, presents a strategy designed to resolve these problems and a programme to implement the strategy.

1. CONSTRAINTS ON ELEPHANT CONSERVATION IN MALAWI.

1.1 LAND-USE CONFLICTS

Due to the increasing population in Malawi, the already high human densities and the decreasing availability of agricultural land, there is growing pressure on the 20% of the country set aside as protected areas.

This pressure takes the form of calls for deproclamation of areas within National Parks, Game and Forest Reserves, agricultural encroachment, habitat destruction and illegal resource use (poaching). By 1990 about 11% of the total elephant habitat within protected areas had been encroached by cultivation and human settlement.

This growing conflict over land-use is the major underlying problem facing protected area management and elephant conservation in Malawi.

1.2 CONSTRAINTS ON ELEPHANT PROTECTION

Law Enforcement

Previous sections have illustrated that the deterrence of illegal off-take of elephant and the control of illegal ivory trading have been constrained by insufficient levels of man-power, field equipment, vehicles, recurrent and funding. These levels have remained roughly stable over the last decade while the pressures from illegal activities have shown an increase over the same period.

Although the DNPW&T has been successful so far in controlling illegal utilization of elephants, there is an urgent need to up-grade legal penalties, law-enforcement and protected area management.

Elephant Control/Crop Protection

The movement of elephants outside the relatively small and isolated protected areas in Malawi results in conflict with surrounding agricultural communities. Efforts to control this problem have largely been dependent on shooting crop-raiding elephants in specific areas.

This method of controlling crop damage is ineffectual and wasteful and has been continued only for public relations reasons. In contrast the effectiveness of solar-powered electric fences has been proved in the sites where it has been tested, such as in Kasungu National Park. Elephant mortality resulting from crop protection was reduced to nil from previously high levels of offtake. However, there is a lack of funds to establish fencing elsewhere.

1.3 UNDER UTILIZATION OF PROTECTED AREAS.

The only significant wildlife resources are in National Parks, Game Reserves and Forest Reserves. Utilization of these resources is currently largely limited to non-consumptive uses such as tourism - which itself is mainly confined to National Parks.

Tourism. Benefits from tourism are presently under-exploited due to 1/ the limited infrastructure and visitor facilities within many of the protected areas, which means visitor numbers are well below the potential and 2/ by the minimal fees charged for visiting National Parks and Reserves.

Consumptive/Rural Community use. The protected areas currently provide very limited benefits or resources to the surrounding rural communities, although the demand for such resources is clear from the level of illegal harvesting and encroachment. There is a need to maximise the potential of these areas to provide economic and natural resource benefits to surrounding communities and increased revenue to the DNPW&T and central Government. This both justifies the continued existence of this form of land-use and lowers the costs of their protection.

The policy of DNPW&T is to increase the utilization of protected areas and it has initiated a variety of such programmes since 1985. Initial results clearly demonstrate that land-uses such as beekeeping or caterpillar collection in protected areas can provide surrounding rural communities with higher economic returns per hectare than subsistence agriculture use. However there is a shortage of funds and staff to undertake the full implementation of an integrated conservation and development programme, which is vital to the continued existence of protected areas and the elephants they support.

1.4 LIMITED RESEARCH CAPABILITY

Infrastructure. Effective management of elephants and protected areas is dependent on research. However, the DNPW&T Research Unit requires more funds, equipment and trained staff to carry out the full range of research needed for effective management of the relatively small and isolated elephant populations in Malawi.

Information Needs. The particular needs are for a detailed assessment of the status of elephants in Malawi (including data on population biology) and of the options and implications of increased utilisation of protected areas. Information on such aspects are urgently required to guide the implementation of an elephant conservation programme.

1.5 LIMITED PUBLIC AWARENES AND PARTICIPATION

Due to inadequate funds, the DNPW&T Education Unit programme to improve public awareness of wildlife conservation and the justifications for protected areas has not been as extensive as is desirable.

2.

STRATEGY

GOAL

"To ensure the conservation of the African Elephant in Malawi."

OBJECTIVES

The strategy aims achieve the following objectives:

- 2.1 Reverse the decline in those elephant populations that are declining and maintain the status of those populations that are currently stable or growing.
- 2.2 Improve the infrastructure and increase the recurrent funding of the DNPW&T to improve its capacity to manage and protect elephant populations.
- 2.3 Identify key protected areas and elephant populations in relation to viable long-term management and focus the conservation efforts on these areas.
- 2.4 Improve the coordination and collaboration of Government and other agencies involved in elephant conservation.
- 2.5 Develop and maximise the economic and natural resource benefits of protected areas and elephant ranges in Malawi. Demonstrate the tangible benefits to the national economy and the surrounding rural communities that can accrue from these protected areas and their elephant populations.
- 2.6 Exploit those elephant populations that can sustain harvesting, in conformity with international agreements and to return economic benefits to rural communities.
- 2.7 Revise and consolidate data on distribution and abundance and population biology of elephants in Malawi. Increase the capacity of research to provide information and advise management on the range of elephant and protected area issues from population biology to options for improved utilization of resources.
- 2.8 Monitor the elephant populations continuously so as to assess the effectiveness of management.
- 2.9 Stimulate public awareness of the values (economic and others) of the conservation of elephants and their habitat and so generate public support.

3.

IMPLEMENTING PROGRAMMES

The 9 point strategy can be implemented through programmes focused on **Protection, Utilization, Research and Awareness.**

3.1 PROTECTION

Strengthen the DNPW&T protection and anti-poaching units throughout the country through;

- Increase in field staff to a density of at least 1 staff per 40km in key areas.
- Provision of necessary field equipment (tentage, back packs, uniform, sleeping bags, appropriate firearms)
- Improved mobility with the availability of at least one 4+4 vehicle per protected area field unit, one truck per NP and additional motorcycles.(require minimum of 10 new 4+4 vehicles, 5 trucks and 5 motorcycles)
- Improved infrastructure within protected areas (increased road-network, new camps)
- Improved surveillance through aerial anti-poaching support to identify specific incidents for follow-up (fixed wing aircraft)

Create a law-enforcement presence in Forest Reserves

- Increase number of trained staff in Forest Reserves
(Forest Guard training by DNPW&T)
- Form a mobile DNPW&T anti-poaching unit to assist Forestry Department staff.

Strengthen controls on illegal trade through;

- Increased surveillance and informant network
(funds for rewards and urban law-enforcement)
- Up-graded legal framework and penalties for illegal trade or hunting.
(approval of the draft National Parks & Wildlife Act)

Increase in the recurrent expenditure for protected area management.

- Aim to increase funding levels to US\$ 200/sqkm within key protected areas through improved income generation (see section on Utilization).

Lower the mortality and negative impacts resulting from elephant conflicts with surrounding agricultural land.

- Install solar powered electric or other fencing in key protected areas in the specific conflict zones.(funding for fencing at Nkhotakota, Vwaza Marsh Game Reserves, Nyika National Park and extensions to Liwonde National Park)

3.2 UTILIZATION

Assess the potential for consumptive and non-consumptive use of protected areas and the options for maximising benefits.

- Evaluation and research programme

Increase the revenue generated by tourism in protected areas

- Increase the visitor charges in protected areas to at least the levels elsewhere in the region.
- Increase proportion of revenue accruing direct to DNPW&T and charge as appropriate a supplementary tax to generate funds directly for rural communities around the protected areas.
- Improve tourism infrastructure of protected areas to maximise visitor use and revenue (provision of additional roads, camps and amenities in National Parks, Game Reserves and Forest Reserves)

Expand programmes to provide tangible benefits to rural communities surrounding protected areas.

- Expand sustainable use of protected area resources by surrounding communities – including bee-keeping, caterpillar harvesting, collection of thatching grass (establishment of Bee-keeping clubs, Wildlife and Rural Community programmes).
- Develop and establish a Revolving Fund for Rural Development (schools/clinics etc) from income generated by tourism, trophy hunting or other protected area use (funds for feasibility studies, establishment and initial capital costs)

Utilization of elephant products

- Once sustainable utilization is feasible, exploit the most effective means for generating revenue from ivory and other products. A significant portion of the revenue to be returned to rural communities (establishment of a trade monitoring group and the marketing of ivory through SACIM)

3.3 RESEARCH

Determine and monitor the status of elephants

- Improve and consolidate data on elephant distribution and abundance (aerial survey of Kasungu, Nkhotakota, Vwaza, Nyika, Tuma)
- Monitor population trends, and particularly aspects of breeding biology (sex ratios, age structures)
- Assess the viability and habitat requirements of the various isolated populations of elephants and provide management recommendations (focus on Majete Game Reserve, Mangochi, Namizimu, Tuma, Phirilongwe Forest Reserves)

Assess the feasibility and impacts of increasing the utilization of protected areas.

- Assess potential for consumptive and non-consumptive utilization in National Parks, Game Reserves and Forest Reserves (Feasibility study)
- Monitor the impact of such utilization (Monitoring programme)

3.4 AWARENESS

Undertake a public awareness campaign to promote support for elephant conservation and to publicise the tangible benefits of protected areas.

- General awareness campaign involving DNPW&T and relevant NGOs.
- Awareness campaign as element of rural development programmes (see Utilization section).

4. PHASING

The Implementation Programme can be executed in three phases over the period 1992-96.

PHASE I

This initial phase involves the collection of baseline data through aerial surveys of elephant populations in Kasungu NP, Nyika NP, Vwaza GR and Nkhota Kota GR, clarify management scheme for Forest Reserve elephant populations and assessments of wildlife utilization options and prospects. In this phase the project concepts and proposals for Phase II will be fully developed.

PHASE II

This will be the core phase, comprising the major components of the elephant conservation programme. The aim of this phase is to increase the investment in protected area infrastructure, solar fencing, tourism infrastructure, elephant management in Forest Reserves and increased investment in integrated use of protected areas. At the end of this phase; 1/ the recurrent funding available to the DNPW&T should have increased through improved income generation and be sustainable; 2/ conflicts over land-use should have declined through integrated conservation and development schemes.

PHASE III

This phase will establish long-term monitoring of elephant populations, trade in elephant products and impacts of multiple use of protected areas. This phase will evaluate and consolidate the progress of programmes in Phase II.

TIME SCHEDULE

	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
PHASE I					
• Aerial Survey	>				
• Programme Development	>				
• Study of Wildlife Utilization options	>				
• Workshop; Management Strategy for Elephants in Forest Reserves.	>				
PHASE II					
• Protected Area Infrastructure		>	>	>	>
• Solar powered Fencing	>	>	>	>	
• Wildlife Utilization Pilot projects		>	>	>	>
• Study of Population Dynamics/Viability	>	>			
• Tourism Infrastructure Development		>	>	>	
• Awareness Programmes	>	>	>	>	>
• Provision of Aircraft		>			
PHASE III					
• Ivory Trade Monitoring Unit		>	>	>	>
• Elephant Population Monitoring		>	>	>	>
• Revenue restructuring and evaluation				>	>
• Evaluation of Utilization schemes.				>	>

ELEPHANT CONSERVATION PLAN
MALAYA

SECTION III
PROJECT OUTLINES

November 1991

Department of National Parks, Wildlife and Tourism
P.O. Box 30131
Lilongwe 3
Malawi

SECTION III.

PROJECT OUTLINES

1 INTRODUCTION

The following section presents 8 project outlines. All of these projects require funding so as to implement the elephant conservation strategy detailed in Section II.

Each project outline is presented here in a two page standard format which summarises the key financial aspects, objectives and activities of the individual projects.

Further information on specific projects can be obtained by contacting:

Department of National Parks, Wildlife and Tourism
P.O. Box 30131, Lilongwe 3, MALAWI.

TEL. (Lilongwe) 723 566 or 723 676
FAX. (Lilongwe) 723 089

2. PROJECT OUTLINES

The projects are presented in the following order.

Phase I

Title	Type	Funds Required
1. Aerial Survey of the Key Elephant Populations of Malawi	Survey	US\$ 30,000
2. Management Options for Elephants in Forest Reserves.	Park Management	US\$ 40,000
TOTAL		US\$ 70,000

Phase II

Title	Type	Funds Required
3. Assistance to Protected Area Management and Law Enforcement.	Security	US\$ 500,000
4. Fencing Programme for Protected Areas	Park Management	US\$ 600,000
5. Conservation and Rural Development Pilot Projects	Rural Development	US\$ 2,500,000
6. Development of Tourism Infrastructure	Park Management	US\$ 700,000
TOTAL		US\$ 4,300,000

Phase III

Title	Type	Funds Required
7. Elephants: Research and Monitoring	Monitoring	US\$ 85,000
8. Ivory Trade Monitoring Unit	Ivory Trade	US\$ 15,000
TOTAL		US\$ 100,000

The ANNEXES contain developed project proposals for Nkhota-kota and Vwaza Game Reserves.

PROJECT OUTLINE - MALAWI

Title: AERIAL SURVEY OF THE KEY ELEPHANT POPULATIONS OF MALAWI

Funds Required US\$ 30,000

Project Status: Concept

Project Type: Research and Monitoring

Project Originator: Department of National Parks, Wildlife and Tourism (DNPW&T)

Project Executant: Department of National Parks, Wildlife and Tourism (DNPW&T)

Project Administration: Department of National Parks, Wildlife and Tourism (DNPW&T)

Collaborating Bodies: To be identified

Estimated Budget

Total	US\$ 30,000
Key Items	
Reconnaissance	US\$ 5,000
Aircraft use	US\$ 10,000
AviGas/General	US\$ 10,000
Logistics, analysis etc	US\$ 5,000

Fund Raising Status Raised NIL Needed US\$ 30,000

Donors Approached

Start Date/End date 1992

Related Projects

PROJECT DESCRIPTION

Background:

The approximately 2,000 elephants in Malawi are distributed between 8 isolated populations in relatively small ranges within protected areas. None of these populations, apart from Liwonde National Park have been reliably counted since the mid 1980's. There is an urgent need to up-date individual protected area estimates to assess the impacts of illegal hunting and the current trends of specific populations. A further justification for an aerial survey of elephants is the need to establish baseline population data to guide Malawi's elephant conservation programme and provide hard data for future assessments of the effectiveness of management.

The Department of National Parks, Wildlife and Tourism (DNPW&T) aircraft (Piper Super Cub) is available for use in the aerial survey and experienced survey staff from Zimbabwe have offered their assistance with the technical aspects of the count. It is proposed that the survey focus on the key populations (in terms of size and range) of Kasungu National Park, Nkhota-kota Game Reserve and Vwaza Game Reserve, with additional surveys where feasible to assess populations in Forest Reserves and Nyika National Park and Majete Game Reserve.

Objectives:

To undertake an aerial survey of the key elephant populations of Malawi to up-grade population estimates and provide baseline data for conservation programmes.

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Activities:

- 1/ Collection of available reconnaissance data and preparation of survey plan and logistics.
- 2/ Aerial surveys of Kasungu National Park, Nkhota Kota Game Reserve, Vwaza Game Reserve and Majete Game Reserve.
- 3/ Surveys where feasible of Forest Reserves (especially Tuma and the Mangoche/Namizimu corridor), Nyika National Park and Vwaza Marsh.
- 4/ Analysis of data and production

Outputs:

Objective, reliable baseline data on key elephant populations in Malawi.

Progress to date:

(Database last updated ----)

PROJECT OUTLINE - MALAWI

Title: MANAGEMENT OPTIONS FOR ELEPHANTS IN FOREST RESERVES: A WORKSHOP

Funds Required US\$ 40,000

<u>Project Status:</u>	Concept
<u>Project Type:</u>	Management
<u>Project Originator</u>	Department of National Parks, Wildlife and Tourism (DNPW&T)
<u>Project Executant</u>	Department of National Parks, Wildlife and Tourism (DNPW&T); To be identified
<u>Project Administration</u>	Department of National Parks, Wildlife and Tourism (DNPW&T)
<u>Collaborating Bodies</u>	Forestry Department, Wildlife Society of Malawi
<u>Estimated Budget</u>	Total US\$ 40,000
	Key Items
	Workshop cost US\$ 20,000
	Consultancy cost US\$ 20,000
<u>Fund Raising Status</u>	Raised NIL Needed US\$ 40,000
<u>Donors Approached</u>	
<u>Start Date/End date</u>	1992
<u>Related Projects</u>	

PROJECT DESCRIPTION

Background:

Elephants in Forest Reserves are the most vulnerable in Malawi in terms of illegal hunting, human encroachment of range, conflict with surrounding rural communities. The reserves also have small population sizes and ranges.

The approximately 250 elephants found in 5 Forest Reserves and the less than 300 elephants in the area of Majete Game Reserve represent 25% of Malawi's elephant population but have to date received relatively little attention, management or protection. In the case of the Forest Reserves this is due to the fact that there is a lack of staff within the Forestry Department trained in anti-poaching and the Department of National Parks, Wildlife and Tourism (DNPW&T) lacks the resources to adequately undertake law enforcement in Forest Reserves. The result has been that over the past decades elephant populations in Forest Reserves have steadily declined and in the most extreme case of Tuma Forest Reserve, up to 50 animals (half the population) were killed during 1990. In the case of Majete Game Reserve, the elephants are under high pressure from illegal hunting and encroachment of land as a result of a large influx of Mocambican refugees.

There is an urgent need for a clear strategy to be defined for the conservation of these small isolated elephant populations. For example, the Forest Reserves of Mangochi and Namizimu currently provide a corridor of elephant range from Liwonde National Park to the Mocambique border and as a single protected area would be of high importance for elephant conservation. But this corridor will not continue to exist for much longer as land between the park and forest reserves are being rapidly settled and decisions on the future of the area and its elephants are

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urgently required. In the case of other Forest Reserves and Majete GR decisions are necessary on what elephant management options are possible with the resources available. This project proposes to fund the activities of appropriate consultant for a period of a month to assess the situation and options for management of the small isolated populations and a workshop for the relevant agencies to discuss and elaborate a basis for the future management of these areas and their elephants.

Objectives:

To identify options for the long-term management of elephants existing in the Forest Reserves and to hold a workshop for the relevant agencies to collaborate on a feasible strategy and undertake decisions on the options available.

Activities:

- 1 One month field study by an appropriate consultant to assess the situation and options for long-term management.
- 2 Workshop for consultant to present results and for discussions and decisions on implementation of the most feasible options between the Department of National Parks, Wildlife and Tourism (DNPW&T), the Forestry Department and the Wildlife Society of Malawi.

Outputs:

Clear and effective management of the small isolated elephant populations in Malawi.

Progress to date:

(Database last updated ----)

PROJECT OUTLINE - MALAWI

Title: ASSISTANCE TO PROTECTED AREA MANAGEMENT AND LAW ENFORCEMENT

<u>Funds Required</u>	US\$ 500,000

<u>Project Status:</u>	Concept
<u>Project Type:</u>	Park Management/Security
<u>Project Originator</u>	Department of National Parks, Wildlife and Tourism (DNPW&T)
<u>Project Executant</u>	Department of National Parks, Wildlife and Tourism (DNPW&T)
<u>Project Administration</u>	To be identified
<u>Collaborating Bodies</u>	To be identified
<u>Estimated Budget</u>	Total US\$ 500,000
	Key Items (over 3 years)
	Motor Vehicles US\$ 380,000
	Spares/rehabilitation US\$ 30,000
	Technical Aid US\$ 20,000
	Field Equipment US\$ 60,000
<u>Fund Raising Status</u>	Raised NIL Needed US\$ 500,000
<u>Donors Approached</u>	
<u>Start Date/End Date</u>	1993 - 95 (3 years)
<u>Related Projects</u>	

PROJECT DESCRIPTION

Background:

The Department of National Parks, Wildlife and Tourism (DNPW&T) is responsible for the protected area management of 5 National Parks and 4 Game Reserves covering an area of 10,500 sqkm. The DNPW&T has been successful in containing the wave of illegal elephant hunting which has affected the region for more than a decade but its effectiveness is now constrained by the limited recurrent funding available for protected area management. Particular problems are the lack of vehicles, spare parts for repairs/maintenance and the limited quantity of field equipment for patrol staff - which has had an impact on the effectiveness of protection efforts and staff morale.

The DNPW&T has developed a strategy for increasing recurrent funding within a 5 year time frame but interim funding assistance is required to boost the protection capability of the DNPW&T through the provision of urgently needed equipment. This project is intended as a three year programme of specific investment in protected area management, following which the DNPW&T will have developed the capacity to maintain appropriate levels of recurrent funding to support continued investment.

Objectives:

To boost the effectiveness of the Department of National Parks, Wildlife and Tourism (DNPW&T) to undertake the conservation of elephants in protected areas through provision of necessary equipment.

Activities:

Over a three year project period, fund the provision of the following equipment or activities:

- 1 **Rehabilitation:** A programme, including spares and technical skills, to rehabilitate vehicles and equipment out of action due to lack of spare parts etc.
- 2 **New Vehicles:** 4 x 4 Vehicles – total of 6, to achieve target of one vehicle for each National Park and Game Reserve; Trucks – total of 5, one for the 3 National Parks currently without and for 2 Game Reserves; Motorcycles – total of 10 to be distributed around the protected areas as appropriate.
- 3 **Field Equipment:** Tents – provision of appropriate tentage for 100 field staff. Radio communication – extension of current limited radio network to include Game Reserves and field patrol communications. Back-packs, boots and raincoats appropriate for 150 field staff.

Outputs:

Increased effectiveness of protected area management and control of illegal hunting of elephants in National Parks and Game Reserves

Progress to date:

(Database last updated ----)

PROJECT OUTLINE - MALAWI

Title: REDUCTION IN ELEPHANT - HUMAN CONFLICTS: FENCING
PROGRAMME FOR PROTECTED AREAS

<u>Funds Required</u>	To be determined (cf US\$ 500-600,000)

<u>Project Status:</u>	Concept
<u>Project Type:</u>	Rural Development/Park Management
<u>Project Originator</u>	Department of National Parks, Wildlife and Tourism (DNPW&T)
<u>Project Executant</u>	Department of National Parks, Wildlife and Tourism (DNPW&T)
<u>Project Administration</u>	Department of National Parks, Wildlife and Tourism (DNPW&T)
<u>Collaborating Bodies</u>	To be identified
<u>Estimated Budget</u>	Total US\$ 600,000
<u>Fund Raising Status</u>	Key Items Raised NIL Needed 600,000
<u>Donors Approached</u>	
<u>Start Date/End Date</u>	1992 - 95
<u>Related Projects</u>	

PROJECT DESCRIPTION

Background:

The relatively small size of the protected areas occupied by elephants and the fact that rural communities now closely border these areas means that there is in some sites a high level of conflict between elephants and humans. The scale of this conflict is illustrated by estimates that elephants in Malawi cause US\$ 1 million worth of crop damage per year. The impact of crop destruction on rural communities surrounding protected areas results in an understandably negative perception of elephants and their conservation. In the past the DNPW&T has attempted to contain this problem through shooting elephants causing crop damage but this is ineffectual and a significant source of mortality for Malawi's small elephant herd.

For the past decade solar powered electric fencing at Kasungu National Park has demonstrated its effectiveness in preventing conflict between that elephant population and surrounding rural communities but has not been repeated in other areas due to a shortage of funding. This project aims to provide the funds required to fence key zones of conflict in other protected areas.

Objectives:

To decrease conflicts between elephants and rural communities and thus increase support for elephant conservation through the construction of solar powered electric fencing in key zones of protected areas.

Activities:

Electric Fence areas of significant elephant – human conflict.

Outputs:

Lowered mortality of elephants from crop protection and increased support from rural populations for elephant conservation.

Progress to date:

(Database last updated ----)

PROJECT OUTLINE - MALAWI

Title: CONSERVATION AND RURAL DEVELOPMENT: UTILIZATION OF PROTECTED AREAS - PILOT PROJECTS.

Funds Required US\$ 2,500,000

Project Status: Concept

Project Type: Rural Development

Project Originator: Department of National Parks, Wildlife and Tourism (DNPW&T)

Project Executant: Department of National Parks, Wildlife and Tourism (DNPW&T)
To be identified.

Project Administration: Department of National Parks, Wildlife and Tourism (DNPW&T)

Collaborating Bodies: Wildlife Society of Malawi

Estimated Budget

Total	US\$ 2.5 million (over 3 years)
Key Items	
Infrastructure (buildings/roads)	US\$ 2 million
Vehicles	US\$ 150,000
Revolving fund	US\$ 150,000

Fund Raising Status: Raised NIL Needed US\$ 2.5 million

Donors Approached:

Start Date: 1993

Related Projects: Wildlife Society of Malawi Proposed Conservation and Development programme.

PROJECT DESCRIPTION

Background:

The only significant wildlife resources in Malawi are within the National Parks, Game Reserves and Forest Reserves and legal use of these resources has been largely limited to tourism. These areas are coming under increasing pressure from the growing rural population which takes the form of calls for deproclamation of parts of the protected areas, encroachment into these areas and illegal resource use.

The DNPW&T has long recognised the need for tangible benefits to accrue to those people who surround protected areas to justify their continued existence. Since the mid 1980's the DNPW&T has initiated a variety of programmes to promote multiple use of protected areas including beekeeping projects and caterpillar collection or thatching grass harvesting within protected areas. These programmes have demonstrated that such use of protected areas can provide sustained higher economic returns to rural communities than use of the same areas for subsistence crop production.

However the DNPW&T lacks the necessary funding to fully develop and widely implement such programmes. This project aims to provide the necessary funds for the promotion of conservation and rural development activities in Malawi with a particular emphasis on pilot projects at Nkhota - Kota and Vwaza Game Reserves. These activities should be coordinated with the Wildlife Society of Malawi conservation and development programme.

Objectives:

To implement sustainable multiple land use of protected areas to provide tangible benefits to surrounding rural communities and thereby increase support for the continued existence of Malawi's conservation areas.

Activities:

- 1/ Assess the potential and options for resource use of the 2 focal protected areas (Nkhota Kota and Vwaza Game Reserves); including consumptive and non-consumptive use.
- 2/ Evaluate the different methods of resource use (Beekeeping, caterpillar collection, trophy hunting, tourism) and appropriate mechanisms for management and returns of benefits to rural communities (community revolving funds etc).
- 3/ Improve and expand on existing infrastructure (roads, amenities and accommodation) in the reserves to assist management and conventional tourism.
- 4/ Sub-let all tourist camps to appropriate concessionaires to maximise revenue to recurrent management and community revolving funds.
- 5/ Re-draft the reserves master plans to incorporate multiple land-use management with clearly defined rural community and concessionaire frame work under the supervision of the DNPW&T.

Outputs:

Tangible benefits to the rural communities surrounding protected areas - including employment, subsistence and commercial resource use and funding for community development.
Increased support for the continued existence of protected areas and declines in the pressures of encroachment, illegal harvesting and calls for deproclamation.

Progress to date:

A fully developed proposal and budget has been elaborated for Nkhota Kota Game Reserve (see Appendix).
(Database last updated ----)

PROJECT OUTLINE - MALAWI

Title: ASSISTANCE TO PROTECTED AREA MANAGEMENT: DEVELOPMENT OF TOURISM INFRASTRUCTURE

Funds Required To be determined (cf US \$ 700,000)

<u>Project Status:</u>	Concept
<u>Project Type:</u>	Park Management
<u>Project Originator:</u>	Department of National Parks, Wildlife and Tourism (DNPW&T)
<u>Project Executant:</u>	Department of National Parks, Wildlife and Tourism (DNPW&T)
<u>Project Administration:</u>	Department of National Parks, Wildlife and Tourism (DNPW&T)
<u>Collaborating Bodies:</u>	To be identified
<u>Estimated Budget:</u>	Total 700,000
	Key items Buildings Amenities Road construction Equipment/plant
<u>Fund Raising Status:</u>	Raised NIL Needed cf 700,000
<u>Donors Approached:</u>	On going
<u>Start Date/End Date:</u>	1993 - 1996
<u>Related Projects:</u>	

PROJECT DESCRIPTION

Background:

The capacity of the Department of National Parks, Wildlife and Tourism (DNPW&T) to undertake the effective management of protected areas has been constrained by the levels of recurrent funding that have been available. The DNPW&T aims to increase the revenue earned from non-consumptive use of National Parks and Game Reserves by increasing the number of visitors to these areas and by increasing the costs charged to visitors from present minimal levels to those charged elsewhere in the region.

In order to implement this strategy to increase recurrent funding for protected area management there is a need to invest in the tourism infrastructure - to both justify increased charges and provide the basis for increased visitor numbers. The DNPW&T does not have the funds required to undertake this initial investment and the of this project is to provide such funds. The rationale of this project is that external investment in improving the capability of conservation agencies to generate sufficient revenue for management is more effective in the long-term than donating funds direct to protected area management.

On construction or rehabilitation of tourism infrastructures the DNPW&T can chose the option of internal management or sub-let the facilities to appropriate concessionnaires. Funds would accrue direct to the DNPW&T and a proportion would be allocated to surrounding rural communities.

The focus of the project is on the National Parks and particularly Kasungu and Nyika.

Objectives:

To assist the management of protected areas in Malawi through a programme of investment to increase the long-term revenue generation from non-consumptive use of National Parks and Game Reserves.

Activities:

Construction of additional all weather roads

Rehabilitation of current tourist camps and accomodation

Construction of additional tourist ammenities

Outputs:

Improved protected area management through increased and sustainable recurrent funding from tourism revenues.

Progress to date:

(Database last updated ---)

PROJECT OUTLINE - MALAWI

Title: ELEPHANTS IN MALAWI: RESEARCH AND MONITORING

Funds Required US\$ 85,000

Project Status: Concept
Project Type: Research and monitoring
Project Originator Department of National Parks, Wildlife and Tourism (DNPW&T)
Project Executant Research Unit; Department of National Parks, Wildlife and Tourism (DNPW&T)

Project Administration

Collaborating Bodies

Estimated Budget

Total	US\$ 85,000
Key Items	
Computer;	US\$ 10,000
Hardware/software	
Training	US\$ 10,000
Field costs (surveys)	US\$ 40,000
Vehicle	US\$ 25,000

Fund Raising Status Raised NIL Needed US\$ 85,000

Donors Approached On going

Start Date/End Date 1993 - 1996

Related Projects 1992 Aerial Survey Project

PROJECT DESCRIPTION

Background:

The effective management of Malawi's relatively small population of approximately 2,000 elephants in 8 isolated population units depends on scientific research and population monitoring.

However, due to insufficient funds the DNPW&T Research Unit has been limited in its ability to provide the information on elephant numbers, trends and biology necessary to guide management. Lack of vehicles, aircraft and basic equipment have been major constraints in carrying out surveys and estimates of the national population. In addition the shortage of staff (the unit currently has 2 professional officers with BSc and MSc qualifications) has constrained the monitoring of population dynamics, distribution and behaviour.

The last reliable national surveys were in the mid 1980's and although an aerial survey is planned for 1991/2 there is a need for more regular and consistent counts. This requires research into the most appropriate methods of population monitoring. In addition there is very little information available on the population dynamics or behaviour of elephants in the various protected areas - whose populations have either been under high illegal hunting pressure; have increased in size under full protection or have remained stable. This information is vital in the elaboration of any elephant conservation programme and the evaluation of its progress.

Objectives:

The aim of this project is to boost the effectiveness of the DNPW&T Research Unit to enable it to undertake the necessary long-term monitoring and research role within Malawi's elephant conservation programme.

Activities:

1. Review and consolidate baseline data on elephant distribution and numbers.
2. Test various methods of population estimation to select those most appropriate to individual areas.
3. Monitor population trends and dynamics (age structure, sex ratios, recruitment, mortality factors) and behaviour to establish the impacts of factors such as hunting and to provide recommendations to management.
4. Evaluate the progress of the 5 year Malawi elephant conservation programme.
5. Establish a elephant database within the Research Unit for population numbers, trends and distribution.
6. Train patrol staff in basic methods of assessing elephant distribution, abundance and population dynamics to provide additional data to national surveys.

Outputs:

1. Guidance in the development of the elephant conservation programme.
2. Evaluation of the effectiveness of this programme.
3. Systematic and easily retrievable data on elephant distribution numbers and population dynamics.

Progress to date:

(Database last updated ----)

PROJECT OUTLINE - MALAWI

Title: MALAWI: IVORY TRADE MONITORING UNIT

Funds Required 15,000

Project Status: Concept
Project Type: Security/Trade
Project Originator: Department of National Parks, Wildlife and Tourism (DNPW&T)
Project Executant: Department of National Parks, Wildlife and Tourism (DNPW&T)
Project Administration: Department of National Parks, Wildlife and Tourism (DNPW&T)
Collaborating Bodies: Customs; TRAFFIC (?); SACIM
Estimated Budget: Total US\$ 15,000
Key items
Computer;
hardware/software
Unit running costs
Fund Raising Status: Raised NIL Needed US\$ 15,000
Donors Approached: On going
Start Date: 1993
Related Projects

PROJECT DESCRIPTION

Background:

Malawi, although not a significant ivory producer, has a long established ivory carving industry and also a history of effectively containing the illegal trade in elephant products. The policy of the Malawi Government to ivory harvesting and trade is that Malawi will fully protect elephant populations until there is an increase to levels where sustainable use is possible. When trade resumes a specific volume will be sold through the Southern African Centre for Ivory Marketing (SACIM) and a significant proportion of the benefits will be allocated to rural communities surrounding protected areas.

There is a need in the implementation of this policy for monitoring of the trade in ivory within Malawi and for export to clarify the level of illegal trade, evaluate the effectiveness of control and marketing structures and provide accurate data on ivory trade issues in Malawi.

Objectives:

To establish an Ivory Trade Monitoring Unit within the DNPW&T to assist Malawi in the control of the illegal national and international ivory traffic.

Activities:

1. The establishment of a database on legal and illegal ivory trafficking.
2. Provision of recommendations to management on options for ivory control and utilization and furnish monitoring reports to relevant international bodies.

Outputs:

· Effective monitoring of illegal ivory trade in Malawi and where appropriate the monitoring of legal trade.

ELEPHANT CONSERVATION PLAN

MALAWI

ANNEXES

November 1999

**Department of National Parks, Wildlife and Tourism
P.O. Box 30134
Lilongwe 3
Malawi**

DEVELOPMENT PROJECT SUBMISSION

PROJECT TITLE : UPGRADING THE VWAZA MARSH GAME RESERVE TO
 NATIONAL PARK STATUS

RESPONSIBLE MINISTRY : FORESTRY AND NATURAL RESOURCES

DEPARTMENT : NATIONAL PARKS, WILDLIFE AND TOURISM

1. OBJECTIVES OF THE PROJECT

The broad objective of the project is to develop Vwaza Marsh Game Reserve to National Park status so that its existence is adequately justified both in ecological and economical terms. Immediate objectives are :

(i) Improve law enforcement capabilities through provision of vehicles for placement and servicing of field personnel, provision of field camping equipment, increasing the number of field scouts from the present 24 to 32 for effective field patrol coverage and providing water in the form of a borehole at Kawiya scouts camp.

(ii) Improve and expand on the existing road system in the Reserve for the benefit of both reserve management and conventional tourism.

(iii) Improve and expand existing tourist accomodation facilities at Kazuni and construct a tourist camp near the proposed Turner's scout base, construct swimming pools, provide parrafin fridges at both Kazuni and Turner's tourist camp. A new tented camp should also be established at Zaro pool.

It is envisaged that through these improvements, scouts who patrol the reserve will be highly motivated and with the increased number of scouts more area will be patrolled effectively. This will result in the increase of animal populations including the elephant.

Improvement of the tourist facilities will help to promote tourism in the area thereby making the reserve economically viable.

2. GOALS OF THE PROJECT

Vwaza Marsh Game Reserve has had very limited development such that public use of the area has been minimal. Consequently, its existence has been justified primarily by the ecological role that the area plays i.e catchment conservation and protection of representative biotic communities of the region. Unfortunately, the ecological justifications have not been accepted by the majority of the people living around the reserve. These rural communities have exerted tremendous pressure through their political and traditional leaders to have the reserve opened up for farming. Furthermore, illegal off take of the reserve's

resources mostly large mammals along which is the African elephant (*Loxodonta africana*) is rampant. This project aims at stopping the present trend since the development of infrastructure in the reserve will allow for more public use. Even more important is the concept of rural community involvement in conservation of resources which this project will help to promote.

This project will improve the supervision of both the research and management personnel based in Vwaza through providing house accomodation for the Parks and Wildlife Officer (management) at Kazuni and the Parks and Wildlife Officer (research) at Kawiya. Both officers will each need a four wheel drive vehicle and a motorcycle.

The project will also provide an opportunity for intergration of wildlife management with rural development through the introduction of Commercial Beekeeping to the local farmers living around the reserve as an alternative or suppliment income generating enterprise. This is the most direct tangible benefit local people around Vwaza can get from Wildlife conservation, and it is envisaged that their attitude will positively change in favour of natural resources conservation in general. Hence their desire to have Vwaza Game Reserve degazetted for the pupose of farming will be discouraged.

3. PROJECT LIFE

Four years

4. TOTAL FINANCIAL COST

US \$ 1,487,300

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5. FINANCIAL SUMMARY

ITEM	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
Buildings	\$144,667.00	\$144,666.00	\$144,666.00	\$28,000.00	\$120,000.00	\$581,999.00
Furniture (Beds, Matress, e.tc)	\$820.00	\$820.00				\$1,640.00
Parrafin Fridges	\$10,500.00	\$10,500.00				\$21,000.00
Swimming Pools	\$10,000.00	\$10,000.00				\$20,000.00
Boreholes	\$7,000.00	\$7,000.00				\$14,000.00
Solar Communication Radios	\$10,000.00					\$10,000.00
Camping Equipment	\$12,800.00					\$12,800.00
Vehicle and Motor Bikes	\$255,000.00	\$21,200.00				\$276,200.00
Training	\$1,000.00	\$2,200.00	\$1,000.00	\$1,000.00	\$1,000.00	\$6,200.00
Wages	\$4,415.00	\$10,175.00	\$10,175.00	\$4,415.00	\$4,415.00	\$33,595.00
Vehicle running and Maintenance	\$74,954.00	\$74,954.00	\$74,954.00	\$74,954.00	\$74,954.00	\$374,770.00
Roads and Bridges	\$12,334.00	\$12,333.00	\$12,333.00			\$37,000.00
Fuel and Lubricants	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$4,000.00	\$20,000.00
Maintenance of Vehicles		\$6,500.00	\$6,500.00	\$6,500.00	\$6,500.00	\$26,000.00
Cleaning Materials		\$625.00	\$625.00	\$625.00	\$625.00	\$2,500.00
Protective Clothing	\$5,000.00					\$5,000.00
Revolving Fund Investimate		\$5,000.00	\$5,000.00			\$10,000.00
Consumable Stores		\$625.00	\$625.00	\$625.00	\$625.00	\$2,500.00
Equipment	\$4,000.00	\$4,000.00	\$24,096.00			\$32,096.00
TOTALS	\$556,490.00	\$314,598.00	\$283,974.00	\$120,119.00	\$212,119.00	\$1,487,300.00

6. PROJECT TARGET

6.1 Output and Services

Improved law enforcement capabilities will reduce poaching hence the populations of animals will rebuild to the expected carrying capacities.

More visitors will be attracted to the reserve due to improved visitor facilities

Commercial beekeeping will provide an alternative source of income to the rural communities hence contribute positively to national development.

Job opportunities will be created for local communities at all stages of project implementation.

Improved road system will facilitate game viewing for visitors and also simplify management by making most of the reserve accessible.

6.2 Activities

The establishment of Turner's visitor camp, Kazuni camp, Zaro Pool tented camp, and the improvement of management and research activities

will involve the following activities:

- Construction of scout houses at Turner's Camp.
- Drill a borehole at Kawiya to supply water to the personnel based there.
- Construct and upgrade about 106 Km length of roads.
- Construct swazi thatched roundavels for Turner's visitor camp and Kazuni.
- Construct two kitchens, lounge, and dining complexes i.e for Kazuni and Turner's visitor camp.
- Construct six EL2 houses for camp attendants.
- Construct four EL2A houses for the camp managers of Turner's visitor camp and for the P.W.A's for management and research.
- Drill one borehole
- Construct a swimming pool.
- Construct Zaro pool tented camp.
- Construct two DH6 houses for senior officers (research and management).
- Construct two office blocks.

The intergration of Wildlife management with rural development will involve the following activities:

- Construct one DH6 house for a professional officer dealing with beekeeping activities.
- Construct one EL2A house for the technical officer.

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Construct two EL2 houses for beekeeping extension scouts.

Construct one honey processing house for demonstration purposes.

7. BACKGROUND INFORMATION

The Vwaza Marsh Game Reserve was gazetted in 1977. It's area is 986 Km². It is situated just below the Nyika National Park on the international boundary with Zambia. The mean elevation is about 1000 m.a.s.l. The reserve forms part of the Luangwa valley system. This reserve contains most extensive wetlands in the plateau area of Malawi, and is also the northerly most location for the occurrence of Mopane woodland in Africa.

Vwaza was established to preserve selected examples of biotic communities and their physical environment, protect areas of aesthetic beauty and of special interest, preserve populations of rare, endemic, and endangered species of wild plants and animals; and to assist in maintaining water supplies through catchment conservation, and thus benefit agriculture in adjoining land, and promote fish conservation and fisheries management downstream.

Besides these, and without prejudice to the above, the reserve was established to provide facilities for the studies of the phenomena therein for the advancement of science and understanding and also to provide facilities for public use and enjoyment of the resource therein.

Vwaza has the highest diversity of large mammals in the Northern Region. It has the highest population of elephants (about 300) in the region. Nyika National Park has about 100 elephants. However in Vwaza, over the last 10 years, illegal off take by both Zambian and Malawian poachers has adversely decimated the populations of these large mammals. The current biomass estimates of large mammals is about 40% of the reserve's carrying capacity. The worst hit by poachers in Vwaza are the elephants because of their ivory which has been valued as highly as precious stones since prehistoric times.

Poaching has the most significant effect on the mortality of elephants in Vwaza averaging about 20 elephants killed per annum with a peak of 29 killed in 1983. The trend of poaching is alarming and calls for immediate action geared at giving more protection to the Vwaza elephant population are numerous. This can primarily be achieved through improvement of the law enforcement capabilities in Vwaza. It is therefore proposed that the law enforcement team in Vwaza be increased from the present 24 to 32 scouts.

Adequate equipment to supplement the increased number of personnel is a must. Camping equipment, transportation and radio communication needs to be improved to achieve maximum results.

The existing roads in Vwaza are entirely a system of rough bush tracks of which most of them due to limited funds have succumbed to intense erosion and are impassable during both the rainy and dry season. These

bush tracks were opened up mostly for management purposes and therefore they do not necessarily lead to areas of tourist interest nor provide the most direct access between them. It is therefore considered imperative that a network of roads providing game viewing and bird watching loops, or linking different parts of the existing road network should be developed as well as upgrading the existing road network.

Presently, in Vwaza, there are four tents with concrete bases and swazi thatched roofs. These tents have become inadequate as the number of overnight visitors is increasing. For instance, while in 1985 only 26 overnight tourists visited the reserve, in 1987, the number increased to 400 representing an increase in overnight visitation by approximately 1500%.

Visitors to the North wish to experience the contrast between the montane grassland in Nyika and the mopane woodland in Vwaza. Therefore they often wish to visit both areas. There is therefore an urgent need to expand existing visitor accommodation in Vwaza. Turner's camp has been identified for the development of a tourist camp. Self contained swazi thatched roundavels have been recommended. Similarly Kazuni tented camp need to be expanded by building four self contained swazi thatched roundavels. A new tented camp should also be constructed at Zaro Pools. A swimming pool at each of the tourist camp will be ideal for the hotter months of the year. Lack of food storage facilities limits

the period of stay of visitors and provision of paraffin refridgerators will help to extend the period of stay of the visitors.

It is the policy of the Department of National Parks ,Wildlife and Tourism to take every opportunity to influence local people, especially decision makers, so as to encourage positive attitudes towards Wildlife conservation. Commercial beekeeping, although it is a fairly new enterprise in Malawi is becoming a popular income generating activity. The Department will offer the necessary extension services to educate people about modern beekeeping. Traditional honey extraction is being practised by the people living around the reserve and it is expected that the attitude of the people in the area will change for the better if they are given a chance to utilise the reserve's resources for their beekeeping. It is envisaged that after three years, a revolving fund will have been created and managed by the local people themselves for re-investment in their beekeeping enterprise. It is also expected that some of the profits accruing from this endeavour will be used to fund small locally based projects such as building primary schools, under-five clinics, e.t.c.

B. SUCCESS SO FAR ACHIEVED

Although Vwaza has been a game reserve for a long time, this is a new project.

9. EXECUTION AND SUPERVISION

The project will be undertaken by the Department of National Parks, Wildlife, and Tourism under the supervision of Ministry of Forestry and Natural Resources.

DEVELOPMENT PROJECT SUBMISSION

PROJECT TITLE : INTERGRATION OF WILDLIFE MANAGEMENT
WITH RURAL DEVELOPMENT - NKHOTAKOTA
GAME RESERVE.

RESPONSIBLE MINISTRY : FORESTRY AND NATURAL RESOURCES.

DEPARTMENT : NATIONAL PARKS, WILDLIFE AND TOURISM.

1. OBJECTIVES OF THE PROJECT

The broad objective of this project is to introduce sustainable ~~multiple~~
~~and~~ resource management programmes in Nkhotaikota Game Reserve that
would tangibly contribute to the socio-economic welfare of the
indigenous rural ~~populations~~ of people living around the reserve. The
current management based skewedly on ecological terms has met a lot of
antagonism from the reserve's neighbouring communities, thus seriously
threatening the continued existence and integrity of the reserve's
protected ecosystems.

Specific objectives of the project are:

To improve and expand the existing road system in the reserve for
the benefit of both reserve management and conventional tourism.

To improve and expand the existing tourist accomodation facilities through construction of new camps which could be sub-let to concessionaries.

To reassess the reserve's resource potential for ~~including~~ sustainable consumptive utilization (e.g. selective hunting of trophy animals, live animal sales for the purpose of ranching, beekeeping, Emperor moth caterpillars/ collection, mushroom collection, thatch grass mowing and angling).

Re-zone the reserve to avoid conflicts in the multiple use management.

Evaluate different methods of resource harvesting and recommend those that would maintain the ecological processes of the reserve.

Improve the overall supervision of the reserve through the provision of a professional officer, competent in wildlife management, including beekeeping.

For the intergration of wildlife management with rural development, the specific objectives are:

- Sub-letting all tourist camps to trustworthy concessionaires

with high managerial skills who will be given the mandate to advertise, manage, and maintain the tourists facilities in the reserve.

Set reasonable concession fees which could be credited to a special fund that could be used to finance rural development projects within the communities around the reserve.

Formation of small groups / clubs that will undertake the beekeeping project and any other utilisation projects.

To define the managerial framework of the reserve indicating the exact level of the concessionaire's and rural people's participation in the reserve's management which is under the overall supervision of the Department of National Parks, Wildlife, and Tourism.

2. GOALS OF THE PROJECT

In Malawi, agriculture is the backbone of the economy, employing in excess of 90% of the rural people. Increases in agricultural productivity have so far depended on acquiring and opening more land rather than increasing productivity per unit area. The amount of cultivatable land in the country is nonetheless limited both in quality and quantity, and is nearly saturated in Ilhotakota district where the reserve is located. Consequently, encroachment into the reserve for

the purposes of agricultural expansion and poaching for game meat and forest products has been the major disturbance to the maintenance of the ecological processes in the reserve. In view of these problems, the need for the Department of National parks, wildlife and Tourism to demonstrate that the reserve can tangibly contribute to the economic welfare of the rural communities becomes eminent.

3. PROJECT LIFE

Three years

4. TOTAL PROJECT COST

US \$ 1,672,550

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3. PROJECT LIFE

Three years

4. TOTAL PROJECT COST

US \$ 1,672,550

5. FINANCIAL SUMMARY

ITEM	YEAR 1	YEAR 2	YEAR 3	TOTALS
Buildings	\$448,333.00	\$672,499.00	\$224,168.00	\$1,345,000.00
Furniture	\$10,000.00	\$10,000.00		\$20,000.00
Electricity	\$30,000.00	\$30,000.00		\$60,000.00
Roads / Trails	\$44,775.00	\$50,775.00		\$95,550.00
Vehicles			\$102,000.00	\$102,000.00
Revolving Fund			\$10,000.00	\$10,000.00
Consultancy	\$40,000.00			\$40,000.00
TOTALS	\$572,108.00	\$763,274.00	\$336,168.00	\$1,672,550.00

6. PROJECT TARGET

6.1 Output and services

Improved road system and tourist facilities, introduction of sport angling and canoeing and subletting the tourist camps to skilled concessionaires will attract more tourists to the reserve, hence more revenue earned by the Government.

Substantial amount of money will be available for financing some of the most pressing rural based projects, including the formation of a revolving fund from which rural people could borrow money for investing in wildlife based commercial enterprises such as beekeeping.

Introduction of commercial beekeeping will offer alternative employment to rural people around the reserve. Besides this, since some of the by-products such as bees wax and venom have high demand overseas, therefore, this project will offer foreign exchange to the Malawi Government.

Permission to freely pick mushrooms and caterpillars will have a significant contribution to the nutrition and health of the rural people.

Permission to the rural people to freely cut thatching grass will help minimise uncontrolled bush fires which are usually set by the locals.

Introduction of selective harvesting of trophy animals is a high money spinning industry that would make available large sums of money to be used in the rural based development projects.

Creation of job opportunities to the local people at all stages of the project both on long and short term basis.

Generally, the overall proposed project will assist in justifying the existence of the reserve on ecological and economic terms. Thus even the most adamant local residents around the reserve may change their attitude in favour of Wildlife Conservation and stop illegally cultivating and poaching game meat and forest products in the reserve.

6.2 Activities

Upgrade / construct about 148 Km length of roads in the reserve. These are : Wodzi - Mbonekela, Likoa surveyers road, Chipala - Njongombe, Mbengwa - Kasaka, and Mbobo - Bus.

Establish wilderness trails : Mbengwa -Dwafuni -Bua, and Mbengwa - Timbamluzu - dwangwa.

Construct 5 self contained, Swazi thatched rondavels at each of the following sites : Woci, Bua, and Mbengwa. Bua to be developed as a luxury camp, for the upper class clientele.

Construct self contained manager's house at each mentioned site where rondavels will be.

Construct double unit houses at each tourist accomodation site for the departmental personnel who will work as tourist guides.

Construct an information room at Chipata student camp to be used by both tourists and students.

Construct dining shed at each tourist camp with an extended curio shop and bar.

Instal electricity and water powered by solar energy at each tourist camp including Chipata which cater for both students and tourists.

Furnish the rondavels in the form of beds, tables, chairs.

side tables, e.t.c . linen and blankets will be the responsibility of concessionaires.

Establish camping sites along the proposed wilderness trails for tourists to pitch up their tents while on a walking safari.

Establish a tented camp at the confluence of Kangwa and Dwangwa rivers where canoeing activities could be introduced. The development of such camp could be given to the concessionaires. It could operate on seasonal basis.

Quatification of the available wildlife resource and specification of harvesting quota.

Specification of harvesting strategies.

Zoning of the reserve, specifying the form and level of utilisation in each zone.

Provision of a new reserve's master plan which will incorporate multiple use component.

Define concession fees for the tour and camp operators.

Define cost of utilising the reserve's resources, e.g. selective harvesting of trophy animals, live animal sales, and angling.

Establish a revolving fund for the local people to borrow money for investing in wildlife based projects such as beekeeping within and around the reserve.

Construction of a professional officer's house and an office at Nkhosakota district headquarters.

Provision of a vehicle and motorbikes to facilitate management activities in the reserve.

7. BACKGROUND INFORMATION

Nkhosakota Game Reserve lies on the Rift Valley escarpment and adjacent land East of Kasungu National Park in the Central Region of Malawi. The Reserve's terrain is generally hilly and deeply dissected by drainage lines. The highest point in the reserve is Chipata mountain (1638 m.a.s.l.) while Eua river (529 m.a.s.l.) is the lowest. The reserve measures 1802 km² and is administered by the department of National Parks, Wildlife and Tourism under the Ministry of Forestry and Natural Resources. It was gazetted, and acquired its present status in 1979.

The vegetation type of the reserve is *Brachystegia* woodland, with *Combretum* and *Terminalia* dominating the more fertile areas, while *Syzgium* is common along the drainage lines and the montane evergreen forest localised on the Chipata mountain.

The Reserve has a reasonable diversity of large mammals and birdlife. Among the animals occurring in the reserve are : the African elephant, Buffalo, Eland, Kudu, Reedbuck, Zebra, Sable antelope, Roan antelope, Waterbuck, Bushbuck, Kudu, Luiker, Hartebeest, Baboon, Blue monkey, Vervet monkey, Lion, Leopard, Civet cat, Hyena, Wild dogs etc.

The Protected areas Master Plans for the Central Region stipulates the reasons for having and managing Nkhosha Game Reserve as follows:

To preserve the montane evergreen forest on the Chipata mountain, and the open *Brachystegia* woodland of the hills and escarpments which account for the reserve's 0.94% and 99.06% respectively and their associated fauna.

Protect the aesthetic values of the reserve.

Offer special protection to the Malawi's rare and endangered species such as the African elephant, Blue monkey, Waterbuck, Sable antelope, and Lake Malawi which is endemic to Malawi and largely spawns in the reserve.

Protect parts of the catchments of several rivers that pass through the reserve such as Iwangwa, Kaombe, and Bua which assist in maintaining water supplies to the agricultural lands of the lakeshore.

To legally provide for sustainable use and enjoyment of the reserve's resources which may include any form of approved non-consumptive use such as tourism, and consumptive uses such as licenced hunting, fishing, and honey gathering for subsistence and commercial purposes.

The primary factor in safeguarding the reserve's resources has so far largely depended on law enforcement and to a limited extent non-consumptive utilisation, in the form of tourism. The latter is however, grossly under developed in the reserve. Only two tourist's rondavels (4 beds) exist in the reserve. Thus currently the revenue earned from tourism in the reserve is insignificant and nebulously contributes to the economic welfare of the rural communities neighbouring the reserve.

B. SUCCESS SO FAR ACHIEVED

New Project.

9. EXECUTION AND SUPERVISION

The project will be undertaken by the Department of National Parks, Wildlife and Tourism under the supervision of the Ministry of Forestry and Natural Resources.