

**T H E G R E A T  
LIMPOPO  
TRANSFRONTIER PARK**



Z I M B A B W E

SENGWE  
CORRIDOR

GONAREZHOU  
NATIONAL  
PARK

KRUGER  
NATIONAL  
PARK

LIMPOPO  
NATIONAL  
PARK

S O U T H  
A F R I C A

M O Z A M B I Q U E



**JOINT  
MANAGEMENT PLAN:  
JOINT POLICY & MANAGEMENT  
GUIDELINES**

This draft Joint Management Plan for the Great Limpopo Transfrontier Park was prepared by the Joint Management Plan Working Group of the Technical Coordinating Committee for the Great Limpopo Transfrontier Park, chaired by Prof. Willem van Riet. Data compilation and rough drafting of the plan was lead by Dr Jeremy Anderson, Wildlife Management and Tourism Specialist for Development Alternatives Incorporated who may be contacted at the address below.

Overall coordination for the Great Limpopo Transfrontier Park is provided by the Lead Implementing Agency of each country, to whom all enquiries and comments related to this document should be addressed. Contact information is on the back cover.



This document was made possible through support provided by the Regional Centre for Southern Africa (RCSA) of the U.S. Agency for International Development (USAID), under the terms of Contract No. PCE-I-00-99-00002-00 Task Order #811. The opinions expressed herein do not necessarily reflect the views of USAID.



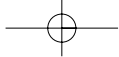
*Additional copies of this plan are available on request from Development Alternatives, Inc. at the project office for implementation of the Gaza-Kruger-Gonarezhou Transboundary Natural Resources Management Initiative.*

*PO Box 6153 Nelspruit 1200, South Africa*

*Phone: +27 13 752 4497*

*Fax: +27 13 752 4367*

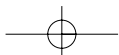
*#17 Block B, Mpumalanga Parks Board, Mataffin, Nelspruit 1200, South Africa e-mail: marylin\_jordan@dai.com*

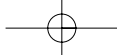


JOINT POLICY AND  
MANAGEMENT GUIDELINES  
FOR THE  
GREAT LIMPOPO TRANSFRONTIER PARK  
2002



Great Limpopo Transfrontier Park  
Joint Management Board





## THE VISION

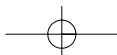
To achieve inter-state collaboration  
in the conservation of trans-boundary ecosystems and their  
associated biodiversity, promoting sustainable use of natural resources  
to improve the quality of life of the people of Mozambique,  
South Africa and Zimbabwe. \*

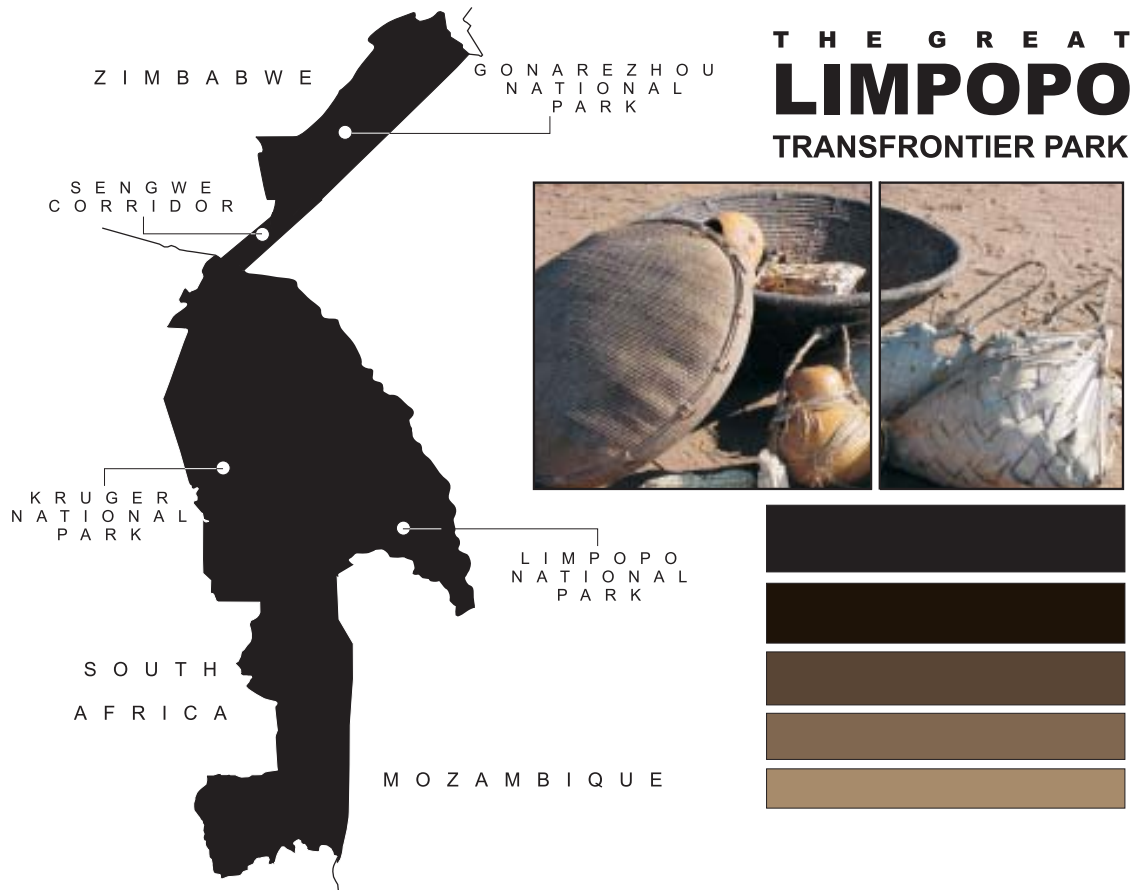
\*(Anon, 2000)



## THE MISSION

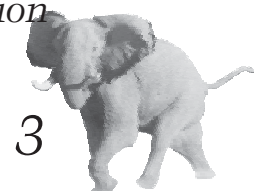
*"To collaboratively establish and manage  
on a sustainable basis a viable Gaza-Kruger-Gonarezhou  
Transfrontier Conservation Area with full stakeholder participation,  
including local communities, fostering regional co-operation,  
biodiversity conservation, and cross-border  
socio-economic development."*





# 1. PREFACE

*For more than a decade the conservation agencies that represent Mozambique, South Africa and Zimbabwe have been discussing the possibility of linking the area known as Coutada 16 (now the Limpopo National Park), Kruger National Park and Gonarezhou National Park into a single conservation area.*



This plan has been built upon the proceedings of a series of workshops representing a variety of working groups.

All parties recognized that, largely as a consequence of years of conflict that had flowed through the region and disparity in government funding, there were great differences in the degree of development and status of the wildlife populations in each area.

It was obvious that the development of a transfrontier park would bring proportionally greater benefits to Mozambique than to either Zimbabwe or South Africa. However, the greater vision of Bioregional conservation evolved, with the Transfrontier Park as a core to a much wider Transfrontier Conservation Area (TFCA). This TFCA would encompass other protected areas, the Mozambique coast, communal areas and conservancies and the synergy created would benefit all three countries and a far larger and wider range of communities.

Once the respective Governments had agreed to proceed with the formation and development of the Gaza-Kruger-Gonarezhou Transfrontier Conservation Area (TFCA) and the Great Limpopo Transfrontier Park, a Technical Coordinating Committee was appointed. This Committee in turn appointed a Coordinator and formed key working groups.

- ❖ Community Interest
- ❖ Joint Management Plan
- ❖ Legislation
- ❖ Wildlife Diseases
- ❖ Tourism
- ❖ Security
- ❖ Customs and Immigration

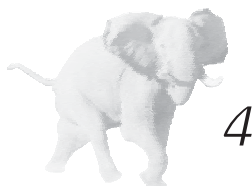
This policy and management guidelines document has been compiled with inputs from the

Working Groups and also from a number of the other stakeholders in the project.

The broad structure and content of the document was mapped out at a workshop held at Kruger National Park, Skukuza on the 25-27 July 2001. After a series of presentations that gave a general background to the Great Limpopo Transfrontier Park (GLTP), the Working Groups then broke away into smaller workshops covering each focus area where issues needed to be included in the plan. The recommendations of these groups were then presented at a plenary session where there was again feedback from the entire group. Proceedings from both prior and subsequent workshops held by the different Working Groups have also been incorporated into this document.

The results of the workshop were what the participants regarded as being the desirable structure and components of the plan (de Waal & Snyman, 2001). The proceedings of this workshop were then circulated to the chairpersons of all Working Groups and most of the participants for comment and any further contributions.

In mid September, the first rough draft was sent to all Working Group chairpersons, and to a wide selection of group members and other interested parties. Between 15 October and 23rd November 2001, most recipients of this draft returned their comments, which were then incorporated into the second draft. This was then circulated to working group members and other stakeholders on the 15th January 2002, with the request that comments be received in sufficient time so that the final draft



could be ready for submission to the Ministers by the 15th February 2002. Inputs that were received by the 15th March 2002 were included in a final revised document that was provided to the Technical committee for their ratification. This Management Plan focuses on common policies and joint management guidelines that will apply to adjoining parks.

The role of the Management Plan is to guide the Joint Management Board (JMB) and policy makers and managers of the protected areas that make up the Great Limpopo Transfrontier Park (GLTP). It does not attempt to take the place of the existing plans for either the Gonarezhou National Park (GNP) or Kruger National Park (KNP), nor the plan being prepared for the Limpopo National Park (formerly Coutada 16). It merely addresses those areas where common policies are needed and a common approach is needed for management issues. It is hoped that when the individual park plans are next reviewed, the joint policies and management guidelines should be incorporated into them.

Recognizing the autonomy of each management authority, the document specifies that which needs to be done and where the responsibility lies. However, it leaves the actual wording of the policies and planning and execution of common management issues to the JMB and the authorities concerned.

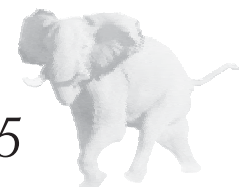
This document is confined to the GLTP, namely the Limpopo National Park, Kruger National Park, Gonarezhou National Park (including the Malipati Safari Area and

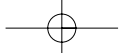
Manjinji Pan Sanctuary) and the Sengwe Corridor linking Gonarezhou and Kruger. Once this is accepted and implementation started, the second phase of the TFCA will begin. This will be the planning of the broader Transfrontier Conservation Area (TFCA) embracing land adjoining the GLTP Park in each country. Notwithstanding the latter, it is recognized that parallel processes involving some of these adjacent areas are already underway e.g. Banhine National Park management plan, Kruger to Canyons Biosphere Reserve. These parallel initiatives must be recognized and embraced by the TFCA process, and must not be held up or be allowed to lose their individual identity.

While a few representatives of some communities neighbouring the GLTP were present at the workshops, it is felt that greater participation from these communities would have been most useful. This must be an important consideration in the first revision of the plan where meaningful inputs from the communities must be obtained.

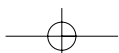
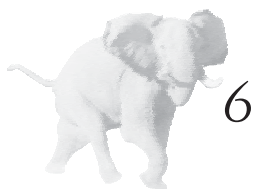
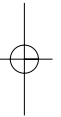
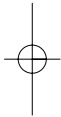
With each subsequent revision of the policies and joint management issues, it is hoped that there will be progressively greater harmonization of the conservation policies, objectives and management strategies. In this sense, this plan is the first in a series within which subsequent plans will achieve the greater harmonization referred to here.

This document  
does not  
replace the  
existing plans  
for the reserves  
incorporated  
into the GLTP.  
Instead it  
provides policy  
and  
management  
guidelines for  
those issues  
common to  
more than one  
area.





THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN





# TABLE OF CONTENTS

Preface	3
Table of Contents	7
1. Summary	11
2. Sumário	23
3. Introduction	33
3.1 Towards a Joint Policy and Management Guidelines Document for the Great Limpopo Transfrontier Park	33
3.2 The Mission Statement	35
4. Transfrontier Park Concept and Principles	37
4.1 The Concept	37
4.2 The Principles	38
4.3 The Transfrontier Concept and GLTP	39
5. The History of the Region and its Component Protected Areas	41
6. The Management Structures of the GLTP	43
6.1 The Current Situation	43
6.2 Future Administration of the Great Limpopo Transfrontier Park	44
6.3 On-site Management of Joint Issues	45
6.4 Involvement of the Water Catchment Authorities of the JMB	46
7. Description of the GLTP	47
7.1 Introduction	47
7.2 Location and Size	48
7.3 The Biophysical Description of the GLTP	48
8. The Management of the Natural Resources of the GLTP	51
8.1 Common Operating Principles	51
8.1.1 Biodiversity Conservation as the primary objective	52
8.1.2 Adaptive Management	52
8.1.3 Limits of Acceptable Change	53
8.1.4 Integrated Environmental Management (IEM) in all developments.	53
8.1.5 Development and management appropriate to regional values and priorities	53
8.1.6 Sustainable Consumptive Utilization	54
8.1.7 Community Participation and Capacity Building	54
8.1.8 Private Sector Participation	54
8.1.9 An Equitable Framework for Benefit Sharing.	54
8.2 Zonation	54
8.2.1 Proposed Zonation	55
8.3 Rivers and Water Resources	57
8.3.1 The Overview	57
8.3.2 The Kruger National Park Rivers Research Programme	59
8.3.3 Present River Management	60
8.3.4 The Importance of Rivers for Ecotourism	60
8.3.5 Known Future Development	61
8.3.6 Recommendations	61



## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

8.4 Artificial Waterpoints	62
8.4.1 The Present Situation	62
8.4.2 Policy Recommendations	63
8.5 Invasive Alien Plants	63
8.5.1 The Present Situation	64
8.5.2 Invasive Alien Plants Control.	65
8.5.3 Monitoring of Invasive Species.	66
8.5.4 Bio-control.	66
8.5.5 Recommendations	66
8.6 Fire and Fire Management	67
8.6.1 The Present Situation	67
8.6.2 Policy recommendations	68
8.7 Wildlife	69
8.7.1 The Present Situation	69
8.7.2 The SADC Protocol on Wildlife Conservation and Law Enforcement	69
8.7.3 Mammals	69
8.7.4 Elephant Management	71
8.7.5 Birds	73
8.7.6 Reptiles	74
8.7.7 Amphibians	74
8.7.8 Fish	74
8.7.9 Alien Species	74
8.7.10 Threatened Species	74
8.7.11 Consumptive Utilization	75
8.7.12 Recommended Policies	75
8.8 Veterinary Issues	77
8.8.1 The Present Situation	77
8.8.2 Endemic Diseases and Parasites	78
8.8.3 Alien or Exotic Diseases	78
8.8.4 Emerging Diseases	79
8.8.5 Background to Disease Control Policies	79
8.8.6 Monitoring and Research Recommendations	79
8.8.7 Domestic Livestock Recommendation	80
9. Ecotourism	83
9.1 The Present Situation	83
9.2 Creating an Environmental Theme Attraction	85
10. Infrastructure Development and Management	89
10.1 Introduction	89
10.1.1 Existing Bulk Infrastructure	90
10.1.2 Policy Recommendations and Management Guidelines	91
10.2 Fences	94
10.2.1 The Vision	94
10.2.2 The Present Situation	94
10.2.3 Determinants	94
10.2.4 Policy Recommendations and Management Guidelines	96
10.3 Waste Management	100
11. Local Communities	101
11.1 The Present Situation	102
11.1.1 Mozambique: Limpopo National Park	102
11.1.2 Sengwe/Chikwarakwara	104
11.1.3 South Africa	104
11.2 Community Awareness of the GLTP	108
11.3 Recommended Policies and Management Guidelines	109
12. Local Community and Private Sector Involvement in GLTP Operations	113
12.1 Activities Where the Private Sector and Communities Could Become Involved	114
12.2 Local Communities as part of the Private Sector	114

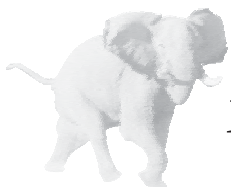


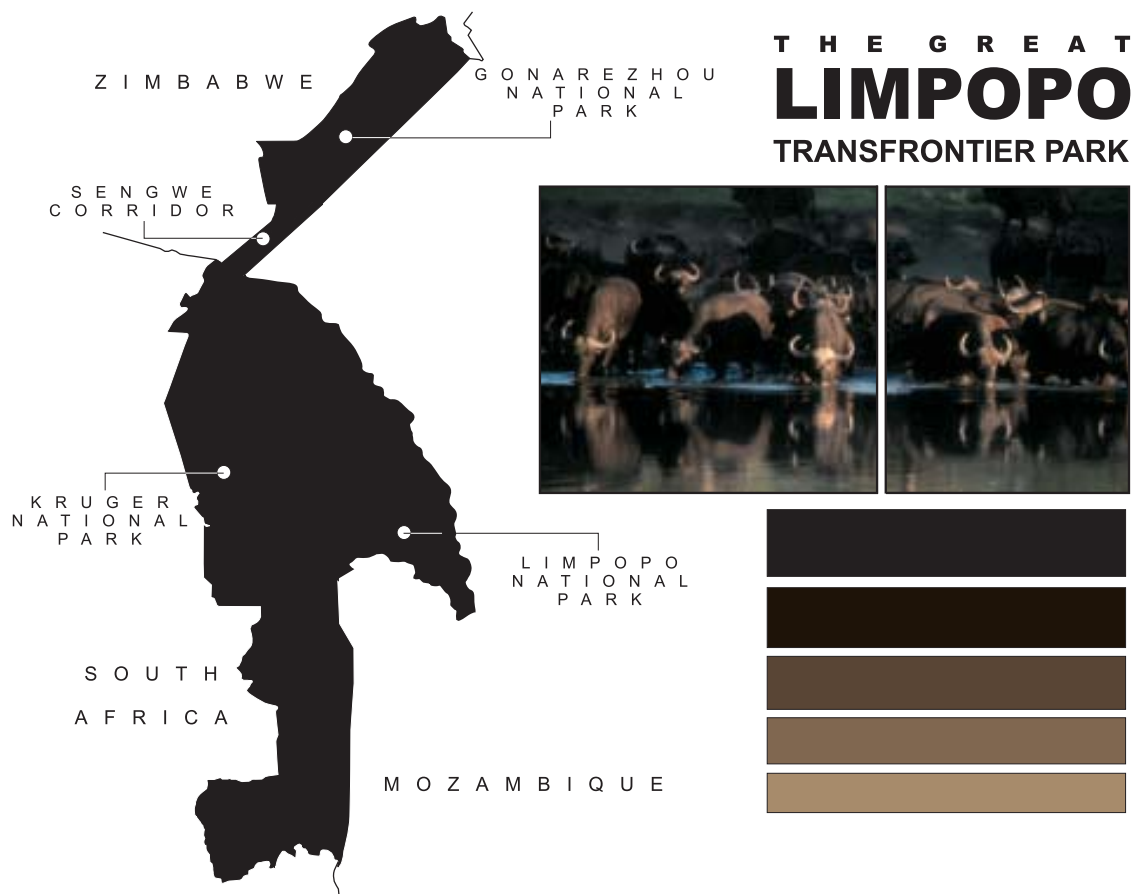
13. Security	117
13.1 Internal Security	118
13.1.1 The Present Situation	118
13.1.2 The SADC Protocol on Wildlife Conservation and Law Enforcement	119
13.1.3 Recommended Goals and Strategies	120
13.2 Border Control	122
13.2.1 Background	122
13.2.2 Recommended Policies and Management Guidelines	123
13.3 Land Mines	127
13.3.1 The Present Situation	127
13.3.2 The Goal and Recommended Strategies	128
14. Administration	131
14.1 Legal Status and Agreements	131
14.1.1 Protected Area Status	132
14.1.2 International Agreements and Issues That Must Be Considered	132
14.1.3 National Legislation and Obligations	132
14.1.4 Capacity Building of GLTP staff	133
14.2 Recommended Strategies	133
15. Funding and Technical Assistance	135
16. Implementing the Recommendations	137
17. Reviewing the Joint Policy Recommendations and Management Guidelines	141
18. Future Development of the TFCA	143
18.1 The Vision	143
References	149
Appendix I	<i>i</i>
Terminology and abbreviations used in this document	<i>i</i>
Abbreviations, acronyms and definitions	<i>i</i>
Appendix II	<i>ii</i>
Climate	<i>ii</i>
Topography and Drainage	<i>iv</i>
Geology and Soils	<i>v</i>
Vegetation	<i>vii</i>
Conclusions	<i>vii</i>
The Major Vegetation Types of the Great Limpopo Transfrontier Park	<i>viii</i>
Appendix III	<i>xiv</i>
Articles in the SADC Protocol on Wildlife and Law Enforcement 155	
Appendix IV	<i>xvi</i>
Red Data Book Mammals of the GLTP	<i>xvi</i>
Appendix V	<i>xvii</i>
Red Data Book Birds of the GLTP	<i>xvii</i>
Appendix VI	<i>xviii</i>
Red Data Book Reptiles of the GLTP	<i>xviii</i>
Appendix VII	<i>xviii</i>
Red Data Book Amphibia of the GLTP	<i>xviii</i>
Appendix VIII	<i>xviii</i>
Red Data Book Fish of the GLTP	<i>xviii</i>
Acknowledgements by the management plan working group	<i>ixx</i>



*“The challenge before us  
is the challenge of human development...Parks and  
protected areas can play a role in meeting  
that challenge”*

*Yves Renard @ Leslie Hudson 1999*





# 1. SUMMARY

*On 10 November 2000, an International Agreement enabling the establishment of the Great Limpopo Transfrontier Park was formalized between the governments of Mozambique, South Africa and Zimbabwe.*

Consultation with, and participation by those communities affected by the development of the GLTP, is critical to the success of the initiative.

This Transfrontier Park, consisting of the Limpopo National Park (LNP) formerly the hunting area known as Coutada 16, the Kruger National Park including the Makuleke region (KNP) and Gonarezhou National Park (GNP) including its other official components will be one of the largest conservation areas in Africa.

This document covers the joint issues that require resolution between two or more of the component parks management authorities, and makes recommendations as to what the joint course of action should be for each of these. Knowing that different stakeholders may have different expectations of detail in the document, the level presented is in the knowledge that each component park has its own detailed plans, its own policies and its own professional staff and that these plans and these staff will provide the finer details of management within each area.

This document briefly describes the ecological components of the GLTP. It then provides a background to the present situation with each of the issues that have to be jointly addressed. These being: management of natural resources, ecotourism, infrastructure development, land mines, local communities, local community and private sector involvement in GLTP development and operations, security, administration and funding and technical assistance. The implementation and reviewing of the document are discussed and finally, recommendations are made on retaining the momentum of the development planning for the greater TFCA of which the GLTP is a part..

This notes the necessity for the JMB to develop specialist management structures, or

committees, that are closer to where the day-to-day management issues exist, and where actions are taken to address them. The JMB, the specialist committees and the field staff will be those who will formulate the policies and apply the guidelines that follow.

Greater consultation with the local communities in decision-making and the supply of accurate information on the development of the GLTP is vital, particularly in Mozambique where the greatest degree of change will take place.

A summary of policy and management recommendations are given below:

#### MANAGEMENT STRUCTURES

❖ Recommendation:

That the Technical Coordinating Committee and Joint Management Board develops internal management structures (Management Committees) for the GLTP. These will be Committees consisting of specialists that will guide the day-to-day management. There will be Committees to responsible for the following fields: Conservation, Security, Community Relations, Tourism, Finance and Human Resources.

❖ Recommendation:

That the Joint Management Board develops policies for common operating principles in the GLTP.

❖ Recommendation:

That the respective management authorities adopt the new management structure, and the Joint Management Board (JMB)



appoints persons to the Management Committees.

#### THE ZONATION PLAN

❖ Recommendation:

That the National Directorate of Conservation of Mozambique (DNAC) and South African National Parks (SANP) review, modify where necessary and then approve the proposed zonation plan for the linking of Limpopo National Park and Kruger National Park. Thereafter the management agencies inform the local communities and general public of the new zones.

#### MONITORING AND MANAGEMENT OF RIVER CATCHMENTS

❖ Recommendation:

That the respective Ministers implement the SADC Protocol on shared water resources and establish Water Catchment authorities for the rivers that run through the GLTP. River monitoring, research and management in the GLTP should be consolidated into a single body.

❖ Recommendation:

That the JMB ensures that GLTP management becomes involved in planning and management in the river catchments.

#### ARTIFICIAL WATER POINTS

❖ Recommendation:

That no artificial water points are developed or maintained closer than 10 km from the boundary of a neighbouring park, unless this is done with the written consent

of the JMB and the Directorate of the neighbouring park. The IEM procedure, at the appropriate level, must be followed in the planning and development of any new artificial water points.

#### INVASIVE ALIEN PLANTS

❖ Recommendation:

That no plants alien to the region will be introduced to the GLTP for any purpose whatsoever and that Invasive Alien Plants (IAP) presently in the GLTP will be eliminated in the most cost effective manner

❖ Recommendation:

That, as a cost-effective strategy, the JMB makes use of the Alien Biota Section in the KNP to assist in the development of similar units in the LNP and GNP and to assist with data storage and in planning strategies to solve some of the IAP problems that may exist in these areas. Also, that consideration be given to the development of a joint management plan for the IAP problem on Massingir dam.

❖ Recommendation:

A survey of the invasive alien plant threat in both the GNP and LNP must be undertaken.

#### FIRE AND FIRE MANAGEMENT

❖ Recommendation:

That annually, the management of each park must inform the JMB and the management of the neighbouring park, of their planned fire management programme for the burning blocks that are within 10 km of the neighbouring park. This must take

Close cooperation between the conservation agencies of the three countries will be the foundation of effective ecosystem management, especially with regard to fire, water and alien biota.



Each park will implement its own management strategies. However it is important that data resulting from monitoring programmes be accessible to all in a common data base.

place immediately the programme is decided.

- ❖ Recommendation:  
Management of each park must inform the management of the neighbouring park four weeks in advance of any plans to burn fire-breaks, or to carry out management burning of blocks within 10 km of the border.
- ❖ Recommendation:  
That park management staff informs the neighbouring park management immediately of any runaway fire that might cross the border.

#### WILDLIFE

Although each park will have its own wildlife management objectives and strategies, it is expected that some of these will be common to all. These are:

- ❖ Recommendation:  
That the populations of elephant in each protected area will be managed subject to a plan specific for that park.
- ❖ Recommendation:  
It is important that the management agencies and the JMB form a common approach to the Animal Rights lobbies that oppose sustainable utilization of wildlife populations for ecological reasons. This is particularly important in relation to the management of over-abundant elephant populations. To achieve this, groups and movements opposed to consumptive utilization need to be constructively engaged on a united front and clearly informed of the need for such a policy in southern Africa.

- ❖ Recommendation:  
That there will be a common approach to the management of threatened species. (Refer SADC Protocol)
- ❖ Recommendation:  
That as the conservation objective is to conserve the biodiversity of the area, it may be necessary to re-introduce species that have disappeared from the area. The following criteria should apply to introductions:
  - a. All reintroduction must be researched before they take place to ensure that the project is justified and has the optimal likelihood of being successful and the introduction and the process must be approved by the Conservation Committee and the JMB.
  - b. Animals to be introduced must be of the same genotype as those that are already present.
  - c. It must be ensured that no parasites or diseases foreign to the GLTP are introduced with the reintroduced animals.
  - d. The necessary infrastructure (off-loading ramps, holding enclosures etc.) must be constructed.
  - e. A monitoring programme must be put in place that will determine the success of the introduction, whether there are any limiting factors and whether any intervention is necessary.





- ❖ Recommendation:  
That the monitoring of large mammal populations will be carried out in each park in such a manner that results can be combined to form a common GLTP database. Data on wildlife populations and management will be freely shared between the three conservation agencies.
- ❖ Recommendation:  
That where consumptive utilization is permitted in one park, it must be done in such a manner (e.g. zones) that it does not have a negative impact on the objectives of the neighbouring protected area. This is particularly the case with trophy hunting where there are wide differences in public opinion and abuses have had a high degree of negative publicity. Decisions on this must emanate from national level where policies can then be translated into management recommendations.
- ❖ Recommendation:  
That sustainable consumptive utilization of any wildlife resource in the GLTP must be zoned, researched and monitored. Accurate records must be kept and made available to the JMB.
- ❖ Recommendation:  
That where differences arise between two agencies over a proposed animal removal quota, this is resolved by a mutually acceptable panel of independent scientists.

## VETERINARY ISSUES

- ❖ Recommendation:  
That the veterinary monitoring for the LNP

and KNP, be coordinated through the existing veterinary facilities at Skukuza. As this facility already acts as a centre for storage of data from the KNP, and no other facility is available in the GLTP, it is proposed that it continues to undertake this function and is expanded to serve the entire GLTP.

- ❖ Recommendation:  
That the funds are made available to provide the resources needed by the Dept. of Veterinary Services in Zimbabwe to upgrade the veterinary monitoring for the GNP.
- ❖ Recommendation:  
That the State Veterinary facility at Skukuza will provide the practical training needed for the veterinary technical staff that will work in the LNP and the KNP.
- ❖ Recommendation:  
That copies of all veterinary related data collected within the GLTP will be made available to management of the LNP, GNP and KNP and the Veterinary authorities of each country.
- ❖ Recommendation:  
That no domestic livestock will be permitted to transit the GLTP other than on the road between Mapai and Chiredzi. Livestock intended for Zimbabwe may only enter the country with the appropriate health checks and if the importation is by approved road or rail vehicle, with approved movement permits.

Consumptive utilization programmes must be sensitively handled in order to avoid generating negative public opinion towards management strategies in the GLTP or its component protected areas.



Domestic livestock must comply with strict veterinary controls to ensure that the wildlife is protected from disease or other threats.

- ❖ Recommendation:  
That no domestic cats will be permitted in the GLTP. A programme to eliminate any that are present must be implemented. Negotiations will have to take place with the communities that continue to live in the LNP.
- ❖ Recommendation:  
The ownership of domestic dogs within the GLTP should be discouraged. Those domestic dogs that are permitted to reside within the GLTP will be recorded and vaccinated annually with Rabies vaccine and the Distemper / Parvovirus combination. State veterinary staff will undertake the vaccination and issue the appropriate certification.
- ❖ Recommendation:  
That all unexplained deaths of domestic livestock within the GLTP must be reported to Park management. Where domestic ungulates are kept within the GLTP, management will undertake an information campaign to inform residents of the need for reporting deaths and also the hazards of eating livestock that may have died from Anthrax and Bovine Tuberculosis. (The possibility of getting villagers to take blood smears from dead animals will be investigated).
- ❖ Recommendation:  
That the entry of Bovine tuberculosis from the KNP into Zimbabwe, and of northern topotypes of Foot and mouth disease from the GNP into South Africa, will be prevented by the erection of a suitable fence along the northern bank of the Limpopo.
- ❖ Recommendation:  
That all cattle permitted to stay within the LNP must be vaccinated annually against Foot and Mouth Disease (FMD). In Zimbabwe vaccination for FMD takes place every 6 months and this will continue to apply to cattle in the Sengwe corridor. The vaccination of cattle against anthrax at the villages of Macandezulu A and B in Mozambique is also recommended.
- ❖ Recommendation:  
The uncontrolled movement through the GLTP of raw or unprocessed products derived from cloven hoofed animals must not be permitted, unless their transit has been cleared by the respective Veterinary and Customs authorities.
- ❖ Recommendation:  
Any cloven hoofed animal to be translocated out of the GLTP must first be subjected to standard quarantine and disease screening procedures. (It is only the artiodactyla that transmit FMD)
- ❖ Recommendation:  
The proposed GLTP Veterinary Committee will keep each nations State Veterinary Department informed of veterinary issues on a monthly basis, and immediately if any unforeseen problem arises.

## TOURISM

- ❖ Recommendation:  
That the JMB form a Tourism Working Group and that this group develops a plan to address joint development and operating principles. This tourism Working Group



should also develop the joint internal tourist regulations in cooperation with the conservation committee.

#### INFRASTRUCTURE (BUILDINGS)

- ❖ Recommendation:  
That the JMB and Management Committees identify and plan new joint infrastructure and define the standards for these structures.
- ❖ Recommendation:  
That the relevant Ministries and JMB secure the necessary funding for the joint infrastructure.
- ❖ Recommendation:  
That a transparent tender process, that involves participation by local communities, is developed by the JMB and Management Committees and is used for awarding of construction tenders.

#### INFRASTRUCTURE (FENCES)

- ❖ Recommendation:  
That wherever it is possible to practically manage the area without a fence, this will be done. When the risks of human/animal conflict are high, and a fence can resolve this, this fence will be constructed.
- ❖ Recommendation:  
Because of the presence of Bovine Tuberculosis in the KNP, the erection of a veterinary fence parallel to the Limpopo is considered essential at present. However, the long-term view is that if the disease can be eliminated, this fence can be removed.

- ❖ Recommendation:  
That where Security and Border Control authorities require that a fence is erected, the specifications for this fence must also take into account potential wildlife issues.

- ❖ Recommendations:  
That when the fence between the LNP and the Kruger NP is removed, the fence poles be left in place as they will be a useful indicator of the border. All wire and cable must be removed from the field. The material will remain the property of the KNP, and that which can be reused can hopefully be allocated for other developments within the Transfrontier Conservation Area.

- ❖ Recommendation:  
A source of funding to erect the proposed veterinary fence paralleling the Limpopo will have to be found. The JMB should initiate the process of preparing a submission for the appropriate Zimbabwe authorities to appeal to a suitable donor.

- ❖ Recommendation:  
The local communities must be involved in all phases of the construction or removal of fences, and in their subsequent maintenance. Both the communities and the local private sector must be given priority in any employment opportunities that are created. Wherever possible, skills training for local people must be incorporated into the development projects including fencing.

#### LOCAL COMMUNITIES

- ❖ Recommendation:  
That the JMB and the conservation

Tourism and management infrastructure development should be optimised by formulating joint development, regulatory and operating principles.



Communication  
between  
neighbouring  
communities  
and the  
conservation  
authorities—by  
definition a  
two-way  
process—is  
fundamental to  
the success of  
the GLTP.

agencies set in place transparent structures, which enable meaningful participatory management of community related issues involving the GLTP and its neighbours.

- ❖ Recommendation:  
Because many people in the communities have understandable fears of what the GLTP is about, or unrealistic expectations of the benefits it will bring, it is important that the correct information is given and these perceptions are corrected as soon as possible.
- ❖ Recommendation:  
The JMB and Management of each of the parks must ensure that communities have meaningful participation in policymaking, development planning and management in the GLTP. Also, mechanisms must be established within the JMB and Management Committees to transfer information on the GLTP and its developments to the local communities and those living within the park.
- ❖ Recommendation:  
That, in the regulations for each Park, there must be preferential access for those people from the communities that have always lived either in or adjacent to the GLTP and reduced rates for schoolchildren and teachers from Communities adjacent to the GLTP.
- ❖ Recommendation:  
Access to natural resources within the GLTP is subject to the internal policy of each constituent park, but it is recommend-

ed that the harvesting of any resources at sustainable levels be zoned and based on sound management principles and that monitoring of this by Park management is essential.

- ❖ Recommendation:  
To help alleviate unemployment, wherever possible people from local communities must have preference in the employment opportunities that arise from the development and management of the GLTP. In addition, the development and management projects must be seen as skills training opportunities. Also, that in the planning and implementation of projects, management must always consider the opportunities for the development and training of entrepreneurs from the local community.
- ❖ Recommendation:  
Because of the low and erratic rainfall in the region, dryland agriculture has a very low rate of success. In Zimbabwe, the abandoned irrigation schemes on the Limpopo should be rehabilitated to act as an incentive for dry land farmers to move out of the Sengwe corridor zone and into these projects.
- ❖ Recommendation:  
In the same manner that the Biodiversity conservation has driven the Transfrontier philosophy, it is considered that where frontiers separate communities with a common heritage, efforts must be made to link neighbouring country community programs in the Gaza province of Mozambique, and the Makuleke area in



South Africa and the Sengwe area of Zimbabwe.

❖ Recommendation:

Within the GLTP, there is an obligation to market the opportunity for neighbouring communities to provide cultural products for tourists to experience. This can be done by creating awareness amongst park visitors that cultural tourism is available adjacent to the park and also by creating enabling regulations to allow visitors to the park to visit the neighbouring areas without incurring extra park re-entry costs.

❖ Recommendation:

Those GLTP staff that have any interaction with communities must have training in fields that will help enrich and add value to their work with the communities. This will include aspects such as conflict resolution, process facilitation, and information dissemination.

❖ Recommendation:

The opportunity for the conservation agencies and private sector to provide experiential training in a wide range of fields is enormous. These opportunities range though the hospitality, security, services, guiding, conservation and administrative fields. The JMB must regard such a programme as a corporate responsibility of the GLTP.

❖ Recommendation:

The JMB and in particular the DNPWM and DNAC, must help in negotiating community user rights for parts of the

GLTP such as the Malipati Safari area and the resource use area of the LNP.

❖ Recommendation:

Most communities do not have the capacity to recognize joint venture opportunities that may arise, nor to embark on a process to attract the private sector, negotiate an equitable agreement and/or to participate in the enterprise. Therefore, if the GLTP is to fulfill its obligation to the communities, the JMB must help develop opportunities and ensure that it is mandatory that any private sector development incorporates the community and/or local entrepreneurs.

#### INVOLVEMENT OF COMMUNITIES AND THE PRIVATE SECTOR IN DEVELOPMENT AND MANAGEMENT

❖ Recommendation:

That the JMB establishes criteria for the involvement of the Communities and the Private Sector in development projects and management within the GLTP.

❖ Recommendation:

That the JMB identifies activities that can be cost-effectively allocated to the Private Sector and develops and implements transparent procedures to outsource these activities.

#### GLTP SECURITY

❖ Recommendation:

That the JMB work towards the

The JMB must ensure that development opportunities are exploited so as to optimise benefit to neighbouring communities.



Adequate conditions of service, fluency in at least two appropriate languages and efficient communications equipment underpin the security of the area.

implementation of the resolutions on Law Enforcement Protocol on Wildlife Conservation and Law Enforcement that was ratified by Member States in 1999.

- ❖ Recommendation:  
That the roles of the park officials and Security Forces must be clearly defined and understood by all parties.
- ❖ Recommendation:  
That the JMB establishes a permanent GLTP Security Committee that will determine the ideal security staff levels, define training needs and standards at all levels and determine and procure the appropriate scale of equipment.
- ❖ Recommendation:  
That the JMB ensures that Field Rangers have adequate conditions of service as a basis on which to develop their morale.
- ❖ Recommendation:  
That communication between the parks is improved by the rationalizing of telephones, radio frequencies and the training appropriate staff to be able to communicate in both Portuguese and English, and wherever possible Shangaan.
- ❖ Recommendation:  
That no commercial traffic will be permitted to pass through the GLTP, other than on the Chiredzi Mapai road.
- ❖ Recommendation:  
All traffic entering the KNP must be channeled through official gates.
- ❖ Recommendation:

The Strategic Plan for linking Gonarezhou with the KNP and the LNP through the Sengwe Communal Area must be developed so that planning can be undertaken for the construction and operation of the necessary control points.

- ❖ Recommendation:  
That as part of an overall security strategy, the JMB plan and initiate proactive community programmes and plan and implement consumptive-use community wildlife areas.

#### BORDER CONTROL

- ❖ Recommendation:  
That the JMB will ensure that all stakeholders collaborate on the planning of the perimeter fence for the LNP.
- ❖ Recommendation:  
The JMB negotiate with the Mozambique and South African Governments for the funds to erect and operate the border posts between the Kruger and Limpopo National Parks. That once these funds are secured, the JMB will ensure that the border posts are constructed.

#### LANDMINES

- ❖ Recommendation:  
That the Zimbabwe Department of National Parks and Wildlife Management (DNPWM) and the JMB establish a working relationship with those parties involved in clearing the mines in the Sengwe corridor. Thereafter, the DNPWM to prioritize the areas to be cleared and become involved in



the planning for the re-occupation of cleared areas.

#### FUNDING AND TECHNICAL ASSISTANCE

- ❖ Recommendation:  
That a sub-committee is formed to document the problems experienced with donors and NGOs, to identify the funding needs, to compile proposals for the needs and to develop internal monitoring procedures for these requests.

#### IMPLEMENTING THE PROPOSALS

- ❖ Recommendation:  
That once the Trilateral Ministerial Committee has approved this document, the Management Committees will set

operational goals, develop action plans and undertake needs and skills assessments to achieve these.

- ❖ Recommendation:  
That the JMB, through the Management Committees will initiate the action plans and that where possible the concept of outsourcing will be applied.

#### FUTURE EXPANSION OF THE TFCA

- ❖ Recommendation:  
That once the Trilateral Ministerial Committee has agreed to investigate the expansion of the TFCA, the participating Governments will secure the necessary funding and initiate the process to undertake the necessary planning.

Sourcing adequate funding for the expansion of the GLTP is a primary challenge of the JMB.

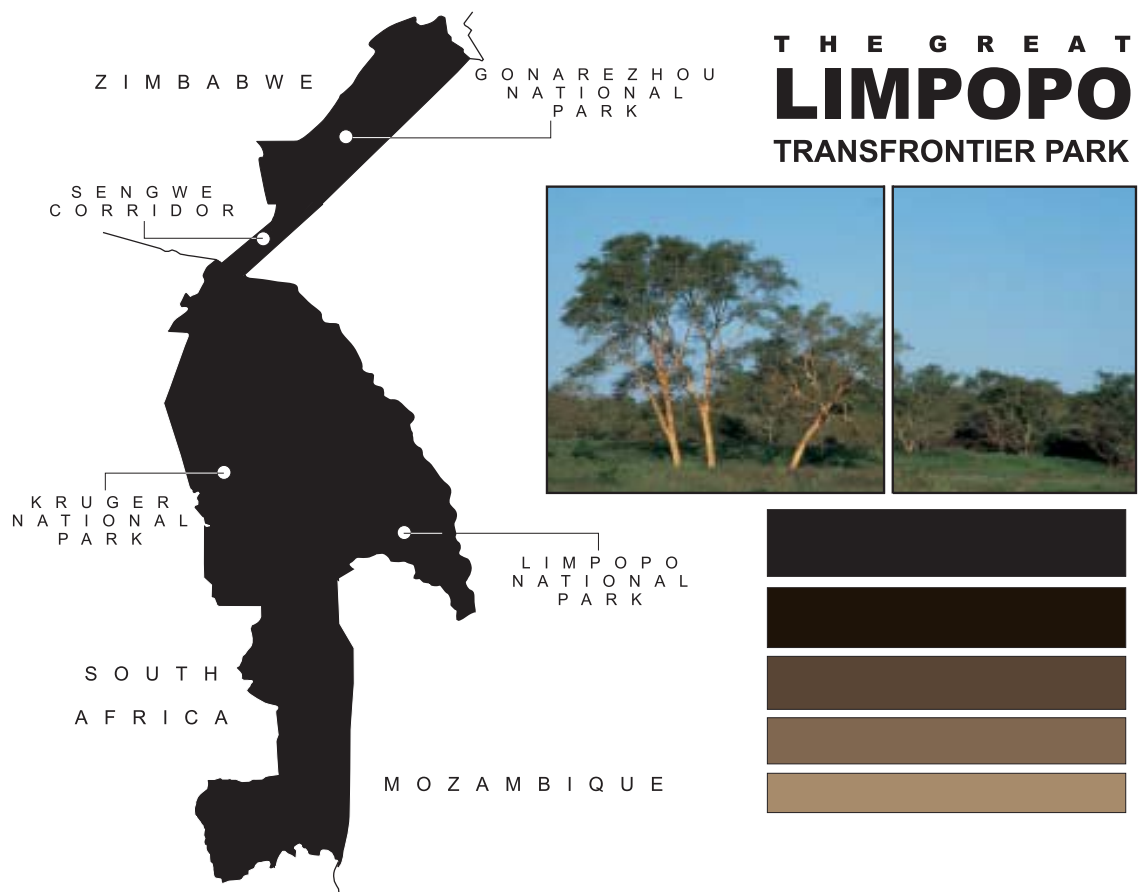


*(Africa)...*  
*is the greatest show on earth.*  
*It might be the last show,*  
*but it's the biggest....*

*Peter Beard*







## 2. SUMÁRIO

*No dia 10 de Novembro de 2000, um acordo internacional com vista ao estabelecimento do Parque Transfronteiriço do Grande Limpopo (PTGL) foi formalizado entre os governos de Moçambique, África do Sul e Zimbabwe.*



## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

Este parque transfronteiriço, constituído pelo Parque Nacional do Limpopo (PNL)- anteriormente uma área de caça conhecida como Coutada 16- o Parque Nacional do Kruger (PNK) e o Parque Nacional de Gonarezhou, será uma das maiores áreas de conservação em África.

Este plano cobre um conjunto de assuntos comuns que requerem acerto entre duas ou mais das autoridades de gestão dos parques nacionais e, para além disso, formula recomendações sobre como acções conjuntas devem ser empreendidas por cada uma das autoridades nacionais. Sabendo que as diferentes partes envolvidas podem ter diferentes expectativas de detalhe no presente plano, a versão aqui apresentada parte do princípio que cada um dos parques nacionais possui os seus planos detalhados, suas próprias políticas e seu próprio pessoal profissional.

O presente plano descreve brevemente os componentes ecológicos do PTGL. Em seguida providencia informações de base referentes à actual situação no que respeita aos temas que têm de ser resolvidos em conjunto. Estes temas incluem: gestão dos recursos naturais, ecoturismo, desenvolvimento de infra-estruturas, minas, comunidades locais, envolvimento do sector privado nas operações do PTGL, segurança, administração e finanças, e assistência técnica. São ainda sugeridas formas de implementação e revisão do plano e finalmente, recomendações são feitas no sentido de se aproveitar a dinâmica do plano de desenvolvimento para maior Áreas de Conservação Transfronteiriças que envolvem o Parque internacional.

Este documento nota a necessidade para o Grupo conjunto de Gestão de desenvolver estruturas de gestão especializadas, ou comités, que são mais

chegados aonde as actividades de gestão do dia-a-dia existam, e onde acções são tomadas para as dirigir. O Grupo conjunto de Gestão, as os comités especializados e o pessoal de campo serão aqueles que vão formular as políticas e aplicar as linhas de orientação que se seguem.

As recomendações mais importantes no presente plano são as seguintes:

#### ESTRUTURAS DE GESTÃO

- ❖ **Recomendação:**  
Que o Comité Técnico de Coordenação desenvolva estruturas de gestão (Comités de Gestão) para o PTGL.
- ❖ **Recomendação:**  
Que o Grupo Conjunto de Gestão (GCG) desenvolva políticas de gestão comum para todo o PTGL.
- ❖ **Recomendação:**  
Que cada uma das autoridades de gestão adopte a nova estrutura de gestão, e que o Grupo Conjunto de Gestão recrute e contrate pessoas para os Comités de Gestão.

#### PLANO DE ZONAÇÃO

- ❖ **Recomendação:**  
Que a Direcção Nacional de Áreas de Conservação (DNAC) e a instituição dirigente para os Parques Nacionais da África do Sul (SANP) revejam, modifiquem onde necessário e que aprove o plano de zonação para a ligação do Parque Nacional do Limpopo (PNL) com o Parque Nacional de Kruger (PNK). Depois disto aquelas instituições devem informar o público geral e as comunidades locais sobre a natureza e implicações das zonas estabelecidas nesse plano.



#### MONITORIZAÇÃO E GESTÃO DAS ÁREAS DE CAPTAÇÃO DE ÁGUAS

❖ **Recomendação:**

Que os respectivos ministros estabeleçam comissões de trabalho para os cursos de água que percorrem o PTGL e consolidem a monitoração destes rios numa única estrutura de gestão.

❖ **Recomendação:**

Que o Grupo Conjunto de Gestão (GCB) se certifique que o PTGL se encontra envolvido no planeamento e gestão das áreas de captação dos rios já mencionados.

#### PONTOS ARTIFICIAIS DE ÁGUA

❖ **Recomendação:**

Que nenhum ponto artificial de água seja aberto ou mantido a menos de 10km dos limites de um parque vizinho, a não ser que tenha aprovação escrita do GCB e da estrutura de direcção desse parque vizinho. Um estudo de gestão ambiental, a um nível apropriado, deve ser previamente desenvolvido para fundamentar a adequação de qualquer novo ponto artificial de água.

#### PLANTAS EXÓTICAS INVASORAS

❖ **Recomendação:**

Que nenhuma planta exótica sejam introduzida na região do PTGL qualquer que seja motivo e que as plantas exóticas actualmente existentes no PTGL sejam eliminadas de maneira mais económica possível.

❖ **Recomendação:**

Que como estratégia económica o Grupo Conjunto de Gestão (GCG) use a estrutura organizacional já existente no Parque do Kruger para lidar com a vegetação exótica (Alien Biota Section) e para apoiar a criação de unidades similares no Parque nacional do Limpopo e no

Parque Nacional de Gonarezhou e ainda para assistir com a recolha e tratamento de dados e na formulação de estratégias para resolver problemas que possam ocorrer em áreas do Parque Internacional. Igualmente, que seja concedida atenção ao desenvolvimento de um plano conjunto de gestão para o problema das plantas exóticas invasoras em redor da barragem de Massingir.

#### QUEIMADAS E GESTÃO DE FOGOS

❖ **Recomendação:**

Que anualmente, a estrutura de gestão de cada parque deve informar o GCG e a gerência do parque vizinho do respectivo programa de controle de queimadas para os blocos que se localizem numa faixa de proximidade de 10km em relação ao parque vizinho. Este intercâmbio de informação deve ser realizado imediatamente após o programa ter sido decidido. Deve-se informar a gerência do parque vizinho quatro semanas antes de qualquer plano de lançar fogo nos quebrafogos, ou de activar os blocos de queimada no limite de 10 km da fronteira com um parque vizinho.

❖ **Recomendação:**

Que o pessoal da gerência do parque informe os parques vizinhos imediatamente sobre fogos que se possam alastrar para além do limite.

#### VIDA SELVAGEM

❖ **Recomendação:**

Cada parque terá os seus próprios objectivos de gestão da vida selvagem e as suas estratégias particulares mas, apesar disso, é esperado que algumas destas estratégias sejam comuns a todos. Estas áreas de estratégias partilhadas são:



## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

## ❖ Recomendação:

Que se torne imperativo que as administrações de cada parque e o GCG se posicionem de modo firme e claro face aos interesses dos grupos de defesa dos direitos dos animais quando estes interesses colidam com a utilização sustentável das populações selvagens e a gestão de populações abundantes de elefantes pela via que pode ser o método mais humano e sensível, por exemplo, a matança planificada.

Para se alcançar este objectivo, grupos e movimentos que se opõem à utilização para consumo local devem ser envolvidos numa frente unida e claramente informada da necessidade deste tipo de políticas em África.

## ❖ Recomendação:

Que as populações de elefantes em cada área protegida sejam sujeitas a um plano específico de gestão formulado para as condições específicas desse parque.

## ❖ Recomendação:

Que haja um consenso na gestão das espécies em risco (com referência ao protocolo adoptado pela SADC).

## ❖ Recomendação:

Que, dado o facto do objectivo principal ser a conservação da biodiversidade na área do Parque, poderá vir a ser necessário re-introduzir espécies que já desapareceram da região. O critério seguinte deve ser seguido nas introduções:

Todas as re-introduções devem ser investigadas antes da sua ocorrência para se ter a certeza de que o projecto é justificado e com potencial de êxito e que, para além disso, a decisão e o processo de re-introdução devem ser aprovados pelo Comité de Conservação e pelo GCG.

Todos os animais introduzidos devem ser do mesmo genotipo dos que já estão presentes.

Deve se ter a certeza de que nenhuns parasitas de doenças estranhas ao PTGL sejam introduzidas juntamente com os animais a serem deslocados.

As infraestruturas necessárias (rampas de descarregamento, instalações de aprisionamento, etc.) deverão ser construídas.

Um programa de monitoramento deve ser posto em prática para determinar o sucesso da introdução, se existem ou não factores limitantes e definir se uma intervenção correctiva é ou não necessária.

## ❖ Recomendação:

Que o monitoramento das populações de grandes mamíferos seja conduzido em cada parque, por forma a que os resultados possam ser combinados para criar uma base de dados comum. Dados sobre as populações selvagens e respectivo manejo serão livremente partilhados entre as três estruturas de gestão.

## ❖ Recomendação:

Que caso a introdução de elefantes no Parque Nacional do Limpopo provenientes do Parque Nacional de Kruger prossiga tal como se prevê, então a remoção da vedação seja atrasada até à altura em que os animais translocados se encontrem estabelecidos na nova área. Se a vedação for removida num futuro próximo, então a translocação dos elefantes de Kruger Parque deve ser suspensa e se permita que os elefantes dispersem livremente pelo Parque Nacional do Limpopo.



❖ **Recomendação:**

Que na circunstância em que a utilização para consumo seja permitida num dos parques, esta deve ser feita de forma a que não tenha impactos negativos nem prejudique os objectivos dos parques ou das áreas protegidas vizinhas. Este princípio aplica-se particularmente no que se refere à caça para trofeus onde há diferentes sensibilidades na opinião pública e se registaram campanhas publicitárias negativas sobre a eventual ocorrência de abusos. Decisões nestes assuntos devem ser tomadas a nível nacional de forma a que as leis sejam traduzidas em recomendações específicas de gestão.

❖ **Recomendação:**

Que o consumo sustentável de qualquer recurso selvagem no PTGL deve ser previamente estudado e sujeito a monitorização. Dados exactos devem ser recolhidos e actualizados e devem ser postos à disposição do GCG.

❖ **Recomendação:**

Que onde surgirem diferenças entre duas agências sobre uma quota proposta para o abate de animais, este diferendo seja resolvido por um cientista independente aceite mutuamente.

#### ASSUNTOS DE VETERINÁRIA

❖ **Recomendação:**

Que monitoração veterinária para o Parque Nacional do Limpopo e o Kruger Parque seja coordenada através dos serviços de veterinária já existentes em Skukuza. Como Skukuza já age como o centro de recolha e registo de dados de Parque do Kruger, e nenhuma outra facilidade deste tipo está disponível no PTGL, é proposto que este serviço prossiga e seja expandido para servir todo o PTGL.

❖ **Recomendação:**

Que os fundos sejam disponibilizados para providenciar os recursos necessários pelo

Departamento de Serviços Veterinários no Zimbabwe para melhorar a monitoração veterinária a ser desenvolvida pelo Parque Nacional de Gonarezhou.

❖ **Recomendação:**

Que os serviços estatais veterinários instalados em Skukuza providenciem treinos práticos necessários para os técnicos de veterinária que trabalharão no Parque Nacional do Limpopo e no Parque Nacional do Kruger.

❖ **Recomendação:**

Que cópias de todos dados relacionados com veterinária colectados no interior do PTGL sejam postos à disposição das estruturas de gestão de cada um dos Parques Nacionais e das autoridades veterinárias de cada país.

❖ **Recomendação:**

Que não se permita a circulação de nenhum animal doméstico pelo PTGL a não ser na estrada entre Mapai e Chiredzi. Animais destinados ao Zimbabwe só podem entrar no país com inspecções de saúde próprias e que a importação seja efectuada por vias rodoviárias ou ferroviárias aprovadas e depois da apresentação de guias de transferência aprovadas pelas autoridades competentes.

❖ **Recomendação:**

Que nenhum gato doméstico seja permitido no PTGL. Um programa para eliminar os que ocorrem actualmente deve de ser implementado. Tem de haver negociações com as comunidades que continuam a viver no PNL. Que todos os cães domésticos que forem permitidos ocorrer dentro do PTGL sejam anualmente vacinados com a vacina anti-rábica e a combinação “esgana/parvovirose”. Os serviços estatais de veterinária levarão a cabo a vacinação e a questão de certificação apropriada.



## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

- ❖ **Recomendação:**  
Que se reportem à estrutura de gestão do Parque todas as mortes de animais domésticos dentro do PTGL cujas causas forem desconhecidas. Onde gado doméstico for mantido dentro do PTGL a estrutura de gestão deve organizar campanhas de informação para sensibilizar os residentes da necessidade de reportar mortes e também os perigos de comer animais que tenham morrido devido a anthrax ou tuberculose bovina (a possibilidade de fazer com que os camponeses recolham amostras de sangue a partir de animais mortos será investigada).
- ❖ **Recomendação:**  
Que todo o gado cuja presença seja permitida dentro do PNL seja vacinado anualmente contra a FMD. No Zimbabwe as vacinas para FMD são administradas semestralmente e esta prática será mantida para o gado no corredor Sengwe. A vacinação contra anthrax nas regiões moçambicanas de Macandazulu A e B é também recomendada.
- ❖ **Recomendação:**  
Que não seja permitido o trânsito movimento não controlado de produtos crus e não processados derivados de animais ungulados através do PTGL, a não ser que o seu trânsito tenha sido inspeccionado e autorizado clarificado pelas respectivas autoridades de veterinária e alfândegas.
- ❖ **Recomendação:**  
Qualquer ungulado a ser translocado para fora do PTGL deve primeiro ser sujeito a um período de quarentena e a procedimentos de rastreio sanitário.
- ❖ **Recomendação:**  
Proposto Comité de Veterinária do PTGL deverá manter cada um dos departamentos nacionais de

veterinária informados de casos veterinários com periodicidade mensal e imediatamente se ocorrerem qualquer problemas imprevistos.

## TURISMO

- ❖ **Recomendação:**  
Que o GCG forme um Grupo de Trabalho de Turismo e que este grupo desenvolva um plano para estabelecer princípios operacionais e planos de desenvolvimento conjunto. Este Grupo de Trabalho deverá desenvolver um regulamento interno para o sector turístico no Parque.

## INFRA-ESTRUTURA (CONSTRUÇÕES)

- ❖ **Recomendação:**  
Que a GCG e os Comités de Gestão identifiquem e planeiem novas infra-estruturas conjuntas e definam um padrão de classificação para estas infra-estruturas.
- ❖ **Recomendação:**  
Que os ministros e o GCG assegurem os fundos necessários para as infra-estruturas conjuntas.
- ❖ **Recomendação:**  
Que concursos abertos e transparentes, capazes de envolver a participação das comunidades, sejam desenvolvidos pelo GCG e Comités de Gestão e que sejam usados para contratar empresas de construção.

## INFRA-ESTRUTURA (CERCAS)

- ❖ **Recomendação:**  
Que sempre que seja praticamente possível gerir uma área sem fazer uso de vedação, que isso seja feito. Quando os riscos de conflito entre homens e animais forem altos, e uma cerca surgir como solução viável, essa vedação deverá ser construída.



- ❖ **Recomendação:**  
Por causa da presença de tuberculose bovina no PNK, a construção de uma cerca veterinária paralela ao rio Limpopo é considerada essencial no momento. Mas mantém-se a visão de que a doença pode vir a ser eliminada e, então, esta cerca pode ser removida.
- ❖ **Recomendação:**  
Que onde a segurança e as autoridades fronteiriças requererem a existência de uma vedação as características desta cerca devem ter em conta o ponto de vista das autoridades que lidam com assuntos faunísticos
- ❖ **Recomendação:**  
Que quando a vedação entre o PNL e o PNK for removida, os postes devem ser deixados nos lugares para serem indicadores úteis da linha fronteira. Todos os cabos e fios devem ser removidos do campo. O material continuará a ser propriedade do PNK, e aquele que se apresentar passível de ser reutilizado poderá ser alocado para outros desenvolvimentos dentro da Área de Conservação Transfronteira.
- ❖ **Recomendação:**  
Governo do Zimbabwe não tem os recursos para erguer a cerca veterinária paralela ao Limpopo. Fundos para a construção desta cerca terão que ser encontrados e o GCG deve iniciar o processo de submissão de um pedido de financiamento a um doador apropriado.
- ❖ **Recomendação:**  
As comunidades locais devem ser envolvidas em todas as fases de construção ou remoção das cercas e na sua subsequente manutenção. O sector privado local e as comunidades devem receber prioridade em qualquer oportunidade de emprego que for criada. Sempre que possível, treinos de

capacitação para os residentes locais devem ser incorporados nos projectos de desenvolvimento incluindo naqueles que dizem respeito às vedações.

#### COMUNIDA DES LOCAIS

- ❖ **Recomendação:**  
Que o GCG crie estruturas transparentes que possibilitem a gestão participativa de assuntos relacionados com as comunidades envolvendo o PTGL e as zonas vizinhas.
- ❖ **Recomendação:**  
Devido à persistência de receios infundados entre as comunidades locais sobre o que é realmente o PTGL ou à existência de expectativas irreais sobre os benefícios que o Parque poderá trazer é importante que estas perspectivas sejam corrigidas assim que possível.
- ❖ **Recomendação:**  
GCG e a estrutura de gestão de cada um dos parques deve-se certificar que as comunidades tenham participação relevante no desenvolvimento de legislação, planificação e nas actividades de gestão dentro do PTGL. De igual modo, mecanismos têm de ser estabelecidos dentro do GCG e comités de gestão para transferir informação do PTGL para as comunidades locais em redor do Parque e para aqueles que eventualmente residam dentro do parque.
- ❖ **Recomendação:**  
Que nos regulamentos de cada parque, haja acesso preferencial para aquelas pessoas das comunidades que sempre viveram dentro ou em locais anexos ao PTGL para além de taxas reduzidas para crianças e professores das comunidades adjacentes ao Parque.



## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

❖ **Recomendação:**

Acesso aos recursos naturais dentro do PTGL é um princípio estabelecido para a gestão do Parque mas recomenda-se que a colheita de qualquer recurso se processe a níveis sustentáveis e seja baseada em princípios integrados de gestão e que estas formas de uso dos recursos sejam devidamente monitoradas pela estruturas de gestão do Parque.

❖ **Recomendação:**

Para ajudar a aliviar a situação de desemprego, sempre que possível as pessoas das comunidades locais devem ter preferência em oportunidades de emprego que surgirem do desenvolvimento e gestão do PTGL. Além disso, os projectos de desenvolvimento e gestão devem ser vistos como oportunidades para desenvolver treinos de capacitação. Também no planeamento e implementação de projectos, a gerência deve considerar as oportunidades para desenvolvimento e treino de empresários surgidos da comunidade local.

❖ **Recomendação:**

Que no Zimbabwe, os esquemas de irrigação no Limpopo abandonados devem ser reabilitados de forma a actuarem como incentivo para os agricultores das áreas secas saírem da zona do corredor do Sengwe.

❖ **Recomendação:**

Da mesma maneira em que a conservação da biodiversidade conduziu a filosofia do parque transfronteiriço, considera-se que sempre que fronteiras separem comunidades com heranças históricas e culturais comuns, devem-se iniciar programas comunitários de trocas culturais entre países vizinhos na província de Gaza em

Moçambique, e na área de Makuleke na África do Sul e na área do Sengwe no Zimbabwe.

❖ **Recomendação:**

Dentro do PTGL há a obrigação de abrir o mercado para fornecer oportunidades para as comunidades vizinhas providenciarem produtos culturais para usufruto dos turistas. Para impulsionar esta actividade pode-se criar interesse entre os visitantes do parque informado-os da existência de turismo cultural perto do parque em áreas adjacentes e também criando regulamentos que permitam aos visitantes percorrerem as áreas vizinhas sem que isso acarrete custos extras de reentrada ao parque.

❖ **Recomendação:**

Aqueles trabalhadores do PTGL que convivam com as comunidades têm de ser treinados em áreas que ajudam a enriquecer o seu trabalho com a comunidade. Isto incluirá aspectos como resolução de conflitos, processos de facilitação e disseminação de informação.

❖ **Recomendação:**

São vastas as oportunidades para as agências de conservação de providenciarem acções de formação em diversos sectores. Estas oportunidades vão dos sectores de hospedagem e hotelaria aos sectores de segurança, serviços, guias, conservação e sectores administrativos. O GCG deve olhar para programas do género como uma responsabilidade do PTGL.

❖ **Recomendação:**

GCG, e em particular a DNPWM e a DNAC, devem ajudar a negociar os direitos de uso das comunidades para partes do PTGL como as áreas de Malipati Safari e a área de uso de recursos do PNL.





❖ **Recomendação:**

Que o GCG estabeleça uma estrutura que vai ajudar as comunidades a desenvolver associações com o sector privado, particularmente nas áreas do turismo e uso de recursos.

#### ENVOLVIMENTO DAS COMUNIDADES E O SECTOR PRIVADO NO DESENVOLVIMENTO E GESTÃO

❖ **Recomendação:**

Que o GCG estabeleça um critério para o envolvimento das comunidades e o sector privado em projectos de desenvolvimento e gestão dentro do PTGL.

#### SEGURANÇA DO PTGL

❖ **Recomendação:**

Que o GCG estabeleça um comité de segurança permanente que determinará níveis ideais de pessoal de segurança, defina necessidades e padrões de treino em todos os níveis, e determine a escala apropriada para o equipamento desse pessoal.

❖ **Recomendação:**

Que o GCG se certifique de que os guardas tenham condições adequadas de serviço por forma a manterem níveis elevados de moral.

❖ **Recomendação:**

Que seja melhorada a comunicação entre os parques com a racionalização dos telefones, frequências de radio e treino de pessoal apropriado capaz de comunicar em português e em inglês.

❖ **Recomendação:**

Que o GCG trabalhe para a implementação das resoluções do protocolo de lei da conservação da vida selvagem que foram ratificadas pelos estados membros em 1999.

❖ **Recomendação:**

Que o GCG planeie e inicie programas de desenvolvimento comunitário e que planeie e implemente áreas de uso abertos às comunidades.

#### CONTROLO DA FRONTEIRA

❖ **Recomendação:**

Que o GCG vai assegurar que todas as partes envolvidas colaborem na definição e planeamento da vedação para o PNL.

❖ **Recomendação:**

Que a GCG negocie com os governos de Moçambique e da África do Sul para angariar fundos para erguer e fazer operar os postos fronteiriços entre o PNK e o PNL. Que quando estes fundos forem assegurados, o GCG irá certificar que os postos são construídos.

#### MINAS

❖ **Recomendação:**

Que o Departamento de Parques Nacionais do Zimbabwe (DNPWM) e o GCG estabeleçam uma relação de trabalho com as partes envolvidas na desactivação de minas no corredor de Sengwe. Depois, o DNPWM priorizará as áreas a serem desminadas e envolver-se-á no planeamento para a re-ocupação das áreas já tornadas seguras.

#### FUNDOS ASSISTÊNCIA TÉCNICA

❖ **Recomendação:**

Que um sub-comité seja formado para documentar os problemas encontrados pelos doadores e ONGs, para identificar necessidades de fundos, para compilar propostas para as necessidades e desenvolver procedimentos internos de monitoramento para estes pedidos.



THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

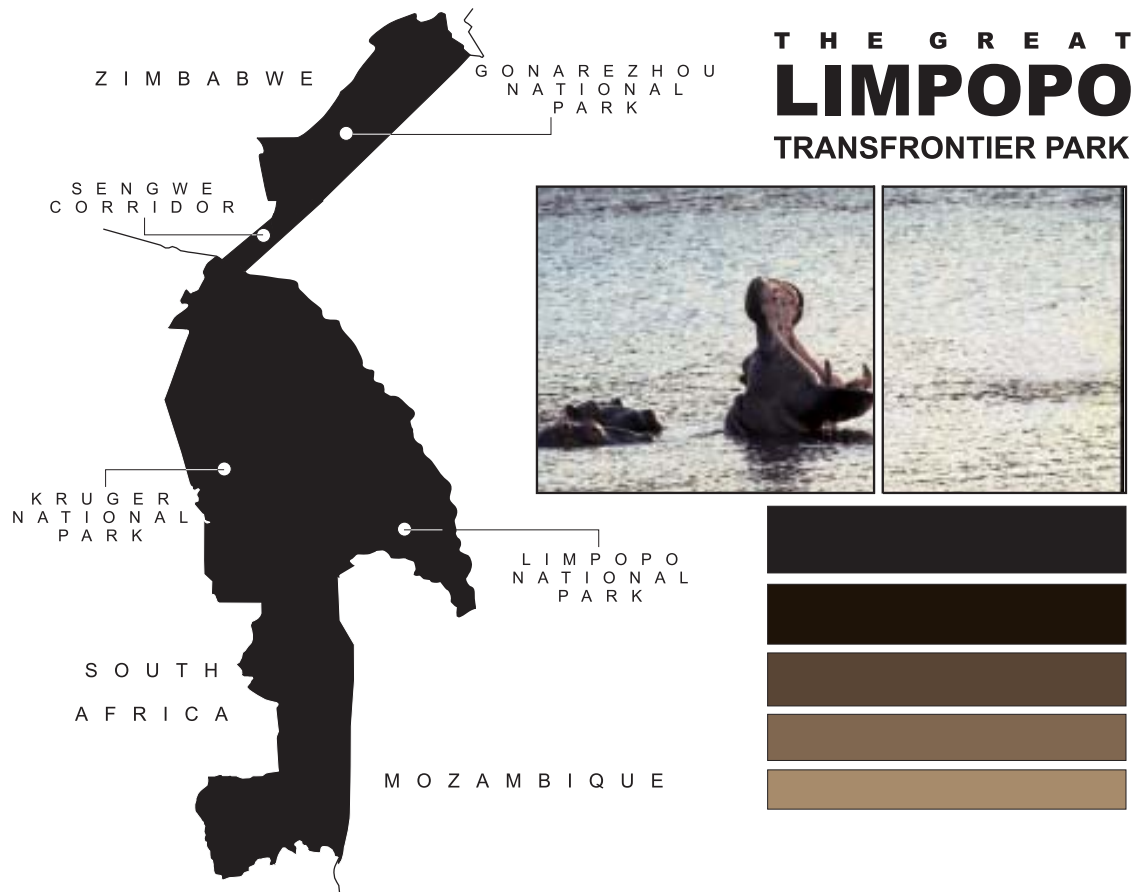
IMPLEMENTANDO O PLANO

- ❖ Recomendação:  
Que quando o comité trilateral de ministérios aprovar o plano, os comités ditarão objectivos operacionais, desenvolver planos de acção e levar necessidades e assessorias de capacidades para atingi-los.
- ❖ Recomendação:  
Que o GCG através dos comités de gestão vai iniciar os planos de acção e onde possível estes serão exteriorizados.

FUTURA EXPANSÃO DO PARQUE

- ❖ Recomendação:  
Que quando o comité trilateral de ministérios tiver aceitado investigar a expansão do TFCA, os gvernos participantes vão assegurar os fundos necessários e iniciar o processo para levar a cabo a planificação.





### 3. INTRODUCTION

#### 3.1 TOWARDS A JOINT POLICY AND MANAGEMENT GUIDELINES DOCUMENT FOR THE GREAT LIMPOPO TRANSFRONTIER PARK

*State managed nature conservation in southern Africa is only slightly more than 100 years old. In its formative years the concept of nature conservation implied little more than arresting the rapid population declines of specifically herbivorous species.*



Tourism is a significant contributor to the GNP of many countries. Southern Africa is particularly advantaged in terms of its tourism potential.

Tourism was not even a consideration. However, from this small, somewhat fortuitous, beginning it has grown in stature to a position where it can now compete as an economically viable and sustainable form of land-use.

In broad perspective the first 50-odd years was a period of consolidation. Carnivores gradually gained more recognition than being mere vermin, and fear-instilling processes such as periodic droughts and bush fires, acquired some acceptance. However, nature conservation was still largely animal based and in all three countries, a number of national parks and game reserves were proclaimed for the sole purpose of protecting individual species.

By mid-century systematic research had commenced and, together with a substantial database of observations by field staff, paved the way for an acceptance of the interdependent and interactive management of the natural environment. Climatic oscillations (especially rainfall), with associated floods and droughts and vegetation responses with varying frequency and intensity of bush fires, animal population fluctuations and the role of carnivores and diseases were acknowledged as integral attributes of natural ecosystems. This resulted in the acceptance of the multi-faceted and integrated nature of ecosystems and the adoption of a holistic and dynamic approach towards wildlife management.

However, it soon became apparent that the conservation of the intrinsic qualities of ecosystems and the full spectrum of biodiversity, i.e. composition, structure and function, required expansive areas. One option of achieving such a goal was the consolidation of state and private-

ly owned land and the establishment of joint ventures. On a greater scale, the integration of land across international borders in similar joint ventures also offered exciting possibilities.

Similar to the development of conservation, tourism and the commercial value of conservation areas also got off to a slow start. This was further impeded by the Second World War in the 1940s. However, early in the second half of the 20th century a rapid growth in tourism became evident for most of the formal conservation areas. This further coincided with the opening of the first private game lodges in private nature reserves, an initiative that was largely based on overseas visitors and rapidly grew with improved traveling opportunities.

In both the formal and private sectors, facilities and opportunities for tourists increased sharply towards the close of the century and, as this also occurred in wildlife management, immense advantages were envisaged with the integration of the two sectors. This optimism is further endorsed by the possibilities offered by cross-border initiatives.

Ecotourism is presently widely heralded as one of the major future economic pillars of southern Africa and, of crucial importance, is its sustainability. The natural environment, apart from any other consideration, is the primary product on offer for tourists in southern Africa. It is, therefore, of paramount importance that the intrinsic qualities of the natural attributes be preserved in their most pristine state as possible. This submission is therefore intended to provide the basic structure to underpin the GLTP managements decision-making processes.



## 3.2 THE MISSION STATEMENT

The Mission Statement for the GLTP is (Anon, 2001):

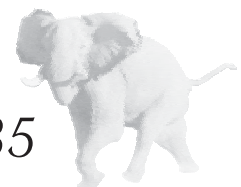
“To collaboratively establish, and manage sustainably, the Great Limpopo Transfrontier Park with full stakeholder participation, including local communities, in a way that fosters regional co-operation, biodiversity conservation and cross-border socio-economic development.”

This document will contribute towards achievement of the mission statement by:

1. Briefly documenting and analyzing the status quo to develop a common understanding.
  2. Identifying the common issues that have to be resolved and making recommendations for their resolution.
  3. Identifying the management processes that are needed to enhance integration, achieve goals and maintain standards and continuity that will enable further expansion of the conservation area.
- a. Foster transfrontier collaboration and co-operation to facilitate biodiversity conservation and effective ecosystem management.
  - b. Promote alliances in the management of natural resources by encouraging socio-economic partnerships (e.g. local communities, private sector, NGOs and government).
  - c. Enhance ecosystem integrity and processes by harmonizing resource management processes.
  - d. Facilitate sub-regional economic growth.
  - e. Develop trans-border ecotourism.
  - f. Facilitate the exchange of technical, scientific and legal information.

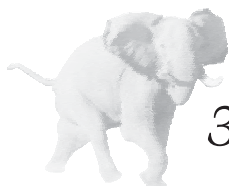
In doing so, this will contribute towards meeting the long-term objectives for the GLTP which are to:

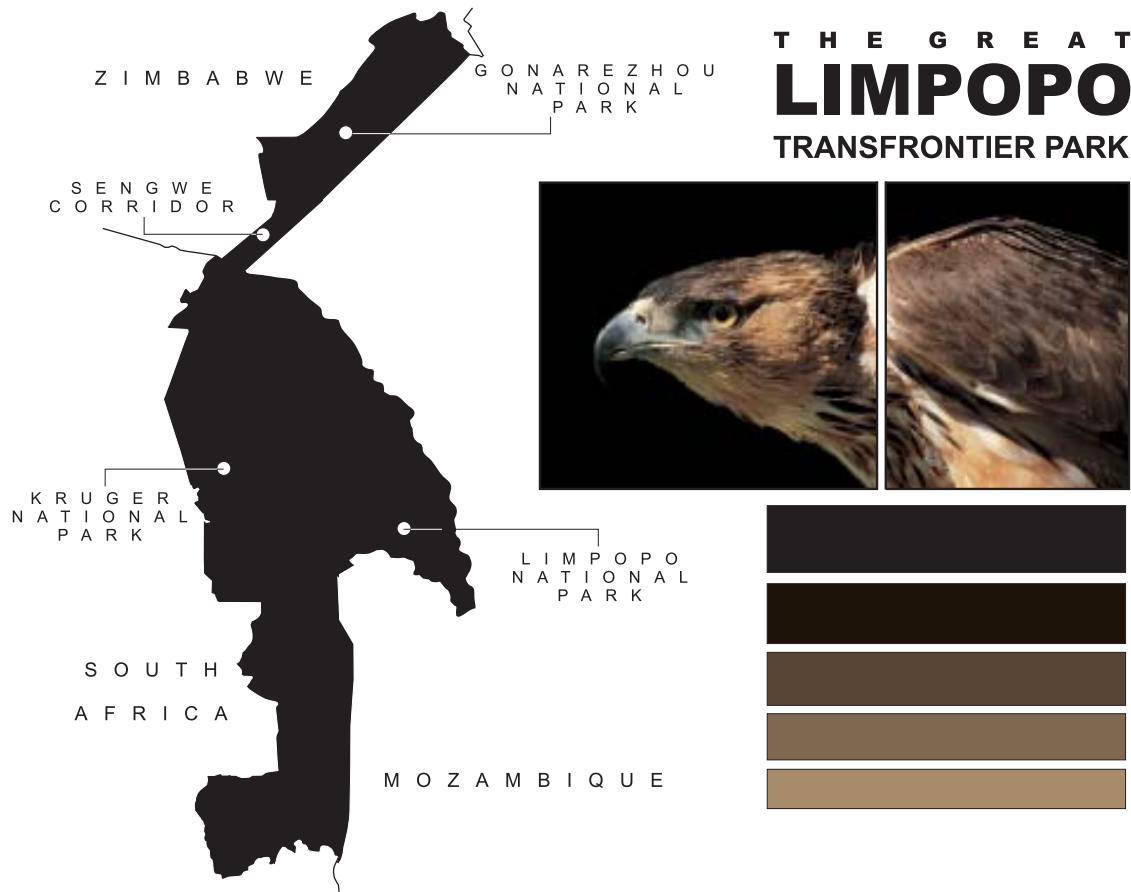
The long-term goal of ecosystem enhancement will only be achieved through collaboration, cooperation and alliances with all stakeholders



*“We owe it  
to posterity to promote  
conservation policies that lead to solutions  
instead of catastrophe”*

*Dr John Hanks 1977*





## 4. TRANSFRONTIER PARK CONCEPT AND PRINCIPLES

### 4.1 THE CONCEPT

*The concept of international Peace Parks and trans-boundary conservation areas (TBCAs), to manage shared natural resources, was started in 1932 with the linking of Glacier National Park in the United States with Waterton Lakes National Park in Canada (van der Linde et.al. 2002).*



The SADC is committed to the concept of transboundary conservation areas to the greater benefit of the region.

By 1997, the concept had expanded to the extent that 136 existing and 85 potential TBCAs straddled 112 international borders in 98 countries (Griffin, 2000).

The Southern African Development Community (SADC) recognizes the benefits of, and the need to support transboundary conservation areas. The Protocol on Wildlife Conservation and Law Enforcement has been signed by the SADC heads of State and ratified. This protocol specifies in Article 4 that specific objectives will be to:

- a. Assist in the building of national and regional capacity for wildlife management, conservation and enforcement of wildlife laws, and
- b. Promote the conservation of shared wildlife resources through the establishment of transfrontier conservation areas.

## 4.2 THE PRINCIPLES

The Biodiversity Support Program (Griffin, 2000) report identifies three principles that provide the framework for operating in Transboundary Natural Resource Management TBNRM. All three have to be applied in the development and management of the GLTP.

These are:

**Democracy** : The initiatives should be for the people - the users : local communities, managers and beneficiaries of the resource. To this end stakeholder involvement should

occur at all stages of the process, particularly during decision-making.

**Sustainability**: In addition to sustainable natural resource use, sustainable financing, human resources and institutions are necessary for success.

**Efficiency**: The benefits of TBNRM must outweigh the total cost of this lengthy and complex process. Efficiency is increased by building on existing resource management systems and institutions.

In the GLTP context, these means that:

- ❖ Firstly, all stakeholders must be consulted in all stages of the process. In particular those living in, and on the borders of, the protected areas.
- ❖ Secondly, that the planning of the development must ensure that the management that will be put in place is sustainable in terms of standards and delivery. How this is to be financed is a question that must be resolved in the start-up stages.
- ❖ Thirdly, as costs will be a limiting factor on delivery, efficiency in the development and operations must be paramount, even if this means adopting new management structures or paradigms.





### 4.3 THE TRANSFRONTIER CONCEPT AND THE GLTP

The first concept to establish a Transfrontier Park linking Mozambique, South Africa and Zimbabwe was in 1938, when the ecologist Gomes de Sousa proposed that the Mozambique colonial administration should negotiate with the neighbouring states to establish Transfrontier Parks. Subsequently, in 1973 an article was published in *The Star* (Clarke, 1973) proposing a linking of GNP, LNP (Coutada 16) and KNP with the St Lucia Game Reserve by way of the Lebombo mountains, Maputo Elephant Reserve, Tembe Elephant Reserve and Ndumu and Mkuze Game Reserves. In 1990, the World Wildlife Fund commissioned a situation analysis of the protected areas in Mozambique and this report added considerable detail to the concept of linking the then Coutada 16 with the Kruger National Park (Tinley & van Riet, 1991). In 1992, a meeting between President Chissano and Dr Anton Rupert gave much of the necessary impetus to translate these ideas into reality.

After the Mozambique Peace Accord of 1992, the Council of Ministers of Mozambique recommended that the feasibility of establishing some pilot TFCAs be undertaken. The Global Environment Facility (GEF), through the World Bank, provided funds for the feasibility study that was finalized in 1996, with recommendations that three pilot TFCAs, be established (World Bank, 1996). These TFCAs being Chimanimani, Gaza-Kruger-Gonarezhou and Lubombo.

The framework for making these TFCAs a reality is provided by the following agreements:

Southern African Development Community (SADC) Wildlife Policy signed in Blantyre, Malawi in 1997 by the Heads of States. This promotes the establishment of Transfrontier Conservation areas as a means of promoting inter-state cooperation in the management and sustainable use of ecosystems that transcend national boundaries.

SADC Protocol on Wildlife Conservation and Law Enforcement, signed in Maputo by the Heads of States. This promotes regional cooperation in the development of a common framework for the conservation of natural resources, enforcement of laws governing these resources and their sustainable use.

The creation of the GLTP is the core component of the wider TFCA project. The planning and development of this is likely to span 10-15 years, requiring continued financial and technical support over this period. This support will be to assist the Governments of Mozambique, South Africa and Zimbabwe to create enabling policies and the institutional environments for developing the Transfrontier Conservation Areas as a central organizing principle for rehabilitating, conserving and managing their biodiversity.

It is intended that through the development of both tourism and sustainable utilization, this will generate economic growth in the region, create employment and improve the quality of life of the affected communities.

The GLTP is  
the core  
component of  
a much wider  
Transfrontier  
Conservation  
Area (TFCA)  
project.

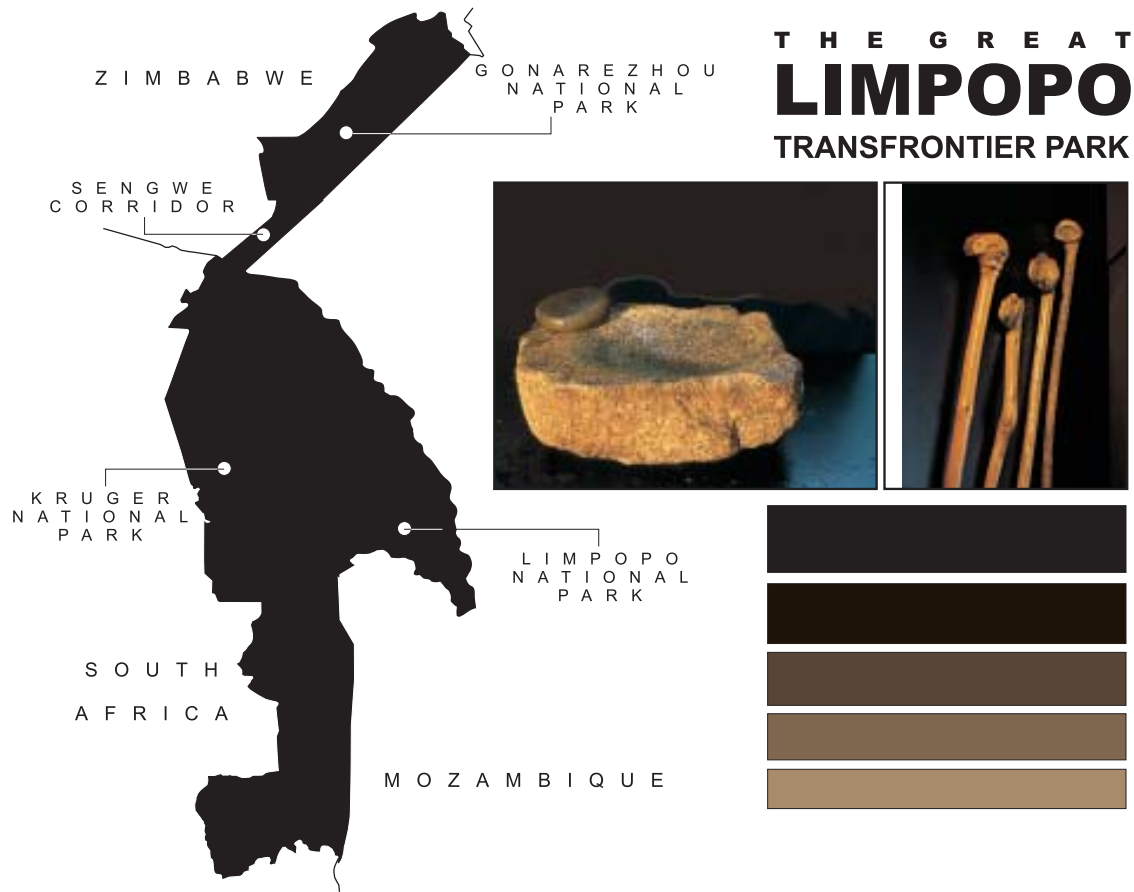


*We believe that  
if people are allowed to participate in  
and benefit financially from natural resources they  
will have a vested interest in taking good  
care of them”*

*John Newby*



5. HISTORY OF THE REGION AND ITS COMPONENT PROTECTED AREAS



**T H E G R E A T  
L I M P O P O  
T R A N S F R O N T I E R P A R K**

**5. HISTORY OF THE REGION  
AND ITS COMPONENT  
PROTECTED AREAS**

*Stone-age artifacts and more recent Iron-age imple-  
ments at many sites provide evidence of a very long  
and almost continuous presence of humans in the  
area of the proposed GLTP.*



The earliest known inhabitants of the area were San hunter-gatherer peoples but parts of the area have been settled by European and Bantu peoples since the 16th century.

Early inhabitants were San hunter-gatherers, who left numerous rock-paintings scattered across the region. Bantu people arrived about 800 years ago, gradually displacing the San. The available evidence suggests that humans occurred at a low density and were mostly confined to the more permanent river-courses. The arid nature of the environment, together with an abundance of predators and diseases (e.g. malaria) would have played a role in preventing largescale human population growth and settlement. Nevertheless, sophisticated cultures already existed by the 16th century as evidenced by Thulamela and other ruins near Pafuri.

As early as 1505, the Portuguese established a permanent presence in what is now southern Mozambique, but they confined themselves mainly to the coastal areas. Their influence on the remote interior, and that of the Arabs who controlled the coast, was limited initially to gold trading routes with the Munhumutapa Empire in Dzimbabwe (now Zimbabwe), large scale ivory trading from the 16th century onwards, and slave trading up until 1860.

The discovery of gold around Barberton and Pilgrims Rest in the latter half of the 19th century attracted large numbers of Europeans to the region. This brought sustained and increasing hunting pressure on wildlife for food, sport and trade. The massive destruction of game, together with the effects of the Rinderpest outbreak of 1896, led to the proclamation in 1898 of the Sabi Game Reserve in the then Zuid Afrikaansche Republiek (now South Africa). In 1926 this Reserve was renamed the Kruger National Park and was the first national park to be proclaimed in South Africa.

In 1998, as a result of a successful land claim, an area of 24 000 ha between the Limpopo and Levuvhu rivers was returned to the Makuleke

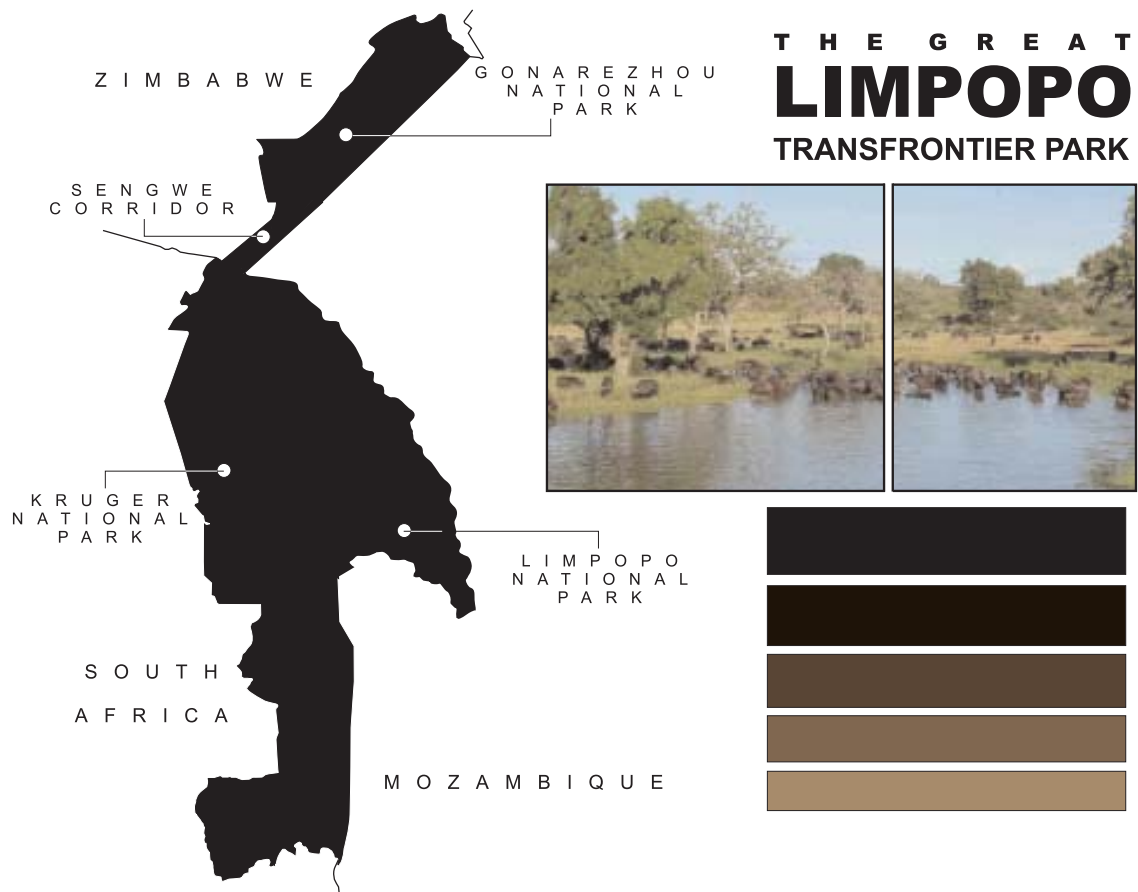
people. The Makuleke Communal Property Association, legal owners of the land, entered into a contract with SANParks whereby the area was proclaimed as a Contractual National Park with guarantees that the land would be used in such a way that is compatible with nature conservation, including sustainable resource use.

In 1934, the Gona-re-zhou Game Reserve, was proclaimed in Zimbabwe, and was later upgraded in 1975 to National Park status. Gona-re-zhou means Home of the elephant and, as the name implies, it provided habitat to a large elephant population. In later years community-based natural resource management in the form of the Communal Areas Management Programme for Indigenous Resources (CAMP-FIRE) initiative was established with varying degrees of success in communal areas around this Park. Also, large areas of commercial land in southeast Zimbabwe adjacent the Gonarezhou, have been consolidated into Conservancies and have been successfully managed as viable destinations for ecotourism and safari hunting.

In Mozambique, the Banhine and Zinave National Parks were originally proclaimed as hunting areas (Coutadas) in 1969, but both were upgraded to National Park status in 1972. Coutada 16 remained a hunting concession from 1969 until as recently as November 2001 when it was proclaimed the Limpopo National Park.

Civil war in Mozambique during the 1970s and 1980s resulted in a complete breakdown in the protection of these wildlife sanctuaries and the local extinction of most large mammal species due to unrestricted hunting. The habitats remain in excellent condition, so the reintroduction of animals from other areas will be successful, provided effective wildlife protection measures can be implemented.





**T H E G R E A T  
L I M P O P O  
T R A N S F R O N T I E R P A R K**

## 6. THE MANAGEMENT STRUCTURES OF THE GLTP

### 6.1. THE CURRENT SITUATION.

*Different administrative systems, independent of each other and with little direct interaction, operate within each of the areas comprising the GLTP.*



## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

Each of the component parks will retain its management structures and the right to administer its own area in the way it deems appropriate—within the framework of the SADC protocol.

In Mozambique, the Direcção Nacional das Áreas de Conservação (DNAC) within the Ministry of Tourism - is responsible for Limpopo National Park (LNP). Previously a hunting concession area, and with its large mammal fauna decimated during the protracted civil war, this area was proclaimed as a National Park in November 2001. Initial direct management of LNP will be achieved through a Project Implementation Unit, comprising a Project Manager, a Park Warden, a Finance Officer, and a Community Relations Officer. As development of the Park proceeds, this structure will change to accommodate the increasing complexity, the added responsibilities and the various organizational needs.

Within South Africa, the KNP is part of the parastatal SANParks organisation, ultimately responsible to the Minister for Environmental Affairs and Tourism. The KNP has its origins with the establishment of the Sabie Game Reserve in 1898. This was subsequently enlarged and proclaimed as a National Park in 1926. A staff of 2000 personnel runs this Park, with infrastructure and support structures. The Makuleke Region of the Kruger National Park is a communally owned portion of land between the Limpopo and Luvuvhu Rivers, administered as a contractual National Park. Wildlife management aspects within the Makuleke Region are managed by its own Joint Management Board composed of Makuleke and KNP representatives. The Makuleke CPA retains full rights and sole discretion over tourism and related developments within the Makuleke Region.

Within Zimbabwe, the GNP forms part of the Department of National Parks and Wildlife

Management estate. The Department falls under the Minister for Environment and Tourism. The park was declared a Game Reserve in 1934 and then proclaimed a National Park in 1975.

The GNP has a small staff in keeping with the objective of low-density wilderness based tourism. However, the density of Game Scouts (Field Rangers) is higher than that in the KNP. The Malipati and Manjinji Pan adjoining GNP areas are concession areas also with a low level of development and low staffing. The corridor area linking GNP with the KNP and LNP is moderately populated by rural Sengwe community people, with administrative responsibility residing within several Rural District Councils. Community leaders retain certain traditional authority at the village and ward level.

## 6.2 FUTURE ADMINISTRATION OF THE GREAT LIMPOPO TRANS- FRONTIER PARK

Each of the component parks comprising the GLTP will retain its own administrative structures and the right to administer its own area in whatever way it deems fit, provided that it does not willfully contravene the SADC Protocol on Wildlife Conservation and Law Enforcement (1999). However, in order to achieve the objectives of integrated biodiversity management and harmonized joint developments within GLTP, new structures are required to ensure appropriate joint management in matters of mutual concern and impact.



In terms of the International Treaty signed between the three governments in 2002, the harmonizing of policies and procedures between component areas will be the responsibility of a Joint Management Board (JMB). The composition and functions of this board, as stipulated by the terms of the Treaty, are indicated below:

The JMB shall consist of the following representatives -

- a. Two from each of the National Implementing Agencies of the Parties;
- b. One from the national institutions responsible for borderline control of the Parties;
- c. One appointed as deemed fit by each of the Parties.

The JMB shall

- a. Be responsible for the implementation and periodic revision of the Joint Policy and management guidelines for the Transfrontier Park.
- b. Determine mechanisms for administering funds received specifically for the Transfrontier Park;
- c. Be responsible for identifying financial needs and sourcing such funds as are required to achieve the effective implementation of the joint management guidelines;
- d. Establish such committees as may be necessary;

- e. Provide reports to the Ministerial Committee.

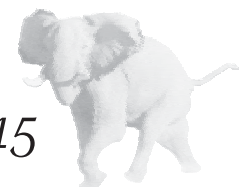
The JMB shall

- a. Be chaired and hosted on a rotational basis; and
- b. Shall meet quarterly .
  - ❖ Decisions of the JMB shall be taken by consensus.
  - ❖ A quorum at all meetings of the JMB shall consist of six representatives of whom one shall be an appointee of the Mozambican National Implementing Agency, one from the South African National Implementing Agency, one from the Zimbabwean National implementing agency and one other representative each from each of the parties.

### 6.3 ON-SITE MANAGEMENT OF JOINT ISSUES

The actual implementation of management decisions and plans will be undertaken at levels that are answerable to the JMB. It is essential that Management Committees be formed to handle the day-to-day issues without having to always refer them, to the JMB. These Management Committees should be formed when necessary, some will be permanent whereas others may have a brief lifetime sufficient enough to accomplish the objectives of a specific project. To ensure continuity, a member of the JMB must chair each of the Management Committees.

Management committees in the component areas will have sufficient autonomy from the JMB to promote efficiency and cost effective operations.



Coordinated control and management of river catchments is vital to the success of the GLTP.

The Management Committees that are likely to be permanent are:

- ❖ Conservation Committee.
- ❖ Veterinary Committee
- ❖ Community Relations Committee.
- ❖ Security Committee.
- ❖ Finance Committee.
- ❖ Tourism Committee.
- ❖ Human Resources Committee.

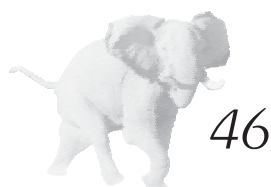
## 6.4 INVOLVEMENT OF THE WATER CATCHMENT AUTHORITIES ON THE JMB

In section 8.3 below, the importance for the JMB to be involved in the all-future planning that takes place in the catchments of the rivers that traverse the GLTP is emphasized. It is strongly recommended that the JMB approach the Ministries in each country that are responsible for water affairs with the invitation to appoint a representative onto the JMB.

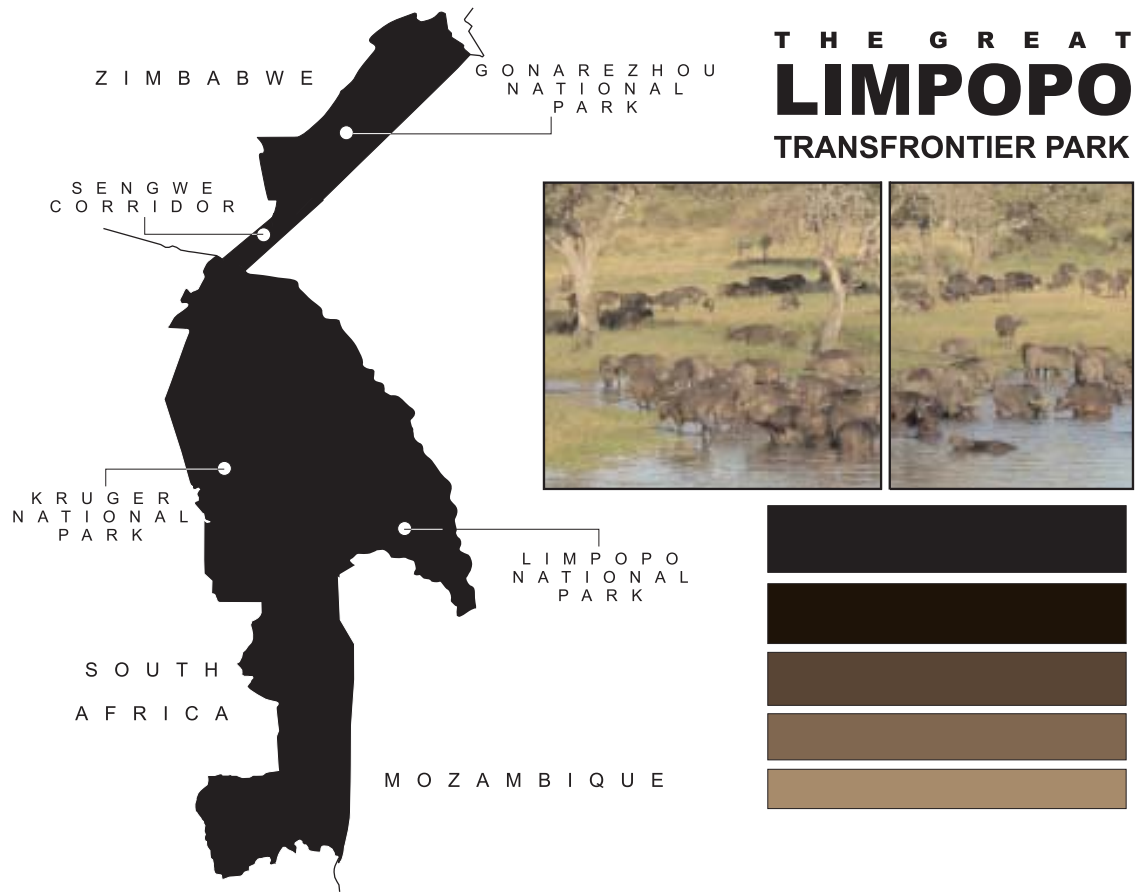
*Actions, responsibilities and timetable for developing the joint management structures required for the GLTP*

Action	Primary Responsibility	Secondary Responsibility	Timetable
Develop internal management structures for GLTP	Technical Coordinating Committee	DNAC, DNPWM, SANP	2001
Drafting of GLTP Policies for common operating principles	JMB	Technical Committees, Project Coordinator	2002
Adoption of management structure	DNAC, DNPWM, SANP	Ministerial Committees	2002
Appoint persons for positions on Management Committees	JMB	DNAC, DNPWM, SANP	2002
Delegate authority to JMB and other structures	DNAC, DNPWM, SANP	Ministerial Committees	2002
Include representative of water affairs Ministries on JMB, and representatives of the JMB on the appropriate catchment management authorities	Ministerial	Ministerial Committees	2002

Table 6.1







## 7. DESCRIPTION OF THE GLTP

### 7.1 INTRODUCTION

*To facilitate the drafting of joint policies and management guidelines for the Great Limpopo Transfrontier Park (GLTP), it is essential to have an understanding of the physical and biological components of the systems.*



On completion, the GLTP will comprise more than 3.5 million hectares or 8.6 million acres.

This section condenses general description of the three areas comprising the GLTP. The three areas involved are; the newly proclaimed Limpopo National Park (LNP) that was formerly known as Coutada 16, situated in the Gaza Province of Mozambique, the Kruger National Park and the Makuleke region (KNP) of South Africa and the Gonarezhou National Park (GNP) including Manjinji Pan Sanctuary and Malipati Safari Area in Zimbabwe. (Fig 7.1)

## 7.2 LOCATION AND SIZE

The LNP is triangular in shape, with the Limpopo River as the eastern boundary, the Olifants River as the southern boundary and the KNP as the western boundary. It comprises an area of 1 123 316 ha.

The KNP is a long and narrow area stretching from the Crocodile River in the south to the Limpopo River in the north and includes the Makuleke region between the Levubu and Limpopo rivers as a contractual park. The eastern boundary is the international boundary with Mozambique and the western boundary is a fence line more or less on the 2200E Longitude. Excluding a number of private nature reserves on its western boundary, the KNP covers an area of 1 948 528 ha.

The GNP comprises 505 300 ha in the south-eastern Lowveld of Zimbabwe. On the east, it borders the Gaza Province in Mozambique and the Sengwe and Malapati Communal Lands to the south and west. To the northwest and north, it borders on the Gonakudzingwa, Matibi II, Chiredzi, Malilangwe Trust, Mahenye and Ndownoye areas.

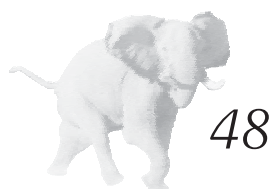
The GNP has no common boundaries with either the KNP or LNP. However, it is envisaged that a corridor ( the Sengwe Corridor) will be established between the KNP/LNP and the GNP to enhance the tourism potential of the GLTP. Until there is control of the bovine tuberculosis infection in the KNP buffalo, there will be no free movement of large mammals into Zimbabwe.

On completion the GLTP (Fig 7.1) will comprise some 3 577 144 ha.

## 7.3 THE BIOPHYSICAL DESCRIPTION OF THE GLTP.

The description of the natural attributes of the GLTP, presented in Appendix II, is broad-based and will suffice to serve as an essential guide for joint decision-making. It is accepted that the degree of information for the various areas to be incorporated into the GLTP varies considerably. It is imperative that, in due course, provision be made for updating the background information. The identification of areas of specific conservation importance and/or ecological sensitivity must be documented in later editions of this document.

For the GNP and KNP inventories have been compiled for the lesser vertebrates (fish, amphibia, reptiles and birds) and the small and large mammals. With the very substantial area to be included in the GLTP, and the corresponding addition of biodiversity with the inclusion of the LNP, new subspecies, species and possibly even communities may be added to those already described for the GNP and KNP. It is





THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

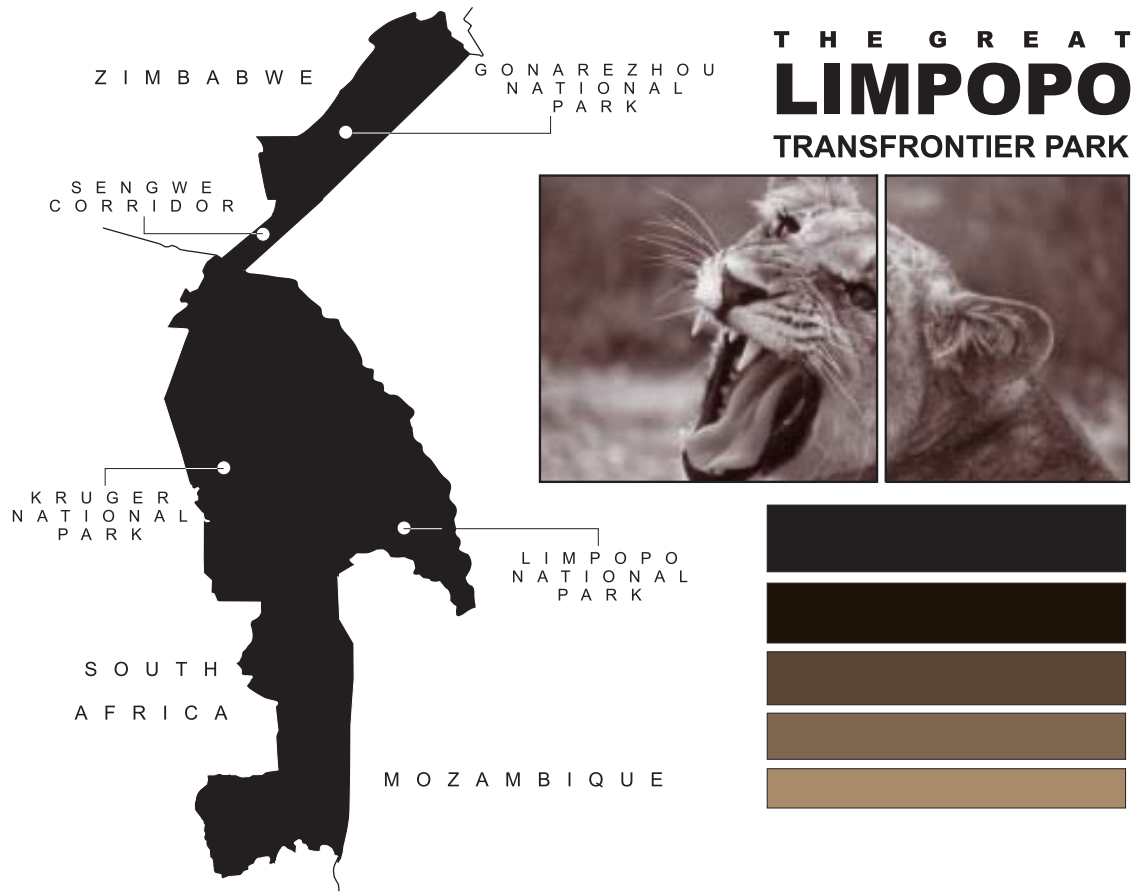
The GLTP has a physical area and range of biodiversity unlikely to be equalled in any other tropical or sub-tropical ecosystem.

therefore important that inventory surveys for all the taxa be undertaken in the LNP as a matter of priority and that these natural attributes be retained in their most pristine state possible.

The GLTP represents one of the most exciting conservation initiatives in the world. It is highly unlikely that a project of such magnitude, both in terms of size and scope of

biodiversity, will be able to be emulated in any other tropical/subtropical ecosystems. Its viability, for this and future generations, will however depend on the qualities of its natural assets. Nothing should, therefore, be spared to ensure that these are fully accounted for and that their management complies with the highest standards.





**T H E G R E A T  
L I M P O P O  
T R A N S F R O N T I E R P A R K**

## 8. THE MANAGEMENT OF THE NATURAL RESOURCES OF THE GLTP

### 8.1 COMMON OPERATING PRINCIPLES

*There are several guiding principles that the GLTP embraces in the conservation of natural resources and development of the area, not only for joint issues but also for each of the component parks.*



Biodiversity contributes to global well-being through its direct utilitarian value, its maintenance of global life support systems and its recreational, aesthetic, spiritual and ethical significance.

These are

### 8.1.1 BIODIVERSITY CONSERVATION AS THE PRIMARY OBJECTIVE

The conservation of Biodiversity is the primary objective of all three parks, and its definition is accepted here as that adapted from the Keystone Dialogue on Biodiversity in Federal Lands (Noss and Cooperrider, 1994):

“Biodiversity is the variety of life and its processes. It includes the variety of organisms and the genetic differences among them, the communities and the ecosystems in which they occur, and the ecological and evolutionary processes that keep them functioning, yet ever changing and adapting”.

This definition captures the important concept that biodiversity is hierarchical in that it is present at the genetic, species, ecosystem, and landscape levels and that interactions within and among levels all contribute to biodiversity.

Biodiversity is valued in the following ways:

- ❖ Utilitarian values (i.e., medicinal use of plants, agricultural gene stocks, and wild animals and plants as a food source)
- ❖ Indirect utilitarian values (i.e. ecosystem services such as air and water quality and climate amelioration)
- ❖ Recreational and aesthetic values
- ❖ Intrinsic, spiritual, and ethical values

### 8.1.2 ADAPTIVE MANAGEMENT

Ecosystem management is now known to be a more complex process than it was thought a decade or two ago, largely because of an increased

understanding of the multiple pathways through which processes take place, and because of the multiple temporal and spatial scales operating. The only way in which such a complex, dynamic system can be managed is by using an adaptive management system. The principle of Adaptive Management (Bell, 1984, Walker, 1998) is accepted as being the basis on which vegetation and wildlife populations are managed in all three protected areas.

This is a systematic approach to management where, based on present and often incomplete knowledge of the operation of the system, a clearly defined objective is chosen and the most appropriate management is implemented to achieve this objective. The management procedure is recorded and evaluated and the results are monitored. Because the outcomes of management are not always certain, the results are evaluated against the assumptions on which the management was based. Divergence from the expected results will provide knowledge that enables greater understanding of the system. Alternatively the objective may have to be



reviewed or the management procedure changed where appropriate.

Such a management system reacts as the ecosystem changes and evolves via the multiple pathways, the management system nudging, teasing or coaxing it in the desired direction. In order to have a clear picture of the "desired state" (which is, for all the above reasons, never static) the management should also be forward-looking, towards an agreed-on set of conditions and objectives for the area and the ecosystem it encompasses.

### 8.1.3 LIMITS OF ACCEPTABLE CHANGE

The way in which a conservation organization checks whether it is on track with its expectations in managing the ecosystem, is to set ecosystem endpoints which reflect the desired state. These are known under various names: Limits of Acceptable Change (LACs), Receiving Water Quality Objectives (RWQOs), or, as in the KNP - "Thresholds of Potential Concern" (TPCs).

These reflect pre-agreed-on "worry levels" or thresholds which, when exceeded (or confidently predicted to be exceeded) become official impetus for consideration of management action (Rogers & Biggs, 1999). They also represent targets to which management must aim to return, before action taken is considered as having been effective. In this way monitoring and management action (and indeed research supporting these) become sensibly and meaningfully linked to a common set of objectives.

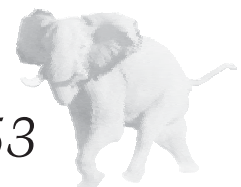
### 8.1.4 INTEGRATED ENVIRONMENTAL MANAGEMENT (IEM) IN ALL DEVELOPMENTS.

Integrated Environmental Management (IEM) is a process designed to ensure that the environmental consequences of development proposals are understood and adequately considered in the planning, development and management of infrastructure. The term environmental is used in its broad sense, encompassing biophysical and socio-economic components. The purpose of IEM is to resolve or mitigate any negative impacts and to enhance the positive aspects of all stages of development processes.

### 8.1.5 DEVELOPMENT AND MANAGEMENT APPROPRIATE TO REGIONAL VALUES AND PRIORITIES

The conservation of many protected areas in Africa has failed to effectively address African values, priorities and practices (Biodiversity Support Program, 1993). International, and generally Eurocentric values, have dominated biodiversity conservation efforts. When these conservation areas were well funded and the density of local communities was comparatively low, these operations were successful. These conditions have changed for most of Africa, and poorly funded conservation agencies are faced with conserving biodiversity with ever-increasing impoverished communities on their boundaries. Planners, developers and managers have to adapt goals, plans and management operations to take this into account.

An integrated environmental management (IEM) approach is the foundation on which all development in the GLTP will be built.



The principle of consumptive utilisation is frequently controversial but it underpins a pragmatic approach to conservation.

#### 8.1.6 SUSTAINABLE CONSUMPTIVE UTILIZATION

Each party accepts the principle of sustainable utilization of renewable natural resources. Whether this becomes policy, and to what degree this is implemented in each of the GLTP parks, is an internal issue that this joint plan does not address. While the principle may be applied to renewable resources in protected areas, this principle is particularly important in relation to the rivers that flow through the GLTP which are all being over-utilized upstream.

#### 8.1.7 COMMUNITY PARTICIPATION AND CAPACITY BUILDING

The vision of improving the quality of life of the people around the GLTP can only be achieved if the communities are brought into the process of developing and managing the GLTP in a meaningful way. Employment is the greatest need by all the communities around the park. Even in Phalaborwa, which is the most developed community, the level of unemployment exceeds 50%; in the LNP it exceeds 90 %.

#### 8.1.8 PRIVATE SECTOR PARTICIPATION

The vision for the GLTP is that it will contribute towards improving the quality of life of the people in Mozambique, South Africa and Zimbabwe. This can be achieved through sound management of the area and careful development into one of Africa's premier tourist destinations. In the development of the areas, particularly the LNP where most change will

take place, every effort must be made to involve local people and the local private sector.

#### 8.1.9 AN EQUITABLE FRAMEWORK FOR BENEFIT SHARING.

The GLTP is a joint project, yet in practical terms most of the development has taken place in South Africa and most visitors will come from South Africa or enter the park from South Africa. Notwithstanding this imbalance, a fair means of cost and revenue sharing is needed.

### 8.2 ZONATION

The zoning system discussed here only addresses those parts of the individual protected areas that adjoin one another. At this interface, it is desirable to merge management zones of one park with those of the neighbour rather than to have conflicting forms of use in zones adjacent to one another. The GNP does not make direct contact with either of the other parks, so it is only necessary to blend the zones for The LNP and the northern half of the KNP.

The criteria on which the zones are established are:

- ❖ The Park objectives
- ❖ Legislation and agreements
- ❖ Landscape and vegetation
- ❖ Development outside the park
- ❖ Existing zonation of any neighbouring park
- ❖ Existing development
- ❖ The socio-economic status of neighbouring communities
- ❖ The regional economy





- ❖ The current and forecast tourist markets
- ❖ Tourism development strategies
- ❖ Resource utilization

### 8.2.1 PROPOSED ZONATION

As the LNP management plan is still being developed, the zonation of this park is provisional at this stage. However, at its junction with the KNP, the zones shown in Fig 8.1 are unlikely to change much.

The provisional zonation of the LNP (Fig 8.1) uses the Shingwedzi catchments as the Tourism Zone but establishes a Wilderness zone on the sand plateau and a Resource Zone

along the Limpopo and Olifants River valleys. It also surrounds the park with a Buffer Zone, which is in accordance with Mozambican legislation and has the north shore of Massingir dam as a High-density Tourist Zone.

The zones on the boundary between the LNP and KNP take into account the existing zonation in the KNP. It must be remembered that the Makuleke Region of the KNP is a Contractual National Park in which consumptive use is practiced. Consumptive utilization will also continue in the Malapati Safari area and the Sengwe Corridor.

*Actions required and the responsibilities for implementation of the zoning plan.*

Action	Primary Responsibility	Secondary Responsibility	Year
Comment on and approve or modify proposed zoning plan	DNAC / SANP	JMB	2002
Inform communities and public of the zoning	DNAC/ SANP	JMB	2002

Table 8.1

Zonation of the GLTP will ensure that its use will be optimised and moderated to provide a balance between access, development and wilderness.



THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

Provisional zonation of the GLTP based on existing zones in Kruger and Gonarezhou National Parks

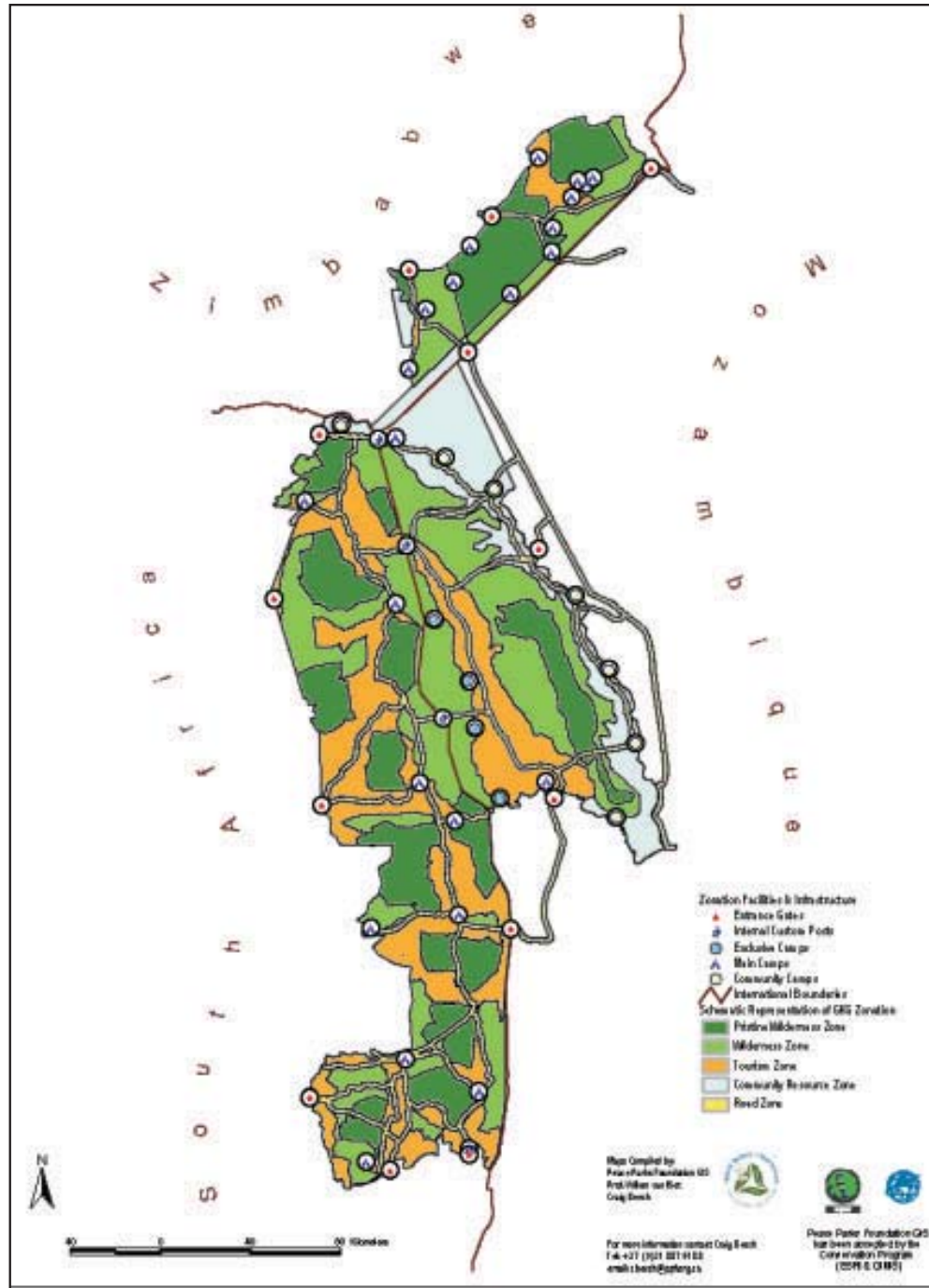


Figure 8.1



## 8.3 RIVERS AND WATER RESOURCES

### 8.3.1 THE OVERVIEW

The SADC Heads of State signed the Revised Protocol on Shared Watercourses on 7th August 2000. The General Principles (Article 3) of the agreement do not prejudice the sovereign rights of each country, but focus on the principles of sustainable utilization, conservation and enhancement of the environment, cooperation in research, data sharing and the execution of projects related to shared watercourses.

The agreement specifies that where there are shared watercourses, the Watercourse States shall undertake to establish appropriate institutions such as watercourse commissions or boards. The responsibilities of these institutions shall be determined by the nature of their objectives, which must conform, with the principles of the protocol.

Ten major rivers flow in an easterly direction through the GLTP. All these rivers originate outside and to the west of both the GNP and KNP and all are heavily utilized. They are crucially important for the conservation of the natural environments of the GLTP. Perhaps the greatest single threat to the GLTP is the deterioration of these once perennial rivers, all of which have their headwaters outside and to the west of the GLTP.

The human population growth in the catchments and the eastern Lowveld of South Africa and Zimbabwe during the past four

decades brought with it the rapid expansion of irrigation farming, exotic afforestation and domestic stock, as well as the establishment of large towns, mines, dams and industries. Along with these developments came overgrazing, erosion, over-utilization and pollution of rivers, as well as clearing of indigenous woodlands from large areas outside the borders of the both the GNP and KNP. All these developments have an impact on the GLTP Rivers and cause severe problems in the conservation of these ecosystems.

The degradation of the rivers varies in character and intensity, but is mainly due to un-sustainable human activities upstream. Although provision is made for sustainable utilization of rivers in the goals of the IUCN, the heavy usage-taking place upstream is not sustainable and has degraded most of the rivers into seasonal and polluted waterways. In an effort to resolve this issue, the SANP is developing strategies consistent with other catchments management strategies.

The conditions of three of the ten rivers, namely the Letaba, Olifants and Sabie are briefly described as examples of (1) an over-utilized river, (2) a polluted river and (3) a river that is still in a fairly good condition. The Runde, flowing through the Gonarezhou, falls into the same category as the Letaba as its catchment has several large dams used to supply irrigation water for the sugar industry.

#### THE LETABA RIVER

The Letaba River, with a catchment of 13 400 km<sup>2</sup>, is highly utilized. More than 36 000 of land are irrigated and 47 000 ha of Eucalyptus

Unsustainable  
human  
activities are  
the primary  
cause of river  
degradation.



Because of siltation, dams on rivers at best provide only a temporary, and even so, unsatisfactory solution to the problem of water availability.

and conifer plantations have been established in the upper regions of the catchment areas i.e. the high rainfall escarpment.

The water allocated for irrigation amounts to more than 117 million m<sup>3</sup>/a. In allocating this water, no provision was made for the maintenance of the natural environment downstream. This has altered the 103 km of the river in the KNP from a perennial to an ephemeral river and no-flow situations now occur for prolonged periods. Aquatic biota, especially fish and macro invertebrates have consequently suffered considerably. The Letaba rest camp, which was built on the banks of the river in the early 1930's, suffers severe water shortages during dry periods.

Due to the problems with cessation of flow during the dry period of the 1960's, the SANP built four weirs in the river in an effort to maintain flow during dry periods. These weirs silted up within 15 years of being built and are not able to maintain perennial the flow in the river. Recent studies by the SA Department of Water Affairs and Forestry (DWAF) and other authorities have led to the planning of several more dams in the upper catchment area outside the KNP to alleviate water shortage. The lack of suitable dam sites and the fact that available water in the system is already over-committed cast a shadow over any further development. The river is over-utilized by irrigation farming to the extent that it can hardly sustain the farming community, let alone the dependant rural populations and the ecosystems within the KNP.

A strategy for the re-allocation of water from this river is being developed. Also, a strategy for

the proper management of exotic forests in the upper catchment is being put in place by the Working for Water Programme under the auspices of the DWAF. This includes the proper management of wetlands, sponges and riparian zones.

#### THE OLIFANTS RIVER

The Olifants River (Rio dos Elefantes in Mozambique) drains a catchment area of 4,575 km<sup>2</sup>. Although abstraction for irrigation and other uses, as well as changes in the catchment characteristics, have decreased the runoff from the catchment, in recent history this river has only stopped flowing twice.

A large proportion of the 2,5 million people living in the catchment live in rural under-developed conditions, being concentrated mainly in settlements with limited infrastructure. Improvements in their living standards and increased urbanization will have a dramatic impact on the water requirements for domestic use.

There are 30 major dams in the basin. Most are used mainly for primary water supply or for irrigation purposes. The decrease in runoff caused by afforestation is limited and restricted primarily to the Blyde River sub-catchment.

Mining activities and power stations are scattered across the upper reaches of the basin. The concentration of industrial development, power stations, rapid urbanization, irrigation activities, extensive soil erosion mainly due to overgrazing and runoff from rural towns and villages, all cause serious deterioration in water quality. Mining and industrial activities at Phalaborwa, just outside the western border of



the KNP, are also a major source of pollution. Extremely low flows aggravate water quality problems and also cause certain aquatic habitats to disappear. High salinity, pollution by heavy metals and high silt loads are the main concerns for conservation and have contributed to the disappearance of at least 5 fish species from the Olifants River (Deacon, 1994). The high silt loads are generated when sediment-laden releases are made from the Phalaborwa Barrage. These have been the cause of massive fish kills downstream in the KNP.

Through the involvement of the Water Quality Management Division of DWAF, a system of management rules evolved in the Phalaborwa vicinity to address the water quality problems. These include the re-circulation of seepage water to the source industries, the establishment of purification plants, and the redirection of polluted water from the Selati River (a tributary) into the Phalaborwa Barrage to achieve maximum dilution. In spite of these measures the water is often so polluted that the KNP has to resort to boreholes for potable water use at the Olifants and Satara rest camps. The problem of water pollution in the Olifants River from the Phalaborwa mines and industries is a crucial one that is being addressed at several fora. Appropriate management actions are continuously identified and implemented to achieve the goal of rehabilitation of the Olifants River.

#### THE SABIE RIVER

The Sabie (with a catchment of 7096 km<sup>2</sup>) is the only river in the KNP that has never stopped flowing. Furthermore, the water of the Sabie River is still of excellent quality, shown by the high biodiversity present in the river.

It provides an excellent example of a river that has been utilized for purposes other than nature conservation without serious effects to its ecology. In spite of the effects of gold mining, intensive irrigation farming (9 484 ha), forestry (82 000 ha), much cattle farming and high-density rural populations in its catchment, it still remains a biologically rich river. It is considered to be the river that is the least affected by activities outside the GLNP.

During recent years however, the flow became very low and the resultant drop in the general water table in the primary channel of the river led to tree mortalities in various reaches of the river. During the exceptionally dry period experienced during the 1991/92 and 1994/95 rainy seasons, flows of as little as 0,1 m<sup>3</sup>/s occurred in the eastern part of the river. This phenomenon is related to a combination of factors, namely, the exceptionally low rainfall experienced during these years, the presence of commercial irrigation farming, and the increase of informal, uncontrolled irrigation from the river and the occurrence of very large areas of exotic forests in the upper catchment areas.

As the pressure on the Sabie River increases, it can be expected that more storage dams in the upper catchment will be considered. Development is regulated and the forestry sector continues to clear wetlands of exotic timber plantations in the upper catchment.

#### 8.3.2 THE KRUGER NATIONAL PARK RIVERS RESEARCH PROGRAMME

The Kruger National Park Rivers Research Programme (KNPRRP) was initiated in 1988 as a co-operative undertaking. It addresses the

High silt loads,  
heavy metals  
and increased  
salinity are the  
primary  
pollution  
concerns with  
regard to many  
rivers in the  
GLTP  
catchment.



Commitment from politicians at high level in government is essential if catchment and river conservation strategies are to succeed.

water quality and quantity requirements of the natural environments of rivers flowing through the KNP. Key areas where the KNPRRP has proved invaluable to the KNP include clear guidance on research issues, development of decision support systems, development of protocols to determine the desired future state of rivers (Rogers and Bestbier, 1997) and involvement with a wide range of scientists.

The programme includes regular fixed-point photographs of the rivers (oblique as well as aerial photography), monitoring fish and macro-invertebrate populations, water quality and flow regimes; hippo censuses, etc. This knowledge, together with that generated by the KNPRRP, is freely available to managers and researchers throughout the GLTP.

This is perhaps the model on which to expand and develop a joint GLTP programme for all rivers in the TFCA. This will create synergy and should be a considerable cost saving.

### 8.3.3 PRESENT RIVER MANAGEMENT

Since the inception of water laws in southern Africa, no country has had a central legitimate body to champion the somewhat voiceless needs that nature has for water. It is only recently that the needs of aquatic systems came into the spotlight with the New National Water Act No 36 of 1998. Prior to this Act and due to the lack of legislation concerning management of river basins as units, the SANP had embarked on a strategy of (1) liaison with communities in the catchments, (2) promoting the cause of the rivers amongst the general public and (3) political lobbying. A strategy for

the overall positioning of the SANP with regard to the Lowveld rivers issue, wider than that covered by the KNPRRP is therefore being developed.

Regarding community involvement in the KNP river catchments, the KNP is already actively involved with 29 boards, fora and other groupings. The overall effect of this initiative is that the SANP is well known in the catchments, invariably invited to attend meetings, and expected to make a stand for water for the environment. Local communities have largely accepted the need to allocate adequate quantities of water for the natural environments of rivers but some still need to be convinced of some concrete or intangible benefits accruing to them in order to support this cause.

At the senior bureaucratic and political level, representation is inadequate in spite of there being some isolated champions of the cause. The plight of the GLTP rivers will need highlighting if politicians are to give more than token support to the GLTP and to act as its champions.

### 8.3.4 THE IMPORTANCE OF RIVERS FOR ECOTOURISM

The terrestrial and aquatic environments of the GLTP are intimately linked and it is not possible to achieve conservation of one without conservation of the other. Thus, threats to the viability of the riverine systems are also threats to the associated terrestrial systems. Since the riverine systems are the preferred sites for the development of tourism infrastructure and tourist activities, the industry is now threatened by further deterioration of the rivers.



### 8.3.5 KNOWN FUTURE DEVELOPMENT

The rehabilitation of the sluice gates of Massingir dam is to take place soon, has been proposed to allow it to function at optimal capacity. This will increase the area of land downstream that can be cultivated under irrigation. It also raises the potential of producing hydroelectric power.

The major negative impact of this on the GLTP is that the rise in water level will push the reservoir back into the Olifants River Gorge. This will flood one of the most spectacular parts of the GLTP and will reduce the options available for visitor facilities in this area. It is also likely to cause extensive deposition of silt in this stretch of the Olifants River in the KNP. This siltation will have an impact on the aquatic organisms and the riverine habitat in general.

The component organizations of the GLTP endorse the principle of sustained utilization of natural resources as defined by the IUCN (IUCN, 1980) in its World Conservation Strategy. It therefore acknowledges the right of other water users along the course of the rivers, provided that over-utilization and abuse do not hinder the DNAC, DNPWM and SANP in the execution of their mandates.

Because of the possible negative impact on the GLTP, the raising of the Massingir dam wall will be of concern to the JMB who must ensure that it is able to participate in the Scoping report and Environmental Impact Assessment (EIA) process.

### 8.3.6 RECOMMENDATIONS

The recommended actions are the following:

❖ Recommendation:

That the Ministerial Committee implement the SADC Protocol on Shared Watercourses and establish a Water Catchment authority for each of the rivers that are shared between two or more of the GLTP states. The strategy of this Commission should be to consolidate the river monitoring, research and management within the GLTP into a single body. This body will work towards restoring the ecological integrity and biodiversity of the river systems, within the constraints imposed by present development in the catchments.

❖ Recommendation:

River monitoring, research and management needs be on two levels. Firstly, monitoring, research and management tasks throughout the GLTP should be consolidated. Secondly, these activities need to be carried out on a catchment scale.

❖ Recommendation:

The JMB and GLTP management will need to become involved with land use planning and management strategies within the catchments of these river systems.

❖ Recommendation:

Where possible, monitoring programmes designed for terrestrial issues should be undertaken in such a way that they will contribute towards providing data that will be of value to monitoring the river systems.

Implementation of the SADC Protocol on shared water resources and establishment of water catchment authorities, would provide legislative mechanisms to sustain water resources in the region.



Provision of artificial water points should not conflict with the underlying principle that semi-arid systems are by definition subject to low and unreliable water resources.

*The actions, responsibilities and timetable for implementing the river management recommendations.*

Action	Primary Responsibility	Secondary Responsibility	Timetable
Water Catchment authorities for shared watercourses to be established.	Ministerial	JMB	2002
Consolidate river monitoring in the GLTP into a single body	Ministerial	JMB	2002
JMB and GLTP management to be involved with land use planning and management in the catchments	JMB	Management Committees	2002
JMB to include a representative of each Government's water affairs ministry	Ministerial	JMB	

Figure 8.2

## 8.4 ARTIFICIAL WATERPOINTS

Great care needs to be taken when planning for the provision of artificial water for wildlife. It must be remembered that much of this semi-arid system was maintained as an open savanna by virtue of the scarcity of water, the natural movement of herbivores and the occurrence of fires. The KNP has learnt the lesson of the well-meaning provision of too many water points and the consequent loss of biodiversity. The same mistakes should not be repeated throughout the GLTP.

### 8.4.1 THE PRESENT SITUATION

#### THE LIMPOPO NATIONAL PARK

In The LNP, there are presently no artificial water points. In the 1998 DNFFB Conceptual Plan for The LNP, it was recommended that

artificial water points be developed as it was anticipated that there would be a fence erected along the eastern boundary of the area. The purpose of these water points was to provide water for animals that would be prevented from drinking at the Limpopo. This will be reviewed in the LNP management plan that is currently in progress.

#### KRUGER NATIONAL PARK

The new water distribution policy for the KNP attempts to simulate the natural distribution of water, with the positive consequences it will have on biodiversity, without detracting from the tourist's experience. It is perceived that this revised water-distribution policy for the KNP will assist in the restoration of intrinsic biodiversity at the landscape level through the simulation of the natural availability of water. It will however be necessary that a monitoring programme be implemented to assess the





consequences of the proposed water distribution policy.

Until recently, the KNP had 280 artificial water points based on boreholes, of these 140 were closed in 1999, and more will be closed in the future. The only artificial waterpoints that will be permitted will be those that supplement permanent natural ones.

The effects of the closure of the nominated artificial water points in the KNP has increased the amount of feeding range that is only available to ungulates during the wet season, from 17,6% to 32,4% of the park. This is considered to be beneficial, especially for the low-density and rare herbivores such as roan antelope.

#### GONAREZHOU NATIONAL PARK

The GNP currently has 48 boreholes of which 11 are capped and only 14 are used to supply water for wildlife. It is considered in the GNP management plan, that only five boreholes are necessary to maintain dry season habitats for roan antelope. (In the light of the KNP experience, this may prove to be an inappropriate strategy).

Insofar as artificial water points are concerned, the GNP objective is to establish an appropriate system of artificial water supplies, with each water point designated to meet specific objectives. A significant reduction in the number of existing artificial water supplies is considered to be acceptable.

#### 8.4.2 POLICY RECOMMENDATIONS

In this plan the goal is to reduce the impact of any artificial water points in one park on the management objectives of a neighbour. The objective is to have no new artificial water points closer than 10km to the boundary between two parks. There is no intention here to prescribe policies on the management of artificial water points for any park. What is recommended though, is that park managers consider the objectives and plans of their neighbours in the development and management of their own artificial water points.

❖ Recommendation:

That no artificial water points are developed or maintained closer than 10 km from the boundary of a neighbouring park, unless this is done with the written consent of the JMB and the Directorate of the neighbouring park. Mozambique should be encouraged to do adopt this policy in the development of the LNP.

❖ Recommendation:

That an IEM procedure, at the appropriate level, be followed in the planning and development of any new artificial water points.

#### 8.5 INVASIVE ALIEN PLANTS

The ultimate goal of the GLTP is that invasive alien plants will be brought under control and eventually eradicated from the GLTP. As with river management, this will require holistic land use strategies that often

Placement of artificial water points is critical to ensure that they do not impinge upon the management programmes of adjoining management units.



The figure 8.2 showing the increase of invasive alien plants in the Kruger National Park is probably representative of the situation in the whole of the GLTP.

go beyond the boundaries of the GLTP.

#### 8.5.1. THE PRESENT SITUATION

All three parks have invasive alien plants at varying degrees of infestation. Because it has the most comprehensively documented case history, the situation in the KNP is described below and will indicate the problem the GLTP is facing.

The long history of settlement, and the many rivers that traverse the GLTP, have meant that the GLTP Park is vulnerable to colonization by alien plants. The problem of invasive alien plants (IAP) has been monitored and tackled in

the KNP and the situation is described here, as it is considered to be representative of the position in most of the GLTP.

Invasive alien plants (IAP) have probably been present in the KNP since its proclamation in 1898. The steady increase in these can be seen in Fig 8.2. Currently, approximately 360 alien plant species are recorded in the KNP. These range from aggressively invading transformer weeds to less invasive casual alien plants. However, as the main aim of a national park is to: conserve the indigenous biodiversity, and as IAP are well known to be a threat to biodiversity, it is undesirable to have any alien species in such a protected area.

*The increase in alien plant species over time in the Kruger National Park*

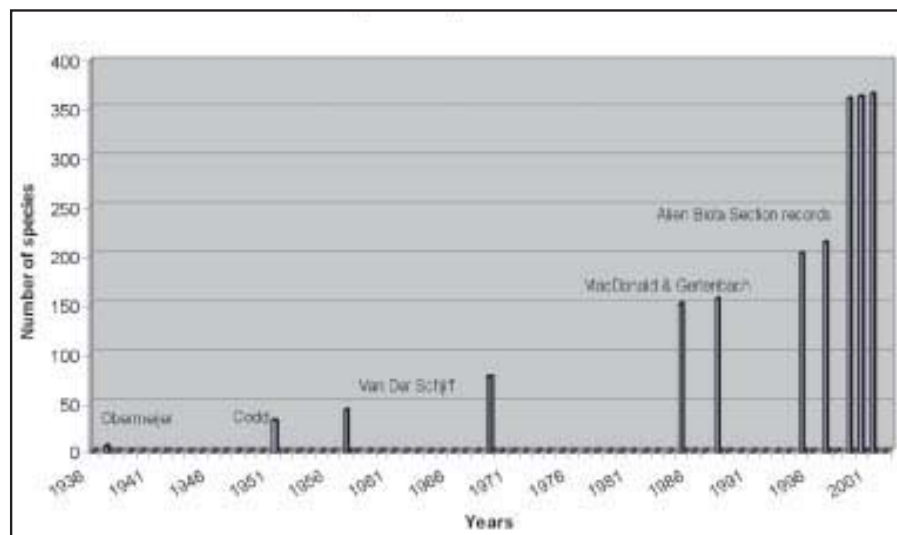


Figure 8.2



The riparian zones are generally the most heavily infested, with a wide array of species being recorded. Many IAP were introduced into the KNP coincidentally, when plants were brought in to beautify gardens and rest camps and then later spread to the surrounding areas. Well known examples are the prickly pear, *Opuntia stricta* (now infesting 35 000ha in the Skukuza area), *Lantana camara* that was planted in camps and villages, and which now occurs widely along the rivers, and even aquatic weeds such as water lettuce (*Pistia stratiotes*), which is now found on many dams and rivers. Many other species have spread into the KNP via the rivers and other vectors.

#### 8.5.2 INVASIVE ALIEN PLANT CONTROL.

The following species, must be considered for joint control operations in both the LNP and the KNP:

Various *Opuntia* (jointed cactus) species (generally *Opuntia ficus-indica*) are known to occur along the Mozambique border and it is predicted that they are widely spread within the LNP. A potential problem however may be that the species is utilized for its fruit. Other *Opuntias* may also be found in the area, such as *Opuntia stricta* and *O. rosea*. These species have little or no commercial value and can rapidly invade dryland/terrestrial areas and form impenetrable thickets. Biological control is used as far as possible in these infestations in SA, the effective insects being *Cactoblastus cactorum* and *Dactylopius opuntiae*.

*Eichhornia crassipes* is currently found on the Letaba River at Engelhard dam and down-

stream of the dam. Biological control agents e.g. *Neochetina eichornae*, *Cercospora rodmanii*, and *Orthogalumna terebrantis* are used in the control of this weed on Engelhard dam as well as many other dams and lakes in Africa. The plants on Massingir dam should already have biocontrol agents on them as the plants carrying the insects in KNP would have spilled over into this dam. Six different species of biological agents were released onto the plants in the KNP.

*Azolla filiculoides* (red water fern) is an aquatic invader that became widespread throughout the KNP in a matter of 12 months. It could infest, or probably already has infested the Massingir dam and the lower Olifants River. The biocontrol agents used to control *Azolla* (*Stenopelmus rufinasus*) are however extremely effective and these travel great distances to find the plants.

*Pistia stratiotes* (water lettuce) was found in the Levhvhvu/Limpopo flood plain and may infest waterways further downstream. Once again, this is a species that can be controlled by the biological agent *Neohydrionomus affinus*.

The two riparian zones of the Limpopo River and Olifants River will be infested to varying degrees with a wide range of species. The species of greatest concern, that may be recorded in these areas include *Lantana camara*, *Chromolaena odorata*, *Caesalpinia decapetala*, *Senna spp.*, *Mimosa pigra*, *Ricinus communis* (although some areas don't consider it an invasive alien plant), *Nicotiana glauca*, a wide array of annual species (e.g. *Argemone*, *Datura* and *Xanthium*), *Cardiospermum halicacabum* and also *C. grandiflorum*, *Melia azedarach*, *Sesbania punicea*, *Solanum mauritianum* and *S. seaforthianum*.

River courses are major routes for the spread of invasive alien plants. Some are effectively controlled by biological agents but invasive plants remain a serious problem.



Effective control of invasive alien plants can only be attempted through a joint management plan applied throughout the GLTP.

### 8.5.3 MONITORING OF INVASIVE SPECIES.

The KNP Alien Biota Section is currently designing a monitoring programme for the monitoring of IAP in riparian areas. *Opuntia stricta* is currently recorded during chemical control and biocontrol operations by means of a Global Positioning System (GPS). Aquatic weeds are currently the most frequently monitored species, using fixed-point photos and the monitoring of biocontrol effectiveness.

### 8.5.4 BIOCONTROL.

Plant samples are collected and reared at the sections facility at Skukuza as a food source for the breeding of biocontrol agents.

Host-specific insects are reared on these plants and once host specificity has been confirmed, they are then distributed introduced to the target plants. The efficiency of the release is determined through the monitoring and recording of the damage caused and the numbers of insects on the target species.

Data from IAP removal operations and GIS data on their distribution is available for the KNP. This is periodically written into internal scientific reports or publications. Information and training, that could assist management staff of the GNP or the LNP in the control of alien species in a regional context, is freely available from the KNP Alien Biota section.

### 8.5.5 RECOMMENDATIONS

#### POLICY RECOMMENDATIONS:

- ❖ Recommendation:  
That no plants alien to the region will be introduced to the GLTP for any purpose whatsoever.
- ❖ Recommendation:  
That Invasive Alien Plants presently in the GLTP will be eliminated in the most cost effective manner.
- ❖ Recommendation:  
Consideration must be given to the development of a joint management plan for the IAP problem on Massingir dam.

#### MANAGEMENT GUIDELINES

- ❖ Recommendation:  
A survey of the invasive alien plant threat in both the GNP and LNP must be undertaken.
- ❖ Recommendation:  
As a cost effective strategy, the JMB should make use of the Alien Biota Section in the KNP. It is recommended that this section assist in the development of similar units in the LNP and GNP with data storage and in planning strategies to solve some of the IAP problems that may exist in these areas.



## 8.6 FIRE AND FIRE MANAGEMENT

Fire is recognized as one of the most important agents capable of effecting change in African savanna ecosystems. The Lowveld savanna is a fire-adapted system and its evolutionary history was considerably shaped by fire. The two primary sources of fire ignition - both historic and current - are humans and lightning. Very little is known regarding the historic contribution of pre-industrial revolution humans to fire frequency, seasonality and extent. This is therefore a gap in our understanding of the primary conditions to which the Lowveld savanna has adapted. Archaeological and other evidence suggests that pre-1900, the human occupation of the area currently represented by the GLTP was relatively sparse.

The rapid increase in the human population adjoining the KNP during the 20th century, together with major changes in land-use, has resulted in greatly changed fire patterns to those that are likely to have prevailed previously. However, we have no idea of the nature and extent of this likely difference.

### 8.6.1 THE PRESENT SITUATION

#### LIMPOPO NATIONAL PARK

Currently there is no fire management policy or active fire management in the area.

The recommendations in the draft LNP Management Plan (in prep) are that in the short term, fire management should follow a *laissez faire* policy. During this period, an appropriate fire management and monitoring programme will be developed and will probably be a

rotational patchwork burning strategy with point ignition where possible.

#### KRUGER NATIONAL PARK

Following forty years of rotational block burning, the KNP took a decision in 1993 to institute a lightning-driven system instead. Because of the contentiousness of this lightning system, an undertaking was also made during the Management Plan Revision in the late 90s to put aside large experimental areas for examining alternatives to a lightning-driven system. However, it transpired virtually every year that illegal immigrant-caused fire dominated the fire pattern, mainly because the veld is burnable from late autumn onwards, the lightning season only usually starting in late spring. This fundamental inability to keep sufficient veld unburnt till the lightning season, eventually led to changes in the way managers felt about the feasibility of this system. Not only did the monitoring system trigger a Threshold of Potential Concern (TPC) almost every year in this regard but managers felt powerless in that they were under an obligation to try to put out each and every non-lightning fire, even ones which seemed acceptable. In addition, they were not able to ignite any fires (other than back burns) according to their judgment. This all led to the acceptance of key elements of the planned experimental alternatives (patch mosaic system and range condition system), these being integrated with what could still be sensibly kept of the lightning-driven system. This so-called Integrated Fire Management System is now tabled for acceptance in place of the attempted lightning-driven system which lasted for nine years as policy.

Management of fire presents a difficult management problem since nearly all fires are caused by lightning or humans—but little is known of the extent to which human initiated burns have shaped ecosystems.



Controlled fires which take into account rangeland fires caused by humans produce a mosaic which counters very large and uncontrolled fires.

In the proposed integrated fire management system, following grass biomass determinations in autumn, a target will be set for the percentage of ranger areas to be burnt by the end of the fire season, with monthly time-steps making this up. From April onwards, rangers will put in patch mosaic fires (initially, many small ones, due to the poor burnability then) and expect a certain number of illegal immigrant fires to occur. Together the ranger and illegal immigrant fires should reach monthly burnt area targets, the ranger having the freedom to catch up or slack off the next month if the targets are under- or overshot. By the onset of the lightning season, a mosaic should be in place, but one, which will allow lightning, burns to take place if natural ignitions occur. For this reason, rangers will stop burning at this time, in the hope that lightning can still play part of its natural role. Also the mosaic, which develops over the season, should generally counter extremely large fires, which had become a concern during the intended lightning policy years, though this was also due to a concurrent policy directive to reduce the number of firebreaks in wilderness areas. Slight variations of this system were proposed in the concession areas, and variations in application of range condition rules inside and outside wilderness areas may produce enough differences to be used as experiments in their own right, the outcomes of which will advise adaptive development of this fire strategy in future.

#### GONAREZHOU NATIONAL PARK

The frequency of man-induced fires in the GNP today is considered to be much greater than that which would represent a normal situation. On average, uncontrolled fires occur with a

frequency of four per year and burn about 25% of the park. Many of the fires are started by illegal hunters in the park (51%) and most of the balance originates from the surrounding communal areas (22%) or Mozambique (19%), (Jones, 1994). The impacts of fire in the park have not been studied and they are thought to have contributed to loss of mature canopy trees from the woodland, reduced rate of tree recruitment, reduction in herbaceous cover and increased rates of soil loss (Jones, 1994) For this reason, there is presently a No burning policy and any fires that do occur are extinguished. The need for a more considered fire management policy is recognized by management staff and will probably be addressed in the next revised management plan.

#### 8.6.2 POLICY RECOMMENDATIONS

For the present, it is recommended that parks respect the fire management policy of the adjoining park and undertake the following:

- ❖ Recommendation: That annually, the management of each park inform the Management Committee and the management of the neighbouring park, of their planned fire management programme for the burning blocks that are within 10 km of the neighbouring park. This should take place immediately the programme is decided.
- ❖ Recommendation: That the management of a park intending to burn firebreaks, or to carry out management burning of any blocks within 10 km of the border, must provide written notice to



the management of the neighbouring park at least four weeks in advance.

❖ Recommendation:

The most appropriate staff must inform the neighbouring park management immediately of any runaway fire that might cross the border.

## 8.7 WILDLIFE

Each park will have its own wildlife management goals and objectives. A joint approach will be adopted with threatened species, and perhaps for other species if and when significant movement patterns develop between two or more of the parks. (In the context of this document, wildlife refers to the larger fauna, but could include small fauna and flora where relevant).

### 8.7.1 THE PRESENT SITUATION

The GLTP contains some of the most significant wildlife populations on earth, and of particular significance are the elephant and rhino populations. In contrast to most protected areas in Africa, in both the GNP and KNP, the elephant populations are increasing and have reached levels where they are considered to be having a detrimental impact on the biodiversity of these parks. For this reason, it is critical that the management

bodies of these areas lobby their national policy makers to support the drafting and implementation of sustainable use policies.

The rhino populations in the KNP continue to increase and the white rhino population is the single largest in Africa.

### 8.7.2 THE SADC PROTOCOL ON WILDLIFE CONSERVATION AND LAW ENFORCEMENT

The SADC Protocol on Wildlife Conservation and Law Enforcement, which was ratified in 1999, acknowledges the need for co-operation between Member states in enforcing laws governing wildlife, in sharing information about wildlife resources and wildlife law enforcement, and in building national and regional capacity to manage wildlife and enforce the laws that govern it. The components of the articles in the Protocol that have a direct bearing on the GLTP and TFCA are listed in Appendix III.

### 8.7.3 MAMMALS

A total of 147 species are known from the area, none of which are endemic. The estimated populations of some of the larger mammal species in the three protected areas are shown in Table 8.1 and the threatened species that occur in the GLTP are listed in Appendix IV.

The SADC Protocol on Wildlife Conservation and Law Enforcement underlines the need for a cooperative and coordinated approach to law enforcement.



## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

Wildlife populations of the conservation areas comprising the GLTP have been subject to wide fluctuations due to both drought and human interventions.

*Estimates of some of the large mammal populations in the GLTP component protected areas.*

Species	Limpopo	Kruger	Gonarezhou	Total
Elephant	± 150	9 294	4 243	13 395
Hippo	Few in dam	2 963	76	3 039
Rhino White	0	3 972	0	3 972
Rhino Black	0	300	0	300
Giraffe	<50	7 493	166	7 709
Buffalo	Very Few	±25 000	536	±25 536
Wildebeest	±30	20 093	161	20 284
Lichtenstein's Hartebeest	0	<50	0	<50
Tsessebe	0	<100	0	<100
Eland	<50	<250	114	<414
Kudu	>500	5 147	1 122	6 769
Nyala	Present	300	Present	Numerous
Bushbuck	Present	Common	3 000	>3 000
Waterbuck	±400	2 225	300	±3 000
Reedbuck	Few	300	50	350
Mt Reedbuck	0	150	0	150
Impala	Numerous	96 000	2 976	>100 000
Roan	1	60	100	160
Sable	±100	300	130	430
Zebra	<100	25 244	652	±26 000
Warthog	Few	1 823	300	>2 000
Leopard	Common	1 000	250	>1 250
Lion	Few	2 500	150*	2 650
Spotted Hyena	Common	2 000	100	>2 100
Wild Dog	±50	200	50	±300
Cheetah	0	200	20	220
Bat-eared Fox	Unknown	Few	Few	Few
Brown Hyena	Unknown	Unknown	Few	Few

Table 8.1

The estimates for The LNP were based on interviews with hunters from Gaza Safaris in 1998 (DNFFB, 1998)

#### GONAREZHOU NATIONAL PARK

Recently, there have been significant changes in the wildlife populations in the park. During the 1980s, black rhino became extinct for the second time, when there was severe poaching in the park and over the same period, at least 900 elephant were killed. It was during the severe 1991/2 drought, when hippo and buffalo numbers declined drastically, that the re-introduced Lichtenstein's hartebeest probably also

died out.

No data are available for the wildlife populations in the Sengwe Corridor, but these are low and the trophy hunting of the CAMP-FIRE program in Malapati/Sengwe relies largely on hunting elephants that have strayed from Gonarezhou or Kruger and are not a result of the sustainable management of a resident population in the Communal Areas.





#### KRUGER NATIONAL PARK

The 2002 population estimates for the KNP include those populations in the Makuleke Reserve. (Several of the large mammals populations declined significantly during the 1992/93 drought).

The KNP has the second largest population of black rhino and the largest single population of white rhino in Africa. The potential for these to increase significantly still exists. As a result of a moratorium on culling, the elephant population now exceeds that which was formerly considered desirable for the park.

#### 8.7.4 ELEPHANT MANAGEMENT

As the keystone species of the GLTP, it is necessary that the prevailing elephant management policies of the KNP and GNP be summarized here. Over the last decade, other than live capture, no culling of the elephant populations has taken place in either of these parks. This has been largely due to the lobbying pressures of the animal rights movement. The final plan for the LNP is not yet complete and consequently no elephant management policy has been developed.

#### LIMPOPO NATIONAL PARK

Over the last 25 years, the elephant population has been almost wiped out through uncontrolled hunting that took place during the civil war. In September 2001, there were about 150 elephant in the LNP, and in early October a further 25 were introduced from the KNP (Whyte, 2001).

Within weeks of the release of these animals, one family group appeared to have settled down

in the LNP; three bulls had returned to the area in which they had been captured in the KNP and several others were patrolling the fence apparently trying to find a gap to enter the KNP. These observations confirmed observations made elsewhere of the strong homing instinct shown by translocated elephants.

The Peace Parks Foundations (PPF) initial proposal, to start removing the intervening fence between KNP and LNP in February 2002 and to commence the introduction of 1000 elephants, has since been revised. In 2002, an area of approximately 40 000 ha of the LNP will be game fenced as an initial restocking area. Only when the animals translocated into this area have settled down, will the fence between this enclosure and the KNP be removed

Given the international publicity that surrounded the elephant re-introduction, it has had a major impact on publicizing the GLTP and the conservation agencies to the general public.

#### KRUGER NATIONAL PARK

The new KNP elephant management policy focuses on the extent and intensity of elephant impacts on biodiversity rather than on numbers of elephants per se. It is based on the principles described below. (The aim of the planned translocation of 1000 elephants from KNP to LNP by the Peace Parks Foundation is to fulfill the KNP management needs and to rapidly establish a large and viable elephant population in the LNP).

These principles are:

- ❖ Ecosystems are not static and that fluctuations of conditions and population

Elephant are a keystone species of the GLTP but their management is beset with problems emanating in particular from the animal rights movement.



Elephant  
management  
policy needs to  
be viewed from  
the perspective  
that elephants  
are just one  
component in  
a broad and  
integrated  
natural system.

responses are an inherent and desirable attribute of the Lowveld ecosystem and contribute to its biodiversity. A range of elephant impact, achieved through different densities of elephants in different areas at different times, is thus also natural and desirable.

- ❖ That elephants are important agents of habitat modification and thus contribute to biodiversity.
- ❖ Those elephant populations that are confined - but whose growth is not limited through management - are very likely to increase in number until negative impacts on the system's biodiversity result.
- ❖ That elephants should not be viewed in isolation, but as one component of a broader, integrated system. The fundamental basis of this policy is not to manage purely for the benefit of the elephant population, but to manage elephant impact in conjunction with other ecosystem processes, such as fire, to promote biodiversity in general.
- ❖ For the purposes of elephant management, the KNP is divided into six zones. These consist of two botanical reserves, two high elephant impact zones and two low elephant impact zones. "Thresholds of Potential Concern" (TPCs) will dictate the management of these zones. These TPCs are specified limits of ecological change to habitats and other wildlife populations, which should not be exceeded. The specified management option for each zone will be followed until there are indications

that one or more of the TPC's have been reached or exceeded. In the high elephant impact zones the population will be allowed to increase. It is expected that the population of these zones will increase at around 7% per year (a potential doubling in 10 years). In the low elephant impact zones the population will be reduced (through live removals or culling) until one or more of the TPCs have been reached or exceeded. This decrease will be achieved through the reduction of the populations within these zones by 7% per year. In the Botanical Reserves (and initially in the Southern High Elephant Impact Zone), medium densities should be maintained.

- ❖ The management actions applied in the high- and low elephant impact zones will have to be alternated once TPC's have been reached or exceeded and the alternate action will then be applied. High elephant impact areas will then be treated as low elephant impact zones and their populations systematically reduced while the elephant populations of the low elephant impact zones will be allowed to increase.
- ❖ The boundaries of the respective elephant management zones have been defined so as to roughly conform to the known boundaries of elephant clans. This is to allow meaningful elephant management without disrupting the natural home ranges of these clans. The boundaries have also been defined so as to ensure that the four major zones (excluding the botanical reserves) are of a similar size. Elephant densities will be monitored annually during aerial censuses



and elephant movements in and out of the area will be monitored through the ongoing movement study using radio-collared animals.

- ❖ Decisions as to appropriate actions for the management of elephants in the respective zones should be made through an annual appraisal by senior management and research staff of the results of the respective biodiversity monitoring projects and the annual elephant census.
- ❖ The preferred future methods for elephant population control should be non-lethal, but where these options are not feasible, culling will have to remain an option. Possible non-lethal options for the management of elephants are:
  - ❖ Translocation: Only adult bulls or animals in intact family units should be translocated.
  - ❖ Contraception: Contraception technology at present does not yet offer a viable method of population control in elephants.

#### GONAREZHOU NATIONAL PARK

It is GNP policy that the elephant population will be kept at between 1000 and 3000 animals (GNP Management Plan, 1986). The recommended optimum population of 2000, will give a dry season density along the rivers of 0.8 per Km<sup>2</sup> (GNP Management Plan).

However, the current population (4200) is double the recommended carrying capacity for elephant recommended in the management plan. The potentially detrimental impact of this elephant population on biodiversity and the

resilience of the habitats is a serious cause for concern to DNPWM management.

The population needs to be reduced to 2000 animals, either by capture and translocation, or by culling. Once this has been achieved, the need for any subsequent off-take will be assessed in relation to the rate of population growth and the rate of change to the woodlands.

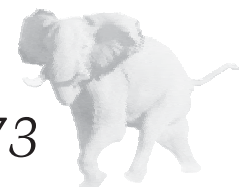
#### 8.7.5 BIRDS

A total of 505 species have been recorded from the KNP alone, but additional species are likely to also be present in the LNP and the GNP (400 species recorded). Threatened species that occur in the GLTP are listed in Appendix IV.

The area has important populations of the following:

Large raptors associated with wilderness (e.g. Martial, Tawny and Bateleur eagles)  
 Ostrich \*  
 Boehms spinetail  
 African skimmer  
 Lesser black-winged plover  
 Brown-headed parrot  
 Green coucal  
 Black-backed cisticola  
 Brown-throated golden weaver  
 Saddle-billed stork  
 Southern ground hornbill  
 Lappet-faced vulture  
 White-headed vulture  
 Yellow-billed oxpecker  
 Openbill storks and the only known regular nesting colony south of the Okavango Delta.  
 Crested guinea fowl

Reduction of elephant populations can be addressed through culling, translocation and contraception. The effectiveness of these last two options is subject to considerable debate.



As well as for mammals, the GLTP is a reservoir for a wide variety of birds, reptiles, amphibians and fish and includes endemic and threatened species.

\* Because of the interbreeding of captive birds in the ostrich industry, the populations of ostrich in KNP and GNP are some of the last populations of pure genetic stock in the region. (This must also be taken into account in the second phase of expanding the TFCA).

#### 8.7.6 REPTILES

At least 116 species of reptiles are known from the GLTP area. Amongst these are two near-endemic species, the Blue-tailed sandveld lizard, *Nucras caesicaudata* and De Costers spade-snouted worm lizard *Monopeltis decosteri*. The density of crocodiles in the gorges of the Olifants (Imbelule, Rio dos Elefantes) is considered one of the highest in Africa. (This could be affected if the Massingir dam wall is raised and the present habitat flooded). In Zimbabwe, the soft-shelled turtle *Cycloderma freantum* is only found in the GNP.

#### 8.7.7 AMPHIBIANS

Thirty-four species of frogs are known from the GLTP. The sandveld pyxie *Tomoptera krugeren-sis* was discovered in the KNP where it has its main area of distribution. It has more recently been found on Malilangwe adjacent to the Gonarezhou.

#### 8.7.8 FISH

Fifty species of fish are known from the area. Three deserve special conservation status because of their rarity and limited distribution. These are two small seasonal pan inhabitants: the killifish *Notobranchius orthonotus* and *Notobranchius rachovii* as well as the lungfish *Protopterus annectens*.

#### 8.7.9 ALIEN SPECIES

The only known alien vertebrates in the GLTP are the house mouse *Mus musculus* and house rat *Rattus rattus*, Nile tilapia *Oreochromis niloticus* and silver carp *Hypothalmichthys molitrix*.

As recently as 1985, the silver carp was confined to populations held in captivity; it was then considered that it had the potential for causing a problem if it became established in natural or semi-natural waters (Bruton & Merron, 1985). It has since become established in the Olifants system and was first recorded in Massingir dam in 1996. Local fishermen report that catches of carp are increasing whereas catches of native fish are declining. This could be a result of food competition between silver carp and the fry of native species.

On the periphery of the GLTP, where there is the possibility of alien vertebrate invasion of the park, the vertebrate species that may be of concern are: small mouth bass *Micropterus dolomieu*, largemouth bass *Micropterus salmoides* that have been introduced to rivers and properties adjoining and upstream of the GLTP. The roan antelope sub-species *Hippotragus equines cottoni*, has been introduced onto Malilangwe. If animals from here move into the GNP, then the population of southern roan *H.E.equinus* in the GNP is at risk of genetic contamination.

#### 8.7.10 THREATENED SPECIES

The vertebrates in the GLTP classified by the IUCN as threatened or rare species are listed in Appendix III, IV and V.



### 8.7.11 CONSUMPTIVE UTILIZATION

It is recognized that each nation has sovereignty over the forms of utilization that are practiced in its own protected areas. Differences between these currently exist. For example, in the Gonarezhou National Park angling by visitors is permitted, whereas in the Kruger National Park this is prohibited.

Trophy hunting adjacent the KNP has not been without its problems. There have been abuses of trophy hunting adjacent the KNP where lions have been lured out of the park with the use of baits and amplified tape recordings.

Trophy hunting of species that have to be controlled for management reasons is permitted in the Contractual National Park in the Makuleke region, but not in the KNP itself.

The establishment of the GLTP must be seen as an opportunity to boost the concept of consumptive utilization. This will be particularly important with the formation of the greater TFCA, where sustainable consumptive is likely to provide one the major sources of benefits to the resident communities.

### 8.7.12 RECOMMENDED POLICIES

Although each park will have its own wildlife management strategies, there will also be strategies that will be common to all three parks. These are:

- ❖ Recommendation:  
That the populations of elephant in each park will be managed subject to that parks management plan. However a joint GLTP elephant management policy and should be developed.
- ❖ Recommendation:  
That there will be a common approach to the management of threatened species. (SADC Protocol on Wildlife Conservation and Law Enforcement, 1999).
- ❖ Recommendation:  
That no species or sub species alien to the GLTP will be introduced into the area. (If the fence between Malilangwe and the GNP is to be removed, DNA testing of the roan should be done to clarify the degree of difference between the populations there and in the GNP).
- ❖ Recommendation:  
That the monitoring of large mammal populations will be carried out in each park in such a manner that results can be used to form a common GLTP database.
- ❖ Recommendation:  
That data on habitats, wildlife populations and management will be freely shared between the three conservation agencies.
- ❖ Recommendation:  
That where differences arise between two agencies over a proposed consumptive utilization quota, this is resolved by a panel of mutually acceptable independent scientists.

The GLTP provides an opportunity to explore a more creative approach to consumptive utilization than that presently applied by some of the individual parks in the initiative.



Fulfilment  
of the  
conservation  
goals of the  
GLTP may  
require the  
controlled  
re-introduction  
of species  
which have  
become extinct  
in the area.

#### MANAGEMENT GUIDELINES

❖ Recommendation:

As the primary conservation objective is to conserve the biodiversity of the area, it may be necessary to re-introduce species that have disappeared from the area. Examples of this are Lichtensteins hartebeest and black rhino. In addition, it may be necessary to augment other populations of declining species such as roan antelope, sable and tsessebe.

Where additional individuals of a species that occurs in the GLTP are introduced, the following criteria must be observed in the process:

- a. All reintroductions must be researched before they take place to ensure that the project is justified and has the optimal likelihood of being successful. (E.g. The habitats must be suitable, the numbers must be viable and negative factors minimal or at least capable of being controlled until the population is established).
- b. Animals to be introduced must be of the same genotype as those that are already present.
- c. It must be ensured that no parasites or diseases foreign to the GLTP are introduced with the reintroduced animals.
- d. The necessary infrastructure (off-loading ramps, holding enclosures etc) must be constructed prior to reintroduction.

- e. A monitoring programme must be put in place that will determine the success of the introduction, whether there are any limiting factors and whether any intervention is necessary.
- f. The introduction and the process must be approved by the Conservation Committee and the JMB.

❖ Recommendation:

If the introduction of elephant from the KNP to the LNP is to proceed as stated, then the removal of the fence should be delayed until such time that the relocated animals have settled in to the area. If the fence is to be removed in the near future, then elephant translocation from the KNP should be suspended and elephant should be permitted to disperse into The LNP of their own accord.

❖ Recommendation:

The impact of any alien animal species in the GNP should be assessed. This is particularly important in the case of the silver carp in the Olifants system, where control measures may be necessary to halt the possible decline in native fish species.

❖ Recommendation:

The occasion may arise when an animal, for one reason or another, may present a problem that requires that it is either destroyed or captured e.g. rabies, wounded by human actions, carrying a snare etc. If this animal is on the boundary between parks, or observed in one park by staff of another, the most practical course of action may be for the persons on site to resolve the problem. Each park should adopt an



internal policy whereby under certain circumstances, the issue can be resolved by the person on site at the time, provided that person is qualified to do the job. The success of this will depend largely on effective means of communication.

❖ Recommendation:

Sustainable consumptive utilization of any resource in the GLTP must be researched and monitored. Accurate records must be kept and made available to the JMB.

❖ Recommendation:

The management agencies and the JMB must develop a common approach to the Animal Rights lobbies that oppose sustainable utilization of wildlife populations for ecological reasons. This is particularly important in relation to the management of over-abundant elephant populations. To achieve this, groups and movements opposed to consumptive utilization need to be constructively engaged on a united front and clearly informed of the need for such a policy in southern Africa.

## 8.8 VETERINARY ISSUES.

The common vision of the national veterinary authorities is that, with the formation of the GLTP, the standards of monitoring and control of diseases that may be transmitted between wildlife and domestic livestock will be maintained at their present levels (October 2001) in SA and Zimbabwe and improved in Mozambique.

It is predictable that without international

boundary fences, and with contiguous wildlife populations, any infectious disease present in any one of the participating conservation areas will eventually spread throughout the entire transfrontier conservation area, unless containment or control measures are put into place. This will present challenges for the veterinary authorities to resolve.

### 8.8.1 THE PRESENT SITUATION

In general, animal diseases that have been identified in sub-Saharan Africa, fall arbitrarily into one of three basic categories, namely:

❖ African endemic diseases, which are those indigenous to the continent and that can be maintained in free-ranging wildlife populations. Important examples are the SAT types of Foot-and-Mouth disease (FMD), African swine fever (ASF), African horse sickness, *Theileriosis*, *Trypanosomiasis* and Alcelaphine malignant catarrhal fever (MCF). This disease category also includes certain multi-species diseases that have an almost worldwide distribution such as anthrax, rabies, *Encephalomyocarditis* (EMC) and certain *enteropathogenic* and clostridial diseases.

❖ Alien / Exotic diseases which have been introduced onto the continent with animal imports, predominantly during the colonial era. Bovine *tuberculosis*, (BTB) Rinderpest, Brucellosis and canine distemper are good examples.

❖ Emerging, re-emerging or truly novel diseases e.g. feline immuno-deficiency virus (FIV).

Only strict  
veterinary  
control will  
restrict the  
spread of  
infectious  
diseases  
amongst  
wildlife from  
one area to the  
whole of the  
GLTP.



Alien diseases amongst wildlife have probably been introduced through the introduction of alien domestic species originating in Europe and Asia.

### 8.8.2 ENDEMIC DISEASES AND PARASITES

With regard to their threat to domestic livestock, the important indigenous endemic diseases that are presently found in the GLTP are FMD, *Theileriosis*, AHS, ASF and MCF.

Many of the people living in the LNP have cattle, goats and pigs. It is important to note that there are currently no buffalo or wildebeest in the LNP and the numbers of warthog and bushpig are assumed to be very low. For these reasons, livestock deaths due to *Theileriosis*, MCF and ASF may not be problematical at present. However, re-colonization of the LNP by these wildlife species is very likely to impact on livestock in the future.

While Rabies has not been found in wild animals within the KNP, it is known to be present in dogs originating from the LNP. Of the stray dogs, which have entered the KNP from Mozambique, more than 80% have been found to be rabid.

Anthrax outbreaks occur cyclically in wildlife in the northern KNP and are endemic on the Levubu river flood plains, where it periodically is responsible for wildlife deaths.

Tsetse fly (*Glossina spp*) still occurs near on the north bank of the Save river in Mozambique. With the vector still present, the resident wildlife is assumed to be host to the *trypanosomes* that cause the disease Nagana in cattle. This area is on the periphery of what will become the greater TFCA and one can expect that as wildlife numbers recover and increase, there will be the likelihood of a gradual spread

of both the fly and *trypanosome* both southwards and westwards

### 8.8.3 ALIEN OR EXOTIC DISEASES

These diseases were probably introduced to the area with the importation of domestic species from Asia and Europe. The most important of these are: Bovine tuberculosis (BTB), Rinderpest, *Brucellosis* and canine distemper (Bengis et al, in press).

Bovine Tuberculosis is prevalent in the buffalo population in the KNP with the greatest incidence of infection in the southern region and the lowest in the north. Lions have become infected as a result of feeding on infected buffalo, and again the greatest incidence of infection is in the south with the most northern incidence found in the area of Letaba.

Rinderpest last occurred in the GLTP Area when the epizootic swept through southern Africa between 1899 and 1905. A strain of the disease that is mild for cattle, but fatal in wild artiodactyls, still smolders in East Africa and should it move southwards it would be of great concern to regional governments. This is a potential threat to most ungulates, particularly buffalo and the *Tragelaphines*.

Canine distemper, apparently introduced into Africa with domestic dogs, occurs in the region. This disease has crossed the species barrier and not only affects canids but has also been responsible for significant mortality in lions (Roelke-Parker et al. 1996).

Contiguous wildlife populations may result in a biological bridge for the reintroduction of cattle-





adapted *Theleiria p.parva* (East coast fever) from eastern Mozambique.

#### 8.8.4 EMERGING DISEASES

An example of an emerging, recently detected disease is the feline immunodeficiency virus (FIV) infection in lions (Spencer et al. 1992).

Examples of diseases that have recently crossed the species barrier are canine distemper in freeranging lions, EMC in free ranging elephants (Grobler et al 1992) and BTB in free ranging lion, cheetah, baboon, kudu, leopard and hyena in the KNP (Keet et al. 1996).

#### 8.8.5 BACKGROUND TO DISEASE CONTROL POLICIES

The Veterinary policies for the GLTP should recognize that:

- ❖ Indigenous diseases and parasites are regarded as part of the biodiversity of the GLTP and the policy is that they will be monitored and studied but no attempt will be made to eliminate them. However, every effort must be made to contain these within the GLTP itself.
- ❖ Alien diseases (e.g. Bovine tuberculosis and Rinderpest) and parasites will be monitored and studied, and where possible, they will be controlled or eradicated.
- ❖ There is no evidence that BTB is present in Zimbabwe. Therefore, until it has been eliminated in the KNP, no species that are potential carriers should be permitted to mingle freely with wild ungulates or live-

stock in Zimbabwe.

- ❖ Buffalo from northwest Zimbabwe have been introduced into the GNP. These carry a FMD topotype alien to those carried by buffalo in the KNP. South African authorities insist that the transfer of this topotype from buffalo in GNP to those in the KNP should be prevented.
- ❖ A GLTP Veterinary Committee will be formed as a sub-committee of the JMB. This will be responsible for the coordination and reporting of veterinary issues within the GLTP and will be represented on the JMB.

#### 8.8.6 MONITORING AND RESEARCH RECOMMENDATIONS

To allay any concerns of the livestock industry in South Africa, regarding the removal of the fence separating the KNP from the LNP, the level and standard of monitoring of wildlife diseases, parasites and unexplained mortalities must be maintained at the level currently in place in the KNP. To achieve this the following recommendations should be put into effect:

##### POLICY RECOMMENDATIONS

- ❖ Recommendation:  
That the veterinary monitoring for the LNP and KNP, be coordinated through the existing veterinary facilities at Skukuza.
- ❖ Recommendation:  
That because the Veterinary Dept in Zimbabwe consider that the veterinary monitoring for the GNP requires upgrading,

New diseases amongst wildlife populations are constantly emerging and these must be strenuously monitored and where possible, confined.



A database of animal disease is vital to the management of wildlife populations. Skukuza, which already has a large database, is proposed as the natural location of such a facility.

this will require additional resources that must be made available by Government.

- ❖ Recommendation:  
That an animal diseases database be maintained, which is readily accessible and available to both management and the public. As Skukuza already acts as a center for storage of data from the KNP, and no other facility is available in the GLTP, it is proposed that it continues to undertake this function the facility is expanded to serve the entire GLTP. Expansion of the facility, or the development of a satellite facility near Crooks Corner should be considered.
- ❖ Recommendation:  
That copies of all veterinary related data collected within the GLTP will be made available to management of the LNP, GNP and KNP and the Veterinary authorities of each country.

#### MANAGEMENT GUIDELINES

- ❖ Recommendation:  
That the State Veterinary facility at Skukuza will provide the practical training needed for the veterinary technical staff that will work in the LNP and the KNP.

#### 8.8.7 DOMESTIC LIVESTOCK RECOMMENDATION

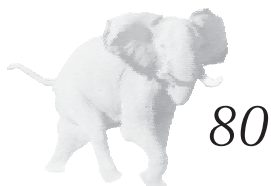
It is recognized that the domestic livestock currently within the GLTP will act as sentinels for the presence of diseases that are transferred from wildlife to livestock. It is also recognized that domestic livestock can transfer diseases to wildlife and people. It is proposed that the

GLTP will impose the following regulations on livestock within its borders.

#### POLICY RECOMMENDATIONS

- ❖ Recommendation:  
No domestic livestock will be permitted to transit the GLTP other than on the road between Mapai and Chiredzi. Livestock intended for Zimbabwe may only enter the country with the appropriate health checks and if the importation is by approved road or rail vehicle, with approved movement permits. Any cloven hoofed animal to be translocated out of the GLTP must first be subjected to standard quarantine and disease screening procedures.
- ❖ Recommendation:  
The uncontrolled movement through the GLTP, of raw or unprocessed products derived from cloven hoofed animals must not be permitted, unless their transit has been cleared by the respective Veterinary and Customs authorities.
- ❖ Recommendation:  
No domestic cats will be permitted in the GLTP. A programme to eliminate any that are present must be implemented. Negotiations will have to take place with the communities that continue to live in the LNP.

- ❖ Recommendation:  
The ownership of domestic dogs within the GLTP should be discouraged. Those domestic dogs that are permitted to reside within the GLTP will be registered and vaccinated annually with Rabies vaccine and the



Distemper / Parvovirus combination. State veterinary staff will undertake the vaccination and issue the appropriate certification.

❖ Recommendation:

All domestic dogs that are permitted to be resident within the LNP will be sterilized so as to keep numbers manageable. This will have to be negotiated with the local communities.

❖ Recommendation:

All cattle permitted to stay within the LNP must be vaccinated annually against FMD. In Zimbabwe vaccination for FMD takes place every 6 months and this will continue to apply to cattle in the Sengwe corridor. Also, the vaccination of cattle against anthrax at Macandezulu A and B is recommended.

❖ Recommendation:

The introduction of domestic equids to the GLTP for management or tourism purposes is acceptable. These will have to be vaccinated annually for African Horse sickness.

❖ Recommendation:

In the course of time, Tsetse fly and *Trypanosomiasis* may return to the area of the TFCA. Should this happen, surveillance activities around the infected areas must commence immediately. The policies to be adopted and the actions to be undertaken will rest with the countries concerned.

❖ Recommendation:

That, in the interests of animal welfare, the minimum conditions for the transport of game through the GLTP must be equivalent

to those listed in the South African Bureau of Standards (SABS) Code 0331 on the welfare of animals while being transported. The Governments will issue a Master Permit to cover Park-to-Park translocations within the GLTP. This will be to facilitate the movement of wildlife into the LNP where normally a permit would be required for each consignment.

❖ Recommendation:

The proposed GLTP Veterinary Committee will keep each nations State Veterinary Department informed of veterinary issues on a monthly basis, and immediately if any unforeseen problem arises.

❖ Recommendation:

That the involvement of the private sector (NGOs, Universities and Companies) in research into and management of veterinary issues is encouraged. The conditions of this involvement will depend on the internal policies of the agencies concerned and these entities must coordinate their activities through appropriate regulatory officials in the GLTP.

❖ Recommendation:

The JMB will have to develop and implement a policy for compensation for losses of livestock as a consequence of veterinary control official measures.

#### MANAGEMENT GUIDELINES

❖ Recommendation:

All unexplained deaths of domestic livestock within the GLTP must be reported to Park management. Where domestic

Strict  
legislation will  
be required to  
control the  
access and  
transit of  
domestic  
animals into  
and through  
the GLTP.



## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

Where possible, existing domestic livestock numbers within the area should be gradually reduced through the exploration of alternative land-use options.

ungulates are kept within the GLTP, management will undertake an information campaign to inform residents of the need for reporting deaths and also the hazards of eating livestock that may have died from Anthrax and Bovine Tuberculosis. (The possibility of getting villagers to take blood smears from dead animals must be investigated).

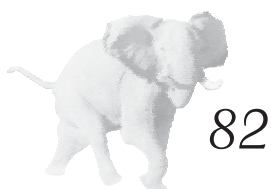
- ❖ Recommendation:  
The enlargement of existing livestock herds at Macandezulu A and B is not

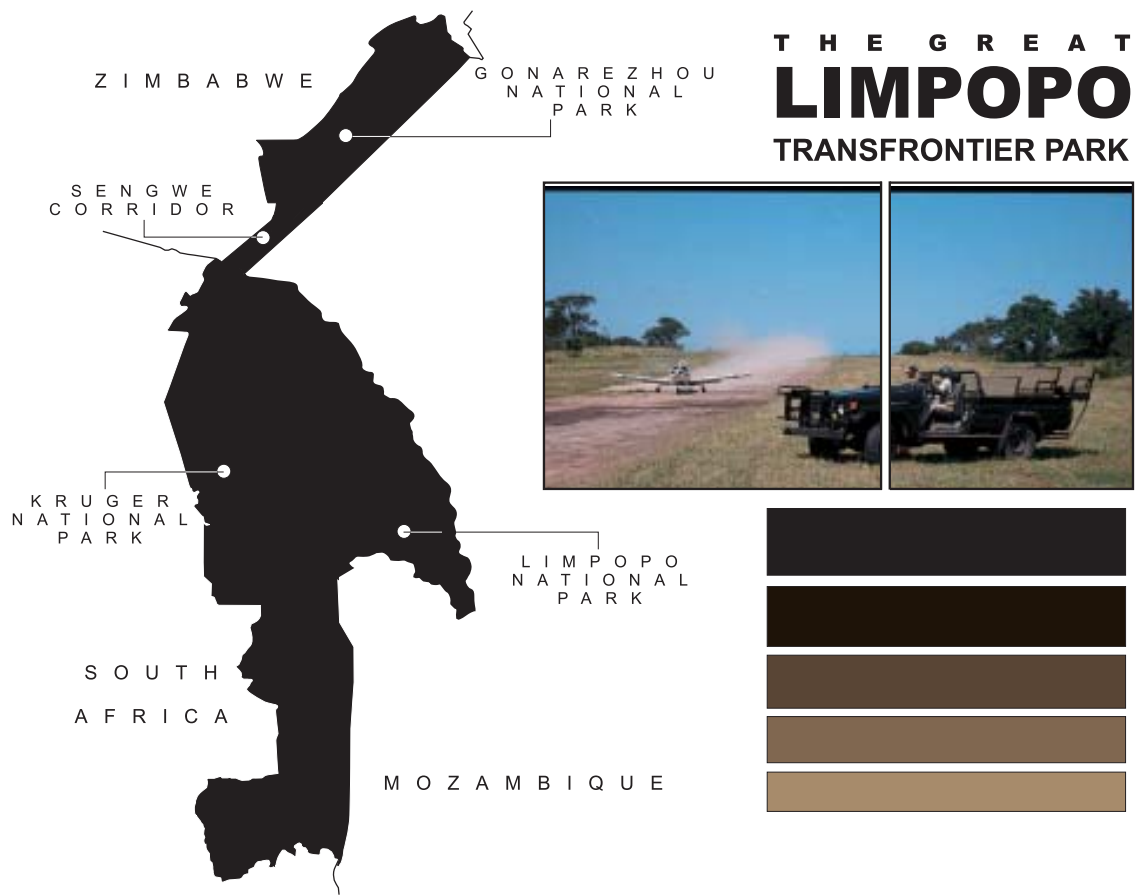
recommended. The gradual removal of domestic livestock from the LNP is recommended and the LNP management is encouraged to develop alternate land use practices and internal policies that will address this.

*The actions responsibilities and timetable  
for implementation of the Veterinary recommendations*

Action	Primary Responsibility	Secondary Responsibility	Year
Agree to veterinary proposals	Veterinary Departments	JMB	2002
Form GLTP Veterinary Committee	JMB	DNAP/ Vet Depts. South Africa & Zimbabwe	2002
Recruit Technical staff for the LNP	DNAP	JMB	2002
Practical training for the LNP Veterinary Technical staff	DNAP	Veterinary Committee & Veterinary Dept Skukuza	Ongoing

*Table 8.8.1*





**T H E G R E A T  
LIMPOPO  
TRANSFRONTIER PARK**

## 9. ECOTOURISM

### 9.1 THE PRESENT SITUATION

#### LIMPOPO NATIONAL PARK

*From 1994 to 2001, the concession to operate hunting safaris in Coutada 16 (now the LNP) was awarded to the company Gaza Safaris. The Company's hunting focus was on trophy lions.*



The proximity of the GLTP to the coast considerably enhances the potential of the whole region for tourism.

The quota allocated was not based on the sustainable utilization of a resident lion population, but the company relied on lions dispersing into Coutada 16 from the KNP. Several abuses of this took place, with hunters making gaps in the KNP fence then luring lions out using baits and tape recordings and then shooting them. In 2001, no hunting quota was issued to the company and management of the company has since indicated that they wish to become involved in non-consumptive tourism.

There are at present no tourist facilities in the LNP and the management plan is still being prepared. However the findings in the recently completed Integrated Tourist Development Plan (GLTP Technical Committee, 2002) indicate that strong linkages between LNP (and therefore GLTFP) with existing and future beach resorts will make the project a success. Few destinations within Africa can offer the experience of a bush and beach experience within such proximity. The ability of a destination to combine the two can considerably enhance the overall tourist experience of the GLTFP and Mozambique as a whole. Without such a combination it is unlikely that the incorporation of LNP into the GLTFP will deliver optimum benefits to Mozambique.

#### KRUGER NATIONAL PARK

The park has as 10 large camps, 8 medium camps and 5 small camps. These have a total of 4500 beds. A further 4000 beds are allocated to people who stay in caravans and tents, at specific sites demarcated at most of the 10 large camps.

Currently the KNP has approximately 1 million visitors per annum and generates an annual

income of approximately US \$40 million.

The bulk of the tourists are self drive visitors who stay in camps managed by the KNP. Apart from these camps, the park also offers wilderness trails, night drives and day-walks. In the near future, the private sector will be developing six semi-permanent camps to cater for the more exclusive end of the tourist market.

#### GONAREZHOU NATIONAL PARK

In terms of achieving its tourist potential, the GNP has been disadvantaged by the strengths of Victoria Falls, Hwange and Kariba in the north-west of Zimbabwe, and has taken a niche status as a result. The tourism development objective for the park is to develop and encourage activities and levels of park-use consistent with sustaining the remote natural character and features of the park (GNP Management Plan). This means a low density of tourists and a low level of development.

Use of the area is confined to vehicle borne game viewing, but angling is permitted. Night drives, wilderness trails and day walks do not yet take place.

Between 1996 and 1998, the annual number of visitors to the GNP was about 6000. Approximately 20% of these visitors were foreigners, primarily from South Africa and Europe. In 2000, in tandem with the rest of the countrys tourism industry, this number declined steeply to just over 2000. More than half this number were day visitors, suggesting that they were primarily locals or tourists using accommodation outside the GNP.



Since 1997, most of the visitors to the GNP have been Zimbabweans and South Africans. This indicates that the park is either poorly known or marketed outside the region, or that overseas visitors have more attractive options available.

There are two chalet camps in the Park in a poor state of repair. The 1998 plan proposes 13 undeveloped campsites (toilets only) and 15 developed sites. There will be 20 day-visitor picnic sites and provision is made for hides, viewing points and picnic sites.

In the GNP plan it is proposed that the DNPWM retains the management of all of the permanent camps and that 10 of the undeveloped campsites will be leased to commercial operators to develop semi-permanent camps.

Adaptive management will determine the eventual carrying capacity of the GNP for tourists. Vehicle borne tourist will be restricted to the Wild Areas and walking trails will take place in the Wilderness zones.

## 9.2 CREATING AN ENVIRONMENTAL THEME ATTRACTION

After a detailed situation analysis, KPMG (2002) recommended that to achieve its development and tourism objectives, the GLTFP should be positioned as one destination in the tourism marketplace. It will however offer a diverse range of visitor experiences.

The theme should be a destination that offers something for everyone. It is thus fundamental

that the project concept addresses the needs and desires of all visitors. Even though the main activity is game viewing, there is also a need to offer a diversity of attractions and activities, which will not only satisfy the individual, but will also diversify the product base and offer new experiences to all visitors. In addition to attracting a wider base of visitors, this could also induce an increased length of stay within or at the park activities wildlife, conferences, retail and dining, sport; and support media coverage and exposure special events etc.

### LINKING PRODUCT TO MARKET

Traditionally, conservation planners and managers have prescribed the criteria for tourism in their protected areas. A new approach is where the industry experts define what tourist products, and at what scale, are required to best meet the development objectives of the area. Thereafter, the managers can either develop plans to accommodate these recommendations, or reject them if they will compromise the conservation goals of the protected area.

The success of the GLTP as a tourism destination and agent of change in the light of different stakeholder requirements will have to be informed by market demand and the future investment opportunities in products and infrastructure created.

It will not be enough for this project to be yet another eco-tourism destination so much more is required to place South Africa, Mozambique and Zimbabwe on the tourism map. In order to begin to generate the required demand that will stimulate economic growth, the ability to create an eco-tourism product that

Possible  
tourism  
initiatives are  
better defined  
by tourism  
industry  
specialists.  
Conservation  
managers can  
then develop  
appropriate  
management  
strategies  
or reject  
inappropriate  
proposals.



## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

It is essential, if the GLTP is to optimise its potential, that developments cater for a broad spectrum of the tourism market.

appeals to the broader marketplace is a requirement, through the provision of an overall tourist experience, as opposed to a pure eco-tourism experience. The strength and size of visitor pull of the GLTP and the parks role in the broader tourism landscape will be dependent on the ability to cater for different market segments (both existing and future) which have varying profiles, desires and travel patterns. This approach has a direct correlation with the definition of areas of priority and strategic interventions that are required.

There is need to build upon product strength, identify catalytic investment opportunities and position according to market opportunity. The most powerful perhaps will be the delivery of a combination of wildlife i.e. GLTFP, the beach experiences along the Mozambican coast (and even further south along the KwaZulu-Natal coast), adventure and culture. It is a fact for example that the majority of international leisure visitors from within the developed world remain focused on the traditional beach holiday.

## POLICY RECOMMENDATIONS

The obvious issues that need to be resolved by the JMB before the GLTP tourism strategy is implemented and the park marketed are:

- ❖ Recommendation:  
It is essential that strategic planning is done before any joint development, management and marketing of tourism takes place. These will include deciding on the line of the transit roads, the need to plan the products to match the markets, outsourcing and private sector, community and government

participation. To achieve this, the JMB should establish a Tourism Committee that must view tourism operations in a common GLTP context.

## ❖ Recommendation:

The tourism development policy for the GNP should be reviewed.

If the Zimbabwe Lowveld is to achieve enough critical mass to compete with the established Victoria Falls-Hwange-Kariba focus, then there is a requirement for a shift of emphasis in the GNP in terms of the experiences and products offered as relating to accommodation. The opportunities are however there and if capitalized upon could begin to establish the southeastern region of Zimbabwe as a competitive tourist destination. The GNP has an important role to play in this regard and its future product provision will dictate market positioning and opportunity to grow demand. This must be a key consideration in the next revision of the management plan.

## MANAGEMENT GUIDELINES

- ❖ Recommendation:  
To avoid confusing visitors, it is important that the tourist regulations that are applied in the LNP and the KNP are harmonized as much as possible. Issues such as the speed limits, travel times, fee structures, gates opening times etc. can easily be agreed to at the JMB level.
- ❖ Recommendation:  
During the period that there are still gates between the GLP and the KNP, staff from





each protected area will operate these. Mozambique staff will control the access to the LNP and South African staff will control access to the KNP.

❖ Recommendation:

The fees to be paid by people who intend moving from one park to another will be decided closer to the time when the GLTP is ready to accept transfrontier visitors. This will be resolved by the JMB and the respective Directorates.

❖ Recommendation:

Whether tourists and guides using the following modes of transport may initially cross the borders will need to be decided by the JMB, and the Parks and the Border Control authorities.

- ❖ Guided walking trails.
- ❖ Guided canoe trails (Limpopo).
- ❖ Guided horse, camel or elephant back trails.
- ❖ Balloon safaris.

The success of tourism in the GLTP will depend heavily on cooperative strategic planning formulated primarily through a joint tourism committee.

*The actions needed, responsibilities and timetable to implement the tourism recommendations*

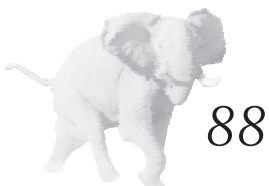
Action	Primary	Responsibility Secondary	Responsibility Timetable
The JMB to form a	Tourism Committee. JMB	DNAC/	DNPWM/SANP 2002
Develop strategic plan to address joint tourism planning, development and oper-	ational principles Tourism Committee	JMB	2002
Develop regulations regarding fee structures and operational	issues Tourism Committee	JMB	2002

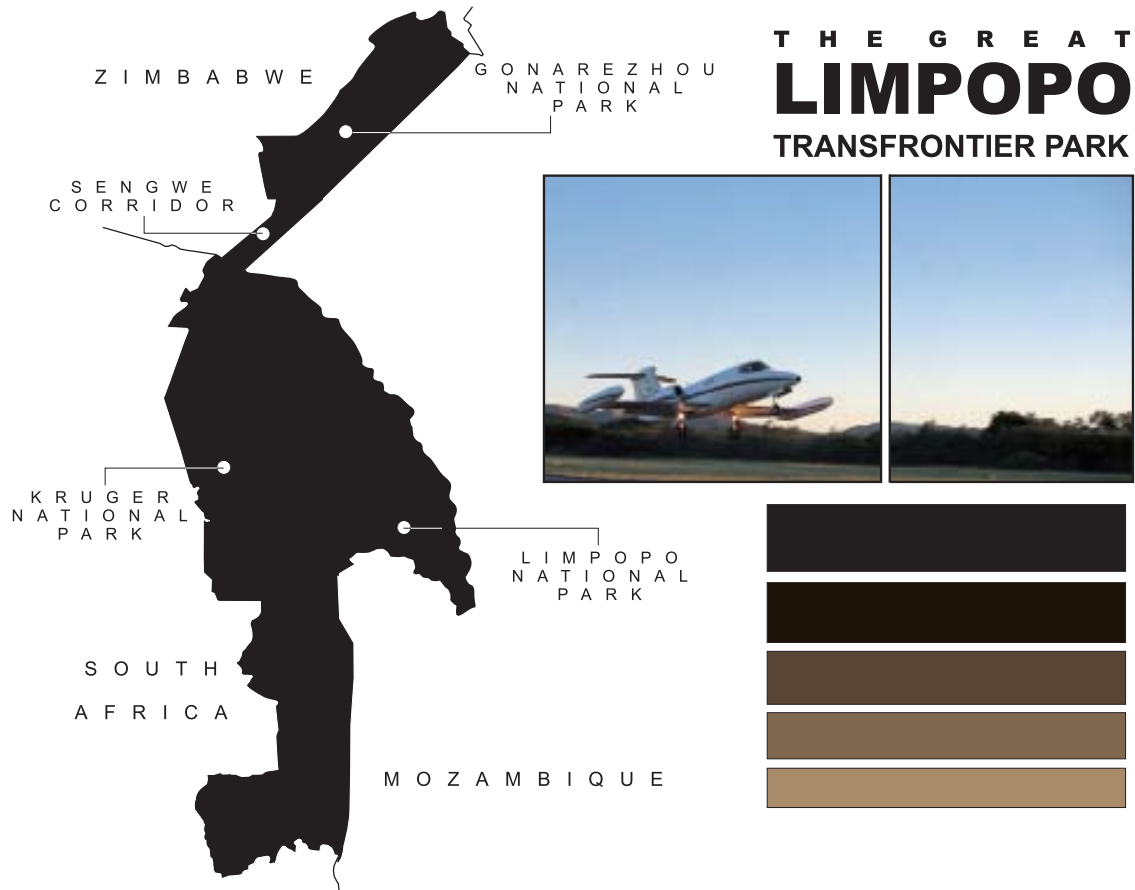
Table 9.1



*“Resource managers  
can no longer operate in a vacuum  
or surrounded by like-minded colleagues.....  
communicating with people from all walks of life  
must now be considered standard  
operating procedure.”*

*J Fazio & D Gilbert*





# 10. INFRASTRUCTURE DEVELOPMENT AND MANAGEMENT

## 10.1 INTRODUCTION

*Two major categories of infrastructure exist or are required for the GLTP, i.e. management infrastructure that is essential for the management and protection of the area, and the tourism related infrastructure needed to cater for visitors to the park.*



Although parts of the GLTP are well serviced in terms of access, there will be a need for substantial development of access points and routes to serve the needs of tourism.

The primary difference is that at present, management infrastructure is only developed and operated by the appropriate management agency yet the growing trend is for tourism infrastructure to be developed and operated by the private sector on a concession basis.

#### 10.1.1 EXISTING BULK INFRASTRUCTURE

##### RAILWAY LINES

The only railway line traversing the area is that which runs from Maputo to Zimbabwe, running through the GNP. This line is not very busy, but it is anticipated that with the economic recovery of Mozambique and Zimbabwe, that it will become more active and could eventually pose a security problem in the GNP.

While elephant bulls and large carnivores cross the line, most ungulates and breeding herds of elephant are very reluctant to cross the rock ballast that supports the rails.

Along the western boundary of the KNP, the railway line from Phalaborwa that links with the Pretoria-Maputo line at Kaapmuiden provides a barrier to the free movement of most wildlife and the westward extension of the greater TFCA.

##### ROADS

###### Limpopo National Park

Access to the LNP is by a tar road as far as Massingir (Fig 10. 1). The other roads in the area are dirt roads and tracks that are only suitable for 4X4 vehicles. There are also a number of rudimentary tracks opened by Gaza Safaris for hunting. An access road from the KNP into

the western side of the LNP has recently been opened, in order to bring in the materials for the elephant boma and for the subsequent introduction of the elephant.

###### Kruger National Park

The KNP is well served by roads. All the access roads to the parks entrance gates are tarred. Within the Park, there are 900 km of tarred roads and 2000 km of gravel roads. The gravel roads are of such a standard that permits their use by a normal sedan car.

###### Gonarezhou National Park

The access roads to the Gonarezhou at Chipinda pools and Mahenya are from the A10, which is tarred. These access roads themselves are not tarred and the bridge across the Runde at Chipinda was washed away during the floods caused by cyclone Eline in 2000. Efforts are being made to encourage the government to construct a new bridge south of Chiredzi, rather than replace the Chipinda Bridge. This would be consistent with developing the Chiredzi-Boli link, to fit in with the inter-Government agreement to open a Maputo-Harare highway.

A serious constraint is that once the GLTP is functional, Mabalauta, which has very poor access, will deal with the greatest increase in traffic, as it is en route to the KNP (Davison 2001).

##### AIRSTRIPS

###### Limpopo National Park

There is an airstrip near Macandezulu that has been developed by Gaza Safaris for the use of their clients. At Massingir there is a tarmac strip approximately 1800m long and 40 m wide.



#### Kruger National Park

The park has 2000m tarmac strips at Skukuza and Punda Maria, and four smaller gravel strips for small aircraft used by the KNP management.

#### Gonarezhou National Park

There are five airstrips in the Park, but the strip at Fishans and the dirt strip at Chipinda Pools are no longer in use and should be closed.

#### STAFF ACCOMMODATION

The staff accommodation for field rangers (game scouts) and management staff in each park is summarized as follows:

#### Limpopo National Park

There is presently no staff accommodation in LNP. The provision of this is seen as being key to the success of deploying security and management related staff in the area. There is a house for the officer in charge in Massingir.

#### Kruger National Park

All KNP field rangers, and other management staff are provided with suitable accommodation.

#### Gonarezhou National Park

The accommodation available is barely adequate for existing staff, and will not accommodate the essential increase in security personnel. Most buildings are structurally sound, but require repainting and extensive repair to fittings and finishes.

#### ELECTRICITY

##### Gonarezhou NP

There is no mains (ZESA) power in the GNP. At Chipinda Pools and Mabalauta, generators are

used to charge batteries for radios and at night to provide power to staff quarters for a few hours.

##### The Kruger NP

The KNP is well serviced with power from the South African National power grid.

##### Limpopo National Park.

There is no electricity in the LNP. The bulk power lines from the Cahora Bassa power station to the South African grid run through the northern tip of the LNP and then across the KNP to Phalaborwa.

#### BORDER POSTS

At present the only official border post is that between South Africa and Mozambique at Pafuri.

#### THE LIMPOPO RIVER CROSSINGS

There are no river crossings of the Limpopo associated with the GLTP.

### 10.1.2 POLICY RECOMMENDATIONS AND MANAGEMENT GUIDELINES

The development of any joint infrastructure must be done in such a way that it will fulfill its purpose, be aesthetically pleasing and have minimal detrimental impact on the conservation objectives of the GLTP and its component parks. IEM principles and processes will be applied.

The recommendations for new infrastructure to be built for a purpose common to more than one park, or for infrastructure built in one park that may impact on another, are as follows:

All  
infrastructure  
development in  
any park  
comprising the  
GLTP will be  
bound by  
consideration  
of its likely  
effects on  
neighbouring  
parks and the  
principles of  
IEM .



Where practical, infrastructure should be either on the periphery of the GLTP or consolidated, thus reducing impact on the area.

- ❖ Recommendation:  
Wherever practically possible, new permanent infrastructure will be developed on the periphery of the GLTP.
- ❖ Recommendation:  
The scale, location, design, construction and management of new infrastructure must be guided by following the principles and processes of IEM.
- ❖ Recommendation:  
Developments, particularly those related to tourism, must conform to the zonation criteria of the area in which they are to be built.
- ❖ Recommendation:  
On any border, where one facility can serve instead of two, the opportunity to consolidate infrastructure must be exercised. For example, a single, jointly operated Customs and Immigration building at a border post may be able to serve as well as one for each country.
- ❖ Recommendation:  
Buildings must blend in with the local landscape. To achieve this, buildings should not exceed the height of the local tree line and/or should be situated against a natural backdrop. Exterior colours should be natural and earthy to blend with the site.
- ❖ Recommendation:  
The development design must, wherever possible, plan around natural features, minimizing the need for the removal of trees. Internal zonation and structures of buildings should also be planned around

any striking natural features, rather than removing the feature.

- ❖ Recommendation:  
New infrastructure must not be located in a position where it may have a potentially negative impact on an existing development in a neighbouring park. This impact may be visual, sound or activity related. Where new essential infrastructure may compromise the objectives of the adjoining park in any way, consensus must be reached before the development takes place and the IEM process observed.

#### MANAGEMENT GUIDELINES

- ❖ Recommendation:  
In this first phase of the development of the GLTP, only one crossing point on the Limpopo is envisaged. This will probably be a causeway and this will have to be sited where there are enough rocks to provide a stable foundation. A bridge across the Limpopo will be considered when it is likely that the traffic levels will justify one. The optimal location for this site should be determined as soon as possible so that it can be described in the first revision of this document.
- ❖ Recommendation:  
The grounds surrounding a development and the plants used therein must assist with blending of the development and the landscape. To this end, only species indigenous to the GLTP may be used. To ensure genetic purity, these plants must be sourced from the vicinity of the site itself.



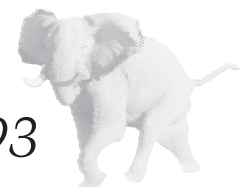
- ❖ Recommendation:  
Light and sound pollution must be minimized in the location and design of all infrastructures.
- ❖ Recommendation:  
The safety standards for the buildings and civil works must conform to the national standards of the country in which the building is being constructed.
- ❖ Recommendation:  
Emphasis should be placed on water and energy saving designs. Waste handling and sewage disposal must be planned to minimize negative impacts.
- ❖ Recommendation:  
Pre-building mitigation of negative impacts on the site, both during construction and operation, must be undertaken and documented in the Environmental Management Plan.
- ❖ Recommendation:  
On completion of any development, the site must be cleared of all foreign objects and rehabilitated to as stable and natural a condition as possible.
- ❖ Recommendation:  
Wherever possible, local communities and entrepreneurs must have the opportunity to become involved in the development and maintenance of GLTP infrastructure.
- ❖ Recommendation:  
Construction staff and their suppliers must adhere to the regulations imposed by park management. The regulations will apply to issues such as transport, access routes, travel times, cooking, overnight accommodation, waste disposal and safety rules.

Development  
of the GLTP  
offers  
opportunities  
to involve local  
interests and  
these must be  
fully exploited.

*Required actions and responsibilities  
for the process of developing new infrastructure*

Action	Primary Responsibility	Secondary Responsibility	Timetable
New infrastructure to be identified and planned	JMB/ Management committees	DNAC, DNPWM, SANP and Project Coordinator	2002
Criteria and standards to be defined.	Management Committees	JMB	2002
Funding to be secured	JMB & Ministers	DNAC, DNPWM, SANP, Finance Committee	Ongoing
Develop transparent tender process for construction	JMB and Finance Committee	DNAC, DNPWM, SANP	2002
Award tenders	JMB and Finance Committee	JMB	Ongoing
Monitor construction and community involvement	Conservation, Finance & Community Relations Committees	JMB	Ongoing

Table 10.1



The issue of fences is complex. The fundamental concept of a transfrontier park requires the removal of intervening fences to allow free movement of wildlife

Ongoing

## 10.2 FENCES

### 10.2.1 THE VISION

In the development of the GLTP, the vision is to have as few fences as are necessary to allow for the optimum free movement of wildlife and people, and only those that are necessary to minimize human/animal conflict and to maintain security.

### 10.2.2 THE PRESENT SITUATION

#### Gonarezhou National Park

In Zimbabwe, there is a Veterinary Dept fence around the internal boundaries of the GNP. The fence is limited to six strands of plain wire and is 1.8m high. It is intended to reduce the contact between buffalo and cattle and is a deterrent to wildlife movement rather than a barrier to all movement. Apart from the section between the GNP and Malilangwe, the fence is poorly maintained and is no real barrier to animal movement. This has been exacerbated by people who have recently invaded the GNP and removed large sections of the fence.

#### Kruger National Park

The key fence in this document is that which separates the LNP and the KNP, erected in 1975. It is a substantial and virtually wildlife-proof barrier. The fence along the Limpopo River on the northern boundary of the KNP has been removed after being largely destroyed in the floods of early 2000. The same situation exists along the Crocodile River on the southern boundary of the park. Whereas the fence along the Crocodile is being replaced,

there are no plans to replace the northern border fence.

Along the western boundary of the KNP, the fence between the park and the large private nature reserves has been removed. The northern boundary fence, along the Limpopo, no longer exists, as it was not able to withstand the constant pressure of elephant, buffalo and hippo and ultimately the 2001 floods. KNP management sees no ecological reason to replace this fence.

#### Limpopo National Park

There are no fences on the boundaries or within the LNP. (The fence between the LNP and the KNP is just inside the international boundary in Kruger).

### 10.2.3 DETERMINANTS

The issue of fences is a complex one. In order to have a Transfrontier Park, it is logical that there must be free movement of animals between parks and therefore no fences. To achieve this on the ground is not that simple. The following are examples of determinants that influenced decisions regarding the removal, placement and erection of fences:

#### ANIMAL HEALTH

Wildlife populations within the GLTP act as a reservoir for several diseases that affect domestic livestock and humans. Bovine tuberculosis in the KNP buffalo population is of serious concern to the veterinary authorities in Zimbabwe and the first line of defence will be a fence.

The fence required parallel to the Limpopo in the Sengwe and Chipise Communal Areas, to





prevent entry of Bovine Tuberculosis from the KNP into Zimbabwe, will have to be a barrier to those species known to carry the disease (buffalo, kudu and lion). It must also be effective enough to prevent breakages by elephant. Such breakages could create gaps for other species to pass through.

**POTENTIAL HUMAN/ANIMAL CONFLICT**  
Human / Animal conflict is a real issue for many communities in the region. Effective fences significantly reduce the threat to human life, damage to crops and infrastructure and predation on livestock.

There is no doubt that with the removal of the eastern boundary fence of the KNP, the potential for human/animal conflict amongst the communities in the LNP and those along the Limpopo will significantly increase. The problems of livestock mortalities related to wildlife diseases will also become a significant issue to communities that have already lost most of their livestock during decades of armed conflict.

#### TOPOGRAPHY

The topography over which a fence must pass determines its feasibility and its costs of construction and maintenance. In the case of the LNP, the periodic flooding of the Limpopo will be a factor in the decision as to where to erect the perimeter fence of the LNP.

#### ANIMAL MOVEMENT

Fences erected across animal movement routes frequently result in damage to the fences themselves, or cause related animal mortalities. In the case of the LNP, the KNP eastern boundary fence was erected in 1975 and the traditional

dry-season movement of game to the Limpopo was brought to an abrupt end.

A fence will contain the dispersion of endangered species such as rhino and will make their protection easier and probably cheaper, than if the area was unfenced.

#### CLEAR DEMARCATION OF INTERNATIONAL BOUNDARIES

For legal purposes, it will still be important for the national boundary between Mozambique and South Africa to be defined. For this reason it is recommended that when the fence is removed, the fence posts that are set in concrete are left in place.

#### CONSTRUCTION COSTS

The construction cost of a fence that will be an effective barrier to elephant, lion and antelope is expensive, and is currently in the order of US\$3000 per kilometre. However, if the fence is one that will serve only as a deterrent rather than a total barrier, this cost can be significantly reduced.

#### MAINTENANCE COSTS

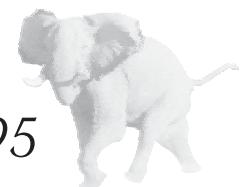
Game fences need regular patrolling and maintenance, particularly those that are electrified in order to contain elephant and lion. This necessitates an annual cost to a Parks management budget and can be regarded as a negative factor. The costs in terms of losses of wildlife, increased human/animal conflict, and the need for greater law enforcement efforts far outweigh the annual maintenance costs.

#### FENCE CONSTRUCTION

##### Limpopo National Park

The Peace Parks Foundation (PPF) has proposed that no perimeter fence will be erected along

Fences may be retained to restrict the spread of disease, or to contain endangered species such as rhinoceros, which are vulnerable to poaching.



A fence to prevent wildlife from passing from Kruger National Park or Mozambique into Zimbabwe, is seen as essential to prevent the spread of bovine tuberculosis

the Limpopo in the LNP but that resident communities will be fenced in. This proposal is currently being reviewed in the LNP management plan that is being drafted.

If a fence is not erected, it is assumed that LNP management will have gained the acceptance of the communities in regard to the inevitable increased human/animal conflict and that management will also have the ability to resolve this. Compensation for losses will need to be negotiated if community support for the project is to be gained.

For several decades, there has been a proposal to build a dam at Mapai. This proposal is under review and, if it is built, it could create an effective barrier for a considerable length of the LNP boundary.

#### Kruger National Park

No new fences will be constructed by the KNP, other than those that may be needed around new facilities developed for the GLTP. The northwestern fence, along the western part of the Makuleke Region, will be realigned to incorporate additional land in the Makuleke Region, as per existing agreements.

The Security Working Group insists that the northern boundary fence of the KNP is replaced, whereas the KNP management does not believe that this is necessary. This difference has to be resolved.

#### Gonarezhou National Park

If Zimbabwe is to keep Bovine Tuberculosis out of the country, then there will have to be a fence that will run parallel to the Limpopo that will serve to keep carriers of the disease from the

KNP from transmitting it to animals in Zimbabwe. Secondly, to prevent the eventual spread of BTB into Zimbabwe from the KNP via Mozambique, there may have to be a fence between Mozambique and Zimbabwe. The Zimbabwe Dept of Veterinary Services will prescribe the specifications for these fences and together with the local communities address their exact location.

The proposed Limpopo fence is not likely to be fully effective on its own and Zimbabwe will need to implement a control policy to support the fence (e.g. a cordon sanitaire behind the fence).

#### FENCE REMOVAL

With regard to the fence along the border between South Africa and Mozambique, the Border Control community is satisfied that removal of significant but clearly defined stretches of this fence can start with immediate effect without compromising security control. These sections represent areas where vehicle access between South Africa and Mozambique is either not possible due the rugged nature of the Lebombo Mountains, or because access roads leading into the area can effectively be controlled.

#### 10.2.4 POLICY RECOMMENDATIONS AND MANAGEMENT GUIDELINES.

##### POLICY RECOMMENDATIONS:

##### ❖ Recommendation:

Wherever it is possible to practically manage the area without a fence, this will be done.



❖ Recommendation:

When the risks of human/animal conflict are high, and a fence can resolve this, this fence will be constructed.

❖ Recommendation:

An IEM process will be followed before any new fence is constructed.

❖ Recommendation:

The local communities must be consulted and informed in all phases of the construction or removal of fences, and in their subsequent maintenance. Both the communities and the local private sector must be given priority in any employment opportunities that are created. Wherever possible, skills training for local people must be incorporated into the development projects including fencing.

❖ Recommendation:

Wherever possible, and acceptable standards can be maintained, local communities will be involved in the construction and maintenance of fences.

MANAGEMENT GUIDELINES:

❖ Recommendation:

Because of the presence of Bovine Tuberculosis in the KNP, the erection of a veterinary fence parallel to the Limpopo is considered essential at present. However, the long-term view is that if the disease can be eliminated, this fence can then be removed.

❖ Recommendation:

Where security and border control requires that a fence be erected, the specifications for this fence must also take into account potential wildlife issues.

❖ Recommendation:

Where any fences remain between the protected areas that make up the GLTP, the responsibility of maintenance will rest with the authority on whose land the fence is situated.

❖ Recommendations:

The portions of the fence that are approved for removal in the first phase are depicted in Figure 10.1. Fence Section 1 in the north represents a length of 33km, and Section 2 in the south is 10km, so that 43km can be removed as soon as it is sensible to do so. Although the Border Control community is also willing to have an additional 23km removed (Section 3), the Kruger Park authorities recommend that this portion remain for the short term because of its proximity to the point of release of the elephants in the LNP. It will help prevent the elephants from readily walking back into the KNP, as has already happened with some of the first animals to be relocated.

❖ Recommendations:

It is recommended that, when the fence between the LNP and the Kruger NP is removed, the fence poles be left in place. These poles are concreted into the earth and will be very expensive to remove. However, if they are left in place they will not affect the conservation objectives of the GLTP but will be a useful indicator of the border.

In the long term, if security issues can be resolved and diseases such as bovine tuberculosis eliminated, fences between participating parks could be removed.



❖ Recommendations:

All wire and cable must be removed from the field and stored in a secure place so that it cannot be stolen and used for snares. The material will remain the property of the KNP, and any which can be reused can be the park.

allocated for other developments within the GLTP.

❖ Recommendations:

Where employment opportunities are created in the removal of the fence, preference should be given to people living in the LNP, as it is impractical to transport people across the KNP from areas to the west of

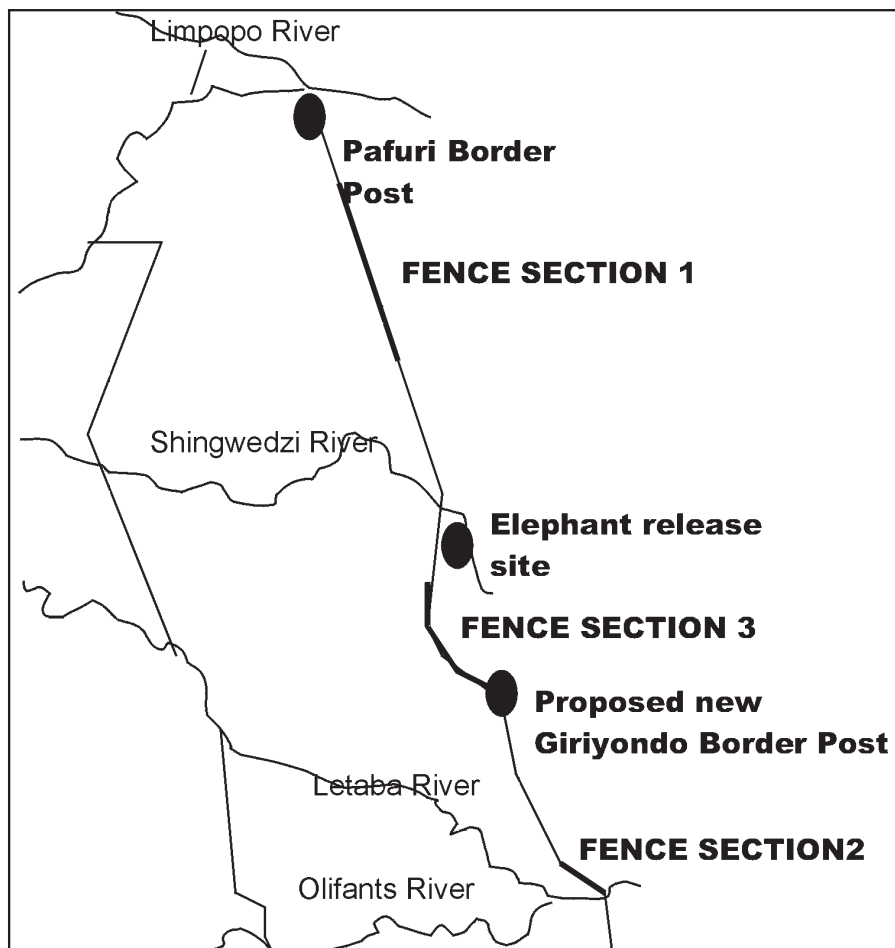


Figure 10.1

❖ Recommendation:

The financing of the removal of the fence between the LNP and the KNP will be borne by the Kredianstalt fur Wiederaufbau (KfW) through the Peace Parks Foundation. A source of funding to erect the proposed veterinary fence paralleling the Limpopo

will have to be found. The JMB should initiate the process of preparing a submission for the appropriate Zimbabwe authorities to appeal to a suitable donor.



*Actions and responsibilities needed  
for the removal and construction of fences*

Action	Primary Responsibility	Secondary Responsibility	Timetable
Removal of section of the LNP - KNP fence*	JMB	Conservation Committee / PPF KfW	As per the LNP plan
Plan essential fences in or around the LNP fence. This includes resolving the issue of the defunct northern boundary fence of the KNP	JMB	Conservation Committee/SANP PPF/ KfW	2002
Construct fences in or around the LNP	JMB	DNAC / PPF/ KfW	2002-2003
Remove remainder of the LNP/ KNP fence	JMB	SANP / PPF/ KfW	?
Resolve the divergent views on the northern boundary fence on the KNP.	JMB	Security & Conservation Committees	2002
Plan veterinary fence on Limpopo (Zimbabwe)	JMB	Zimbabwe Dept of Vet Services / DNPWM	2002
Secure funding for Limpopo fence. JMB/	DNPWM/ Dept of Vet Services	Finance Committee & Donor organizations	2002
Construct Limpopo Veterinary Fence	JMB	Dept of Vet Services / DNPWM	2003
Fence in additional Makuleke land	JMB	Makuleke Communal Property Association	2002

Table 10.2.1

\* This is scheduled to commence in April, contrary to advice from scientists in the KNP and management in the LNP.



Large scale tourism brings substantial waste disposal problems. As much waste as possible should be recycled or removed from the area.

### 10.3 WASTE MANAGEMENT

Significant volumes of waste will be generated at both staff and visitor facilities. While the disposal of this waste in any Park is an internal issue, the following principles should be incorporated into park waste removal policies and plans:

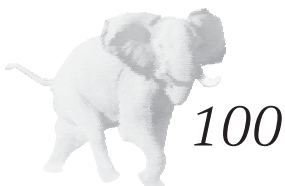
- ❖ Ideally, all solid and chemical waste should be removed from the GLTP.
- ❖ The production of solid waste should be minimized and recycling maximized.
- ❖ The IEM process must be followed before waste disposal methods are implemented, or disposal sites commissioned in the GLTP.
- ❖ Investigate and promote the utilization of solid waste as a resource.
- ❖ Promote a proactive attitude towards waste management amongst all staff and visitors.

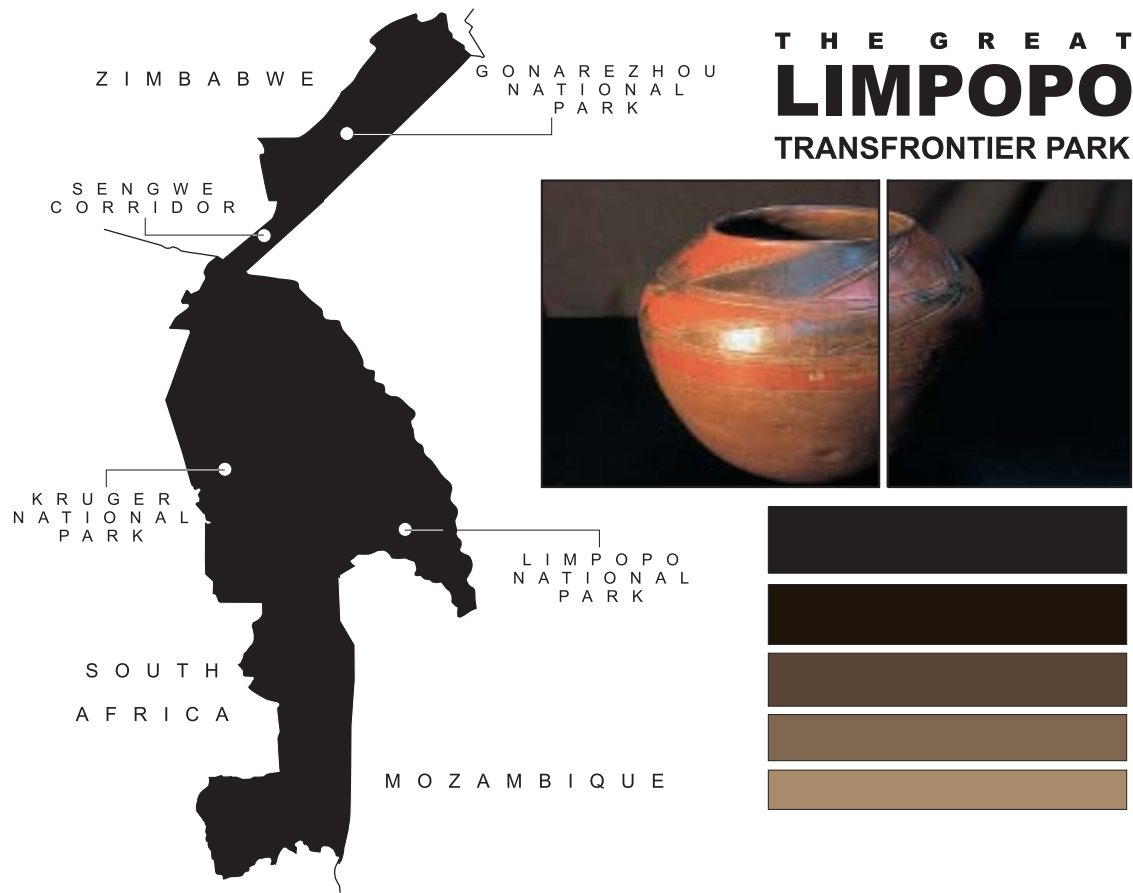
#### POLICY GUIDELINES

- ❖ Recommendation:  
It is recommended that each agency develop its own policies and procedures whereby waste disposal in existing and planned developments and operations is addressed.
- ❖ Recommendation:  
No waste must be disposed of in such a way that it negatively impacts on a neighbouring park or adjoining communal area.

#### MANAGEMENT GUIDELINES

- ❖ Recommendation:  
Waste derived from catering facilities should be recycled by being made available outside the GLTP to garden projects or as pig swill.
- ❖ Recommendation:  
Where feasible, artificial wetlands must be developed and maintained for the processing of sewage. (Depending on their scale, these could become attractions for birds and later birdwatchers).





## 11. LOCAL COMMUNITIES

*The vision is that the development and management of the GLTP will provide human benefits in keeping with the GLTP Mission Statement, and through this will establish a sense of partnership between the GLTP and its neighbours.*



The success of the GLTP rests largely on the success of the managers of the area in establishing good relations with the communities neighbouring the park.

The view has been expressed that Community issues are national issues, not joint issues and may be out of place in this document. Community issues are such important cross-cutting issues that unless they are identified and resolved, the Trans-frontier element of the Park can be lost. Examples of this could be if the Sengwe Community should oppose the corridor linking the GNP with KNP, or that peripheral communities decide to make it difficult for tourists to access the GLTP though their land. While community issues will indeed be treated on a national basis, the JMB will always have a responsibility to be informed and to help support the national agencies wherever possible.

At this stage, it is evident that very few of the local communities are On board as far as the GLTP development is concerned and a significant number are not even aware of the project. There is a very real concern on the part of park planners and managers in the field, that the pace of development set by the Ministerial Committee is being rushed and is ahead of the planning and community consultative process on the ground, rather than following these.

Time, and a concerted effort are needed to apply the widely accepted lessons of the importance in gaining the trust and support of the communities in and around the GLTP. Failure to do this will increase the risk of failure of the project.

### 11.1 THE PRESENT SITUATION

The data available from the neighbouring areas have been collected by different organizations using different sample techniques so that direct comparisons are not possible. What is evident

however is that the communities in Mozambique are significantly poorer than those in Zimbabwe and South Africa and receive a much lower input per capita from Government and NGOs in efforts to improve their quality of life.

The following is a general perspective on the communities in and adjoining the GLTP:

#### 11.1.1 MOZAMBIQUE: LIMPOPO NATIONAL PARK

##### INFRASTRUCTURE

The area has virtually no infrastructure; there are no roads (only tracks), nor electricity, hospitals or senior schools.

##### THE COMMUNITY

The people are aggregated into 37 loose communities, most of which are along the Limpopo river. The total number of people living in Shingwedzi basin of the LNP alone is 4328, Mavodze being the largest village with 1404 inhabitants.

During the war years, many of the people sought refuge in South Africa. Since the cessation of hostilities, there has been considerable movement of people back into the area. The changes in population between 1980 and 1996 in the local districts are shown in Table 11.1. The years of conflict have obviously had a significant impact on the numbers and distribution of people. Returnees made up 44.7% of the population in Chicualacuala; one must assume that a high percentage of the people in Mabalane and Massingir are also returnees. The large increase in population at Massingir was because of the greater security afforded by the military and the possible attraction of the dam for cultivation along the shoreline and for fishing.





*The size of Chicualacuala, Mabalane and Massingir Districts  
and number of people and livestock (cattle, sheep and goats) in 1980 and 1996.*

District	Area (km <sup>2</sup> )	People		Livestock	
		1980	1996	1980	1996
Chicualacuala	16 035	80 801	79 128	17 995	22 237
Mabalane	9 580	69 226	54 781	17 122	18 277
Massingir	18 243	29 710	67 802	12 432	15 625

Table 11.1

#### EDUCATION

The illiteracy rate is very high. Sixty-eight percent of those surveyed have never been to school and 36% of school-age children do not attend school.

#### HEALTH

Between the eight villages that make up the Shingwedzi basin, there are two clinics each with a nurse. However, there are no medical supplies in the clinics.

#### LIVESTOCK

Eighty percent of households have some form of livestock. There are at least 5234 head of cattle in the Shingwedzi basin. One individual has over 3500 cattle and 900 goats.

#### RESOURCE USE

Most settlements in the three Districts are concentrated on the alluvial soils of the riverine systems. Agriculture consists primarily of the subsistence cultivation of dry-land crops such as maize, sorghum, melons, beans and pumpkins. Due to the low and erratic rainfall, maize harvests are also erratic, although local communities persistently attempt to grow the crop.

At present the harvesting of trees for commercial timber, building poles, firewood and charcoal is a major form of land use in the three districts, though not in the LNP itself. The exploitation of timber, and making of charcoal are done subject to the issue of permits. However, with the low surveillance capacity of the DNFFB, it has been difficult to adequately monitor the extent and the impact on the resource.

Subsistence hunting and fishing is an important source of protein for many families. For example, in the UNHCR/UNDP District Development profile on Mabalane District, 30% of households surveyed listed hunting as being important. Along the Limpopo and Rio dos Elefantes, fish is an important foodstuff. At Massingir, fishing forms the livelihood of a number of people who net and dry fish for subsistence and trade.

#### EMPLOYMENT

A recent survey by the Peace Parks Foundation and Ministry of Tourism (2002) show that the majority of families are living on the breadline with no surplus cash and an economy based on subsistence farming. The high level of unem-

Communities  
neighbouring  
the GLTP are  
largely poorly  
educated and  
dependent on  
subsistence  
agriculture and  
natural  
resources  
for their  
livelihoods.



Most rural communities are extremely sensitive to the potential for conflict between humans and wildlife.

ployment accounts for the low income levels that in turn translates into the inability to pay for social services such as health and education. This results in non-school going children who will struggle to find employment, thus continuing the spiral of poverty and subsistence dependence.

Only 7% of the people in the Shingwedzi basin are employed or self-employed. Of those that are employed, a significant number work in South Africa. The community sees employment as being the single greatest benefit that the development of the LNP would bring to the people.

#### AWARENESS OF THE PROPOSED LNP DEVELOPMENT

Of the respondents questioned in the 2001 IUCN survey, 77% were unaware of the plans to develop the LNP.

At workshops held in 1998 ( DNFFB, 1998) and 2001 at Massingir, representatives of these local communities indicated that they are not against the development of the area with respect to wildlife. However, they are concerned about human/animal conflict and most would prefer not to live with potentially dangerous wildlife. They would only be prepared to move if they were able to choose the area to which they could move and had help in the resettlement process. The communities were informed that no forced removals from the LNP will take place and those that do agree to move, must do so willingly. At a more recent workshop in November 2001 at the same venue, the same concerns were reiterated (Grossman, 2001).

#### MASSINGIR DAM

The rehabilitation of the Massingir dam infrastructure and the resulting raising in the water level is being planned to allow it to function at optimal capacity. This may have a major impact on increasing the area of land that can be cultivated downstream under irrigation. It also raises the potential of producing hydroelectric power.

#### BANDITS

Most of the Shingwedzi basin residents feel insecure, largely due to fear of bandits who are said to be common. They feel that the material benefits that they will gain by the development of the LNP could make them more vulnerable to bandits.

#### INVOLVEMENT OF GOVERNMENT OR NGOS IN THE AREA

There is virtually no involvement of Government or NGOs in the area.

#### 11.1.2 ZIMBABWE: SENGWE / CHIKWARAKWARA

The following points present the situation found in the Sengwe/Chikwarakwara area by CESVI, an NGO project funded by the Italian Ministry of Foreign Affairs (CESVI, 2001).

- ❖ The Sengwe / Chikwarakwara Communal Area comprises 22 villages. In 2000, the total number of people in the villages of the Sengwe/Chikwarakwara area was 18963
- ❖ Opportunities for natural resource management exist along the riverine area of the Limpopo River, up the Buby River



(Chilungwe Hills) and in a broad central area that juts into the Sengwe Communal Area where there is a sparse human population.

- ❖ In the Sengwe/Chikwarakwara area, 44% of the households have lived there for less than 20 years. Approximately 83% of the people living there are Shangaan, 13% are Venda. The majority of household heads (80%) have less than two years of primary education. About 60% of the population are females with most males working in South Africa. More than 60% of the people collect their water from boreholes.
- ❖ Major sources of income in the area are the selling of livestock, Ilala palm (*Hyphaene crinata*) products, agricultural produce and formal employment. Livestock sales are the most significant form of economic activity. In 1999 the average monthly household income was Z\$567 (US \$ 11\*). Maximum monthly income was Z\$6150 (US \$ 123\*). Dryland farming is practiced by 75% of the households, although with a high drought frequency. In most years, crop production is insufficient to provide the food needs of a village. The most important crops are maize, sorghum and beans; 48% of households in the Sengwe/Chikwarakwara area own cattle. (\* At the official exchange rate).
- ❖ The dryland agriculture practiced by most households is generally unsuccessful due to the erratic nature of the rains and the regular occurrence of droughts. This highlights the importance of developing appropriate irrigation schemes where possible.

- ❖ The main problem animals are elephant, hyena, lions, baboons and quelea. In 1999, 12% of the people reported attacks on their livestock by lions. Safari operators generally undertake the control of problem animals.
- ❖ In 1999, there were 32000 cattle in the Sengwe Communal area.

#### TRADITIONAL LEADERSHIP AND LOCAL AUTHORITIES.

East of the Buby River, the Sengwe Communal Area falls under Chief Sengwe and Headman Gezani. The recent Traditional Leaders Act in Zimbabwe has restored the powers of traditional leaders. The Chief now coordinates development activities of District Councilors. Chief Sengwe had been actively communicating with Chief Makuleke west of the Kruger Park boundary. The CESVI project has hosted several exchange visits between Chief Sengwe and Chief Makuleke in South Africa.

The Rural District Councils (RDCs) in Chiredzi and Beitbridge have little funds, as they no longer receive grant aid from government. RDCs have poor capacity to manage the natural resources in their districts. CAMPFIRE revenue from hunting is a key source of revenue for the villages close to the Malipati Safari Area.

#### SUPPORT TO THE COMMUNITIES BY NGOS IN THE AREA

In terms of service provider support to the target communities, the two active NGOs in the Limpopo Valley are CESVI and SAFIRE. Both have worked at village level with target communities for several years. The CESVI project is in the last year of a 4-year support

Traditional leadership of communities is a very significant element in local government.



Neighbours of the GLTP are frequently concerned that park development may result in eviction from ancestral lands.

programme and SAFIRE provides continuing support with funding from various donors. Both agencies have staff working in the field at village level.

**SENGWE COMMUNITY CONCERNS ON THE DEVELOPMENT OF THE CORRIDOR**  
There has been little consultation or negotiation with the communities in the Sengwe Corridor. People, both in and adjacent the Sengwe Corridor, have serious and perhaps justifiable concerns about the development of the corridor as part of the GLTP (Le Breton, pers comm.) These fears are:

- ❖ That they will be evicted from their ancestral lands.
- ❖ That they will experience even greater crop damage due to wildlife.
- ❖ That their livestock will no longer be marketable due to being fenced into a F&M zone.
- ❖ That whatever opportunities may exist for entering into agreements with the private sector may be expropriated by outsiders with power and influence.

#### INFRASTRUCTURE AND SERVICES

There is no bulk electricity supply to the area, and roads are all poorly maintained dirt roads. There are schools that teach up to Grade 10.

#### 11.1.3 SOUTH AFRICA

Poor rural communities border the KNP along its western boundary; they also abut many of the private nature reserves that border on the

park. The Limpopo province has the lowest per capita income of the provinces in South Africa and also has the highest unemployment rate (50.7% in the rural population). The province also shows a great deficiency in the distribution of necessities such as water and electricity. Mpumalanga province has a relatively high unemployment rate (36.4%) and also has shown deficiency in the distribution water and electricity among its rural population.

There is a great range in the standards of living conditions between the communities living along the western boundary of the KNP. Data from three areas are given below as examples of this range. The DBSA information on the Phalaborwa area illustrates probably the best-developed area on the KNP boundary. However, the more specific information on the Mbaula community (Inzalo Holdings, 2000) and the Makuleke area (African Wildlife Foundation, pers. comm.) is perhaps more representative of the situation in which most of the people on the western boundary of the KNP live.

#### PHALABORWA

Phalaborwa is situated at one of the main entrance gates to the Kruger National Park and was originally established to support the development of the mining sector in this area.

#### DEMOGRAPHY

The current population of the Greater Phalaborwa Transitional Local Council (TLC) area is estimated at approximately 160 000. The area is experiencing a relatively high population growth rate of more than 3% per annum. This is expected to continue as a result of strong urbanisation trends related to perceived and real employment opportunities,



especially in mining and related activities. About 44% of the labour force is unemployed, while the informal sector currently accommodates just over 12% of the potential work force. The current economic growth rate, and the rate at which new entrants to the labour force grows, suggest that the formal economy will not be able to accommodate the entire labour force for some years to come. The position regarding employment in the Phalaborwa area is more or less in concert with that prevailing in the rest of the Lowveld in South Africa.

#### ECONOMIC ACTIVITY

In South African terms, the area is experiencing high poverty levels, especially in the denser rural areas (Matiko-Xikaya, Hebron, Makhushane, Ben, Mashisimale and Maseki) and in the townships of Namakgale and Lulekani. More than 60% of the households in the TLC area earn less than R1 500 (US\$ 161) per month and more than 70% less than R2500 (US \$ 269). For the denser rural areas it is much worse, while the formal urban areas are relatively better off.

Mining activities are the driving force behind the relatively vigorous past economic growth of the greater Phalaborwa area. In the 1990s, the areas economy experienced relative stability with small fluctuations in economic activity. More recently, tourism and related activities experienced substantial growth. It is expected that economic activities will remain stable in the medium term, perhaps leading to a slightly higher level of economic growth over the longer term. A recent study conducted by the Department of Environmental Affairs and Tourism identified the Pietersburg to Phalaborwa area as one of 14 major tourism

development areas in the country.

Apart from the KNP, the following tourism facilities are located within the jurisdiction area of the Greater Phalaborwa TLC:

- ❖ 2 hotels;
- ❖ 9 lodges and game farms;
- ❖ 35 bed and breakfast/guest house establishments;
- ❖ 1 backpacker establishment;
- ❖ 2 caravan parks and camping grounds.

There is a possibility that two more hotels will be built alongside the Kruger National Park, adjacent to the Phalaborwa gate. The capacity for further expansion lies in the vast potential of commercialization of provincial nature reserves as well as that of communal assets.

The Phalaborwa area is comparatively well serviced. Bulk electricity is provided by ESKOM to the major centers, but house connections in the rural areas are in arrears. The main roads are tarred and the town is supplied with purified water from the Olifants River. There is a hospital, and there are schools for all levels. There are scheduled bus and air services and a rail service to transport ore from the mine. There are three modern sewage plants that purify the waterborne sewage from the three urban areas of Phalaborwa, Lulekane and Namakgale.

The Phalaborwa Spatial Development Initiative (SDI) and the Kruger National Park, for example, have entered into discussions regarding KNP expanding the range of products and services sourced from small, medium and micro enterprises (SMMEs).

The Kruger National Park and the surrounding area offer by far the greatest benefits from tourism to neighbouring communities, however poverty levels in many communities remain high.



Communication between park planners and many communities has to date been extremely poor and has created considerable unease and dissatisfaction.

Despite the rich natural resource base of the area, unemployment with concomitantly high poverty levels is a major cause for concern. The primary sectors have been unable to cope with the increased population pressure and the demand for employment. Competing land uses and its impact on available water resources is perhaps the major issue facing strategic decision-making in the Phalaborwa area.

#### THE MBAULA COMMUNITY

Mbaula is approximately 7 km west of the KNP boundary, situated between the Groot and Klein Letaba rivers. The village has about 10 000 inhabitants.

Of the respondents surveyed, the level of education was comparatively high; 39% had completed 12 years of schooling. Despite this a staggering 78% of the adults surveyed have never been employed.

Mbaula village is electrified. The roads are not tarred and water supply for the village is collected by hand from the Mbaula River. There is one public telephone that services the entire community.

The communities have identified their priority infrastructure needs as being: a health clinic, potable water, a community office, good roads and bridges and a pre-school crèche. Employment was listed as a more important need than toilets or public telephones.

#### THE MAKULEKE COMMUNITY

This falls within Malamulele region of the Northern Province and is one of the poorest regions in the province.

The unemployment rate is more than 60% in the Makuleke community, and this has caused a very high dispersion of people in search of work or better conditions. Since 1980, unemployment has increased at a rate of about 20% per annum. Pensions, remittances, the occasional selling of agricultural surpluses and infrequent informal activities are the main sources of family income.

Infant mortality, at 57 per 1000 births, is higher than the South African average of 41.8 per 1000. In a 1994 survey encompassing the Makuleke area, 36.6% of children between four and five years old were found to be stunted due to poor nutrition.

Residents rely primarily on communal taps for water and only 7% have water borne sewage. Electricity has recently been installed in the area, however the majority of people still rely on fuel wood for cooking and heating ( P. Chauke, pers.comm.).

## 11.2 COMMUNITY AWARENESS OF THE GLTP

From the community representatives at the workshops held at the end of 2001 at both Malilangwe and Massingir, it is evident that there is considerable dissatisfaction within communities with the degree of communication and consultation between the authorities and planners and the communities themselves.

It is widely understood that Park planning and development must be a consultative process involving the local communities. In the



development of the LNP however, most people in the area were unaware of the introduction of the elephants in 2001 until the event had already taken place. At the Massingir workshop in late 2001, community representatives voiced their opposition to the removal of the fence between the LNP and KNP, yet this was scheduled to take place in 2002. This gap between the planning and development process and the communities must be closed as rapidly as possible.

### 11.3 RECOMMENDED POLICIES AND MANAGEMENT GUIDELINES

#### POLICY RECOMMENDATIONS

- ❖ Recommendation:  
That the JMB and management of each of the protected areas must ensure that communities have meaningful participation in policymaking, development planning, and management in the GLTP.
- ❖ Recommendation:  
The pace of development must be adjusted to enable the necessary consultative processes to take place to gain the acceptance and support of the local communities.
- ❖ Recommendation:  
That while access to natural resources within the GLTP is an internal park policy and management issue, it is recommended that any harvesting of any resources must be at sustainable levels that it is researched and planned. The monitoring of this by Park

management is essential.

- ❖ Recommendation:  
To help alleviate chronic unemployment, people from local communities must have preference in the employment opportunities that arise from the development and management of the GLTP. In addition to accomplishing a development objective, the employment of local people on GLTP projects must also be seen as a skills training opportunity. Park management and private sector contractors must make training opportunities available in the development or maintenance projects they are controlling.
- ❖ Recommendation:  
That in the planning and implementation of projects, management must always consider the opportunities for the development and training of entrepreneurs from the local community.
- ❖ Recommendation:  
Most communities do not have the capacity to recognize joint venture opportunities that may arise, nor to embark on a process to attract the private sector, negotiate an equitable agreement and/or to participate in the enterprise. Therefore, if the GLTP is to fulfill its obligation to the communities, the JMB must help identify such opportunities and ensure that it is mandatory that any private sector development incorporates the community and/or local entrepreneurs.

It is imperative that tourism opportunities be conceived in ways which ensure that local communities are not dis-empowered by large developers.

It is essential that park staff working with communities have the appropriate experience and training, especially with regard to participatory processes.

❖ Recommendation:

In the same manner that Biodiversity conservation has driven the Transfrontier philosophy, it is considered that where frontiers separate communities with a common heritage, efforts must be made to link neighbouring country community programs in the Gaza province of Mozambique, and the Makuleke area in South Africa and the Sengwe area of Zimbabwe.

❖ Recommendation:

Those GLTP staff that have any interaction with communities must have training in fields that will help enrich and add value to their work with the communities. This will include aspects such as conflict resolution, process facilitation, and information dissemination.

❖ Recommendation:

While there has been some community participation in providing inputs into this document, there was insufficient preparation of the community representatives and it must be acknowledged that most members of the communities are unaware of the planned development. This must be corrected by improving these Communities capacity for discussion and negotiation.

❖ Recommendation:

Those mechanisms must be established within the JMB and Management Committees to transfer information on the GLTP and its developments to the local communities and those living within the park. This communication must be an ongoing process and undertaken in the most appropriate manner to ensure that communities understand and support the park.

#### MANAGEMENT GUIDELINES

❖ Recommendation:

That it is vital for the GLTP and its constituent organizations to set in place transparent structures, which enable meaningful, participatory management of community-related issues involving the GLTP and its neighbours. This is emphasized by the fact that in March 2001, 77% of the people surveyed in the LNP were unaware of the planned park (IUCN, 2001). This condition still persisted in October 2001, when the first elephants were released without the knowledge of most of the local community residents.

❖ Recommendation:

Many of the community members that are aware of the GLTP have expressed either understandable fears of what the GLTP is about, or have unrealistic expectations of the benefits it will bring. This has to be corrected as soon as possible, with factual reporting and by adopting plans that will address these concerns.

#### PREFERENTIAL ENTRANCE FEES

While entrance fees are part of each Park's own internal policy and regulations, where access will involve more than one park, the following recommendations reflect specific requests from some neighbouring communities:





❖ Recommendation:

That in the regulations for each Park, there must be preferential access for those people from the communities that have always lived either in or adjacent to the GLTP.

❖ Recommendation:

That there must be reduced rates for schoolchildren and teachers from communities adjacent to the GLTP and those who enter as part of an organized community group.

❖ Recommendation:

That members of those Communities that formerly lived within the GLTP must be granted special access for any visit of a cultural or traditional nature at no charge.

❖ Recommendation:

Because of the low and erratic rainfall in the region, dryland agriculture has a very low rate of success. In Zimbabwe, the abandoned irrigation schemes on the Limpopo should be rehabilitated to act as an incentive for dry land farmers to move out of the Sengwe corridor zone and into these projects.

❖ Recommendation:

Within the GLTP, there is an obligation to market the opportunity for neighbouring

communities to provide cultural products for tourists to experience. This can be done by creating awareness amongst park visitors that cultural tourism is available adjacent to the park and by creating enabling regulations allowing visitors to the park to visit the neighbouring areas without incurring additional park re-entry costs.

❖ Recommendation:

That the JMB should regard the provision of experiential training as a corporate responsibility of the GLTP. The opportunity for experiential training in a wide range of fields such as hospitality, security, construction, service provision, conservation and administration.

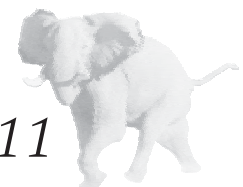
❖ Recommendation:

That the JMB should ensure that management use the resources available in the GLTP to help train people in the local communities as guides by allowing them to gain experience with their own staff and the private sector operating in the GLTP.

❖ Recommendation:

That the JMB must help in negotiating community user rights for parts of the GLTP such as the Malipati Safari Area and the resource use area of the LNP.

A fundamental role to be played by the GLTP should be to provide training opportunities to communities neighbouring the park.



## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

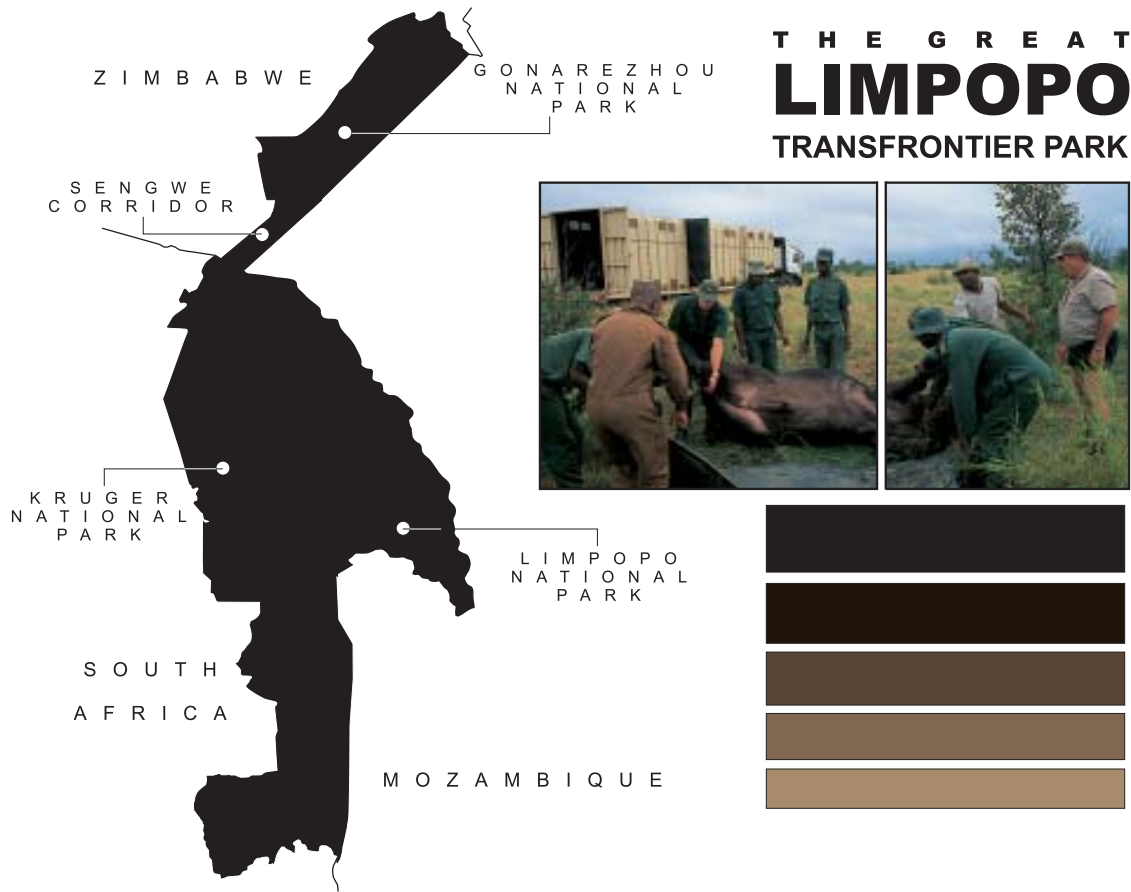
*The actions, responsibilities and timetable required  
for Implementation of Community Related Recommendations*

Action	Primary Responsibility	Secondary Responsibility	Timetable
Develop transparent structures, which enable meaningful, participatory management of the local communities.	JMB	Community Relations Committee DNAC/DNPWM/SANP	Immediate
Develop and implement processes to enable communities to participate better in GLTP Workshops and meetings.	JMB	DNAC/DNPWM/SANP and Community Relations Committee and NGOs	2002
The pace of development must be adjusted to enable the necessary consultative processes to take place to gain the acceptance and support of the local communities	DNAC/SANP/ DNPWM	JMB	2002
Develop and implement mechanisms to communicate GLTP issues with communities	JMB	Community Relations Committee	2002 and ongoing
Press for the border crossing to link with Zimbabwe	JMB	Security Committee/SANP/DNPWM	2002
Document the rights of respective communities in the GLTP components	JMB	Community Relations Committee DNAC/DNPWM/SANP	2002
Implement policies to employ local people wherever possible	JMB	Management Committees DNAC/DNPWM/SANP	2002 and ongoing
Identify skills needed in communities and arrange for training	JMB	Community Relations Committee DNAC/DNPWM/SANP	2002
Identify joint venture opportunities for communities and assist in implementation.	JMB	DNAC/DNPWM/SANP, Management Committees and NGOs	2002 and ongoing
Ensure community participation in all joint ventures.	JMB	Finance Committee/Community Relations Committee	2002 and ongoing

Table 11.2



12. LOCAL COMMUNITIES AND PRIVATE SECTOR INVILVEMENT IN GLTP OPERATIONS



**T H E G R E A T  
LIMPOPO  
TRANSFRONTIER PARK**

## 12. LOCAL COMMUNITY AND PRIVATE SECTOR INVOLVEMENT IN GLTP OPERATIONS

*The socio-economic, and perhaps the most important, vision of the GLTP is that the development of the park will improve the quality of life of the people of Mozambique, South Africa and Zimbabwe.*



One of the goals of the GLTP should be to ensure that neighbouring communities have the opportunity to acquire equity in the park and not only employment.

Meaningful participation of the neighbouring communities in the planning, development and management operations of what will be perceived as Their Park is the best way to achieve this.

### 12.1 ACTIVITIES IN WHICH THE PRIVATE SECTOR AND COMMUNITIES COULD BECOME INVOLVED.

It is recognized that many of the GLTP development and management activities can be cost-effectively out-sourced to the private sector, either independently or in joint ventures with community organizations or Park management.

Activities that can be outsourced include:

- ❖ Planning (Strategic, Ecological, Business).
- ❖ Fence removal
- ❖ Fence erection
- ❖ Fence maintenance
- ❖ Burning of firebreaks
- ❖ Alien plant removal
- ❖ Road and track construction and maintenance
- ❖ Building construction and maintenance
- ❖ Vehicle maintenance and repair
- ❖ Waste removal
- ❖ Establishment and maintenance of community structures
- ❖ Capture and translocation of animals
- ❖ Gate control
- ❖ Anti-poaching (e.g. development of community game guards)
- ❖ All aspects of tourism. (e.g. hospitality,

the supply of goods and services)

- ❖ Operation of shops and filling stations
- ❖ Training

The awarding of any contracts to the private sector must always be a transparent process, but wherever a contract can involve a local community, this must be a condition of the awarding of the contract. Without compromising the cost effectiveness and delivery of a project, some element of preference should be given to local entrepreneurs.

### 12.2 LOCAL COMMUNITIES AS PART OF THE PRIVATE SECTOR

In improving the quality of life of people in the region, the first step is to provide income-earning opportunities. Employment alone must not be seen as the end point; members of the communities have to be empowered so that they will eventually have equity in businesses and ultimately the capacity to tender for GLTP contracts.

It is recognized that there are differences in the capacity and resources of the national conservation agencies and the time is now ripe that the private sector could be called upon to undertake some of the wildlife management responsibilities in one or more of the protected areas. It is felt that this change in the traditional paradigm is acceptable, on condition that the conservation objectives of the area are upheld and the standards of the service provided are at least equivalent to those that the conservation agency could provide.



12. LOCAL COMMUNITIES AND PRIVATE SECTOR INVILVEMENT IN GTLP OPERATIONS

Where such activities are of a transfrontier nature, it will be the responsibility the conservation agency contracting the service, to secure the approval of the contractor from the other agencies that will be affected.

The recommendations to shepherd the communities into becoming part of the private sectors are:

- ❖ Recommendation:  
Establish criteria for involving the communities and private sector in development and management, including community participation in all joint ventures, performance indicators and monitoring processes.

- ❖ Recommendation:  
Identify activities that can cost-effectively be allocated to the private sector.
- ❖ Recommendation:  
Develop and implement a transparent tender or bid process with clearly defined criteria for community participation.
- ❖ Recommendation:  
Award the tender to the most suitable entity.
- ❖ Recommendation:  
Monitor the performance of the successful bidder and correct where necessary.

To facillitate community involvement in the GLTP, the tender process for developments must be structured so as to be both transparent and accessible.

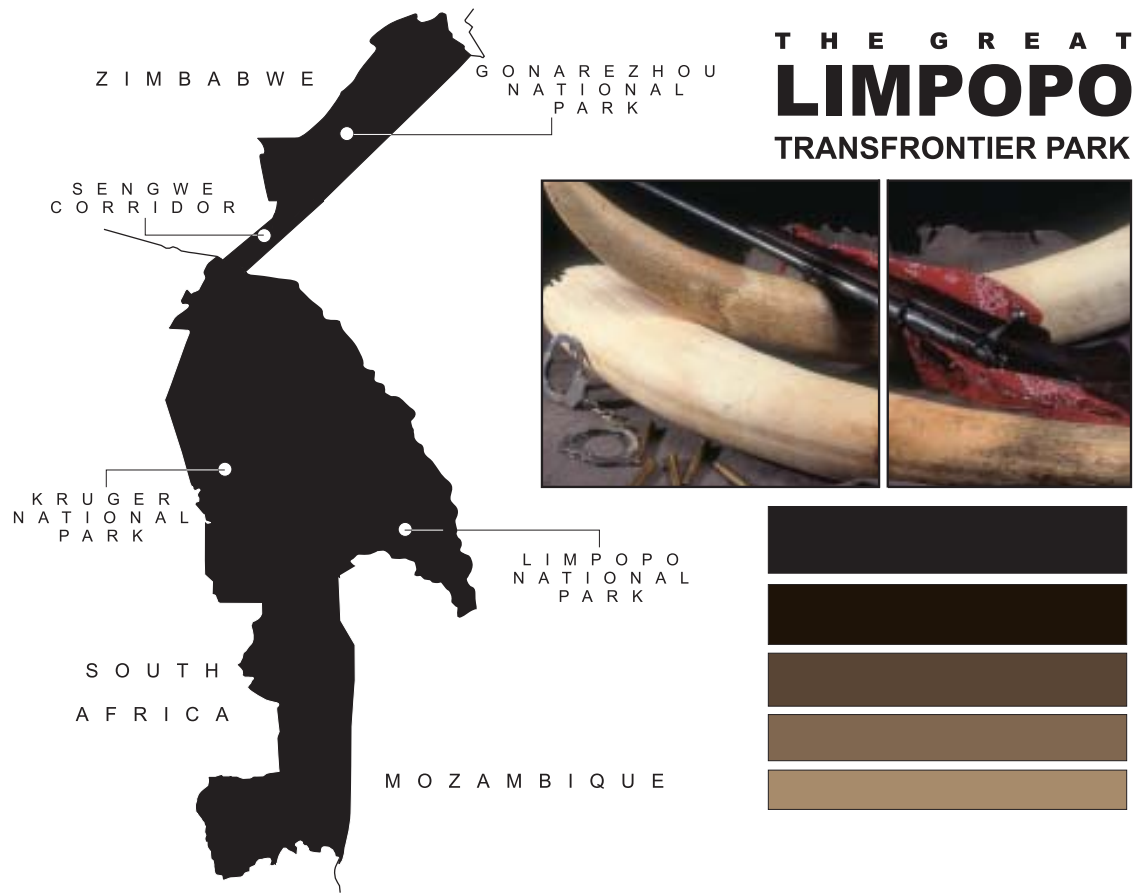
## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

*The actions, responsibilities and timetable  
to involve the communities and private sector in development and management projects.*

Action	Primary Responsibility	Secondary Responsibility	Timetable
Establish the criteria for involving the Communities and private sector.	JMB	DNAC / DNPWM / SANP	2002
Identify activities that can be cost-effectively allocated to Communities and Private Sector	JMB	DNAC / DNPWM / SANP	2002
Develop transparent tender process and award tenders	JMB	DNAC / DNPWM / SANP	2002
Award tenders and monitor performance	JMB	Finance & Community Relations Committees	Ongoing

Table 12.1





**T H E G R E A T  
L I M P O P O  
T R A N S F R O N T I E R P A R K**

### 13. SECURITY

*It is envisaged that with the creation of the GLTP, there will be an improvement in internal security both within the park itself and along the border between the LNP and the KNP.*



Security of the GLTP will only be achieved with properly trained and equipped staff and the full support of management and government.

## 13.1 INTERNAL SECURITY

### 13.1.1 THE PRESENT SITUATION

To effectively secure the biodiversity of the GLTP, it is essential to have sufficient staff with the appropriate skills, knowledge and experience for the task, adequately equipped and with sufficient vehicles. Equally important is for the park staff to have the support and commitment of their most senior management and politicians at all levels.

There is presently a wide disparity in the complements of security staff between the protected areas. (Table 13.1). In order to effectively protect rhino populations in African

conservation areas, it has been shown that it is necessary to have a staff density of at least one field ranger (game scout) per 30 km<sup>2</sup> (Emslie & Brooks, 1999). Against this guideline, it can be seen that protection services of all three of the authorities comprising the GLTP are understaffed. (This situation in Kruger is alleviated by the fact that the South African National Defence Force has a company of troops stationed in the park to assist with border control).

*Conservation staff categories and numbers in each of the GLTP protected areas.*

Position	Limpopo	Kruger N P	Gonarezhou N P
Director	0	1	0
DD Technical	0	1	0
DD management	0	1	
Warden / District Ranger	1	4	2
Veterinarians	0	3	0
Scientists	0		1
Research Technicians	0		
Senior Rangers	0	8	0
Rangers	0	10	6
Senior scouts	0		4
Field Rangers	10+40**	212*	65
Labourers	0	132	45
Km <sup>2</sup> per Field Ranger	250 **	92	78

Table 13.1

\* This total includes NCOs (Sergeants and Corporals)

\*\* On the basis that there will be 40 trained Field Rangers deployed with in six months.





Poaching has traditionally been differentiated into two categories, subsistence poaching and commercial poaching. The former is considered to be hunting for meat to be consumed by the poacher and his family. Commercial poaching is where animals are killed for the sale of meat, skins, ivory or horns and often has an international dimension. The poachers themselves are frequently foreigners and rhino horns and ivory are generally destined for sale in the Orient. In reality, many animals that are killed as food are also sold and the borderline between commercial poaching and subsistence poaching has become blurred.

#### Limpopo National Park

It is assumed that until 2002, poaching has taken place virtually unchecked in the LNP. There were only 10 field rangers (Fiscals) in the area, they did not have their own weapons and the only vehicle available for the area was based in XaiXai about 300 km away. In addition to subsistence poaching, members of Gaza Safaris have created gaps in the KNP boundary fence and lured lions out of the park to be shot by their clients.

Recently, the situation has improved significantly with newly trained staff being deployed and new equipment in the pipeline.

#### Kruger National Park

In the KNP, there is some subsistence poaching for meat, but the poaching of greatest concern is the killing of rhino for their horns and elephants for ivory for sale, i.e. commercial poaching.

At present, the level of poaching in the KNP is so low that it has no measurable impact on any

wildlife populations. However this is only the case because of the effective preventative measures. If these measures were to diminish, poaching would increase significantly. The field staff training, deployment and equipment are some of the best in Africa and the morale is good.

The KNP Corporate Investigative Services is a pro-active intelligence investigation unit working with law enforcement agencies both in South Africa and in neighbouring states. It is largely due to the success of this unit that the KNP security functions can be competently carried out with such a low ranger density

#### Gonarezhou National Park

In the GNP, there is ongoing poaching for meat. This has been regarded as subsistence poaching, but the stage has been reached when meat is being sold and the dividing line between subsistence poaching and commercial poaching has disappeared (Davison, 2001). In 1983/4, the GNP suffered a spate of elephant poaching with at least 896 animals known to have been killed for their ivory and the re-introduced black rhino population was exterminated.

### 13.1.2 THE SADC PROTOCOL ON WILDLIFE CONSERVATION AND LAW ENFORCEMENT

The SADC Protocol on Wildlife Conservation and Law Enforcement was signed in 1999 by all heads of SADC member states except Botswana. This is a wide-ranging document and is attached as Appendix VII. It is expected that the agreements reached in the protocol will be honoured.

Poaching, both commercial and subsistence, remains an issue of serious concern and in some areas represents a serious threat to some species of wildlife.



## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

With adequate security measures it will be possible to reintroduce species very vulnerable to poaching, such as rhinoceros, to the GLTP.

## 13.1.3 RECOMMENDED GOALS AND STRATEGIES

## GOALS

It is expected that there will always be some level of illegal activity in the GLTP. Realistic goals will be to limit this activity to a level:

- ❖ That is considerably lower than the maximum sustainable off take (yield) for any single species of fauna or flora.
- ❖ That does not affect viability, or cause significant changes to the age structure or behavior of any species.
- ❖ That does not affect any legal activities within the park.
- ❖ That security can be improved to the extent that rhino can again be introduced to the GNP and the LNP with the assurance that their numbers will increase.

## MANAGEMENT GUIDELINES

To achieve these goals, the JMB and management must ensure the following recommendations are carried out:

## COORDINATION

- ❖ Recommendation:  
The measures ratified in the SADC (1999) Protocol on Wildlife Conservation and Law Enforcement for the extradition of persons charged with contravening wildlife acts must be formalized and implemented. )
- ❖ Recommendation:  
That a GLTP security structure is put in place to foster cooperation of the three park

management authorities in achieving the security goals.

- ❖ Recommendation:  
In areas where transborder poaching is a problem, training exercises must be held to enable staff from different organizations to become accustomed to working together. Procedures for the coordination of joint responses must be developed and staff trained in implementing them.
- ❖ Recommendation:  
Establish protocols that will allow for cross-border operations when necessary.
- ❖ Recommendation:  
Radio frequencies must be made available so that staff in adjoining parks can readily communicate with one another.
- ❖ Recommendation:  
The JMB must ensure that regular meetings are held between field staff of adjoining parks and between park managers and neighbours.

## TRAINING

- ❖ Recommendation:  
That the minimum standard of training for field rangers must be equivalent to the South African NQF (National Qualifications Framework) level 2. This accommodates persons with no formal schooling but appropriate experience and skills. It would therefore not exclude candidates living in the LNP who have little of no formal schooling. It is recommended that the JMB liaise with the Game Rangers Association of Africa (GRAA) for help in this regard.



❖ Recommendation:

At all levels of leadership, staff must receive the appropriate training, and the regular retraining of staff must be introduced.

❖ Recommendation:

Staff in key positions must have a working knowledge of Shangaan (Xitsonga), Portuguese and English.

#### OPERATIONS

❖ Recommendation:

That in all the component parks, the complement of operational trained and equipped field rangers (game scouts and fiscals) are increased to a level equivalent to one person per 30 Km<sup>2</sup>.

❖ Recommendation:

Field rangers must be issued with appropriate equipment and weapons that enables them to carry out the task for which they are deployed.

❖ Recommendation:

The accurate monitoring of illegal activities and law enforcement efforts must take place so that adjustments can be made to improve efficiency and to meet new threats.

❖ Recommendation:

The establishment of intelligence networks beyond the boundaries of the GLTP is a priority. (This will also include ensuring that problems do not arise from within the ranks of any organization). This will involve the creation of a joint pro-active intelligence investigative unit. This should build on the Corporate Investigative services of the KNP, a unit that already cooperates across borders.

#### PLANNING

❖ Recommendation:

Where possible, the harmonization of laws and penalties must be achieved. This has already been agreed to and ratified in the SADC (1999) Protocol on Wildlife Conservation and Law Enforcement and has to be acted upon.

❖ Recommendation:

Some form of community involvement in the security of their park must be developed with the neighbouring communities. This is particularly the case with rhino conservation and it has also been shown in several areas that only when communities are convinced that conserving rhino will bring them long-term benefits, will rhino be assured of a long-term future (Emslie & Brooks, 1999). It is imperative that projects must be developed where this conviction will spread to the communities around the GLTP.

❖ Recommendation:

The JMB must plan and promote the development of a proactive response to the poaching threat that will involve working with neighbouring communities.

❖ Recommendation:

Where possible, the development of consumptive use community wildlife areas, adjoining the GLTP, must be investigated as a strategy to reduce poaching pressure in the parks and to create local community support for the objectives of the GLTP.

Established South African standards and training programmes of could provide an appropriate level of competence and permit the employment of suitable staff even without formal education.



## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

*The actions, responsibilities and timetable  
for implementing GLTP security recommendations*

Actions	Primary Responsibility	Secondary Responsibility	Year
Form GLTP Security Committee	JMB	Park Management	2002
Determine minimum staff levels	JMB	Security Committee	2002
Define training courses and standards at all levels	JMB & GRAA	Security Committee	2002
Define, procure and issue appropriate scale of equipment	JMB	Security Committee	2002
Ensure field rangers are motivated and have good conditions of service as a basis on which to develop their morale.	JMB	Directorates & Security Committee	2002
Improve transboundary communication (telecoms., language-training, meetings)	JMB	Security Committee	2002
Rationalize legislation.	JMB	Directorates	2002
The SADC (1999) Protocol on Wildlife Conservation and Law Enforcement for extradition of persons charged with contravening wildlife acts must be formalized.)	JMB	Security Committee	2002
Develop proactive Community programmes	JMB	Directorates & Specialist Services	2002
Plan & implement Consumptive-use community wildlife areas	JMB	Directorates & Specialist Services	2002
Establish transborder operation protocols	JMB	Immigration & Customs	2002

Table 13.1

## 13.2 BORDER CONTROL

Entry by tourists into the GLTP, and travel within it between countries, should be achieved with as few border control formalities as possible, while at the same time the border controls necessary to contain smuggling and illegal immigration will be maintained.

### 13.2.1 BACKGROUND

The Security Working Group (SWG) has outlined the problems and made recommendations on preventative and corrective actions (Security Working Group, 2001). Criminal syndicates have targeted the South Africa/Mozambique border for vehicle and weapon smuggling



operations. It is estimated that every month, 150 to 300 stolen vehicles are smuggled from South Africa to Maputo through the area between Ressano Garcia and Swaziland. Many of these are obtained by killing the owners. Although relatively few vehicles are currently smuggled through the KNP/Mozambique border fence, if control measures are stepped up outside the park, it is considered likely that the smuggling route will shift further north and pass through the park.

Currently, up to 100 illegal immigrants are caught each month by the SANDF and SAPS patrols within the KNP. It is anticipated that with the dropping of parts of the fence, there will be a slight increase in the number of people trying to enter South Africa illegally. However, the increase in patrolling and the number of potentially dangerous animals in the LNP may offset this.

There are numerous weapons caches within the LNP and there is a justifiable concern that, with the development of vehicle movement between the LNP and KNP, it will make the smuggling of illegal weapons into South Africa much easier.

There is major concern amongst the agencies that constitute the South African Border Control Community that these vehicle and weapon smuggling operations will increase if free-flow tourism access is created between the three countries within the GLTP. There is less concern about the flow of narcotics and illegal migrants as these are very difficult to control under the best of times, and it is not anticipated that it will be exacerbated by the creation of the GLTP.

The single biggest problem identified by the South African border control community is the porous nature of the KNP western boundary. There are numerous roads along the western boundary of Kruger Park, which can link up, with the roads within the many Private Game Reserves, and there is no fence between these reserves and the KNP. In theory therefore a person could enter from the LNP (which is presently unfenced, although the Limpopo and Olifants Rivers are natural barriers for vehicles for most of the year over much of their length), drive through the Kruger Park, and exit into South Africa via illegal transit through one of the private game reserves.

For the above reason, the South African security and border control entities will resist establishment of peripheral border posts until the entire perimeter of the GLTP is secured. All traffic entering the GLTP from the South Africa must be channeled through official gates.

Very little effective planning can be done regarding access with Zimbabwe until a Strategic Plan for linking GNP with KNP through the Sengwe Communal area has been developed.

### 13.2.2 RECOMMENDED POLICIES AND MANAGEMENT GUIDELINES

#### RECOMMENDED POLICIES

##### ❖ Recommendation:

The roles of the park officials and Security Forces must be clearly defined and understood by all parties.

The incidence of illegal immigration may be reduced by the intensified level of patrolling resulting from the establishment of the park



An illegal cross-border traffic, especially in stolen vehicles and weapons, is a major cause of concern.

❖ Recommendation:  
That security liaison committees are formed in the GLTP and regular liaison meetings are held.

❖ Recommendation:  
That the JMB takes steps to develop a strategic plan that will enable the development of peripheral Border Posts along the GLTP.

#### MANAGEMENT GUIDELINES

❖ Recommendation:  
The border control security concerns can only be effectively addressed if the entire periphery of the GLTP is secured in a manner that will effectively channel people to designated international processing points. This will, of necessity, involve extensive fencing along portions of the GLTP boundary. The Security Working Group want the northern boundary fence of the KNP re-erected this in contrast to the KNP who believe it impractical and no longer necessary. This dilemma must be resolved.

❖ Recommendation:  
All countries accept the principle of peripheral border posts situated on the outer boundary of the GLTP as being the ideal long-term objective. However, because of the current security situation along the South Africa/Mozambique border, this is not feasible in the short term. As an intermediate compromise, it is recommended that until the perimeter of the GLTP can be secured, international traffic is routed through the existing Pafuri Border Post

(Mozambique - South Africa) and Sango Eduardo Mondlana Border Post (Mozambique, Zimbabwe), and that a new temporary border post be established at Giriyondo to enable traffic flow from the KNP to Massingir in The LNP.

❖ Recommendation:  
All traffic entering the KNP must be channeled through official gates.

❖ Recommendation:  
That no commercial traffic will be permitted to pass through the GLTP, other than on the Chiredzi Mapai road.

❖ Recommendation:  
The present standards exercised in the control of both official and unofficial entrance gates must be upgraded.

❖ Recommendation:  
That the appropriate government departments in each country be requested to initiate a process that will lead to the effective operation of the new border posts, and ensure these are included in future budget exercises.

❖ Recommendation:  
Infrastructure will have to be established at Giriyondo for border processing procedures. The initial infrastructure required will be small temporary border posts. These facilities, on each side of the border, will have to include at least an immigration office, administration office, computer store, document safe room, police office, a shelter where vehicles can be checked, toilets, a generator for electricity, and water supply.



Staff required on the South African side would be six officers (working in shifts of three). Temporary infrastructure can be used for office and other space, such as caravans and Park-homes. Accommodation on the South African side can be provided at the existing Army base nearby. IT and access to normal Departmental databases is essential plus access to the Park entrance gates IT databases.

- ❖ Recommendation:  
Non-compliance with any Border control legislation must be monitored and addressed by an established monitoring body in the GLTP.
- ❖ Recommendation:  
An Emergency/Security Control Center must be established from where effective control can be exercised over any emergency situation ranging from a shooting incident to an out of control fire. This control center must have access to all relevant and necessary databases available between the three countries.

- ❖ Recommendation:  
The Strategic Plan for linking Gonarezhou with the KNP and the LNP through the Sengwe Communal Area must be developed so that planning can be undertaken for building and operating the necessary control points.
- ❖ Recommendation:  
That the GLTP Joint Management Board prioritize the acquisition of funds and other requirements to establish and operate the Giryondo Border Post.
- ❖ Recommendation:  
Agreement to enable emergency access, without travel documents or outside the normal traveling times, must be developed to cater for the following circumstances:
  - ❖ In the case of serious illness or injury where it is essential that the affected person receive medical attention as rapidly as possible.
  - ❖ Where, for security or law-enforcement reasons, officials need to rapidly enter the neighbouring country quickly to carry out a legitimate task.

Conservation managers and border security personnel may have differing views on issues associated with border security; it is essential that agreement be reached.



## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

*The actions, responsibilities and timetable  
for implementation of Border Control issues.*

Action	Primary Responsibility	Secondary Responsibility	Year
The roles of Security Force and GLTP officials must be clearly defined	JMB/Security Committee		2002
Collaborate on strategic planning for perimeter fence for the entire LNP.	JMB	Security & Cons. Committees, DNAC SANP, PPE.	2002
Acquire funds to erect border posts and cover running costs	JMB	Mozambique and SA Governments.	2002
Plan location of interim border posts between KNP and LNP	JMB	Security Committee, DNAC and SANP	2002
Erect interim border posts	JMB	DNAC/SANP	2002/3
Resolve the difference with the KNP over erection of the northern border fence.	JMB	Security & Veterinary Services of RSA and Zimbabwe	2002
Commercial traffic may only transit the GLTP on the Chiredzezi-Mapai road.	JMB	National Depts of Customs & Transport	2002
Traffic to enter the GLTP ONLY via official entrance gates. Alternative entry routes to be made inaccessible to visitors.	SWG/JMB	National Security and Parks Services.	2002
Control of official and unofficial gates to be upgraded to satisfaction of SWG	JMB & Security Committee	National Security and Parks Services.	2002
A Standard Operating Procedures to deal with incidents, investigations and criminals within the GLTP to be applied to all security forces	JMB & Security Committee	Legislation and Policy Working Group	2002
Security liaison committees to be established at ground level	JMB & Security Committee	National Security Forces and Parks Services.	2002
SANParks private security company to be properly trained for its role	SWG	KNP	2002
Agreements must be developed for the following: Extradition, Airspace control, Emergency access, an integrated IT system, use of road and access points and the blocking thereof.	JMB	Legislation and Policy Working Group	2002





### 13.3. LAND MINES

#### 13.3.1 THE PRESENT SITUATION

The presence of landmines and booby traps in the area has had major social and economic impacts on the local populations and imposes constraints on the development of the GLTP and TFCA.

A limited landmine problem is thought to exist in the southern parts of the LNP. The data on this and planned de-mining operations is held by the Instituto Nacional de Desminagem (IND) in Maputo. What little is known of the possible landmines in the area is, that it is believed that these will not impede development over the next two years. In 1999, the area immediately around the town of Massingir was cleared of mines, but no survey or clearing has been done deeper in the LNP. It is therefore vital that a systematic survey is carried out to confirm that the park is safe before it is opened to tourists.

During the course of the liberation war leading to Zimbabwe's independence, the then Rhodesian Army laid minefields along many parts of the country's borders with Mozambique and Zambia. The last border minefield to be laid was that which is now termed the Sector 5 minefield and covers the 70 km from Sango border post in the north to Crooks Corner in the south. These minefields pose a major threat to successfully linking the GNP into the GLTP.

Since 1980, there have been 40 casualties as a result of the minefields. Of these 11 were killed and the remainder were severely injured or became amputees. The distribution of casualties is: 45% from Mozambique, 35% from Crooks Corner, 3% from Shilotlela and 15% from Samu Dumisa. The casualty rate has

dropped off over the last few years as 76% of the casualties occurred between 1980 and 1992 and 24% between 1993 and the end of 2000.

The comparatively low rate of casualties is misleading as the local people, both in Zimbabwe and Mozambique, have adapted to cope with the presence of the minefields. Over the years they have developed safe routes, however casualties still occur.

Until recently, it was presumed that the Sector 5 minefield was the only one. At this stage there was no penetration between this minefield and the border. There was no resettlement of this no-mans-land until 1998, when 14 families of the Shilotlela community were allowed to return to their original homes. However, the recently completed survey, (Ministry of Foreign Affairs- Federal Republic of Germany, 2001) has found that there is a major secondary minefield in the area and in a number of suspected other areas. It also revealed a mine threat in the adjacent Chicualacuala District in Mozambique. (Fig 13.1)

The linking of the GLTP through the Sengwe Communal Lands, and the optimization of the conservation and economic opportunities in this area, are dependant on the clearing of these minefields and associated booby traps. The difficulty of the task is compounded by the fact that there are no maps of the minefields, also, not all mines are laid in a set pattern and rains and soil movement have meant that many mines have become dislodged and no longer lying horizontal. This makes probing by hand a more hazardous task than normal.

These minefields are shown in Fig 13.1. Both the Sector 5 minefield and the secondary minefield are still in place. The Sector 5 minefield

The presence of minefields, including some which are not mapped, is a serious constraint to optimal development of the GTLP.



Minefield removal is a difficult process and should be coordinated to coincide with the development of the GLTP

covers an estimated area of 3542 ha and varies in width from 200m to 1.2 km. Little trace remains of the original fencing and marking of the main minefield and, as stated above, the secondary minefield was never fenced or marked.

The mine threat in this area of the TFCA is obviously a major threat to the fulfillment of the project.

### 13.3.2 THE GOAL AND RECOMMENDED STRATEGIES

The goals are to remove all landmines in the area so as to eliminate the threat to people living in the area, and to plan and manage the resettlement of the area so that the GLTP is not negatively affected. This is an important part of the planning and development of the GLTP Park and the requirement for integrating the removal of the minefield with the development of the GLTP are detailed in the German Ministry of Foreign Affairs Report (2001). These must include:

- ❖ Identification of mine action requirements.
- ❖ The prioritization of mine removal actions, taking into account that rapid settlement into the Sengwe/ Sector 5 No-Mans-Land, is likely once mines are removed.
- ❖ In anticipation of the influx of people into the area between the two minefields, there must be planning for this settlement and associated CBNRM so that it is compatible with the objectives of the GLTP.

- ❖ In the financing of mine removal action, the traditional donor base cannot be expected to finance all the above; other sources must be looked into.

To accomplish the goals, the following recommendations must be implemented:

- ❖ Recommendation:  
The Zimbabwe DNPWM and the Joint Management Board must develop a working relationship with the authorities and the parties involved in the removal of the Minefields. As important stakeholders in the issue, this relationship is key to the success of the project.
- ❖ Recommendation:  
The DNPWM and JMB must prioritize the clearance of areas in relation to the development of the GLTP and the subsequent eastwards linkages. These priorities must be conveyed to those involved in the planning of the removal of the minefields.
- ❖ Recommendation:  
The DNPWM, with the support of the JMB, must become involved in the planning needed to optimize the resettlement of the area between the major and secondary minefields.
- ❖ Recommendation:  
The presence, or suspected presence, of minefields must be taken into account in all planning and development of the Sengwe Corridor and the potential dangers must be conveyed to all visitors to the area.



The primary and secondary minefields between Gonarezhou National Park and the Limpopo

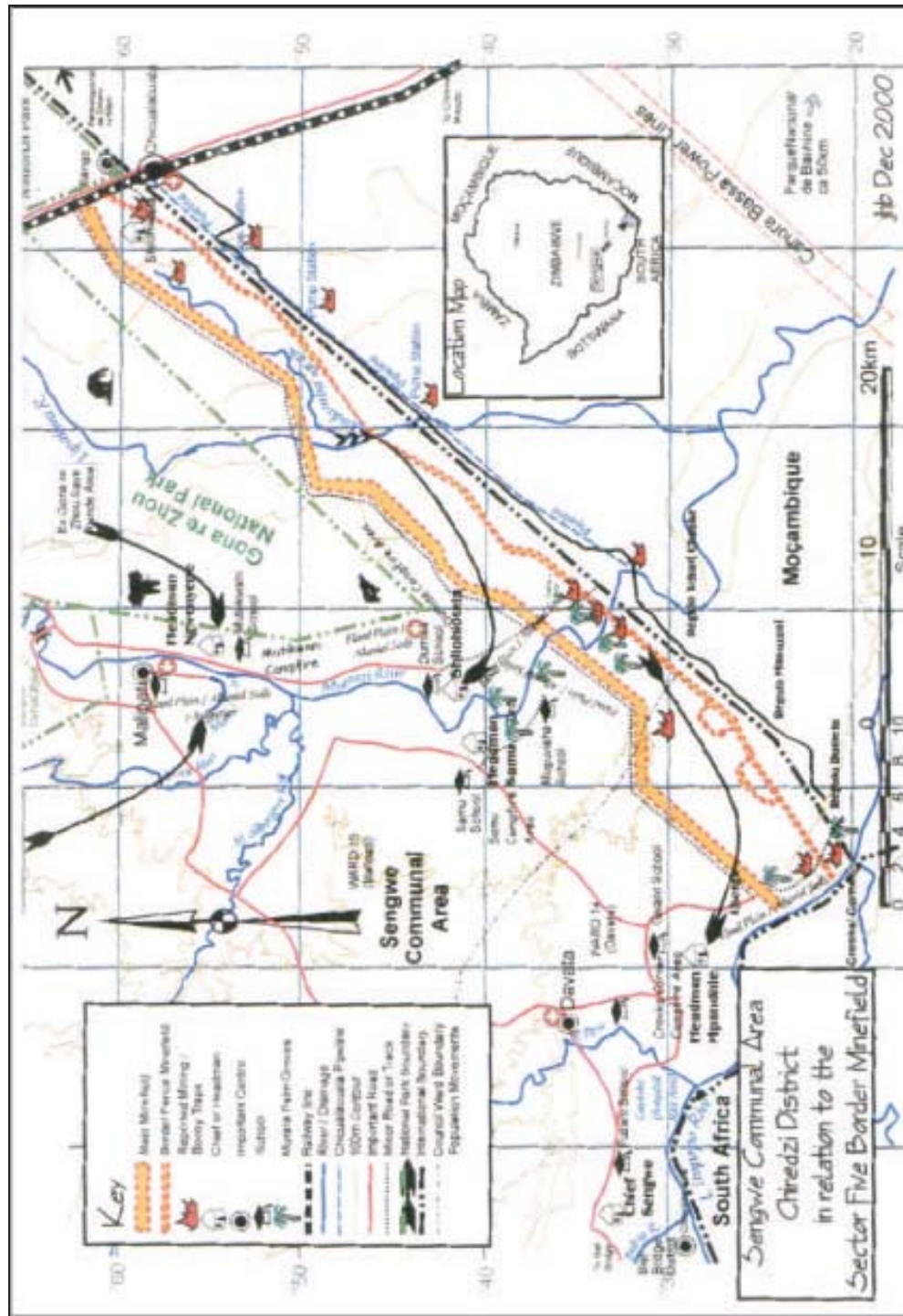
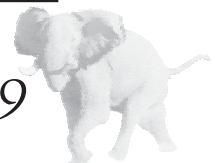


Figure 13.1



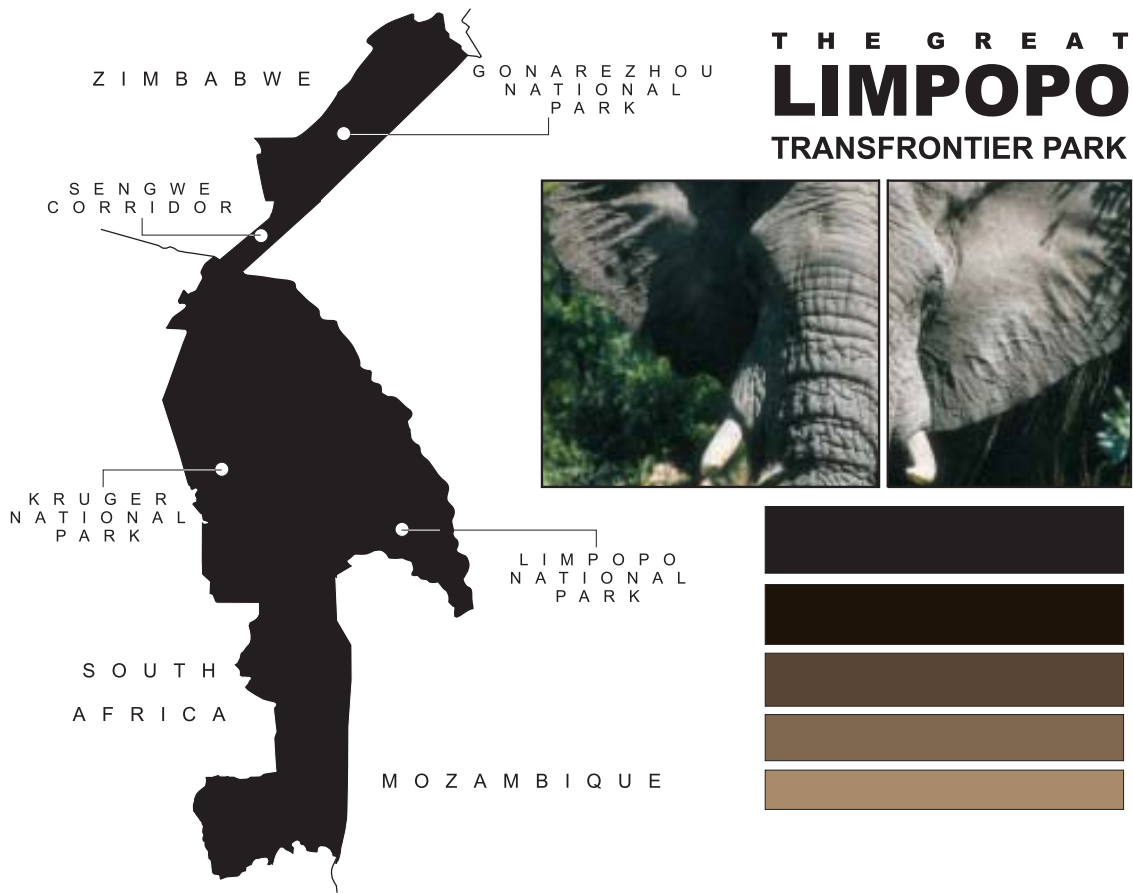
## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

*Actions and Responsibilities for implementing the GLTP objectives in the mine-clearing programme in Sengwe*

Action	Primary Responsibility	Secondary Responsibility	Timetable
A landmine survey of the LNP to be undertaken as soon as possible.	JMB & Security Committee	DNAC	2002
The DNPWM and JMB to develop a working relationship with the parties involved in coordinating landmine clearance.	DNPWM	JMB	2002
Prioritize clearance areas regarding the GLTP development	DNPWM	JMB	2002
Become involved in the planning for the re-occupation of cleared areas	DNPWM	JMB	2002
Develop an information programme to warn communities and tourists of landmines	DNPWM	JMB	2002

Table 13.3





## 14. ADMINISTRATION

### 14.1 LEGAL STATUS AND AGREEMENTS

*The GLTP itself has no legal status and the laws under which the area will be managed will be those that apply to each of its component parks.*



The conservation agencies involved in the GLTP are bound by a number of international conventions and agreements relating to the environment.

In addition to the Acts and regulations that are applicable to each park, there are several international agreements to which the Conservation Agencies are signatory and these bind the parks to certain standards.

#### 14.1.1 PROTECTED AREA STATUS

Gonarezhou, Kruger and Limpopo are all National Parks, the highest category of protected area in each country. (Coutada 16 was proclaimed the Limpopo National Park as recently as the 27th November 2001).

#### 14.1.2 INTERNATIONAL AGREEMENTS AND ISSUES THAT MUST BE CONSIDERED.

There are several international agreements that bind the signatories of the agreements to specific operating principles and performance criteria. Those that currently affect components of the GLTP are:

- ❖ The Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) 1973.
- ❖ The Convention on Biological Diversity (1992), to which all three countries subscribe.
- ❖ The IUCN (1994) categorisation of protected areas, the definitions of which have certain obligations for the GNP and KNP.
- ❖ The Treaty of the Southern African Development Community (SADC) 1992.

- ❖ The United Nations Convention to Combat Desertification 1994.
- ❖ The World Heritage Convention, which commits the KNP, as a World Heritage Site, to certain standards and obligations.
- ❖ The Helsinki Agreement on International Waters, which South Africa has to uphold.
- ❖ The IUCN Species Survival Commission, which also binds each country to certain obligations.
- ❖ International borders between states that have certain legal implications for each of the protected areas.

#### 14.1.3 NATIONAL LEGISLATION AND OBLIGATIONS

- ❖ The National Parks Acts and other legislation of each country that provide certain protection but also some constraints (e.g. utilization, privatisation).
- ❖ Veterinary regulations impose certain restrictions and obligations on both the GNP and KNP in relation to the control of diseases and movement of animals.
- ❖ The national constitutions of each country that specify that national parks fall under central government, thus affording a greater degree of stability. This is a potential support base for the GLTP, but it also places limitations on NGO and private sector investment and involvement where Government agencies lack capacity.



- ❖ The GLTP has cultural resource conservation obligations due to the presence of important archaeological sites and relics.
- ❖ Adjacent land use impacts in various ways on the GLTP and has to be incorporated in management considerations. This is of greatest significance in river management.
- ❖ Land claims may have obligations on the Parks and impact on the size and/or management options within the GLTP.
- ❖ Provincial borders and the limited jurisdiction of the SANP outside the KNP have an effect on the efficiency with which management options can be exercised.
- ❖ In Mozambique, the jurisdiction of DNAC does not extend beyond the borders on protected areas. Thereafter the wildlife portfolio falls under the National Directorate for Forests and Wildlife (DNFFB).
- ❖ There is an obligation to the GLTP to provide employment opportunities, market outlets, and a source of business custom for local communities.
- ❖ The high diversity of many taxa in the GLTP places obligations on their conservation. Also, the value of the GLTP as a source of wildlife for restocking other protected areas is an important consideration for each country.

#### 14.1.4 CAPACITY BUILDING OF GLTP STAFF

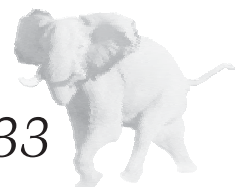
It is accepted that each agency will have its own staff development and training programmes. However, in the GLTP, considerable synergy can be created if a joint Training Committee is established that maintains a needs assessment of staff numbers, skills and training requirements. Training programmes can be developed and presented jointly that will contribute towards establishing a uniform capacity and a sense of working together as a team. The involvement of the Game Rangers Association (GRAA) in this programme is recommended.

#### 14.2 RECOMMENDED STRATEGIES

There are differences in the legislation between the three countries, particularly in relation to the penalties that can be imposed. So that no advantage can be taken of these differences, the following steps need to be taken:

- ❖ Recommendation:  
While many of the DNFFB and DNAC staff have had academic training in Conservation, very few have had any opportunity to enhance this with practical experience. Opportunities for experiential training in the development and management of the GLTP must be taken to give staff from these organizations practical skills. This will enable them to better fulfill their positions and in turn to transfer these skills to others.

Capacity building amongst the staff of the agencies comprising the GLTP, especially from a practical field perspective, is extremely important.



## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

Experienced mentors from the participating countries have an important role to play in building capacity in field staff.

- ❖ Recommendation:  
A needs and skills assessment of the respective agencies is needed to identify the necessary capacity building.
- ❖ Recommendation:  
With the rapid expansion of responsibilities in Mozambique, and the shortage of experienced field and management staff, there is a dire need for guidance to newly qualified staff until they have found their

feet. A programme is urgently needed that will provide experienced mentors who will give on-the-job experiential training and guidance of middle and senior level staff in DNAP and particularly in Gaza Province. Again, the GRAA can assist in this regard.

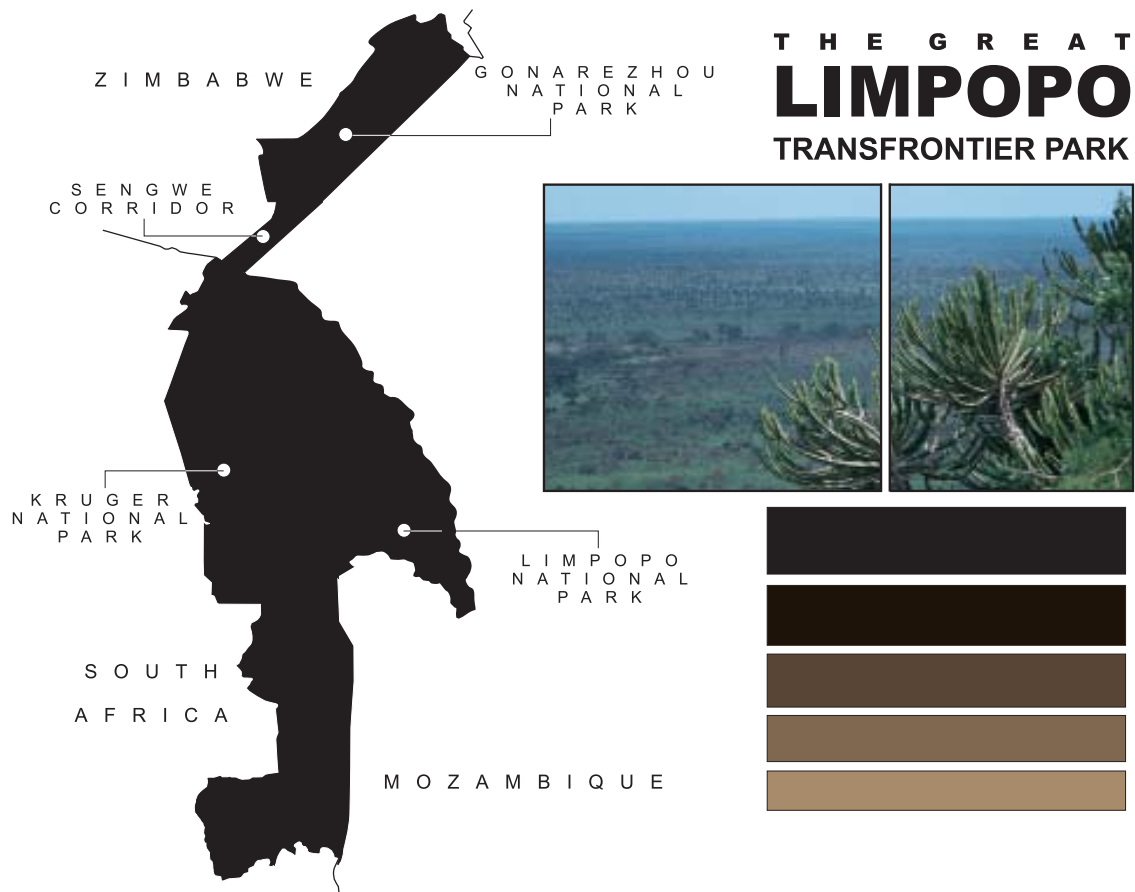
*The actions, responsibilities and timetable for assisting capacity building.*

Action	Primary Responsibility	Secondary Responsibility	Timetable
Undertake both needs and skills assessments of the responsible agencies and plan to correct shortcomings	Management Committees & Consultants	Consultants	2002
Identify and implement skills training necessary to improve institutional capacity	Management Committees & Consultants	Consultants	2002 and ongoing
Develop and implement a Mentorship programme for senior and middle level DNAP staff.	Responsible Ministers in Mozambique	Director DNAP	2002 and ongoing

Table 14.1







## 15. FUNDING AND TECHNICAL ASSISTANCE

*The development of the GLTP will involve significant capital funding and the recurrent costs of management and maintenance. Very little funding is available from the Governments involved.*

## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

The cost of establishing and sustaining the GLTP will be considerable and heavy reliance will be placed on support from donor organisations.

This is particularly so for Mozambique which will have the biggest capital outlay. For the project to be successful therefore, considerable help from donor organizations will be essential.

It is essential to form a working group that incorporates the donor agencies that are working in, or are likely to work in, the GLTP and greater TFCA. This will help to optimize their support by avoiding duplication and facilitating joint involvement in projects where necessary. It will also enable donor agencies to identify where they may be able to help with technical assistance in planning, project implementation, training and capacity building.

Membership of this working group would be voluntary. The responsibility for the formation of the group rests with the JMB, and because donors may come and go, the JMB will have to maintain the continuity of the group. The actions needed are:

*The actions, responsibilities and timetable in forming a Donor Working Group.*

Action	Primary Responsibility	Secondary Responsibility	Timetable
Form a donor and NGO sub-committee	JMB	Project coordinator	2002
Convene a relevant donor/NGO workshop	JMB	Project coordinator	2002

Table 15.1

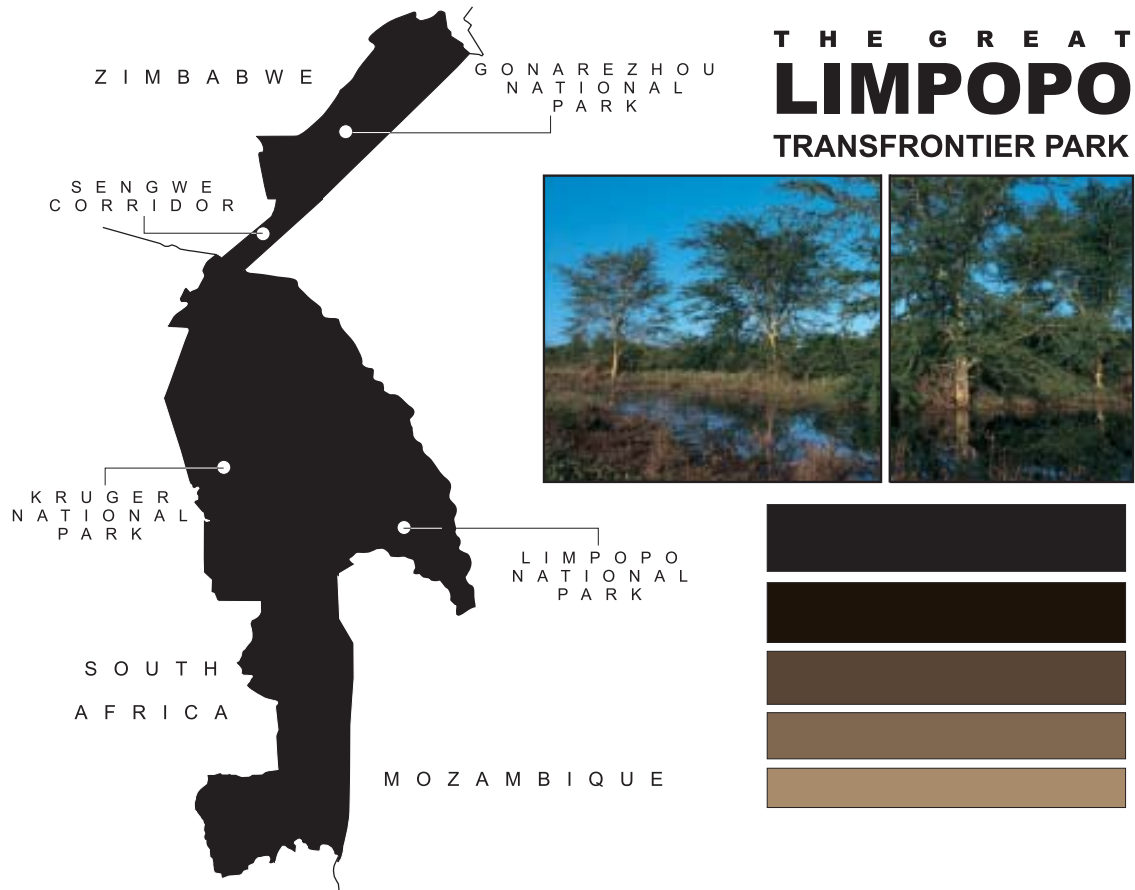
## POLICY RECOMMENDATION

- ❖ Recommendation:  
That the JMB form a sub-committee to coordinate the issues associated with donors and NGOs, identify the funding needs, compile proposals for the needs and develop internal monitoring procedures for these requests.

## MANAGEMENT GUIDELINE

- ❖ Recommendation:  
Convene a one-day workshop with those donors and NGOs involved in the project and create a working group for donors and NGOs.





## 16. IMPLEMENTING THE RECOMMENDATIONS

*Due to the dynamic nature of the establishment of the GLTP and the biodiversity and ecosystems within it, this document must be seen as the first step in the process of gradually harmonizing the management of the area.*



Many functions and activities within the GLTP may most cost-effectively be contracted out. However it is important that core functions rest with government agencies.

It will now be required of each Management Committee (as identified through the establishment process) to clearly articulate and prioritize management objectives that fall within the guidelines set by this document. Thereafter they will need to set their goals by means of a Logical Framework (Logframe) and then develop Action Plans for each goal. These will then be ratified by the JMB. It is hoped that the joint policies and management guidelines will be incorporated into the individual park plans when these are next revised.

As the communities that live in and around the GLTP are some of the poorest in southern Africa, and the media attention has created high expectations, it is essential to develop the Park as rapidly as possible and keeping the community on board the process. In this way, the GLTP will be able to help deliver on the promises of economic stimulation and job creation. Inordinate delays in the development will inevitably result in a loss of trust by the communities. Conversely, community support for the project will be proportional to the rate and extent that tangible benefits flow to their people.

While it may be possible to outsource many of the components of the project, core functions should always rest with government. These core functions will be: policy formulation, the approval of plans and programmes, the transparent awarding of leases and contracts and the monitoring of management and development undertaken by other parties.

Monitoring of all phases of the project is essential in order to provide managers and other stakeholders with continuous feedback on the implementation and progress. This continuous assessment of progress, standards

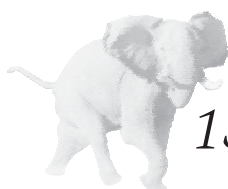
and costs in terms of agreed schedules is vital to meeting delivery deadlines within prescribed budgets.

The Logframe methodology used to set the goals will have selected the indicators for monitoring and project performance. It must also incorporate stakeholder awareness and opinion, particularly in the case of the local communities.

❖ Recommendation:

Monitoring protocols must be designed and implemented as appropriate for each level within the framework of management goals and action plans. The design of each programme must include:

- ❖ Clear statements of measurable goals for each project and its components.
- ❖ A structured set of performance indicators, covering the output of tangible deliverables and services generated by the specific goal and the impact on stakeholders.
- ❖ The requirements for collecting data and record keeping so that data required for measuring the indicators are compatible with other relevant statistics and cost-effectiveness.
- ❖ The organizational structures that will be needed for collecting, analyzing and reporting on project data.
- ❖ The proposals for how the results gained from monitoring will be reported to management and the JMB, and how they will be used to adjust performance where necessary.



*The actions, responsibilities and timetable  
to initiate implementation of the GLTP plan.*

Action	Primary Responsibility	Secondary Responsibility	Timetable
Approval and acceptance of the GLTP plan & objectives	Trilateral Ministerial Committee	JMB and DNAC, SANP & DNPWM	February 2002
Set Operational Goals and strategies using Logframe and develop Action Plans	Management Committees	Management staff	April 2002 and ongoing
Establish monitoring indicators, methods and feedback protocols	Management Committees	Management staff	2002 and ongoing
Ratify goals and plans for implementing	JMB	Nil	April 2002 and ongoing
Outsource projects where this is more cost-effective	JMB	Management Committees	2002 and ongoing
Monitor each project and adjust where necessary	JMB	Management Committees	2002 and ongoing

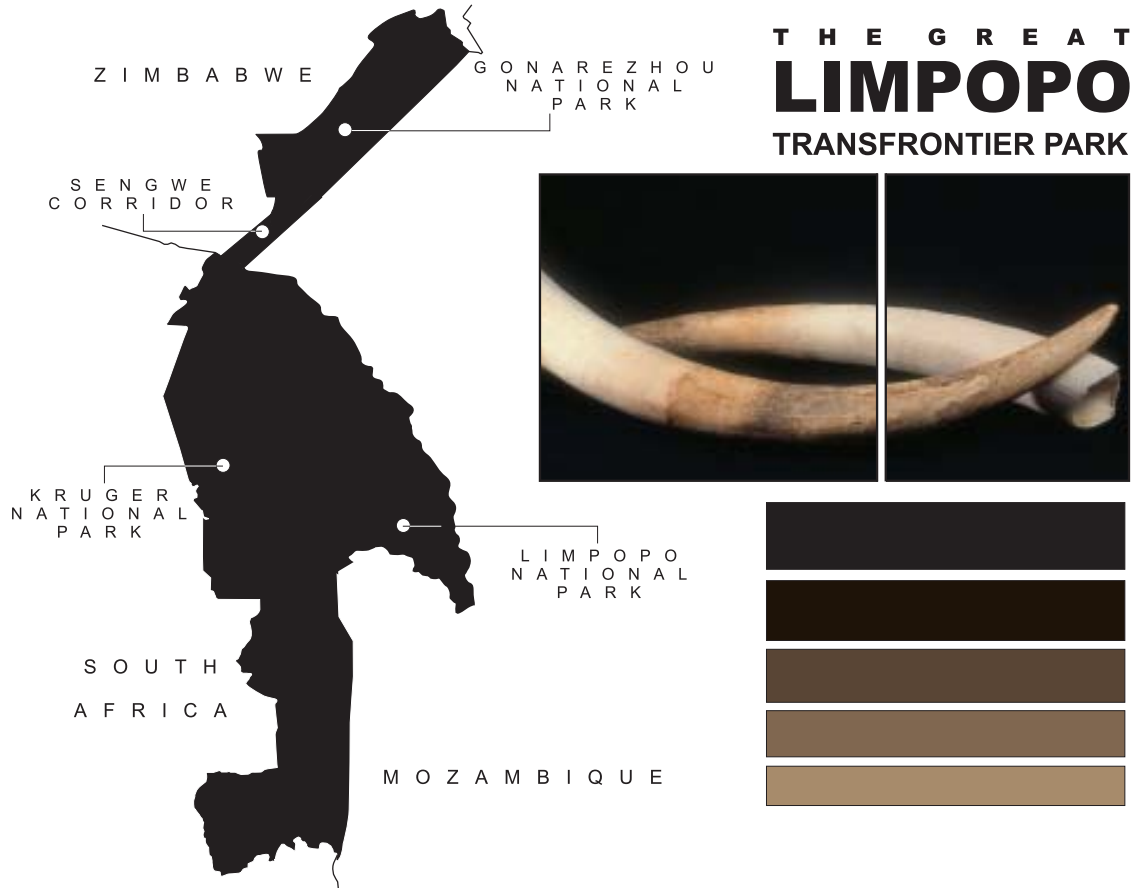
*Table 16.1*

*“He who moulds opinion  
is greater than he who enacts laws”*

*Abraham Lincoln*



17. REVIEWING THE JOINT POLICY RECOMMENDATIONS AND MANAGEMENT GUIDELINES



## 17. REVIEWING THE JOINT POLICY RECOMMENDATIONS AND MANAGEMENT GUIDELINES

*This is a working document that must be reviewed and updated as the GLTP develops. Where important additions and changes are necessary, these must be brought to the attention of the JMB by the appropriate Management Committee and included as annexures or amendments before this document is next reviewed.*

It is important that documentation such as this one, is subject to regular review to ensure that management guidelines and policies respond appropriately to the dynamics of protected area management.

In 2004, this document should be reviewed and updated to accommodate the changes within and in areas adjoining the park.

❖ Recommendation:

The review of this document should take place at intervals of not greater than three years.

❖ Recommendation:

The JMB must ensure that, in the revisions of the document, continuity in the development and management of the GLTP is maintained.

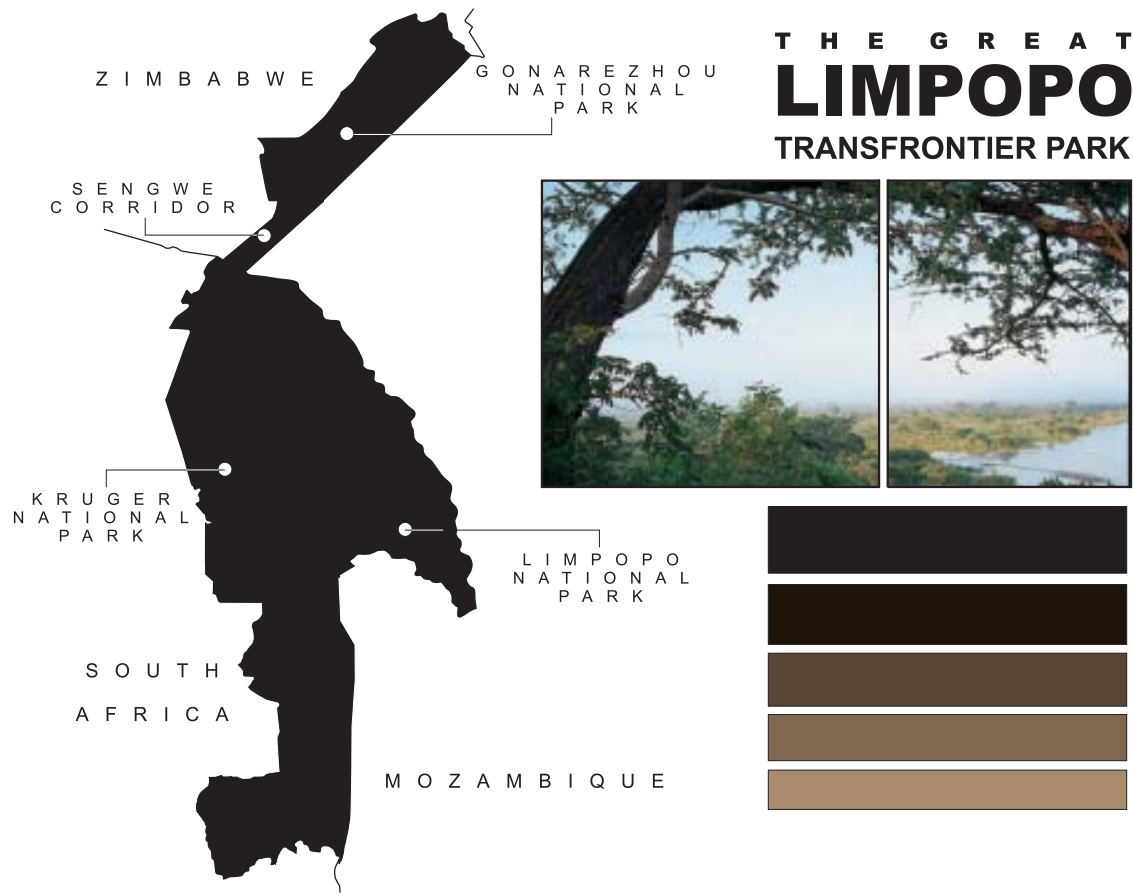
*The actions, responsibilities and timetable for reviewing this document.*

Action	Primary Responsibility	Secondary Responsibility	Timetable
Appoint a review committee.	JMB	Project Coordinator	2002
Obtain budget for the document review.	JMB	DNAC, DNPWM, SANP	2003
Appoint review team.	JMB	Project Coordinator	2004

*Table 17.1*







**T H E G R E A T  
L I M P O P O  
T R A N S F R O N T I E R P A R K**

## 18. FUTURE DEVELOPMENT OF THE TFCA

### 18.1 THE VISION

*The GLTP Park is only one component of the vision of a much greater Transfrontier Conservation Area (TFCA) illustrated in Fig 18.1. It is here that the most direct benefits of the development can be provided to the greatest number of people.*



The UNESCO biosphere reserve concept can greatly expand the scope of the TFCA to the benefit of both wildlife and communities.

In the east, the TFCA currently stretches from the LNP and Gonarezhou to include the National Parks of Banhine and Zinave and the interstitial areas. Along the north bank of the Save river it includes Coutada 4 and almost reaches the coast.

To the west, the private nature reserves along the western boundary of the KNP and Manyeleti and Letaba Ranch are included. In the northwest, the extension includes parts of the adjoining Communal Lands, the Sengwe Gorge, Malilangwe Trust, the Save Valley

Conservancy and the Chiredzi River Conservancy.

Adopting the UNESCO Biosphere Reserve concept can vastly expand the scope of the TFCA. The functions of a Biosphere reserve are to link several conservation and development areas within a single conceptual framework. A first step in this direction has been in UNESCO's recent recognition of the Kruger to Canyon Biosphere Reserve, linking the KNP to the Blyde Canyon Nature Reserve and this is an obvious priority. (Fig 18.2)

*(Initial) Conceptual extent of the GKG Transfrontier Conservation Area*



Figure 18.1



The GLTP is a component of the TFCA and should be used as a dynamo to drive forward the greater concept of the much larger TFCA for the region.

This Biosphere Reserve concept can be applied to expand the TFCA in Mozambique northwards from the Save to reach the Chimanimanis, eastwards to include the Save estuary, the Bazaruto Archipelago and the coast between Xai Xai and Inhambane. From LNP it could extend southwards along the eastern border of the KNP, including Curromane Dam to then cross the Komati and follow the Lebombo to Swaziland and Mlawula Game Reserve and the Picannin Lebombo ranges to link with the Maputo TFCA and Lebombo SDI.

#### K2C Map

In South Africa, in the northwest, the expanded TFCA could stretch westwards along the Limpopo to link with Tuli and in the central area it will be easy to include Manyeleti Nature Reserve, Makhuya Nature Reserve, Letaba Ranch, and the Mariyeta and Munga communal areas. The Kruger to Canyon Biosphere Reserve provides the link between the Blyde Canyon Nature Reserve eastwards through the private reserves between Blyde and the KNP. Further south it should be possible to include the Mthethomusha Game Reserve and then through a chain along the Crocodile river to link up with the Barberton Mountainlands Nature Reserve, Songimvelo Game Reserve and Malolotja National Park in Swaziland. (The negotiations to link these as a Transfrontier Park have started).

In Zimbabwe, the Biosphere Reserve concept can mean extending the TFCA northwards as far as the Chipinge Rhino Sanctuary, and as far west as the Mateke hills and Chipise Communal Lands. The final boundaries in Zimbabwe would depend on the final alignment of the proposed new Foot and Mouth

fences. Along the Limpopo, the TFCA could extend westwards, perhaps to link up with the Limpopo/Shashe TFCA.

#### ❖ Recommendation:

So that the momentum created by the development of the GLTP is not lost, the vision of the greater TFCA must be articulated in detail and steps needed to plan and develop the greater area must be initiated. The Tri-lateral Ministerial Committee should authorize the commencement of this planning as soon as possible.

#### ❖ Recommendation:

The borders of the TFCA must be objectively defined.

#### ❖ Recommendation:

The JMB will need to develop criteria that will enable communal or privately owned land to be included within the TFCA. These criteria will include the following:

- ❖ The signing of a binding agreement for a specific period of time.
- ❖ Provision to allow neighbours of communal or privately owned land to also become part of the TFCA under the same criteria as allied by the JMB.
- ❖ The erection, removal and maintenance of fences.
- ❖ Controls over hunting.
- ❖ Agreements over water provision and habitat management.
- ❖ Agreements on visitor access.
- ❖ Agreements on security responsibilities and access to GLTP personnel.



*Actions, responsibilities and timetable to  
evaluate the expansion of the Trans-Frontier Conservation Area.*

Action	Primary Responsibility	Secondary Responsibility	Timetable
Reach agreement on investigating expanding the TFCA	Trilateral Ministerial Committee	TFCA Technical Committee & Project Leader.	2002
Secure donor funding for planning expansion.	Participating Governments	TFCA Technical Committee & Project Leader.	2002
Develop programme for undertaking planning.	TFCA Technical Committee	Donor Organizations and Planners	2002
Tender for, and award contracts for planning.	TFCA Technical Committee	DNAC, DNPWM & SANP	2003

*Table 18.2*

## REFERENCES

DNFFB, 1998. *Guidelines for the development and management of Coutada 16 in Gaza Province Mozambique*. DNFFB. Typed report 33 pp.

Anon 2000. *Conceptual Plan for the Gaza-Kruger-Gonarezhou Trans-Frontier Conservation Area*. Document presented to the Ministers responsible for wildlife in Mozambique, South Africa and Zimbabwe. 43 pp.

Barnes, K.N. 2000. *The Escom Red Data book of the birds of South Africa, Lesotho and Swaziland*. Birdlife Southern Africa. 150pp.

Bengis, R.G., G.R.Thompson, R.D.Bigalke and R.A.Kock (in press). *Infectious animal diseases in sub-saharan Africa: the Wildlife / Livestock Interface*. OIE Scientific and Technical Review. Vol. 21 (1).

Biodiversity Support Program. 1983. *African Biodiversity: Foundation for the Future*. Biodiversity Support Program, Washington DC.149

Brockett,B.H., H.C.Biggs and B.W.van Wilgen. 2001. *A patch mosaic burning system for conservation areas in southern African savannas*. International Journal of Wildland Fire. 10 , 169-183.

Bruton,M.N. & S.V.Merron 1985. *Alien and translocated aquatic animals in southern Africa: a general introduction, checklist and bibliography*. South African National Scientific Programme report No 10. Foundation for Research Development, CSIR. Pretoria. 71pp.

CESVI Project: (2001) *Sustainable development and natural resources management in southern Zimbabwe*. Notes on the Sengwe/Chikwarakwara Area of the Limpopo River. Typed Report 4pp.

Davison, B.P, W.Masuka. and J.Chikwanaha. 2001. *Report on aspects of the state of the Gonarezhou National Park relevant to the GKG TFCA*. Dept of National Parks & Wildlife Management report. 16 pp.

De Waal, D. and S.Snyman. 2001. *The Gaza-Kruger-Gonarezhou Transfrontier Park park planning workshop*. Draft report. 46pp.

Development Bank of southern Africa (2000). *Greater Phalaborwa socio-economic perspective*. 13pp.

## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

Emslie, R. & M.Brooks.1999. *African rhino. Status survey and conservation action plan*. IUCN/SSC African Rhino Specialist Group. IUCN, Gland, Switzerland & Cambridge, UK. 92pp.

Foxcroft, L. (2001) *Invasive alien species; issues for joint management*. Kruger National Park. Typed Report. 4pp.

GLTP Technical Committee (2002) . *Intergrated tourism development plan*.

Gomera, M. 2001. *Sengwe community Zimbabwe*. Southern Alliance for Indigenous Resources, Harare. Typed report 5pp.

Grobler, D.G., Raath, J.P., Braak, L.E.O., Keet, D.F., Gerdes, G.H., Barnard, B.J.H., Kriek, N.P.J., Jardine, J. & Swanepoel, R.1995. *An outbreak of Encephalomyocarditis-virus infection in free-ranging African elephants in the Kruger National Park*. Onderstepoort Journal of Veterinary Research. 62: 97-108.

Griffin.J. 2000. *Study on the development of transboundary natural resource management areas in southern Africa*. The biodiversity support program. 149 pp.

Hilton-Taylor,C. 2000. *IUCN Red List of threatened species*. IUCN Gland Switzerland and Cambridge UK. 61 pages.

IUCN. 2001 *Community Survey Coutada 16*. Typed report. 33pp.

Jones, M.A. 1994. *Park plan for Gonarezhou National Park*. Dept of National Parks & Wildlife Management; Harare.

Joubert. S C J 1986. *Masterplan for the management of the Kruger National Park*. Internal report to the National Parks Board, Skukuza.

Keet, D.F., Kriek, N.P.J., Penrith, M-L., Michel, A. & Huchzermeyer, H.F.A.K.1996. *Tuberculosis in buffaloes (Syncerus caffer) in the Kruger National Park: spread of the disease to other species*. Onderstepoort Journal of Veterinary Research. 63: 239-244.

KPMG. 2002. *Great Limpopo Transfrontier Park: integrated tourism development Plan*. 50pp.

Leader-Williams, N. 1988. *Patterns of depletion in a black rhino population in Luangwa Valley, Zambia*. Afr.J.Ecol 26 (30): 181-188

Leader-Williams, 1999. *An analysis of approaches to rhino conservation in Africa and Asia*. WWF/WCS Study Report



Ministry of Foreign Affairs-Federal Republic of Germany (2001) *Technical and socio-economic impact study of the Sector 5 of the Zimbabwe border minefields adjacent the Sengwe communal lands and the Gonarezhou National Park*. Final report May-2001.

Mundondo, J. and T.R. Johnson, 2001. Zimbabwe - *Country consultation: Great Limpopo Transfrontier Park joint management plan*. Proceedings of Workshop. 17pp.

Noss, R.F. and Cooperrider, A. 1994. *Saving natures legacy*. Island Press.

Peace Parks Foundation (2001) *Land use planning of Coutada 16: part of the Gaza-Kruger-Gonarezhou Transfrontier Park*. 103pp.

Peace Parks Foundation, Ministry of Tourism Mozambique (2002). *Socio-economic, demographic, land-use and attitudinal survey of the communities residing in the Shingwedzi Basin, Limpopo National Park, Gaza Province, Mozambique*.

Rogers, K and H.C. Biggs. 1999. *Integrating indicators, endpoints and value systems in strategic management of the Kruger National Park*. *Freshwater Biology* 41, 439-451.

SADC (1999) *Protocol on wildlife conservation and law enforcement*. 20pp.

SADC (2000) *Revised protocol on shared watercourses*. 31pp.

Scientific Services Section, Private Bag X402, Skukuza, 1350, South Africa  
June 1998

Security Working Group (September 2001) *Kruger-Gaza-Gonarezhou Transfrontier Park security plan*. (Restricted)

Smithers,R.N 1986. *South African Red Data Book - terrestrial mammals*. South African Scientific Programmes Report No 125. Foundation for Research Development, CSIR, Pretoria. 216pp.

Steenkamp, C. and D.Grossman. 2001. *People and parks: crack in the paradigm*. Policy Document no 10. May 2001. IUCN. Pretoria, South Africa.6pp.

Tinley, K.L. and W.F. van Riet 1991. *Conceptual plan for a Kruger-Banhine transfrontier conservation area*. Report for the Government of Mozambique. WWF Southern Africa.

van der Linde, H., J. Oglethorpe, T.Sandwith, D. , and Y.Tessema ( with contributions from Ananda Tiega and Thomas Price). 2001. *Beyond boundaries: transboundary natural resource management in sub-saharan Africa*. Biodiversity Foundation. Washington, D.C., U.S.A.



THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

Venter F J and Deacon A R (1995). *Managing rivers for conservation and ecotourism in the Kruger National Park*. Wat. Sci. Tech. 32: 5/6, pp. 227-233.

Venter, F.J. and H C Biggs (1998) *Sustainable management of rivers for conservation and ecotourism - a Kruger National Park perspective*.

Venter, F. J. and Deacon A R (1995). *Managing rivers for conservation and ecotourism in the Kruger National Park*. Wat. Sci. Tech. 32: 5/6, pp. 227-233.

Walker, B.H. 1998. *The art and science of wildlife management*. Wildlife Research. 25. 1-9

Whyte, I.J. 2001 *Movements of elephants translocated to Mozambique in September/October 2001 and considerations of future options*. Scientific Report 5/012. South African National Parks. 16pp.

World Bank (1996) Mozambique. *Transfrontier conservation areas pilot and institutional strengthening project*. Report No. 15534-MOZ .



# APPENDICES

## APPENDIX I

### TERMINOLOGY AND ABBREVIATIONS USED IN THIS DOCUMENT.

There are differences in the use of terminology between the protected areas.  
Some of these have been used in this document. These are listed below.

TERMS USED IN THIS DOCUMENT.	SYNONYMOUS TERMS OR DEFINITIONS
Field Ranger	Fiscal, Game scout.
Warden	District Ranger
Patrol base	Picket
Community	A group of people who have long standing traditional or historical links to part of the GLTP Park or its immediate environs.

### ABBREVIATIONS, ACRONYMS AND DEFINITIONS

<b>AWF</b>	African Wildlife Foundation
<b>CAMPFIRE</b>	Communal areas Management Programme for Indigenous Resources
<b>COUTADA</b>	Hunting Area
<b>DNAC</b>	National Directorate of Conservation.
<b>DNAP</b>	National Directorate of Agriculture and Forestry
<b>DNFFB</b>	The National Directorate of Forests and Wildlife (Mozambique)
<b>DNPWM</b>	Dept of National Parks & Wildlife Management (Zimbabwe).
<b>GLTP Park</b>	The Great Limpopo Transfrontier Park
<b>GLTP</b>	The Great Limpopo Transfrontier Park
<b>GNP</b>	Gonarezhou National Park
<b>GRAA</b>	The Game Rangers Association of Africa
<b>IEM</b>	Integrated Environmental management
<b>JMB</b>	Joint Management Board
<b>KfW</b>	Kredianstalt fur Wiederaufbau
<b>KNP</b>	Kruger National Park
<b>LNP</b>	Limpopo National Park (formerly Coutada 16)
<b>NGO</b>	Non Governmental Organization
<b>PPF</b>	Peace Parks Foundation
<b>SANP</b>	South African National Parks
<b>SWG</b>	The Security Working Group
<b>TFCA</b>	Trans Frontier Conservation Area



## APPENDIX II

### THE BIOPHYSICAL ENVIRONMENT CLIMATE

The climate of the GLTP may be described as subtropical, with hot, wet summers and mild, dry winters. Frost occurs only very occasionally during winter in some of the lower lying areas of the KNP. Day temperatures of above 40C in summer are a common phenomenon.

The GLTPs climate is related to the regional climate of the subcontinent as a whole insofar as it is influenced by anticyclonic systems moving rhythmically over southern Africa from west to east.

During the summer months, the presence of anticyclonic conditions in the interior of southern Africa give rise to extremely hot and dry conditions which may persist for up to two weeks at a time. These conditions are normally followed by the development of a low-pressure cell over the interior, resulting in an influx of hot, moist equatorial air from the north and northeast, with subsequent thunderstorms. The establishment of equatorial low-pressure troughs over the subcontinent normally gives rise to widespread and continuous rain over the Lowveld.

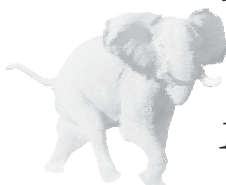
Tropical cyclones occasionally enter the area in the late summer months. They originate in the equatorial areas of the Indian Ocean when the surface temperature of the sea rises above 27C and move slowly down the Mozambique Channel, gaining moisture as they proceed. The high rainfall associated with tropical cyclones moving overland frequently causes extensive flooding and damage to infrastructure and services. In addition, it may also impact severely on the natural environment.

Winter months are normally characterized by the presence of anticyclonic conditions over the interior of southern Africa, which result in fine and mild weather over the area. These conditions intermittently give way to cooler, cloudy conditions when cold frontal systems of polar origin penetrate from the south.

#### TEMPERATURE

Data presented in Table 7.1 indicate that the average maximum day temperatures increase from south to north in the GLTP, with the exception of Punda Maria, which is situated at a higher elevation in the extreme northwest of the KNP. Absolute maximum temperatures of above 40C are common for all the stations for the months November to February.

Although the mean minimum temperatures at all the stations are above freezing point, frost is periodically recorded in the lower lying areas along the rivers in the Skukuza, Letaba and Shingwedzi areas.



## RAINFALL

With the exception of Punda Maria, the data shown in Table 7.1 indicates that the mean annual rainfall decreases from south to north. Mean monthly rainfall also indicates that effective rain occurs from September to April with a short dry period of four months.

*Mean daily maximum and minimum temperatures  
in C for five representative stations in the GLTP.*

MONTH	SKUKUZA		LETABA		SHING- WEDZI		PUNDA MARIA		CHIPINDA POOLS	
	M E A N D A I L Y									
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
January	32,3	19,6	34,0	22,0	34,3	21,7	34,4	21,2	36,1	24,2
February	32,2	19,4	34,9	21,5	33,9	21,2	31,7	19,8	35,2	23,1
March	31,2	17,9	34,3	20,5	33,2	20,0	31,7	19,8	34,6	21,7
April	29,8	14,8	33,4	19,4	30,4	17,4	29,3	16,6	33,1	18,0
May	27,4	10,2	28,6	12,6	26,8	11,5	26,2	12,7	31,1	12,5
June	25,6	6,1	26,7	8,0	25,8	6,7	24,6	9,8	28,2	8,7
July	25,4	5,6	26,7	10,4	25,9	9,2	25,0	12,8	27,2	8,4
August	27,2	7,6	28,9	11,3	28,3	10,6	26,4	14,1	30,1	11,5
September	29,4	11,6	30,3	12,9	30,5	12,9	27,1	14,5	30,3	17,1
October	30,8	15,1	31,1	14,0	31,2	14,0	29,0	17,0	33,9	19,7
November	31,8	17,5	32,0	19,0	32,7	19,0	32,7	19,7	35,4	21,9
December	32,3	19,2	33,3	19,1	33,4	19,1	31,1	19,0	35,8	22,3

Table 1

*Mean annual and monthly rainfall  
in mm for six representative stations in the GLTP*

MONTH	SKUKUZA	LETABA	SHING- WEDZI	PUNDA MARIA	CHIPINDA POOLS	MABALAUTA
January	96,5	93,8	124,6	130,4	88,7	108,9
February	91,2	101,9	147,3	115,0	98,6	106,9
March	76,6	47,5	49,9	95,4	51,9	42,8
April	34,1	35,0	25,1	29,1	21,5	17,9
May	13,8	7,8	19,3	13,4	13,8	11,4
June	9,7	3,7	8,9	5,6	0,9	2,2
July	8,0	9,2	2,9	4,3	5,2	3,2
August	4,6	1,0	2,4	2,8	4,9	8,6
September	23,8	27,5	38,1	14,7	16,3	19,7
October	35,1	26,0	28,5	25,0	31,0	29,1
November	78,2	55,5	64,7	73,1	54,3	66,5
December	79,2	109,3	112,9	113,4	112,7	71,8
MEAN	546,3	462,2	471,8	587,8	480,0	389,7

Table 2



## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

Analysis of the rainfall patterns of the KNP over the past 100 years also indicates a cyclical nature with approximately 10 years of generally above average rainfall, followed by a period of similar duration with generally below average rainfall.

The high temperatures during summer result in high evaporation rates that impact negatively on the effectiveness of the precipitation. Hail occurs on a regular basis, but at low frequencies. Mist in winter is common in the lower lying areas

## TOPOGRAPHY AND DRAINAGE

### LAND FORM

The area is mainly flat to slightly undulating except for the Malelane Mountains in the southern KNP, the Waterberg Sandstone Outcrops in the Punda Maria area, the Lebombo Mountain Range on the eastern boundary of the KNP and the Chionja Mountain Range in the north of the GNP. A number of Inselbergs, of various geological origins, are also evident along the western half of the KNP.

Numerous pans of varying size are present, primarily on the flat sandstone plateaus and on the floodplains of the larger rivers. Some of these pans are capable of retaining water throughout the dry season.

### DRAINAGE

The rivers in the area all drain in an easterly or southeasterly direction. The main rivers, from south to north, are the Crocodile and Sabie rivers of the Nkomati System, the Olifants, Letaba, Shingwedzi, Levuvhu, Limpopo and Mwenezi of the Limpopo system and the Save and Runde rivers of the Save drainage.

Except for the Letaba, Shingwedzi and Mwenezi rivers, all the other rivers are perennial. Surface water is also available throughout the year in pools in many of the seasonal rivers.

The sandstone plateaus are characterized by the lack of well-defined drainage lines and the occurrence of numerous pans.

### ALTITUDE

The GLTP is situated between 100m and 800m above sea level. The junction of the Sabie and Nkomati rivers (170m), the Limpopo floodplains in the east (100m) and the junction of the Save and Runde rivers (165m) are the lowest points in the area. High points in the area are the Malelane Mountains (800m), the Pretoriuskop Granite Inselbergs (700m), the Makamandima and Mutandave peaks (570m) and the Punda Maria sandstones (400m). The major part of the plains in the area is between 300m and 350m altitude. The Sandveld Plateau in LNP is situated between 400m and 500m above sea level.



## GEOLOGY AND SOILS

For the purpose of the JMP, the geology and associated soils are discussed under one heading. The geology is discussed in the sequence of the age of the rock formations.

### GRANITOID ROCKS

Different kinds of granitoid rocks were formed over a period, stretching from 3 500 million to 2 000 million years ago. These rocks cover the entire western regions of the KNP and also occur in the northern part of Gonarezhou along the Chionja range and in the Mwenezi valley. The rocks consist of a combination of minerals, such as granite, migmatite, granodiorite and syenite. Dolerites of a much younger age have intruded through the granitoid rock to form dykes that are sometimes visible on the surface.

The granitoid landscape is typically undulating with a catenal sequence of soils from the top of the undulations to the bottom. Sandy soils of a grey to brown colour and with a low nutrient content, occur on the top of the undulations. Down the slope, the sandy soils give way to a grey nutrient rich clayey soil that might result in duplex soils close to the drainage line. A seep line that indicates conditions of water saturation in the rainy season is common in the middle slopes of this landscape. This seep line tends to disappear under conditions of lower rainfall (>500mm per annum). Alluvial soils occur on the banks of the drainage channels.

The soils of the dolerite dykes are richer in nutrients, more clayey, red to dark brown in colour and have a distinct influence on the vegetation which differs dramatically from the vegetation of the associated soils of granitoid origin.

### PRECAMBRIAN AND TRIASSIC SEDIMENTS

Precambrian Waterberg Sandstone of the Soutpansberg Group, which is an older sediment (1800 million years), occurs around Punda Maria in the northern KNP. Outcrops of the sandstone form conspicuous mountain ranges. The sandstone gives rise to nutrient poor medium grained red, yellow to grey sandy soils.

The Triassic Karoo Sediments in this area consist of shales and sandstone that were deposited on the granites about 200 million years ago. The shales are very unstable and therefore never form outcrops. Karoo Sandstone, however, forms outcrops along a relatively narrow band stretching north-south through the central regions of the KNP and forms a divide between the granites, on the western side, and the basalts, on the east. This band of Karoo Sandstone disappears at the Olifants River but reappears in the northern regions where it forms conspicuous outcrops in the Punda Maria area.

Soils that develop on the shales contain large amounts of sodium, grey or yellow-brown in colour, and have a heavy prismatic structure. The A-horizon is usually very thin and very susceptible to erosion.



## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

Karoo Sandstone gives rise to yellow to grey, fine grained sandy soils that are poor in nutrients. Because of the close proximity of the shales and sandstone, the soils are usually of a mixed origin.

#### BASALT

Basalts, occur extensively in the eastern part of the KNP. It also occurs in the western and north-western parts of GNP but not in the LNP. It is highly erodable and gives rise to dark coloured, clayey soils that have a high nutrient content. Depending on the mineral contents of the basalt or the drainage, it can result in red structured soils or dark brown to black vertic soils that contain clays that expand when wet and contract when dry. The soils may also be very shallow with a prominent layer of calcrete not deeper than 30cm.

#### RHYOLITE

Jurassic rhyolite forms prominent outcrops as part of the Lebombo Mountain Range from Crocodile Bridge in the south along the eastern boundary of the KNP up to Shingomene where it disappears under the Cretaceous sandstone. It reappears further north in the Mwenezi valley in Gonarezhou. The rhyolites of the Lebombo Range form the boundary between the KNP and LNP and are conspicuous in the Massingir area along the Olifants River. The Jurassic rhyolites are about 150 million years old and are more resistant to weathering than the adjacent basalts of about the same age.

The rhyolites weather into brown to yellow-brown clayey soils with a high sodium content. The soils are shallow with rocks throughout the soil profile.

#### CRETACEOUS AND QUATERNARY SEDIMENTS

The Malvernia Formation of Cretaceous origin consists of conglomerates, grits, calcareous sandstones and shales. It occurs in the northern part of the KNP, in Gonarezhou and throughout the LNP. It generally forms the calcareous sediments of valley sides and exposed boulder beds.

After the formation of the Malvernia System, 7 million years ago, there was a period of dry desert-like conditions under which sand was deposited. These Quaternary deposits are found extensively in the LNP and the GNP and form the big elevated sand plateau that extends southwards into the Mananga sands in The LNP.

The soils derived from the conglomerates and calcareous sandstone of the Malvernia Formation occur against slopes and are usually shallow and calcareous with lots of boulders present. Calcrete is generally visible on the surface.

The sand plateaus are flat or concave and pans are common. The soils are sandy, fine textured and vary in colour from red to yellow to grey, depending on the internal drainage. Some of these sands can be more than 30m deep.



## ALLUVIUM

Younger alluvium deposits are found flanking most of the larger drainage lines. The Limpopo, Luvuvhu and Mwenzi rivers especially have well developed floodplains. The soils are young, differ widely in clay content and usually show signs of active micro-faunal activity.

## VEGETATION

The vegetation of the GLTP is discussed on the basis of the woody plant component, the geological formations and soil types. The more detailed description of the major vegetation types is given in Appendix II: These vegetation types are

- ❖ *Combretum* Woodland on Granite.
- ❖ *Combretum* / Mopane Woodland on Granite.
- ❖ *Brachystegia glaucescens* Woodland on Granite.
- ❖ Knobthorn/Marula Savanna on Basalt.
- ❖ Mopane Scrubland on Basalt.
- ❖ *Combretum* Woodland on rhyolite.
- ❖ Mopane/*Combretum* Woodland on rhyolite.
- ❖ Communities of the Waterberg and Karoo sediments.
- ❖ Communities on Cretaceous and Quaternary Sediments.
- ❖ Floodplain Vegetation.

## CONCLUSIONS

The descriptions of the natural attributes presented in Appendix is broad-based and will suffice to serve as an essential guide for joint decision-making. It is, however, also accepted that the level of information for the various areas to be incorporated into the GLTP varies considerably. It is, therefore, imperative that in due course, provision be made for the identification and inclusion of areas of specific conservation importance and/or ecological sensitivity in the GNP and the LNP in later editions of this plan.

For the GNP and KNP comprehensive inventories have been compiled for the lesser vertebrates (fish, amphibia, reptiles and birds) and the small and large mammals. A large collection of invertebrates also exists. With the very substantial area to be included in the GLTP, and the corresponding addition





## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

of biodiversity with the inclusion of the LNP, new subspecies, species and possibly even communities may be added to those already described for the GNP and KNP. It is, therefore, vitally important that inventory surveys for all the taxa be undertaken in the LNP as a matter of priority and that these natural attributes be retained in their most pristine state possible.

## THE MAJOR VEGETATION TYPES OF THE GREAT LIMPOPO TRANSFRONTIER PARK

### COMBRETUM WOODLAND ON GRANITE

This vegetation type occurs from Pretoriuskop to Orpen on the western side of the KNP on granitic soils. The undulating landscape has an average annual rainfall that varies from 700mm, in the south, to 500mm, in the north. Under the higher rainfall conditions in the southern areas the ridges of the undulations are dominated by *Combretum species* and *Terminalia sericea*. Other species associated with the sandy uplands are *Strychnos madagascariensis*, *Pterocarpus angolensis* and *Sclerocarya birrea*. The grass layer on the uplands is dominated by *Hyperthelia dissoluta* and *Hyparrhenia hirta*. *Acacia* species associated with *Dichrostachys cinerea*, *Combretum hereroense* and *Grewia* species dominate the bottomlands with *Loudetia simplex* and *Digitaria* species as the dominant grasses.

Under the drier conditions north of the Sabie River, the granite uplands are dominated by *Combretum apiculatum*, *C. zeyheri* and *Terminalia sericea*. *Panicum maximum*, *Digitaria eriantha* var. *pentzii* and *Pogonarthria squarrosa* are the dominant grasses. *Acacia nigrescens*, *Combretum hereroense* and *Euclea divinorum* occur in the bottomlands with *Digitaria eriantha* var. *pentzii*, *Aristida congesta* and *Panicum maximum* as the dominant grasses.

Dolerite intrusions occur throughout this landscape and the vegetation differs from the surrounding granitic areas. *Acacia nigrescens*, *Bolusanthus speciosus* with *Themeda triandra* are the characteristic species.

### COMBRETUM/ MOPANE WOODLAND ON GRANITE

This undulating landscape on granite occurs from Orpen in the KNP to just south of Punda Maria. Rainfall ranges from 500mm to 400mm per annum. It also occurs on granitic ecotones in the GNP in the Mwenezi valley.

The uplands of the landscape are dominated by *Colophospermum mopane* and *Combretum apiculatum*. *Colophospermum mopane*, *Albizia harveyi* and *Acacia nigrescens* are dominant in the bottomlands. *Panicum maximum* and *Digitaria eriantha* var. *pentzii* occur mainly on the uplands and *Themeda triandra*, *Aristida sp* and *Cymbopogon plurinodes* in the bottomlands.

### BRACHYSTEGIA GLAUDESCENS WOODLAND ON GRANITE

This community occurs along the Chionja Mountain Range in the GNP. Woody vegetation includes *Brachystegia glaucescens*, *Monodora junodii*, *Vangueria infausta*, *Royena macrocalyx*, *Canthium*



*weidii*, *Manilkara mochisia* and *Maerua kirkii*. The grass cover is characteristically sparse and this results in the suppression of fires.

#### KNOBTHORN/MARULA SAVANNA ON BASALT

This landscape is situated between the Crocodile and Olifants rivers on basalt in the eastern regions of the KNP. Average rainfall ranges from 600mm to 500mm per annum, dropping from south to north. It is an open savanna plain with bigger trees like *Acacia nigrescens* and *Sclerocarya birrea*. The grass layer is dominated by *Themeda triandra*, *Panicum coloratum*, *Bothriochloa radicans*, *Panicum maximum*, *Eragrostis superba*, *Enneapogon cenchroides* and *Schmidtia pappophoroides*.

#### MOPANE SCRUBLAND ON BASALT

Stunted *Colophospermum mopane* dominates the area from the Olifants River to the Limpopo River in the eastern half of the KNP on basaltic soils. It also occurs in the northwestern and western parts of Gonarezhou. The average rainfall ranges from 500mm to 400mm per annum. The grass layer is dense with *Themeda triandra*, *Bothriochloa radicans*, *Panicum coloratum* and *Schmidtia pappophoroides* as the dominant species. Where the soil becomes very clayey and vertic, the grass layer is dominated by *Setaria ingrassata* and *Sorghum versicolor*. *Adansonia digitata* (baobab) is conspicuous in the landscape where the soils become shallow and rocky.

#### COMBRETUM WOODLAND ON RHYOLITE

On the shallow soils and rocks derived from rhyolite on the eastern boundary of the KNP as part of the Lebombo Range, *Combretum apiculatum* and *Acacia nigrescens* are the dominant woody plant species. This landscape only occurs on rhyolite up to the Olifants River. The grass layer is sparse but *Themeda triandra* and *Urochloa mosambicensis* are dominant.

#### MOPANE/COMBRETUM WOODLAND ON RHYOLITE

This vegetation type occurs from the Olifants River to north of the Shingwedzi River on the rhyolite outcrops of the Lebombo Mountain Range on the boundary between the KNP and The LNP.

In the Massingir area the vegetation type is extensive and it also occurs on rhyolitic outcrops along the Mwenezi River in Gonarezhou. The vegetation is dominated by *Colophospermum mopane* and *Combretum apiculatum* with a sparse herbaceous layer dominated by *Schmidtia pappophoroides*, *Enneapogon cenchroides* and *Digitaria eriantha* var. *pentzii*.

#### COMMUNITIES OF THE WATERBERG AND KAROO SEDIMENTS

The Waterberg Sandstone of the Soutpansberg Formation is restricted to the northern part of the KNP around Punda Maria.

Three variations of the vegetation type may be distinguished. The *Burkea africana/Pseudolachnostylis maprouneifolia*-tree savanna occurs on deep sands and loams. Dominant woody species are: *Burkea*



## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

*africana*, *Pteleopsis myrtifolia*, *Pseudolachnostylis maprouneifolia*, *Hymenocardia ulmoides*, *Bauhinia galpinii*, *Diplorhynchus condylocarpon*, *Ochna pulchra*, *Holarrhena pubescens*, *Terminalia sericea*, *Guibourtia conjugata*, *Combretum collinum*, *Peltophorum africanum*, *Monodora junodii*, *Combretum zeyheri*, *Strychnos madagascariensis*, *Combretum apiculatum*, *Hexalobus monopetalus* and *Dalbergia melanoxylon*. The field layer is moderate to dense and is characterised by the presence of the following species: *Andropogon gayanus*, *Digitaria eriantha* var. *pentzii*, *Panicum maximum*, *Perotis patens*, *Brachiaria nigropedata* and *Eragrostis pallens*.

The *Kirkia acuminata*/*Azelia quanzensis*/*Combretum apiculatum*--tree savanna is mainly situated on steep slopes with stony soils. It is a moderate tree savanna and the following species are common: *Kirkia acuminata*, *Azelia quanzensis*, *Croton gratissimus*, *Guibourtia conjugata*, *Combretum apiculatum*, *Hymenocardia ulmoides*, *Diplorhynchus condylocarpon*, *Monodora junodii*, *Hexalobus monopetalus*, *Combretum zeyheri*, *Strychnos madagascariensis*, *Rhoicissus revoilii*, *Bridelia mollis*, *Phyllanthus reticulatus*, *Alchornea laxiflora*, *Maytenus mossambicensis*, *Artabotrys brachypetalus*, *Tricalysia allenii* and *Tephrosia sericea*. The field layer has a low crown cover, with the following dominant grass species: *Digitaria eriantha* var. *pentzii*, *Panicum maximum*, *P. deustum* and *Pogonarthria squarrosa*.

*Androstachys johnsonii* thickets are conspicuous on the high slopes of this landscape.

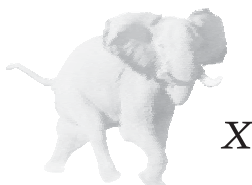
Shales of the Karoo System form a narrow strip between the granites and basalts from the Crocodile River to the Olifants River in the KNP. The soils derived from the shales support a dense woody vegetation, dominated by *Acacia welwitschii* subsp. *delagoensis* and *Euclea divinorum*. The grass layer is sparse and the dominant species are: *Sporobolus nitens*, *Urochloa mosambicensis* and *Dactyloctenium aegyptium*, with a variety of forbs. *Acacia welwitschii* subsp. *delagoensis* also occurs in some areas in the GNP.

Shales are also present immediately to the south of Punda Maria and support stands of large *Colophospermum mopane* trees and *Euclea divinorum* shrubs. *Enneapogon cenchroides*, *Panicum maximum* and *Bothriochloa radicans* are the dominant grasses.

Outcrops of Karoo Sandstone are sporadically associated with the shales, but in the Punda Maria vicinity they form sandveld plateaus and prominent outcrops. The vegetation is closely related to the vegetation of the Waterberg Sandstone with *Terminalia sericea* and *Dichrostachys cinerea* as the dominant species. *Digitaria eriantha* var. *pentzii* and *Pogonarthria squarrosa* are the dominant grasses.

#### COMMUNITIES ON CRETACEOUS AND QUARTENARY SEDIMENTS

The middle and foot slopes of the plateaus of the lower Shingwedzi, the Levuvhu, Mwenezi and Limpopo rivers are comprised of soils derived from the Malvern System of Cretaceous origin. This



occurs extensively in the LNP and in the GNP. Two structural vegetation types are present. The one is a heavily stunted *Colophospermum mopane* shrubland and the other a mopane tree savanna. The floristic composition consists of: *Colophospermum mopane*, *Maytenus heterophylla*, *Euclea schimperi*, *Grewia bicolor*, *Acacia nigrescens*, *Terminalia prunioides*, *Euclea divinorum*, *Sterculia rogersii*, *Commiphora mollis*, *Zanthoxylum humilis* and *Dalbergia melanoxylon*. The herbaceous layer is characterised by the presence of species such as *Enneapogon scoparius*, *Seddera capensis* and *Aristida congesta* subsp. *congesta*. Other grasses present are *Heteropogon contortus*, *Fingerhutia africana*, *Eragrostis superba* and *Rhynchelytrum villosum*.

A characteristic attribute of this landscape is the occurrence of dense thickets of *Androstachys johnsonii* that dominate the community. Other species that occur are *Euphorbia confinalis*, *Phyllanthus reticulatus*, *Entandrophragma caudatum*, *Strophanthus kombe*, *Croton pseudopulchellus*, *Hymenodictyon parvifolium* and *Boscia albitrunca*. The grass layer is usually very sparse to absent. The following species may be present: *Aristida congesta* subsp. *barbicollis*, *Cymbosetaria sagittifolia* and *Brachiaria xantholeuca*. A characteristic of the *Androstachys johnsonii* thickets is the occurrence of the lichen, *Usnea poliotrix* in the branches of the trees.

The sandveld plateaus of Quaternary age are the most important component of the largest part of the LNP and to a lesser extent Gonarezhou. These communities are only restricted to a very small portion of the KNP.

Three variations of the sandveld can be identified:

The *Baphia massaiensis*/*Guibourtia conjugata*-thickets occur on the red soils. It is a dense tall shrubveld with no trees. Dominant woody species are: *Baphia massaiensis*, *Guibourtia conjugata*, *Xylia torreana*, *Combretum celastroides*, *Hugonia orientalis*, *Pteleopsis myrtifolia*, *Vitex amboniensis*, *Alchornea laxiflora*, *Grewia microthyrsa*, *Vangueria infausta*, *Hexalobus monopetalus*, *Spirostachys africana*, *Dichrostachys cinerea*, *Ptaeroxylon obliquum*, *Pavetta catophylla*, *Heinsia crinata*, *Zygoon graveolens*, *Combretum zeyheri* and *Strychnos madagascariensis*. The following rare species also occur in this landscape: *Pterocarpus antunesii*, *Drypetes mossambicensis*, *Cleistanthus schlechteri*, *Croton steenkampiana*, *Dalbergia nitidula* and *Uvaria lucida* subsp. *virens*. The field layer is weakly developed and the following species contribute the most towards the cover: *Eragrostis pallens*, *Digitaria eriantha* var. *pentzii*, *Panicum maximum*, *Perotis patens*, *Brachiaria nigropedata*, *Tricholaena monachne*, *Aristida argentea* and *Pogonarthria squarrosa*.

The *Xeroderris stuhlmannii*/*Combretum apiculatum*-tree savanna occurs on the yellow sands. It is a tree savanna with moderately high and low shrubs and a stronger field layer. Dominant trees and shrubs are: *Xeroderris stuhlmannii*, *Sclerocarya birrea*, *Combretum apiculatum*, *Adansonia digitata*, *Azelia quanzensis*, *Terminalia sericea*, *Combretum collinum* subsp. *suluense*, *Dalbergia melanoxylon*, *Strychnos madagascariensis*, *Balanites maughamii*, *Guibourita conjugata*, *Zygoon graveolens*,



## THE GREAT LIMPOPO TRANSFRONTIER PARK - MANAGEMENT PLAN

*Vangueria infausta*, *Cissus cornifolia*, *Combretum mossambicense*, *Grewia monticola*, *Pteleopsis myrtifolia*, *Grewia bicolor*, and *Boscia albitrunca*. *Spirostachys africana* is the dominant plant species around the pans where brackish soils occur. Other plants that occur in the same habitat are: *Dichrostachys cinerea*, *Combretum imberbe*, *Euphorbia ingens*, *Diospyros mespiliformis*, *Ehretia amoena*, *Lonchocarpus capassa*, *Gardenia spatulifolia*, *Boscia albitrunca*, *Berchemia discolor*, *Dalbergia melanoxylon* and *Crossopteryx febrifuga*. The field layer of this community is better developed than the previous and the following species are present: *Aristida stipitata*, *A. junciformis*, *Digitaria eriantha* var. *pentzii*, *Panicum maximum*, *Schmidtia pappophoroides*, *Tricholaena monachne*, *Eragrostis pallens*, *Aristida congesta* subsp. *congesta* and *Pogonarthria squarrosa*.

The *Terminalia sericea* tree savanna also occurs in this landscape. This community is dominated by *Terminalia sericea* with *Kirkia acuminata*, *Lannea stuhlmannii*, *Sclerocarya birrea*, *Xeromphis obovata*, *Combretum zeyheri* and *Strychnos madagascariensis* as constant species. Dominant grasses are: *Digitaria eriantha* var. *pentzii*, *Pogonarthria squarrosa*, *Perotis patens* and *Aristida graciliflora*.

Another three plant communities could be present, especially in the northern part of the GNP. *Brachystegia glaucescens* in association with *Monodora junodii*, *Vangueria infausta*, *Manilkara mochisia*, *Hugonia* spp., *Diplorhynchus condylocarpon* and *Ormocarpum trichocarpum* also occur on the sand plateaus in northeastern GNP.

*Julbernardia globiflora* occurs in pure stands on the Cretaceous sandstone areas in Gonarezhou up to 492 meter above sea level.

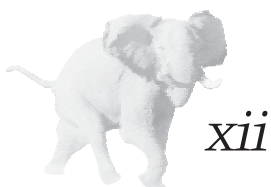
*Millettia stuhlmannii* woodland is widespread on the Mozambique coastal plains and occurs in single species stands on the Cretaceous sands. It occurs on the boundary between GNP and Mozambique.

The pans in the area are characterised by the following plant species: *Nymphaea capensis*, *N. caerulea*, *Ottelia exserta*, *Paspalidium obtusifolium*, *Convolvulus mauritanicus*, *Neptunia oleracea*, *Bergia salaria*, *Epaltes gariepina*, *Marsilea macrocarpa*, *Potamogeton schweinfurthii*, *Lagarosiphon crispus*, *Cyperus difformis*, *Fuirena ciliaris*, *Vahlia capensis* and *Buchnera longespicata*.

#### FLOODPLAIN VEGETATION

The vegetation along most of the rivers with a well-developed floodplain on alluvium is similar for the entire area. The vegetation of the Limpopo River floodplains offers a prime example of this vegetation and is used in this text for descriptive purposes.

Four variations may be identified. The *Colophospermum mopane*/*Acacia tortilis*/*Urochloa mosambicensis* tree savanna occurs on the basalt footslopes. Dominant woody species associated with *Colophospermum mopane* and *Acacia tortilis* are *Maerua parvifolia*, *Grewia bicolor*, *Azima tetraacantha*,



*Acacia senegal* var. *rostrata*, *Salvadora angustifolia*, *Hyphaene natalensis*, *Commiphora glandulosa*, *Thilachium africanum*, *Ximenia americana*, *Gardenia resiniflua*, *Maytenus heterophylla*, *Dalbergia melanoxylon*, *Acacia nigrescens*, *Gardenia spatulifolia*, *Zanthoxylum humilis*, *Boscia albitrunca* and *Adansonia digitata*. Almost homogeneous stands of baobab occur in certain localities. The field layer is sparse with a large variety of species. Grass species are: *Tragus berteronianus*, *Aristida congesta* subsp. *barbicollis*, *Chloris virgata*, *Sporobolus smutsii*, *Enneapogon cenchroides* and *Dactyloctenium aegyptium*.

The *Faidherbia albida*/*Ficus sycomorus*-river forest occurs on the banks of the rivers and consists of a large variety of species. The community is a closed forest of about 20m high. The undergrowth is dense with sparse grass cover. The most important woody species are: *Faidherbia albida*, *Ficus sycomorus*, *Acacia robusta*, *Trichilia emetica*, *Xanthocercis zambesiaca*, *Acacia ataxacantha*, *Ficus capreifolia*, *Combretum microphyllum*, *Grewia caffra*, *Diospyros mespiliformis*, *Tabernaemontana elegans*, *Acacia xanthophloea*, *Lonchocarpus capassa*, *Combretum imberbe*, *Acacia tortilis*, *Kigelia africana*, *Maclura africana*, *Albizia harveyi*, *Rauvolfia caffra*, *Ekebergia capensis*, *Strychnos potatorum*, *Breonadia microcephala*, *Syzygium guineense*, *Deinbollia oblongifolia*, *Ochna confusa*, *Nuxia oppositifolia*, *Azima tetraacantha*, *Mimusops zeyheri*, *Garcinia livingstonei*, *Croton megalobotrys*, *Hyphaene natalensis* and *Ficus stuhlmannii*. The field layer of this community is sparse and the following forb species are important: *Abutilon angulatum*, *Achyranthes aspera*, *Epaltes gariepina*, *Hypoetes verticillaris*, *Hibiscus engleri*, *Wissadula rostrata*, *Ageratum conyzoides*, *Cynanchum schistoglossum*. The grass cover is sparse and consists of species such as *Panicum meyerianum*, *Urochloa mosambicensis*, *Echinochloa pyramidalis*, *Chloris gayana*, *Cymosetaria sagittifolia* and *Sporobolus consimilis*.

The *Acacia xanthophloea*/*Panicum meyerianum*--open savanna is found in the floodplains. It is a tree savanna from between 6m to 15m high and consists of the following species: *Acacia xanthophloea*, *Combretum imberbe*, *Dichrostchys cinerea* subsp. *africana*, *Flueggea virosa*, *Combretum mossambicense*, *Lonchocarpus capassa*, *Combretum hereroense*, *Croton megalobotrys*, *Xanthocercis zambesiaca*, *Kigelia africana*, *Hyphaene natalensis*, *Spirostachys africana* and *Maytenus senegalensis*.

In the depressions the above-mentioned community merges into open grassland, with the tall and robust *Sporobolus consimilis* the dominant grass species. Associated species include: *Setaria sphacelata*, *Panicum meyerianum*, *P. deustum*, *Ischaemum afrum*, *Panicum maximum*, *Chloris gayana*, *Cenchrus ciliaris*, *Echinochloa pyramidalis*, *Phragmites australis* and *Sorghum verticilliflorum*.



## APPENDIX III

### ARTICLES IN THE SADC PROTOCOL ON WILDLIFE CONSERVATION AND LAW ENFORCEMENT THAT HAVE A DIRECT BEARING ON THE GLTP AND TFCA.

#### ARTICLE 3: PRINCIPLES

Each State party shall ensure the conservation and sustainable use of wildlife resources under its jurisdiction. Each State Party shall ensure that the activities within its jurisdiction or control do not cause damage to the wildlife resources of other states or in areas beyond the limits of national jurisdiction.

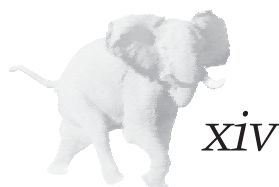
- ❖ State Parties shall develop as far as possible common approaches to the conservation and sustainable use of wildlife.
- ❖ State Parties shall collaborate to achieve the objectives of international agreements which are applicable to the conservation and sustainable use of wildlife and to which they are party.

#### ARTICLE 4: OBJECTIVES

- ❖ Specific objectives of the protocol are to:
- ❖ Promote the sustainable use of wildlife.
- ❖ Promote the conservation of shared wildlife resources through the establishment of transfrontier conservation areas.

#### ARTICLE 6: LEGAL INSTRUMENTS FOR THE CONSERVATION AND SUSTAINABLE USE OF WILDLIFE

- ❖ State Parties shall endeavor to harmonize national legal instruments governing conservation and sustainable use of wildlife resources and such harmonization shall relate to:
- ❖ Measures governing the trade in wildlife and wildlife products and bringing the penalties for the illegal taking of wildlife and the illegal trade in wildlife and wildlife products to comparable deterrent levels.
- ❖ Procedures to ensure that individuals charged with violating national laws governing the taking of and trading in wildlife and wildlife products are either extradited or appropriately sanctioned in their home country.



## ARTICLE 7: WILDLIFE MANAGEMENT AND CONSERVATION PROGRAMMES

- ❖ State parties shall, as appropriate, establish programmes and enter into agreements:
  - ❖ to promote co-operative management of shared wildlife resources and wildlife habitats across international borders; and
  - ❖ to promote co-operative management, the conservation of species and populations and the marketing of their products.

and

- ❖ State Parties shall promote the development of **transfrontier conservation areas**.

## ARTICLE 8: INFORMATION SHARING

The State Parties shall establish a regional database on the status and management of wildlife. The regional database shall:

- ❖ Comprise data on all wildlife resources within the region; and
- ❖ Be accessible to State Parties and to the general public

The Wildlife Sector Technical Co-coordinating Unit shall:

- ❖ Co-ordinate the development of standard methodologies for wildlife inventories.

## ARTICLE 9: CO-OPERATION IN WILDLIFE LAW ENFORCEMENT

State Parties shall

- ❖ exchange information concerning the illegal taking of, and trade in wildlife products.
- ❖ undertake any other initiatives, which promote the effective and efficient enforcement of wildlife laws and regulations within, between and among State Parties.

## ARTICLE 10: CAPACITY-BUILDING FOR EFFECTIVE WILDLIFE MANAGEMENT

State Parties shall co-operate in capacity building for effective wildlife management.

- ❖ The Wildlife Sector Technical Co-coordinating Unit shall co-ordinate initiatives of State Parties to standardize and initiate training programmes.



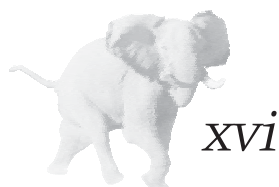


## APPENDIX IV

## RED DATA BOOK MAMMALS OF THE GLTP

SPECIES	COMMON NAME	STATUS
<i>Loxodonta africana</i>	Elephant	Threatened
<i>Diceros bicornis minor</i>	Black rhino	Critically endangered
<i>Ceratotherium simum</i>	Square-lipped rhino	Conservation Dependant
<i>Hippotragus e. equinus</i>	Southern roan antelope	Endangered
<i>Alcelaphus lichtensteini</i>	Lichtenstein hartebeest	Conservation Dependant
<i>Acinonyx jubatus</i>	Cheetah	Vulnerable
<i>Lycaon pictus</i>	Wild dog	Endangered
<i>Hyaena brunnea</i>	Brown hyena	Conservation Dependant
<i>Manis temminckii</i>	Pangolin	Threatened
<i>Calcochloris obtusirostris</i>	Yellow Golden Mole	Rare
<i>Paraxerus palliatus</i>	Red squirrel	Rare
<i>Uranomys ruddi</i>	Rudds mouse	Rare
<i>Taphozous perforatus sudani</i>	Egyptian tomb bat	Indeterminate
<i>Nycterus woodii</i>	Woods slit-faced bat	Indeterminate
<i>Cloeotis percivali</i>	Short-eared trident bat	Indeterminate

References: Smithers ( 1986); Hilton-Taylor ( 2000).



## APPENDIX V

## RED DATA BOOK BIRDS OF THE GLTP

SPECIES	COMMON NAME	STATUS
<i>Rhynchops flavirostris</i>	African skimmer	Regionally extinct
<i>Neophron percnopterus</i>	Egyptian vulture	Regionally extinct
<i>Botaurus stellaris</i>	Bittern	Critically endangered
<i>Turnix hottentotta</i>	Blackrumped button quail	Endangered
<i>Ephippiorhynchus senegalensis</i>	Saddlebilled stork	Endangered
<i>Poicephalus robustus swahilicus</i>	Greyheaded parrot	Endangered
<i>Bucorvus leadbeateri</i>	Southern ground hornbill	Threatened
<i>Pelecanus rufescens</i>	Pink-backed pelican	Vulnerable
<i>Gorsachius leuconotus</i>	Whitebacked night heron	Vulnerable
<i>Necrosyrtes monachus</i>	Hooded vulture	Vulnerable
<i>Gyps coprotherus</i>	Cape vulture	Vulnerable
<i>Gyps africanus</i>	White-backed vulture	Vulnerable
<i>Torgos tracheliotus</i>	Lappetfaced vulture	Vulnerable
<i>Triginoceps occipitalis</i>	Whiteheaded vulture	Vulnerable
<i>Aquila rapax</i>	Tawny eagle	Vulnerable
<i>Polemaetus bellicosus</i>	Martial eagle	Vulnerable
<i>Circaetus cinerascens</i>	Southern banded snake eagle	Vulnerable
<i>Terathopius ecuadatus</i>	Bateleur	Vulnerable
<i>Circus ranivorus</i>	African marsh harrier	Vulnerable
<i>Falco naumanni</i>	Lesser kestrel	Vulnerable
<i>Crex crex</i>	Corn crake	Vulnerable
<i>Podica senegalensis</i>	African finfoot	Vulnerable
<i>Otis kori</i>	Kori bustard	Vulnerable
<i>Tyto capensis</i>	Grass owl	Vulnerable
<i>Scotopelia peli</i>	Pels fishing owl	Vulnerable
<i>Buphagus africanus</i>	Yellowbilled oxpecker	Vulnerable
<i>Ephippiorhynchus senegalensis</i>	Saddlebilled stork	Vulnerable
<i>Ciconia episcopus</i>	Woolly-necked stork	Vulnerable
<i>Anastomus lamelligerus</i>	Openbilled stork	Vulnerable
<i>Mycteria ibis</i>	Yellowbilled stork	Vulnerable
<i>Cisticola galactotus</i>	Black-backed cisticola	Vulnerable
<i>Ploceus xanthopterus</i>	Brown-throated golden weaver	Vulnerable

References: Barnes (2000)



## APPENDIX VI

## RED DATA BOOK REPTILES OF THE GLTP

SPECIES	COMMON NAME
<i>Cycloderma freantum</i>	Zambezi soft-shelled turtle
<i>Pachydactylus capensis vansoni</i>	Van Sons thick-tailed skink
<i>Zygapsis violacea</i>	Violet round-snouted amphibiaenan
<i>Typhlosaurus a. auranticus</i>	Orange blind skink
<i>Mabuya hamalocephala depressa</i>	Peters blind skink
<i>Nucras caesicauda</i>	Blue-tailed scrub lizard

## APPENDIX VII

## RED DATA BOOK AMPHIBIA OF THE GLTP

SPECIES	COMMON NAME
<i>Tomopterna krugerensis</i>	Sandveld pyxie
<i>Hyperolius pusillus</i>	Water lily frog
<i>Hyperolius argus</i>	Argus reed frog

## APPENDIX VIII

## RED DATA BOOK FISH OF THE GLTP

SPECIES	COMMON NAME
<i>Protopterus cyprinoids</i>	Lungfish
<i>Notobranchius fuzeri</i> *	Turquoise killifish
<i>Pristis microdon</i>	Smalltooth sawfish

\* Probably endemic. (Bell-Cross & Minshull, 1988)



## ACKNOWLEDGEMENTS

### BY THE MANAGEMENT PLAN WORKING GROUP

Major contributions to the document have been made by staff from Mozambique's National Directorate for Protected Areas and the National Directorate of Forestry and Wildlife, South African National Parks, and Zimbabwe's Department of National Parks & Wildlife Management (Zimbabwe), the Mpumalanga Parks Board, the National Departments of Customs, Immigration and Border Security, the World Bank, the Peace Parks Foundation and USAID. Particular mention must be made of: Dr J Anderson, C. Beech, Dr R. Bengis, Dr H. Biggs, Dr L. Braack, Dr D. Keet, E. Chandri, P. Chauke, M. Couto, E. Chidziya, B. Davison, R. de Vletter, Dr D. de Waal, N. Dube, Dr C. Foggin, L. Foxcroft, Dr W. Gertenbach, Dr D. Grossman, P. Holden, A. Sparrow, M. Stalmans, T. Johnson, M. Jordan, Dr S. Joubert, Mr C. Pierce, Dr B. Soto, M. Khandalemfene, A. Madope, L. Maluleke, Dr S. Munthali, Prof. L. Nkatini, Col. D. Peddle, Dr D. Pienaar, Prof W. van Riet, A. van. Week, Dr F. Venter, Dr. U. Weyl, Dr I. Whyte, J. Williams and K. Zunckel. In addition to those above, the following provided valuable comment and inputs to the final draft of the plan: G. Daconto, D. de la Harpe, R. du Toit, G. Le Breton and R. Style.

Liaison with, and inputs from, the Communities living in and adjacent to the GLTP Park were facilitated by the African Wildlife Foundation, CESVI and Safire. The Peace Parks Foundation and John Williams generously provided the Maps of the GLTP; the information on the Zimbabwe minefields was provided through the GTZ-IHDD team and GTZ permitted the use of the map of the Sengwe minefields and John Williams provided the map of the proposed Kruger to Canyon Biosphere Reserve. The plan was compiled by Dr J. Anderson and the document was produced by DAI/USAID.

This document should be cited as follows:

The Great Limpopo Transfrontier Park Joint Management Board, 2002: Joint Policy and Management Guidelines for the Great Limpopo Transfrontier Park.



Please direct enquiries as follows:

## Mozambique



*Direcção Nacional Areas de Conservação - DNAC*

*(National Directorate for Conservation Areas)*

*Alfonso Madope - Director*

*Tel: +258 1 303616*

*Fax: +258 1 303 212*

*C.P. 4101 Maputo.*

## South Africa



*Department of Environmental Affairs and Tourism*

*Dirk van Schalkwyk - Chief Director*

*Transfrontier Parks and Protected Areas*

*Tel: +27 12 310 3560*

*Fax: +27 12 320 1243*

*dvschalkwyk@ozone.pwv.gov.za*

*Private Bag X447, Pretoria 0001*

## Zimbabwe



*Department of National Parks and Wildlife Management*

*Brigadier Ep-marcus Walter Kanhanga*

*Tel: +263 4 792 786-9*

*Fax: +263 4 724 914*

*natparks@africaonline.co.za*