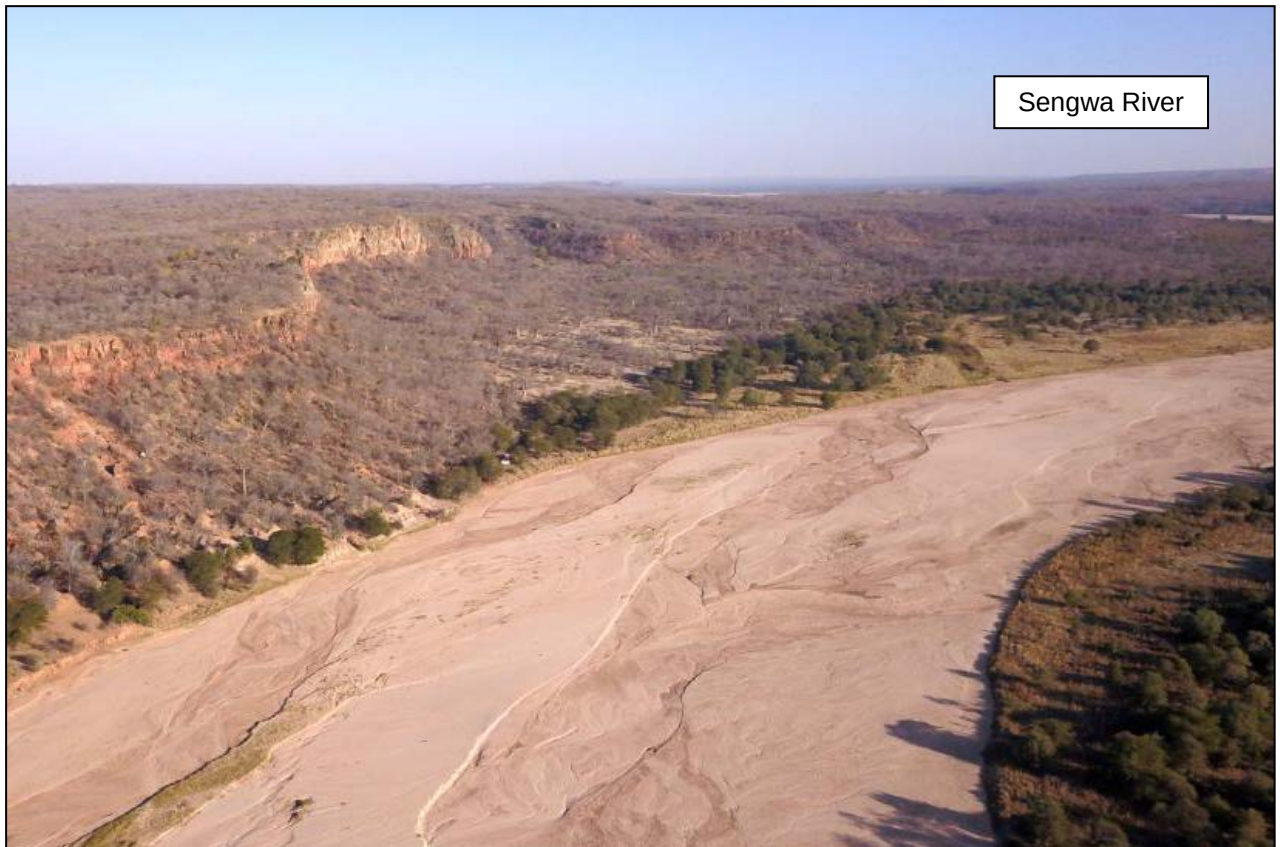




CHIRISA SAFARI AREA SENGWA WILDLIFE RESEARCH AREA



MANAGEMENT PLAN 2020 – 2030

10th September, 2020

Core Planning Facilitation Team



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Lion Recovery Fund - Provided funding for the planning process

APPROVAL PAGE

**This Management Plan has been approved by the
Director General and Board Chairman of Zimbabwe
Parks and Wildlife Management Authority, the
Secretary and Minister of Environment, Climate,
Tourism and Hospitality Industry**

10th September, 2020



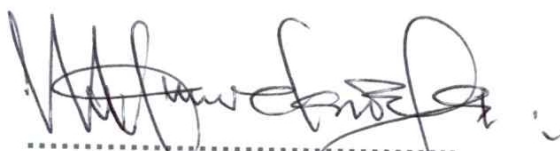
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FOREWORD

This General Management Plan for Chirisa Safari Area (SA), including the Sengwa Wildlife Research Area (SWRA), is a product of an intensive and extensive participatory consultative process which incorporated various stakeholders including communities and their respective traditional leaders. This is the first approved management plan for the conservation area since its gazettement in 1975, apart from a draft management plan for the Sengwa Wildlife Research Area compiled in 2002. Chirisa SA lies in the Sebungwe region/ cluster of Midlands province of Zimbabwe and is 1 454km² in spatial extent. Sebungwe cluster is one of the eight administrative clusters of Zimbabwe Parks and Wildlife Management Authority (ZPWMA). This management plan addresses the issues and threats facing the Safari Area through four interlinked programmes.



These four programmes comprise of Ecological Management, Tourism Development and Management, Community and Collaborative Management and Operations Management. Together they facilitate a holistic approach to the Protected Area (PA) management. The planning process was carried out from May 2019 to April 2020 and entailed field work, literature review and intensive consultations of stakeholders. The plan has a working life span of 10 years (2020 – 2030) and is supported by 3 – year action plans that can be rolled forward with new activities being added as required.

The plan has its foundations in the ZPWMA five - year Strategic Plan (2019 – 2023) Key Result Area (KRA) 1, Conservation of Biodiversity Objective 12 which spells out the need to Develop and Update protected area management plans (PAMP) for all protected areas and this has to be achieved by December 2023. At a departmental level the Chirisa SA plan development is in line with Research Strategic document of the Scientific Services Department which accords park planning or the development and updating of PAMPs per se a high priority status along with Rhino, Elephant monitoring and research. The plan was also prepared in conjunction with the plan for Chizarira NP in order to consolidate planning across the conservation area.

Amongst issues of concern is the relocation of the remaining Black Rhinos to Matusadona NP and other PAs and a possible reintroduction of Black Rhino in the Domwe – Busi zones of the Chirisa – Chizarira conservation area, poaching, incessant veld fires, settlement encroachment and excisions on the eastern boundaries of the area to the community. The area is part of the connectivity of a massive wildlife human landscape including Botswana, Namibia, Angola, Zambia through a network of conservation areas Kavango – Zambezi TFCA (KAZA). Managing these resources ensures the future sustainability of the safari area.

Through its objectives, strategies, activities and monitoring programmes the management plan plays particular attention to the proper management of the Exceptional Resource Values of the Chirisa Safari Area. These include unique geological features, natural springs and alluvial systems, the Lutope and Sengwa valleys and the overall wilderness values of the area. Large mammals and birds, as well as catchment protection and cultural and archaeological sites are also important conservation targets. We are hopeful that the acceptance and adoption of this management plan will enhance the conservation and management of Chirisa in order to sustain the desired state of the wilderness qualities and the exceptional resource values for the benefit of the present and future generations.

Dr. Fulton Upenyu Mangwanyia

Director General, Zimbabwe Parks and Wildlife Management Authority

EXECUTIVE SUMMARY

Although standard procedures and methodologies have been used during the preparation of this management plan it was recognised that the continuation of "business as usual" for the Chirisa Safari Area would probably result in its ongoing decline and that it would eventually cease to function as a protected area.

Therefore, the ZPWMA seeks to find innovative ways to facilitate the recovery of Chirisa Safari Area. In the event of agreements being reached with operators and investors they would be expected to follow the basic concepts outlined in this management plan.

It was concluded that external investment in the Chirisa Safari Area would be needed to ensure the recovery of the Safari Area. The possibilities include direct philanthropic investment into the northern part of the Chirisa Safari Area and possibly a long lease of the Sengwa Wildlife Research Area to a reputable operator with strict lease conditions detailing expected responsibilities on the part of the lessee and lessor to maintain the integrity of the area.

Introduction

It is important to note that the planning process for Chirisa SA was inextricably linked into a parallel planning process for Chizarira NP and, where feasible, planning issues were addressed at the ecosystem or conservation area level. However, for implementation at ground level, each area has its own management plan. This is also necessary as the two protected areas have different use paradigms – purely photographic tourism in national parks then in safari areas hunting. In Chirisa SA there is room for a mix of both consumptive and non-consumptive activities.

Apart from a draft management plan for the Sengwa Wildlife Research Area compiled in 2002, and some internal, on-station documents, the Chirisa Safari Area has not had a formal management plan since it was gazetted in 1975.

Management Programme Layout

The plan is actioned through four interlinked management programmes:

1. Ecological Management,
2. Tourism Development and Management,
3. Outreach and Collaborative Management
4. Operations.

Each programme is divided into the following sections

- **Programme Description and Purpose** - Programme overview followed by a purpose definition for the programme.
- **Management Philosophy and Guiding Principles** - Sets the stage for the programme. Guiding principles are central to the way the programme is developed
- **Objectives, Strategies and Activities** - The core of the management programme. This also translates into the extracted summary three-year action plan (available as a separate document).

Each strategy has a text description in which the various activities are defined. At the end of each action is a summary of the activities relevant to that action to help focus ground managers.

The three-year activity plan lists the activities and the requirements for their implementation.

Within the document each programme is colour coded for ease of reference.

Ecological Management
Tourism Development and Management
Outreach and Collaborative Management
Operations

Plan Foundations

Exceptional Resources and Conservation Targets

The exceptional resources for the conservation area are classified into four categories - Environmental, Scenic, Social and Cultural. These focus on the geologic and scenic values of the Safari Area which are strongly associated with its wilderness qualities. The Safari Area has numerous springs and rivers and forms an important regional catchment area, owing to its elevated position above the Zambezi Valley.

The conservation targets for the Safari Area, their key ecological attributes, and the threats facing them were defined at ecosystem, community and species level and these were instrumental for defining the Safari Area purpose and the subsequent objectives in the four programmes.

Safari Area Purpose

The purpose statement summaries the importance of Chirisa Safari Area, clarifies the reasons for its existence, and provides the overall goal that protected area managers are working towards. All protected areas in Zimbabwe have a generic purpose as defined in the Act. This was used as the base to define the specific purpose of Chirisa Safari Area, shown below.

Conserve vegetation, wildlife, landscapes and drainage systems associated with the Karoo sediments that underlie the area to allow income generation for conservation through visitor use

Subsidiary purposes for the Chirisa Safari Area include

- protection for the large rivers (Sengwa, Lutope, Manyoni and others), the numerous springs and scattered wetlands found throughout the area
- protection for the ridges, escarpments and plateaus that are a distinctive feature of the region
- provision of facilities and opportunities to the public for camping, hunting, fishing, photography, viewing of animals, bird-watching or such other pursuits that may be permitted therein

Zoning Scheme

The zone plan for Chirisa SA is a subset of the wider Conservation Area Zone plan developed for both Chirisa SA and Chizarira NP. It was developed to provide a framework in which to balance the aims of conservation of the Safari Area's exceptional resource values and developing the Safari Area as both a hub of trophy hunting and as a tourism destination. The conservation of biodiversity, ecosystem and hydrological processes and the Safari Area's wilderness character is one of the primary management objectives throughout the Safari Area.



The zone system departs from the traditional ZPWMA system of categorising zones into "wilderness" or "wild" and then setting limits of use based on these zone types. Rather zone limits of use are defined by the zone characteristics. This is to avoid confusion that results from the use of standardised terminology.

Ecological Management Programme

The main function of the Ecological Management Programme is to provide the information base on which other management programmes derive interventions. With three objectives, the programme aims to enhance and expand monitoring and guide research, develop the mechanisms to protect and conserve key habitats, improve the conservation status of key large mammal species and therefore all species within the ecosystem, and to address land use issues outside the protected areas. The Programme works strongly in conjunction with the Operations Programme, especially on "cross-cutting" issues such as fire, vegetation and water management.

Tourism Development and Management Programme

Chirisa, including the Sengwa Wildlife Research Area (SWRA) is used for guided hunting safaris. The two components (SWRA and the remainder of Chirisa) are separate hunting concessions with separate quotas. They are also managed out of two different management stations. At present the SWRA has better wildlife populations than much of the rest of the Sebungwe Regions (as evidenced by aerial surveys) and consequently is a viable concession. The remainder of the Chirisa SA has suffered from over hunting in the past and wildlife numbers, and consequently quotas, are low. With the current situation it is unlikely that hunting revenues will be sufficient to improve protection activities in the area.

Consequently, the tourism programme suggests ways to improve the conservation status of the safari area. Given the low priority of the area in terms of funding allocation from HQ the plan proposes partnership models to ensure the area endures into the future. SWRA is a viable concession and long-term concessioning may be the way forward for this area. For the remainder of the safari area an innovative philanthropic model is suggested.

The Safari Area has been zoned into three areas, two reflecting the current hunting concessions. The Domwe area (that part of Chirisa north of the SWRA and to the west of the Sengwa River is classified as a recovery area, needing special attention, along with a corresponding zone in Chizarira NP.

Outreach and Collaborative Management Programme

This programme deals with communities and wildlife and conservation related issues outside the Safari Area. It also deals with collaborative management; the way in which the ZPWMA and Safari Area management deal with conservation partners, community based law enforcement and international conservation initiatives. Four objectives are defined, three dealing with communities, stakeholders and the ever-present human wildlife interface. The fourth objective defines ways of dealing with conservation partners and collaborative management paradigms for the Safari Area.

Operations Programme

The Operations programme underpins all other programmes and their activities in the conservation area. The programme aims to provide a conducive and supportive environment for Safari Area staff to carry out their duties. Staff need to be well trained, motivated and in sufficient numbers to carry out their duties effectively. They also need sufficient infrastructure and equipment to be able to carry out their duties. This includes building, roads, airstrips, vehicles and ancillary patrol related equipment. Any staff increases need to be carried in tandem with improved housing facilities.

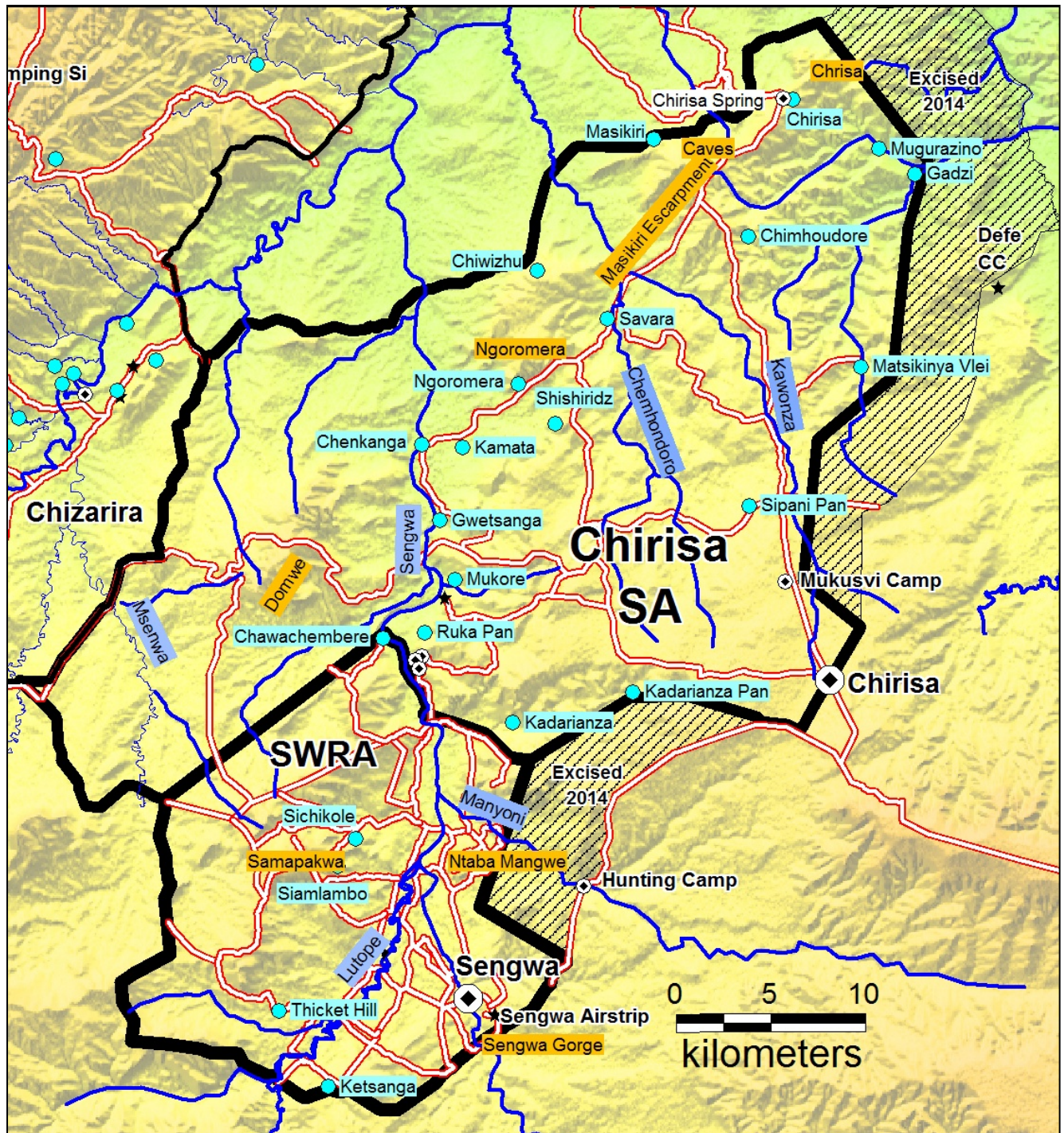
Four objectives are defined, three of them dealing with ensuring that staff numbers and morale are improved and that there is sufficient equipment and infrastructure for the management of the Safari Area. The fourth deals with security and law enforcement.

Summary

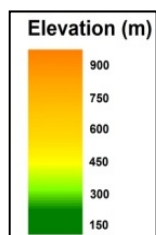
The purpose, guiding principles and objectives for all programmes are defined in the table 1 (next page).

Table 1: Programme Summary

Programme	Purpose	Guiding Principles	Objectives
Ecological Management	To conserve the flora, fauna, natural landscapes and hydrological resources of Chirisa through monitoring, research and targeted management interventions	1. Management decisions based on scientific information 2. Safari hunting will be maintained as a viable form of resource utilisation 3. Interventions to be kept to a minimum 4. Water source conservation is of paramount importance 5. Conservation agendas will be pursued outside the protected area 6. Connectivity with the wider landscape and management entities	1. Monitoring and research effectively address management needs 2. Biodiversity, habitats and wildlife populations restored and protected 3. Land use issues in surrounding areas are addressed
Tourism Development and Management	To manage consumptive and non-consumptive tourism so that it becomes the driving force for the recovery of the wildlife populations	1. Quotas will be based on scientific information 2. Tourism will be diversified 3. Ethical practices need to be followed 4. Conservation and commercialisation balanced through responsible tourism	1. Partnership models drive the recovery of Chirisa 2. Management and administration of hunting improved 3. Tourism diversified 4. Education and interpretation
Outreach & Collaborative Management	To engage local communities and stakeholders in empowering and conserving biodiversity and promoting custodianship	1. Open and transparent relationships with stakeholders 2. Community involvement and participation 3. Promote community livelihood in and outside Safari Area 4. Education and awareness 5. Promotion of conservation agendas outside the Safari Area	1. Human wildlife conflict resolution improved 2. Stakeholder awareness of Chirisa raised 3. Communities benefit from the protected area 4. Collaborative Management of Chirisa improved
Operations	Effective management of Chirisa SA and the SWRA through transparent, accountable and efficient management of human, financial and physical resources.	1. Trained and motivated staff 2. Good access and communications are vital for effective management 3. Management and financial resources are finite 4. Collaborative management - the sum is greater than the parts	1. Sufficient trained staff with high morale 2. Infrastructure adequate for effective management 3. Equipment required for management in place 4. Resource protection improved



Chirisa Safari Area General Features



- Springs
- ⊙ Management/Tourism
- Rivers
- Roads

Note: The SWRA boundary reflected on this map is not the original SWRA. The boundary was shifted northwards to Chawachembere Spring to compensate for the 2014 excision



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To all our valued stakeholders, Gokwe South RDC, Gokwe South Forestry Commission, Gokwe South Environmental Management Agency, Sitatunga Safaris, Mokore Safaris, Bhejane Trust, Gokwe rural communities and respective traditional and local leadership we value the time and knowledge you shared freely during the planning process consultations and field trips. The senior staff from Chirisa SA, Area Manager Mr C. Mashange, Officer in Charge SWRA; Mr I. Mahakata, Senior Ranger Chirisa SA; Mr A. Hlomani, Wildlife Officers SWRA; Mrs C. Ndhlovu and Mr S Mhiripiri.

Participation at planning meetings was lively and constructive and our thanks go out to all who made the effort to attend.

Funding for the process was provided by the Lion Recovery Fund as part of its mandate to improve the survival of lions in the wild.

ACRONYMS - DEFINITIONS

ALERT	African Lion and Environmental Research Trust
CAP	The Nature Conservancy's (TNC's), Conservation Action Planning methodology
Chirisa North	That part of Chirisa Safari Area that excludes the SWRA
Chirisa Safari Area	The legal Chirisa, including both the SWRA and the remainder of the area
CPT	Core planning team
ERV	Exceptional resource value
HWC	Human-wildlife conflict
KEA	Key ecological attribute (of conservation target)
IPZ	Intensive (rhino) protection zone
IUCN	International Union for Conservation of Nature
LAU	Limits of acceptable use
NPR	National Park Rescue
PA	Protected area
PAC	Problem animal control
PTC	Permanent Tented Camp
SC	Special campsite
SWRA	Sengwa Wildlife Research Area
TNC	The Nature Conservancy
WWF	World Wide Fund for Nature
ZPWMA	Zimbabwe Parks and Wildlife Management Authority

PLAN FOUNDATIONS



PREAMBLE

The Planning Process

This planning process follows the format used by ZPWMA for the last 15 years. The process is collaborative and involves stakeholder and/ or community input through a series of meetings and dialogue. However, it is recognised that the ZPWMA is the owner and implementer of the plan.

The Planning Area

The Chizarira-Chirisa Ecosystem

From a planning perspective, the Chizarira National Park and Chirisa Safari Area are regarded as a single conservation area. They are part of a larger ecological system that includes the Chete Safari Area, the Matusadona National Park, the Sijarira Forest and the adjacent communal lands and conservancies. All of these fall into a larger area known as the Sebungwe region. This is important in that many policy decisions regarding wildlife and conservation were taken at the level of the Sebungwe region and, indeed, aerial surveys are still carried using this region. The original Sebungwe District was subsequently broken up into the Gokwe North and South Districts and parts of the Kariba and Binga Districts.

A brief summary of ecological, sociological and management related information for the wider ecosystem is found in the Plan Foundations section. There is also a companion volume to this plan that collates the background material in more detail.

Chirisa Safari Area

This management plan is for Chirisa Safari Area. The protected area is 1,454 km² in extent and forms part of the ZPWMA's Sebungwe management cluster. The area provides protection for the Sengwa and Lutope rivers, as well as for some escarpments, gorges and mountains. Although this plan is for the Chirisa Safari Area it cannot be considered in isolation and is especially closely linked to the Chizarira National Park as the two areas share a common boundary. In addition, the importance of stakeholders is taken into account and dealt with in the Outreach and Collaborative Management Programme.

The Chirisa Safari Area has two separate management and utilisation components. The Sengwa Wildlife Research Area (SWRA) is 378 km² and the remainder of the Chirisa SA is 1,076 km². Throughout the text there is a need to define whether we are discussing the Chirisa SA Complex (SWRA and remainder of Chirisa SA) or the Chirisa SA excluding the SWRA. Chirisa North is also used to define that part of the area that excludes the SWRA.

Past Planning for Chirisa Safari Area

The earliest management document for the Safari Area was the Policy for Chirisa Safari Area compiled in 1972, two years before its official gazettment. This document outlined the rationale for the protected area and the key elements are shown below

- Protection of all landscapes in their natural state
- Important for scientific research and education
- Provision of areas for the experience of wild and primitive country
- Needs to managed to preserve it against accelerated change induced by man and access must be regulated

Sengwa Wildlife Research Area

In 2002 a detailed draft management plan was prepared for the Sengwa Wildlife Research Area which was to be revised in 2005. At that time the vision for the SWRA was that it should protect the integrity of the wild and largely undeveloped landscape and that its remoteness was a special quality that should be

maintained for high quality visitors. In addition, research was seen as being central to its purpose as well as the opportunity for conservation education.

The plan advocated branching into wilderness recreation and to use the area for testing and researching management intervention which included fire, culling, road development, artificial waterholes and supplementary feeding.

The plan defined nine key management issues which are summarised below.

1. Economic justification and low scientific output
2. Elephant population control and vegetation damage (0.75 elephants/km² is cut-off)
3. Fire damage to regenerating woodlands
4. Sheet erosion and gulley control
5. Vegetation change
6. Hard edge boundary effect
7. Illegal activity monitoring
8. Low animal populations of some species (roan and sable, Tsessebe became extinct)
9. Poor access roads

With respect to zoning the plan recommended a Special Conservation Zone on the Sampakwa ridge, a wilderness zone to the west of the Lutope and Sengwa rivers, a wild zone (most of the rest of the area) and a development zone on the Ncherera Escarpment down to the Manyoni River (most of this latter has been excised and has become part of the communal land).

This plan was never implemented and soon afterwards the area became a hunting concession.

Current Document Structure

The management plan for Chirisa Safari Area will have three main components shown in the table 2. Firstly, there is the plan itself which has a descriptive section followed by a condensed three-year action plan. The Action Plan has been extracted and can be considered the core of the documentation.

Supplementary documentation consists of a background to the ecosystem and a "plan on a page". The plan on a page is a summary of the plan on an A0 sheet which can be displayed at appropriate locations. More details are shown below.

Table 2: Management Planning Documents for the CHIRISA SAFARI AREA

Document	Description
Safari Area Plans	Each protected area will have its own general management plan, even though the background to the area and the overall zoning was carried out at the "ecosystem level" This is for several reasons. Firstly, a joint area management plan can lead to confusion for managers on the ground, especially those who come after the planning process has been completed. Secondly, the use paradigms are radically different between national parks and safari areas, with consumptive utilisation being permitted in safari area but not in national parks.
Background Document	The background investigation of the Chizarira and Chirisa complex was carried out at the ecosystem level and is presented jointly. A big part of the ecosystem analysis was the collection and cleaning of GIS data and this is represented in maps found throughout the management plan and the background document. A short summary of the background material is found in the introduction to each plan but it is presented as a separate document so that the plan is not cluttered and blurred with background information.
Posters and Maps	A large wall map was prepared for each protected area and forms part of the deliverables from the planning process. In addition, it has proved useful to prepare a summary of the management plan on an A0 poster for display on station. This allows all staff members and stakeholder to visualise the plan at a glance. These posters have been prepared for each protected area.

PLAN FOUNDATIONS

Summary Description

Introduction

Planning was carried out in tandem for the Chizarira National Park and the Chirisa Safari Area and the background documentation was compiled for both areas, known as the Chizarira-Chirisa Ecosystem. The material is presented in part 2 of the plan and a summary is shown in this section. This section provides a snapshot overview of the protected areas and their management.

Chirisa Complex has two distinct parts. The Sengwa Wildlife Research Area (378 km²) is legally part of the Chirisa Safari Area but has its own administration and utilisation system. Chirisa Safari Area (1,076 km² or Chirisa North) is a separate hunting area. For the avoidance of doubt, in this document the SWRA refers to that specific portion of the Chirisa SA while Chirisa North usually refers to the remainder of the area. The Chirisa Safari Area Complex refers to the entire safari area (i.e. both SWRA and Chirisa North)

Biophysical Environment

Relief - Chizarira NP is unique in Zimbabwe combining spectacular mountain ranges, a high plateau and Zambezi valley lowlands. It is the relief that defines the character of the park. The Chirisa Safari Area complex is lower and not as rugged as Chizarira NP but still has its share of extensive river valleys, alluvial plains, mountains and hidden gorges. The highest point is 1,036 meters above sea level along the Sampakwe ridge in the Sengwa Wildlife Research Area while the lowest is on the Sengwa River at 752 m. asl.

Drainage and springs - Owing to its topography Chizarira is the source of several rivers draining into Lake Kariba. These include the Sebungwe, Senkwi and Luzulukulu. The southern part of the park is drained by the Sengwa River basin and includes part of the Busi and Sabara tributaries of this river. The Chirisa Safari Area complex provides protection to both banks of the Sengwa and Lutope rivers and their alluvial plains. The SA provides protection for five smaller catchments which include the Busi, Manyoni, Sabara, Lutope and Sesame, all of which drain into Lake Kariba at the Sengwa mouth.

Geology - Both areas are mostly on Karoo sedimentary rocks. A significant part of Chizarira is underlain by metamorphic rocks of the Sijarira redbeds which occur on the higher ground Mudstone formations on the lower areas (the Busi valley in particular) are known to contain coal and coalbed methane deposits, some of which could be economically viable. The Sengwa Coalfields are found to the south of Tundazi mountain and there have been plans for their extraction over the last 30 years. In addition, there are proposals for coal mining in the Sengwa Wildlife Research Area and coalbed methane extraction in the main part of the Chirisa SA. To date these remain as plans.

Climate - The annual average rainfall in the park is between 700 and 900 mm but there is a high degree of variability, both in a single rainy season and over a longer time scale. Rainfall is highly seasonal and falls between November and April. Rainfall in the Chirisa Safari Area is generally lower than that of Chizarira. Temperatures are high with +40°C being common in the hot season with winter lows of below freezing in the river valleys.

Vegetation - Broadly speaking the vegetation of the Chizarira and Chirisa conservation area is a mix of two biomes. The central lowlands along the Busi and Sengwa Rivers are comprised of Zambezian and mopane woodlands, while the higher ground in the north of Chizarira and the south east of Chirisa are Southern Miombo Woodlands. The woodlands of Chizarira and parts of Chirisa have suffered from damage by elephants in the past and this, compounded by excessive burning, has altered the woodlands. Research in the SWRA indicates a 30% decline in woody cover over 40 years with recovery being noted once elephant numbers decreased (through both poaching and culling operations). The main vegetation types in Chirisa are *Brachystegia* woodland, *Combretum* thickets, *Baikiaea* woodland, mopane woodland and diverse alluvial terrace communities.

Fires - A significant part of both conservation areas are burnt annually, the extent and duration which is dependent on a number of environmental and sociological factors. Chizarira has a fire management plan, reviewed on a yearly basis before the fire season and is actively controlling fires through proactive and reactive management strategies. Similarly, Chirisa practices annual fire management such as block and strip burning but without a formal fire management plan. However, a fire management plan advocating early burning was located for the SWRA dated 2012.

Wildlife - Chizarira and Chirisa are part of the Sebungwe region and most aerial surveys of wildlife cover this area and are not focussed on the two PAs in isolation. As evidenced by aerial surveys, there have been dramatic declines in many species throughout the Sebungwe region, the most notable of these being the black rhino (at least 100 were estimated in 1972, now there are none - The last 30 or so were relocated to Matusadona NP and other areas) and the elephant (down to 3,000 from 12,000 in six years). Only three significant pockets of wildlife remain in the Sebungwe and these are western Chizarira, the Sengwa Wildlife Research Area and the Matusadona shoreline.

Settlement - Originally a lightly settled area, the population growth in the Sebungwe area has been significant during the last 30 years. As human populations increase the wildlife resources outside the PAs become scarcer and the boundary edge between conservation areas and the communities becomes harder and sharper. Several caves are found along the northern boundary, including the Chirisa Cave but the importance of these to historical and current communities is not known.

Research - The Sengwa Wildlife Research Area established a state-of-the-art research centre in 1968 which was operational until the late 1990s. During this 30year period the Research Centre was at the cutting edge of ecosystems and species research and a number of papers and thesis written. However, no consolidated overview of the research was located. This situation needs to be rectified.

Management and Development Background

History - Parts of the Sebungwe have been classified as protected areas since the early 1900s. The boundaries of Chizarira NP and the Chirisa SA complex, as we know them today, were largely defined in the 1950s and 1960s. An important addition to Chizarira was the part of the Busi Valley in the late 1960s. Both areas were formally gazetted in 1975. Chirisa was one of the four safari areas in Zimbabwe established on community land. However, in recent years, the area is considered to be the same as all other safari areas in Zimbabwe from the point of view of ZPWMA.

Boundaries - Chirisa has a boundary of 200 km with nearly 10% being a common boundary with Chizarira National Park. Parts of the boundary are marked by disused veterinary fence lines, especially in the east and south. The northern boundary is less distinct. The excision of two areas in 2014 (250 km² in extent) were allocated to the community were not marked on the ground and these remain as areas on concern for management. Chirisa is one of the few protected areas in Zimbabwe where this type of excision has happened.

Staffing - Currently Chizarira has 29 staff with a ranger patrol compliment of 23. SWRA and Chirisa Safari Area (or Chirisa North) are managed as two separate entities. SWRA has an ecologist whose research mandate includes the whole Chirisa SA complex but in reality the researcher is constrained by lack of funding. The SWRA has 29 staff with a ranger complement of 24, while the Chirisa North has 28 staff with a ranger complement of 17. With time-off, study leave and other reasons for absence this translates to a low level of enforcement capability.

Equipment - The current vehicle compliment for Chizarira is very low with one working land cruiser pickup. However, this vehicle is often assigned to other duties and not available for station work. A conservation partner (NPR) has 4 land rovers which are available for use by parks staff for patrol upliftment, firefighting and other duties. The situation in Chirisa SA and the SWRA is just as dire with SWRA having one landcruiser and a motorbike while Chirisa SA has two working land cruisers. The research laboratories at the SWRA are lacking in equipment. Both stations have a wfi system based on a monthly data allocation.

Services - Water for the Chirisa HQ is provided by a ZPWMA borehole on a solar system which currently only provides water during daylight hours. Both Chirisa Safari Area (Chirisa North) and SWRA stations

have ZINWA tanks and staff but provision of water from this authority appears to be problematic. The water supply systems at both stations need attention.

The management station in the SWRA has access to ZESA mains but power seldom reaches the HQ. This is a common situation in Zimbabwe at present. There is also a small stand-by generator that is run several hours a day but fuel can become an issue. Chirisa HQ has a functional generator but there is not enough fuel to run it.

Infrastructure - Chirisa SA has approximately 200 km of road, with those on suitable geology being in adequate condition. Poor alignment of some roads has led to these becoming rivers during the rains with its subsequent erosion problems. River crossings and culverts are often the weak points for access through the area. The SWRA has over 200 km of roads with a significant number of hunting tracks. The Sengwa and Lutope rivers form seasonal barriers to access to a large part of both areas. There are no permanent crossings over these rivers. Improving wet season access is vital for effective management of the safari area.

There are 27 staff houses on site at the Sengwa station in the SWRA and 46 staff houses at Chirisa HQ. Many are in need of refurbishment.

Communications - A significant portion of Chizarira and Chirisa is covered by digital radio contact. A main repeater station has been established on Tundazi mountain with other, smaller manned repeaters located at Chimbova and Sinompas with the assistance of a conservation partner (WWF). Communications within the SWRA and Chirisa are not as extensive but parts of the area are covered by the Tundazi repeater. However, the radios for Chirisa and SWRA cannot access the Tundazi repeater frequencies. This needs to be rectified as a matter of urgency.

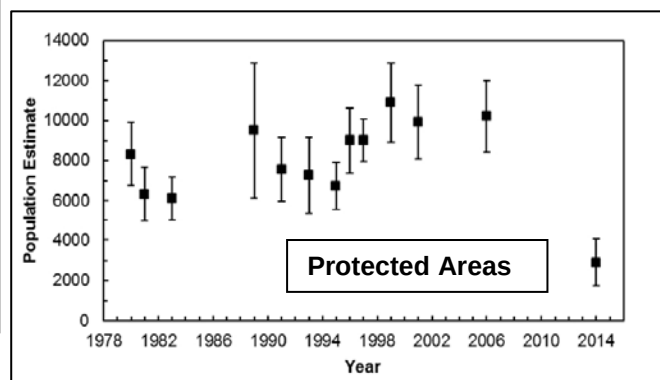
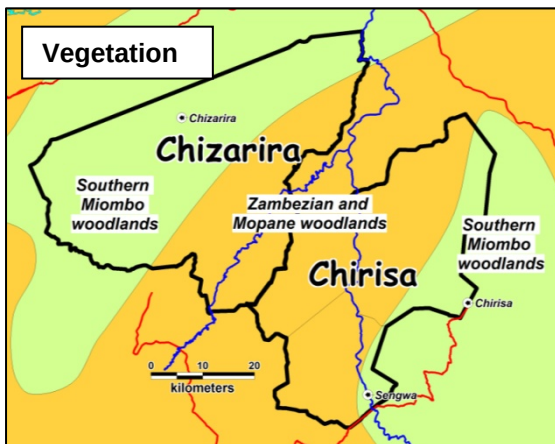
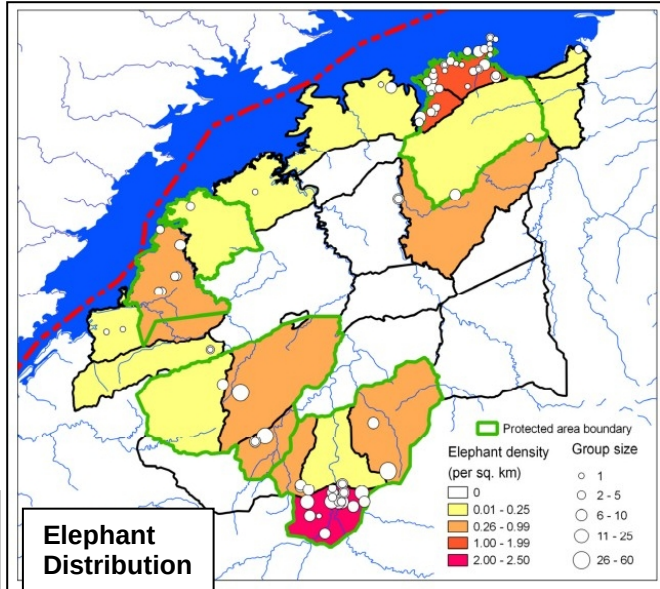
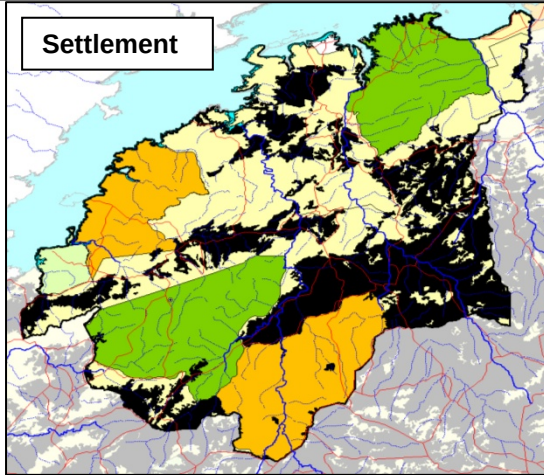
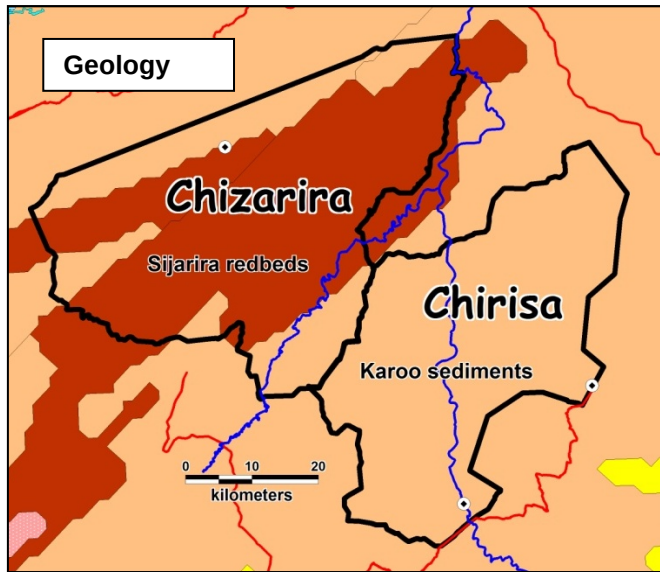
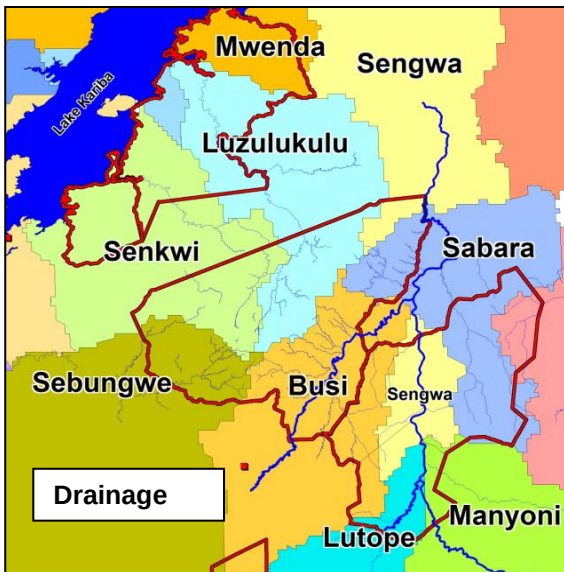
Anti-poaching - The SWRA and the remainder of the Chirisa Safari Area are operated as separate stations with each carrying out its own anti-poaching activities. SWRA is managed from its base on the Sengwa River in the southern part of the area (also the site of the research station). Chirisa has its management base on the eastern boundary at Sipani Gate, now known as Chirisa. Patrol equipment needed for anti-poaching (tents, boots etc) is limited, as are vehicles for patrol deployment. Conservation partners assist ZPWMA in Chizarira NP with anti-poaching activities, both inside and outside the park. A project facilitated by WWF aims to increase community participation in anti-poaching in community areas but few benefits of this are evident in the SWRA or Chirisa SA yet.

Community Outreach - The community outreach programme for Chizarira NP has a multi-faceted approach with inputs into problem animal control, livestock security, community awareness components and access to the park for selected resources. The outreach programme benefits from assistance from all of the conservation partners. As with anti-poaching, most of these activities are focussed around Chizarira and, although conservation partners are keen to expand to include the SWRA and Chirisa, this is a desired future state rather than being a current reality.

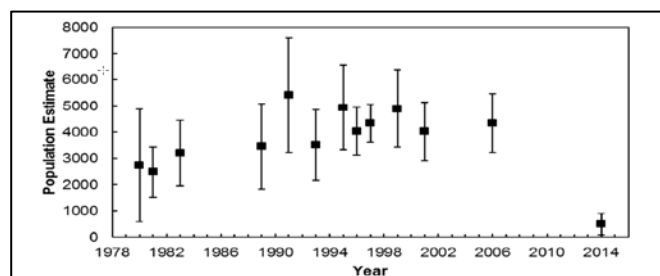
Tourism - Chizarira has established a niche for tourism that is based around self-drive camping and walking safaris. Professionally guided walking safaris in Chizarira are world-renowned. Levels of tourism have always been low, partially due to the remoteness and difficulty of access and partly due to marketing and the general situation in Zimbabwe.

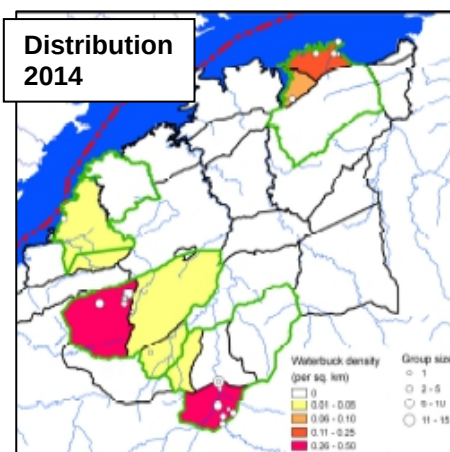
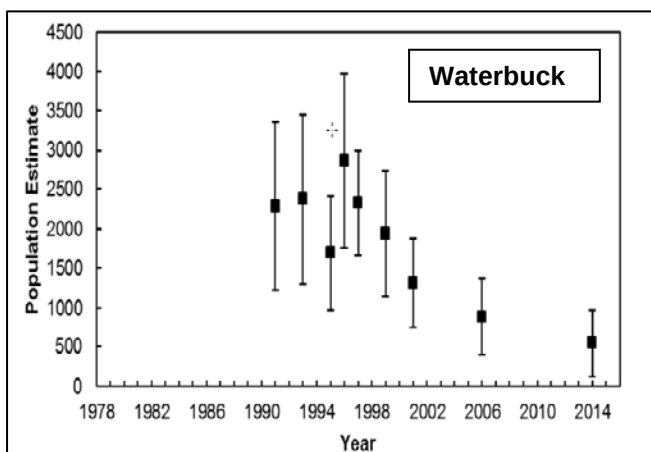
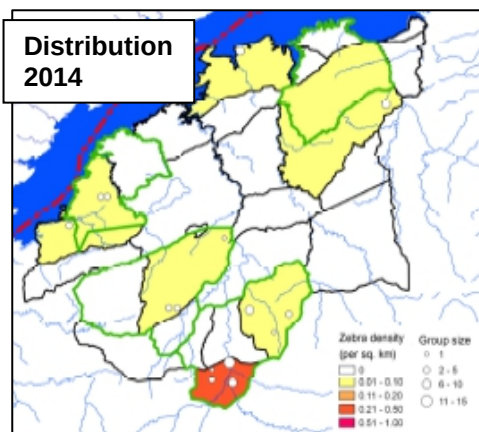
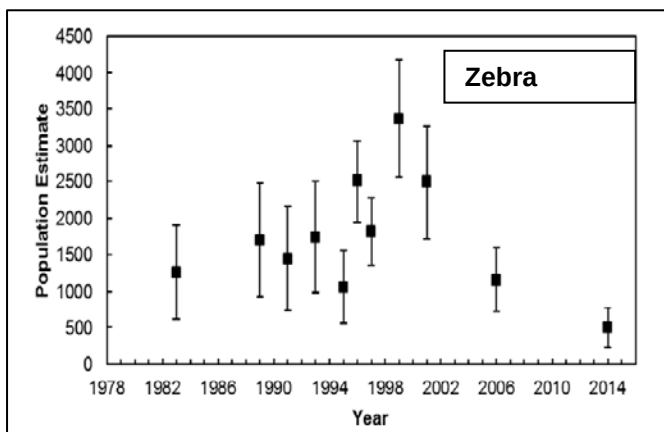
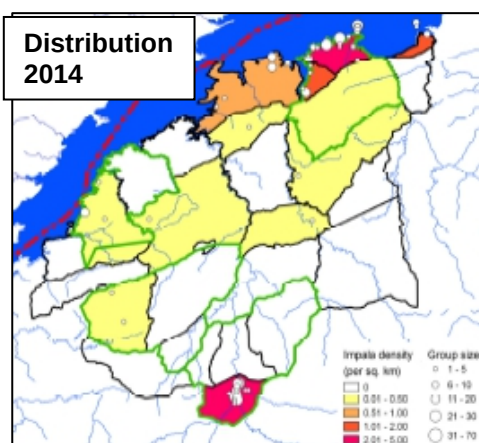
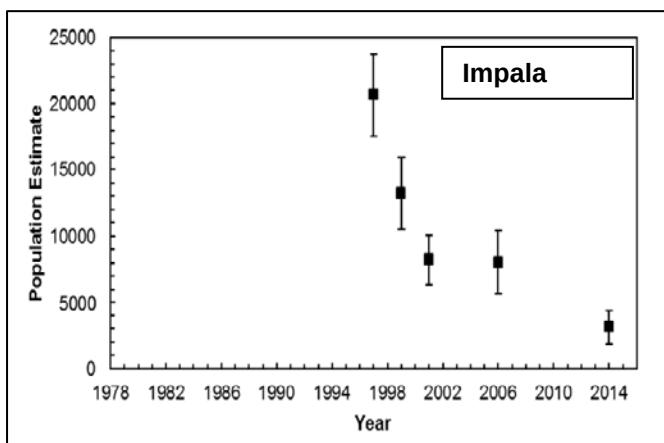
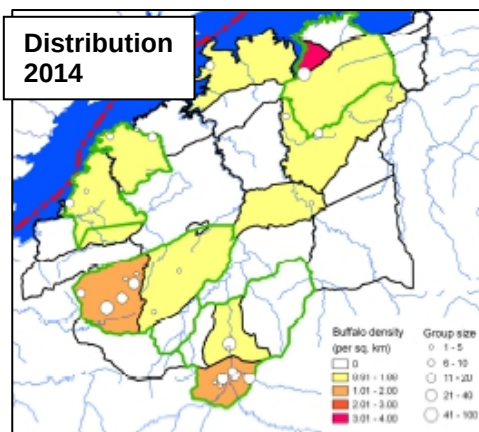
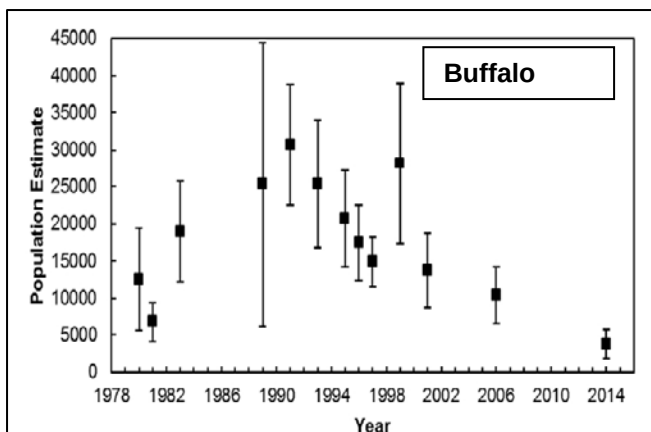
The Chirisa Safari Area is a hunting area and utilisation is through guided hunting safaris. In 2002 the SWRA was opened to hunting for the first time since 1968, as it was previously a research only area. In the 1990s the Chirisa SA (excluding the SWRA) was thought to be one of the prime hunting concessions in Zimbabwe and well known for the quality of its lions, elephants and buffalo. Currently it is still hunted but the trophy quality has declined and hunting is described as being "hard". This is due to declining wildlife numbers which is thought to be partially caused by over-hunting by both operators in the past and by poaching.

Collaborative management - Chizarira has four conservation partners some of whom have areas of operation that cover at least the northern parts of Chirisa. These partners assist with a wide range of activities including infrastructure refurbishment, research, community aspects, antipoaching, communications etc. The possibilities of them becoming active in Chirisa and its surrounding areas needs to be encouraged.



Elephant numbers estimated from aerial surveys. Significant declines noted





Exceptional Resources

These exceptional resource values describe the Chirisa Safari Area's key natural resources and other features that provide outstanding benefits to local, national and international stakeholders. These are also especially important for maintaining the area's unique qualities, characteristics and ecology and are summarised and described below.

Table 3: Summary of Exceptional Resource Values for Chirisa Safari Area	
Category	Exceptional Resource Values
Biodiversity	Springs
	Lutope and Sengwa Valleys
	Wilderness
	Domwe Mountain
	Alluvial vegetation
Scenic	Geological features
	Springs and vleis
Social	Catchment protection
	Research
Cultural	Ntabamangwe mountain
	Shangwe and Tonga tribes

The table below describes the exceptional resource values in more detail.

Table 4: Exceptional Resource Values for the CHIRISA SAFARI AREA		
	Value	Description
Biodiversity	Springs	At least 25 known springs, many of them perennial. These along with the pools in the Sengwa River contribute greatly to the biodiversity of the area. The main springs are Chawachembere, Sichikole, Thicket Hill, Siamlambo, Ketsanga, Sipani Pan, Chirisa, Gwetsanga, Mukore, Chenkanga, Kamata, Ngoromera, Shishiridz, Chiwizhu, Savara, Masikiri, Mugurazino, Gadzi, Kadarianza and Chimhoudore
	Lutope & Sengwa Valleys	The two main drainage systems that are the focal rivers for wildlife. The Sengwa-Lutope confluence is one of the most productive areas
	Wilderness	The Chirisa Safari Area can be regarded as a wilderness, albeit under threat.
	Domwe Mountain	Although not the highest point in the area, Domwe mountain is a standalone ridge that needs to be investigated
	Alluvial vegetation	The central valleys of the Lutope, Sengwa and Manyoni rivers contain alluvial vegetation that needs protection
Scenic	Geological features	Perhaps the most famous geological feature of the area is the Sengwa gorge where the entire Sengwa river is forced through a narrow gorge. Other significant features are the Domwe, Sampakwe and Ntabamangwe mountains, along with other prominent ridges.
Social	Catchment protection	The Safari Area provides protection for at least 50 km of the Sengwa River and for the Lutope and Manyoni Rivers. In addition, it protects the headwaters of the Sabara and Sessame Rivers.

Table 4: Exceptional Resource Values for the CHIRISA SAFARI AREA

	Value	Description
	Research	The Hostes Nicholle Research station (now the Sengwa Wildlife Research Institute) was established in the SWRA 40 years ago and the station has seen the publication of numerous thesis and scientific papers. This tradition of research should be continued.
Cultural	Tonga and Shangwe culture	The original inhabitants of the area were Shangwe under Chief Sai. In the late 1950s the area was also settled by Tonga people displaced by the filling of the Kariba Dam. Many of these people settled in the Busi Valley. The valley contains significant evidence of occupation as people were only moved out in the 1968. The Shangwe and Tonga cultures are not well known in the area and this situation needs to be rectified.
	Fossils	The fossil record is not well known within the area but the discovery of plant fossils on Tundazi indicates that there may be more waiting to be found. In addition, fossil reptiles have been found in the Madumabisa sandstones in the SWRA and elsewhere in the Sebungwe.

Ecosystems Components

The methodology requires that the ecological components of the Safari Area, and the threats to them, be identified and prioritised. The groupings are termed "Conservation Targets". Once the conservation targets, their associated key ecological attributes, and threats have been identified, the main thrust of the ecological management programme is to focus its monitoring and management intervention activities on these conservation targets.

The methodology works on the assumption that, when taken together, these targets are representative of the biodiversity of the Chirisa Safari Area and concentrating on them will also capture systems, communities and species that are not listed. It also allows managers to focus their limited manpower and financial resources.

Conservation Targets

The following tables present the Chirisa Safari Area conservation targets (natural systems, vegetation/wildlife communities and species) and the threats to these conservation targets

Systems	Unique geological features - escarpments and gorges Natural springs and alluvial systems Sengwa and Lutope Valleys Wilderness values
Communities (Vegetation and wildlife)	Large carnivores - lions, leopards, cheetahs and hyenas Rare and endangered ungulates
Species	Elephants Black Rhino Lions

Table 5: Conservation Targets for the Chirisa Safari Area

	Conservation Target	Rationale	Subsidiary Targets	Key Ecological Attributes
ECOSYSTEM	Unique geological features -	Several important mountains and ridges - Domwe, Sampakwe and Ntabamangwe	Escarpment and hillslope vegetation	• Species diversity • Unusual species
	Springs and alluvial systems	Springs are a distinctive feature of Chirisa with many of them being perennial	Aquatic wildlife	• Water flow • Water quality
	Sengwa and Lutope Valleys	These valleys are the core of the SWRA and Chirisa SA and are vital to for the area's biodiversity.	Riverine forest Salt springs Rhino habitat	• River regime (flow and level) • Riparian habitat • Water quality
	Wilderness values	An important component of both areas, increasingly isolated in a sea of settlement	Vegetation	• Intact woodlands
COMMUNITY	Large carnivores	Lions, leopards, cheetahs and hyenas	Other species in ecosystem	• Population size and structure • Prey species availability
	Rare and endangered ungulates	Sable and Roan. Tsessebe thought to be locally extinct	Other wildlife species	• Population size and structure • Habitat availability
SPECIES	Elephants	Elephants have had fluctuating fortunes in the Sebungwe landscape. Numbers are currently low	Vegetation	• Population size and structure • Migration and dispersal areas
	Lions	Lions are a key indicator species for ecosystem health	Other species in the ecosystem	• Population size and structure • Prey species availability
	Black Rhino	Although now locally extinct black rhino are included here as a long-term conservation goal may well centre around their re-introduction	Busi valley as a whole	• Founder population genetics • Habitat availability • Recruitment

Threats

A threat is defined as any factor which has the potential to impair, degrade or destroy a conservation target. These are mainly related to human activity and a summary of the major ones facing the Safari Area are shown in Table 6. More details are found in the background documentation.

Table 6: Main threats facing the Chirisa Safari Area	
Issue	Description
Poaching (wildlife/wood)	Poaching is a serious threat to the integrity of the system. Poaching can take many forms which include killing wildlife and/or cutting trees removing other vegetation resources. Can be either commercial or subsistence poaching.
Mega-Herbivores	Elephants are key architects and transformers of ecosystems, especially when they are found in large numbers. Currently, elephant numbers are low which means that the vegetation is in a recovery phase. But as Safari Area management improves, elephant numbers and consequently elephant damage to the vegetation can be expected to occur.
Invasive species	The threat from invasive species is not well known within the conservation area.
Low prey numbers	The prey base for carnivores is low at present. This will limit the potential build up of predators.
Livestock incursions	Livestock incursion are frequent over much of the safari area, especially with the recent excisions.
Un-prescribed fire	Fires are common within the area and significant parts of the area are burnt on an annual basis.
Human wildlife-conflict	Given the high densities of humans residing around the safari area the potential for human-wildlife conflict is high. Key species include the elephant and carnivores such as lions and hyenas.
Land use changes	As noted settlement in the Sebungwe is increasing. This will bring conversion of land from conservation into agricultural and grazing uses.
Siltation	Siltation of rivers is an ongoing challenge.
Drought/ Climate Change	Drought has been part of life in the Sebungwe for a long time. However, when this is compounded by climate change its effects can be far reaching.
Wildlife diseases	Wildlife diseases are an often overlooked part of protected area management but they can have devastating effects on local populations.

Table 7 relates the identified threats and grades their potential impacts on the conservation targets.

Table 7: Chirisa Safari Area Threats Analysis										
Threat \ Target	Unique geological features	Springs and alluvial systems	Sengwa & Lutope Valleys	Wilderness values	Larger carnivores	Unique Birds	Rare and endangered ungulates	Undisturbed Miombo	Elephants	Lions
Poaching (wildlife/wood)		High	Very High	High	High	Low	High	Low	Very High	High
Mega-Herbivores			Low					High		
Invasive species		High		Low						
Low prey numbers					High					High
Livestock incursions		High	Very High	High						
Un-prescribed fire		High						High		
Human wildlife conflict									Med	
Land use changes				High						
Siltation		Med								
Drought/Climate Change		Very High								
Wildlife diseases					High		High			High

Safari Area Purpose

The purpose statement summaries the importance of Chirisa Safari Area, clarifies the reasons for its existence, and provides the overall goal that protected area managers are working towards. All protected areas in Zimbabwe have a generic purpose as defined in the Act. This was used as the base to define the specific purpose of Chirisa Safari Area, shown below.

Conserve vegetation, wildlife, landscapes and drainage systems associated with the Karoo sediments that underlie the area to allow income generation for conservation through visitor use

Subsidiary purposes for the Chirisa Safari Area include

- protection for the large rivers (Sengwa, Lutope, Manyoni and others), the numerous springs and scattered wetlands found throughout the area
- protection for the ridges, escarpments and plateaus that are a distinctive feature of the region
- provision of facilities and opportunities to the public for camping, hunting, fishing, photography, viewing of animals, bird-watching or such other pursuits that may be permitted therein

Joint Management of Chirisa and Chizarira

Chirisa Safari Area and the Chizarira National Park are part of the same ecosystem. This ecosystem has seen significant changes over the last 30 years and the protected areas are in danger of becoming conservation islands within a sea of settlement and agriculture.

Although the two are PAs under different categories (National Park and Safari Area) they are managed by the same authority. There are three different management stations and each is independent of the other. Between the early 1960s and 2002 the SWRA was a non-hunting research area but safari hunting has been permitted on a trial basis since 2002. The research centre became the de facto management HQ for the area, even though it is officially part of the Chirisa Safari Area.

A central theme running through this management plan is the need for joint management of the two areas. Collaboration is seen as being vital to the recovery of these areas, and especially the Chirisa SA which is chronically underfunded at present. In order to draw attention to the need for joint management each programme will contain a summary of the key points for collaboration between all three management HQs. An extract of these points is shown in table 8 below.

Table 8: Joint management and collaboration - Chirisa and Chizarira

Ecological Management	Tourism	Outreach	Operations
• Research and monitoring coordination • Elephant management • Fire management • Corridors and dispersal areas • Mining and prospecting • Impacts of hunting	• 4x4 trail linkages • Others, if significant photo tourism investment found	• Joint approach to the wedge of settled land that comprises Chief Simchembu's area • Coordinated awareness and education programmes • Support community projects such as community conservancies	• Radio linkages • Road connectivity • Joint patrols • Joint intelligence

ZONING

Overview

Zoning refers to what can and cannot occur in different areas of a protected area. It is a way of breaking down the area into smaller units for management or tourism. Management and tourism zones may not align, but it is helpful if they do. Zones can

- provide protection for critical or representative habitats, ecosystems and ecological processes;
- separate conflicting human activities;
- protect the natural and/or cultural qualities while allowing a spectrum of reasonable human uses; and
- enable damaged areas to be set aside to recover or be restored

When viewing the possible zonal scenarios it was decided that zoning made more sense from an ecosystem perspective than by individual PAs. Accordingly, although zoning was discussed first at a protected area level, the final zone plan took both areas into account. They are therefore presented together. In addition, the management and tourism zones are the same, although there may be zonal sub-divisions for management and anti-poaching purposes.

Zimbabwe has a standardised zone system that has been used in its protected areas for the last 50 years. The zonal categories are shown below and four of these - Wilderness, Wild, Restoration and Buffer/Influence - were considered appropriate for the Chizarira-Chirisa protected areas

- | | | |
|----------------------|---------------|--------------------|
| • Wilderness | • General Use | • Restoration |
| • Wild | • Development | • Buffer/Influence |
| • Special Protection | | |

However, as ZPWMA evolved from being a government department into a standalone entity, there was much emphasis on a commercialisation thrust to enhance revenue generation. However, the authority still has a mandate to ensure that the ecological values of the protected area estates remain intact.

This divergence of responsibilities has seen a proliferation of camps and exclusive leases in some national parks. Part of the problem may stem from the zone classification. For example, Hwange NP has two extensive "wild" zones in which most of the camps and concessions have been established. This precedent means that "wild" zones are now considered to be open for development, hence the need for a new zonation and limits of use framework.

Another issue is the classification for a "wilderness" zone. Most PAs do have a wilderness zone but its status can be perilous. For example, the wilderness zone in Mana Pools was eroded by pressure from developers and now no longer exists. In Hwange, in recent years, camps and concession have been allocated in the wilderness zones.

In short, the meaning of a wild or wilderness zone can be distorted in pursuance of commercial interests. This can lead to inappropriate siting of camps and concessions. Accordingly, for the Chizarira and Chirisa management plans it was decided to use zone names only as the basis for the prescribed limits of use.

Zoning for Chizarira and Chirisa

The following zone plan was developed for both the Chizarira National Park and the Chirisa Safari Area. This was because the areas share a common boundary and are part of the same ecosystem.

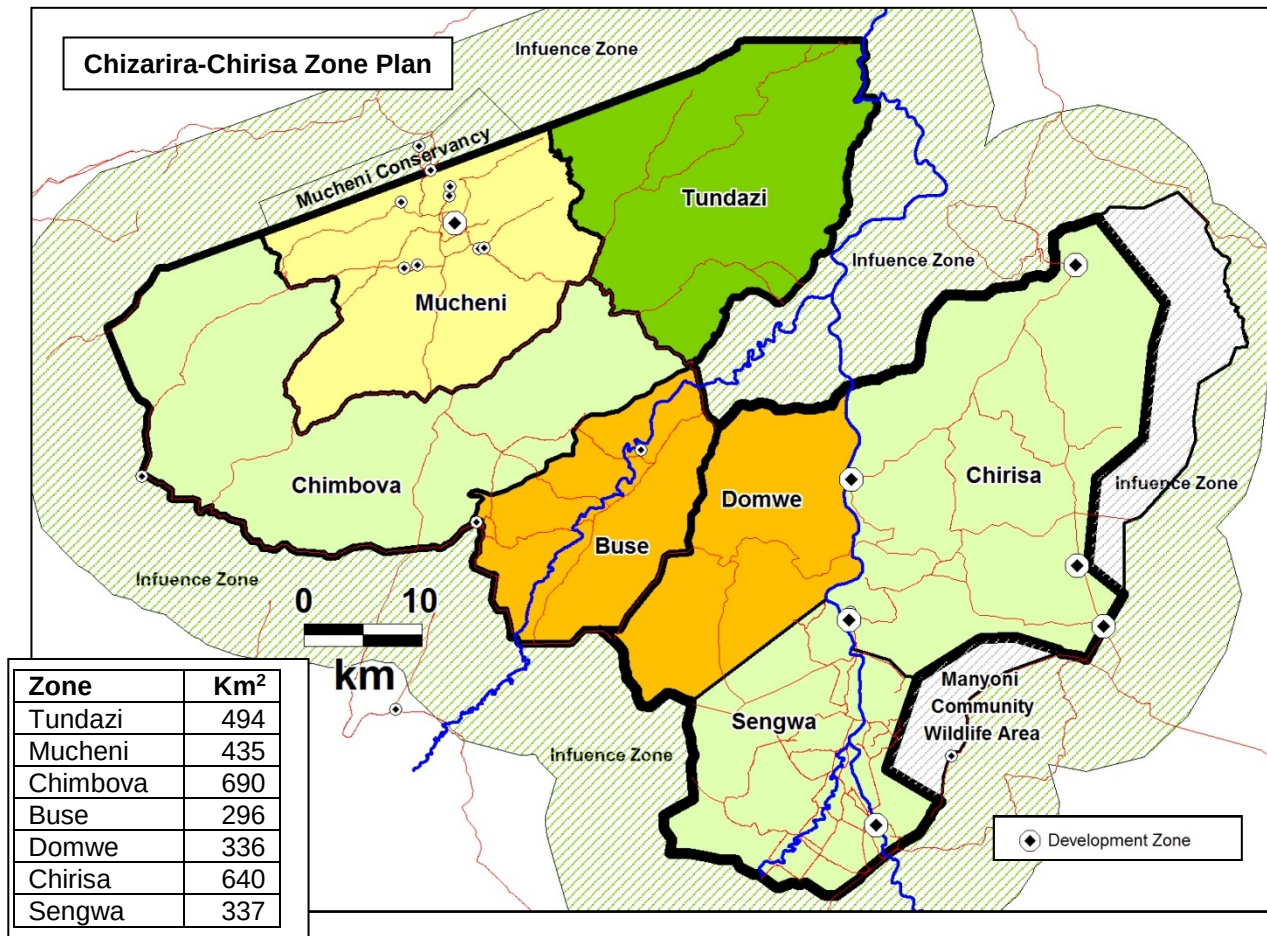


Table 9: Zone descriptions

	Sengwa	Chirisa	Domwe
Description	378 km ²	740 km ²	336 km ²
Current Situation	Most wildlife along the Sengwa and Lutope Rivers. One of the 3 areas in the Sebungwe cluster still with appreciable wildlife	Wildlife in pockets but variety and numbers have significantly declined during the last 20 years	Very little known about this area but wildlife numbers low and thought to be a prime poaching hotspot.
Way forward	Currently a viable concession but anti-poaching operations need to be scaled up	Will need significant inputs for viability	Needs to be reopened and connected to Chizarira

Management Programmes

This plan has been laid out into four management programmes which are in common use both in other Zimbabwean PAs, as well as in protected areas throughout the region.

1. Ecological Management
2. Tourism Development and Management
3. Outreach and Collaborative Management
4. Operations

Programme Function Summary

Table 10 outlines the expected functions for each programme. It is important to set the stage for the programme functions as these affect the development of the objectives, actions and activities.

Table 10: Management Programme Functions	
Programme	Brief Description
Ecological Management	The main function of the ecological management programme is to provide the information base on which other management programmes carry out intervention activities. All activities within the Safari Area will affect the ecology and the programme is designed to monitor these. Important activities include the collection and collation of data, and the direction and management of research. Poaching and other illegal use issues, although directly affecting the ecology of the area, are passed over to the Operations Programme. The execution of other ecological issues are passed to Safari Area management (e.g. fire control, maintenance of water, removal of exotics), but the planning for these remains the responsibility of this programme.
Tourism Development and Management	The Tourism Management Programme is primarily for the management of tourist facilities and the tourists themselves. One of its most important functions is the collection of revenues and the tourism statistics that goes with this. Another function is the enforcement of rules and regulations in conjunction with the Operations Programme. In the case of the Chirisa SA and the SWRA the main focus of the tourism programme will be trophy hunting.
Outreach and Collaborative Management	Although these functions include conservation and management of wildlife resources outside the protected areas, much of its focus is on management of human-wildlife conflict. Therefore, the main thrust of this programme is to alleviate conflicts between people and wildlife. Education and/ or awareness and interpretation is seen as being a very important tool for this programme. In addition, this programme deals with conservation partners and seeks to smooth the way forward for NGO assistance into Safari Area management and collaboration of NGOs and ZPWMA in carrying out community work.
Operations	The Operations Programme deals with day-to-day Safari Area management, including security issues. These include issues such as staff morale, housing, vehicles, plant and equipment. Control and management of wild fires also falls under this programme.

Management Programme Layout

Each programme is divided into the following sections

- **Programme Description and Purpose** - Programme overview followed by a purpose definition.
- **Management Philosophy and Guiding Principles** - Sets the stage for the programme. Guiding principles are central to the way the programme is developed
- **Objectives, Actions and Activities** - The core of the management programme.

Each strategy has a text description in which the various activities are defined. At the end of each action is a summary of the activities relevant to that action to help focus ground managers.

The three-year activity plan lists the activities and the requirements for their implementation.

Within the document each programme is colour coded for ease of reference.

Ecological Management
Tourism Development and Management
Outreach and Collaborative Management
Operations

ECOLOGICAL MANAGEMENT PROGRAMME



PROGRAMME DESCRIPTION AND PURPOSE

The main function of the ecological management programme is to provide the information base on which other management programmes carry out intervention activities. All activities within the safari area will affect the ecology and the programme is designed to monitor these. Important activities include the collection and organisation of data, and the direction and management of research. The programme also will provide guidelines for management of biodiversity in the other three management programmes.

Poaching and other illegal use issues, although directly affecting the ecology of the area, are passed over to the Operations Programme. The execution of other ecological issues are passed to area management (e.g. fire control, maintenance of water, removal of exotics), but the planning for these remains the responsibility of this programme.

The purpose of the Ecological Management Programme was defined as:

To conserve the flora, fauna, natural landscapes and hydrological resources of Chirisa through monitoring, research and targeted management interventions

MANAGEMENT PHILOSOPHY AND GUIDING PRINCIPLES

Introduction

Chirisa Safari Area sits on the central Zimbabwean plateau with an average height of around 800 m above sea level (asl). The highest point is on the Sampakwa Ridge (1,036 m. asl) and the lowest at 752 m asl where the Sengwa River exits the protected area. The topography tilts downwards towards the north as it drains out through the Sengwa River.

The area is well endowed with perennial springs (almost 25 known ones) spread throughout the area. Many of these springs are perennial and they are vital for the biodiversity of the area. The main rivers in the area - Sengwa and Lutope are seasonal, although pools remain at several sites during the dry season.

Miombo and *Baikiaea* woodlands are the dominant vegetation type of the upland areas within the area giving way to mixed woodlands on lower ground, where mopane and terminalia tend to dominate. The Sengwa and Lutope valleys have alluvial plain and riverine vegetation. Grasslands are rare within the Safari Area but are found along some of the drainage lines, including the Matsikenya.

Chizarira NP is a listed Important Bird Area with a number of trigger species that led to this designation. Important and unusual species include the Taita Falcon which nests within the gorges. Information for Chirisa is not available. However, their proximity means that bird diversity in Chirisa is also expected to be high.

Almost all mammal species in the Sebungwe area have declined as recorded by aerial surveys which have been carried out since the 1980s. The last survey indicated three areas where there are still significant wildlife populations - Matusadona lakeshore, western Chizarira and the Sengwa Wildlife Research Area. Poaching is likely to have been the major contributor to this loss. Tsessebe seem to have been eradicated in Chirisa and roan and sable numbers are down significantly.

Elephants are a key driver of vegetation change within African ecosystems and Chirisa has seen its share of fluctuating numbers which have had significant effects on the environment. Almost a boom and bust situation and emphasis in the past was put on controlling elephants to protect the habitats. Over 4,500 elephants were culled in the Sebungwe region between 1960 and 1980, with nearly 1,000 having been removed from the Chirisa SA and the SWRA between 1980 and 1986. Currently elephant numbers are relatively low and the vegetation in some areas is recovering. However, according to the aerial survey, the elephant population in the SWRA and Chirisa SA was estimated to be around 1,200 animals in 2014. This population appeared to be concentrated in the SWRA and the density (as recorded during the aerial survey) was 2 elephants/ km², a cause for concern (as previous research suggested that for woodlands to recover the density should not be more than 0.75 elephants/ km²). However, the 2015 ALERT funded survey indicates a density of less than 1 elephant per km², but still higher than the accepted norm.

Although Chizarira was the more famous area for black rhino in the past, they were known to occur in significant numbers in Chirisa with 100 estimated in the area in 1972. In 1994 remaining 30 rhinos (down from around 300) in the ecosystem were captured and moved out of the Safari Area.

Vegetation changes in the area have occurred as a result of elephants and fire. This was documented in the SWRA and woody cover decreased from 95.2% in 1958 to 68.2% in 1996, with a research indicating that this was caused by elephants. There was woodland recovery after 1983 which was thought to be due reductions in elephant populations (legal and illegal) and reductions in fire frequency.

Carnivore diversity and numbers within Chirisa are low. During a two - month camera trap survey leopards were only seen in the SWRA and the central core of Chirisa SA. Nine leopards and one lion were identified during this survey prompting concerns about the sustainability of 3 leopards on the quota. The hyena population is relatively high but 40% of those recorded were carrying snares.

Surprisingly, crocodiles are known to occur in many of the pools, often surviving under unexpected circumstances.

Guiding Principles

The guiding principles are summarised below and briefly discussed thereafter.

1. Management decisions based on scientific information
2. Safari hunting will be maintained as a viable form of resource utilisation
3. Ecological interventions to be kept to a minimum
4. Water source conservation is of paramount importance
5. Conservation agendas will be pursued outside the protected area
6. Connectivity with the wider landscape and management entities

1 Management decisions must be based on scientific information

The SWRA hosted a long-term, wide ranging ecological research programme for 30 odd years. A number of post graduate thesis were submitted from the station and over 100 papers published, in addition to numerous reports. In the last two decades research has been sporadic and mostly limited to low-key monitoring. In 2000 the research institute was described as being "clinically dead". It is essential that management decisions are based on the best scientific information available. This plan outlines the way forward regarding rebuilding the research component to ensure that decisions are based on scientific information, and especially as it pertains to consumptive use.

2 Safari hunting will be maintained as one of the main forms of resource utilisation

Trophy hunting by foreign clients is the primary form of income of Safari Areas in Zimbabwe. Chirisa SA (but not the SWRA) has been under this form of management since it was gazetted. The SWRA was only opened to hunting in 2002 and is currently one of the more

successful concessions in the country. In the short-term, and certainly for the life of this management plan, safari hunting is expected to be the main utilisation model.

3 Ecological interventions to be kept to a minimum

A non-intervention policy will be pursued in general. However, interference with natural processes may occur to maintain wildlife and plant species diversity, to preserve sensitive species or to restore native ecosystem functioning that has been disrupted by past or ongoing human activities.

4 Water source conservation is of paramount importance

The area is well known for its spectacular and biodiversity centred around springs and rivers. These are the lifeblood of the area and their protection is considered to be a priority.

5 Conservation agendas will be pursued outside the protected area

Chirisa SA and SWRA management will influence the surrounding communities, local and district governments, and other agencies to help ensure that activities occurring outside the Safari Area do not impair Safari Area resources and values. Conservation agendas will be pursued when possible, especially through local district planning forums.

6 Connectivity with the wider landscape and management entities

Chirisa is linked into a wider conservation landscape (albeit sometimes tenuously). Management should take an ecosystem wide view of conservation.

Ecological Management Programme Joint Management Aspects - Chirisa and Chizarira

This section briefly summarises the main areas for collaborative and joint management between the two protected areas. This is especially true for this programme as it deals with the underlying resources of the area, some of which are highly mobile.

- Research and monitoring coordination
- Elephant management
- Fire management
- Corridors and dispersal areas
- Mining and prospecting

OBJECTIVES, ACTIONS AND ACTIVITIES

The primary functions of the Ecological Management Programme are research and monitoring and sometimes there is a fine line between these two. Research could be defined as the assessment of situation on the ground while monitoring is less intensive and builds on the research data for the longer term. However, in some cases, monitoring activities can in themselves be defined as research.

Whichever way the situation is viewed, there is no doubt that the major task of the ecological programme is the collection, organisation and analysis of data, much of it being routine monitoring. Following on from this, the other major function is to provide advice on management interventions to ensure that the ecological processes necessary for the well - being of the ecosystem are conserved and maintained. In addition, the programme will direct and advise on research in the area.

With these limitations of the programme in mind, the objectives and actions have been defined as:

Objective 1: Monitoring and research effectively addresses management needs

- 1.1: SWRA Research Station resuscitated
- 1.2: Focussed research priorities
- 1.3: Baseline data compiled and available
- 1.4: Monitoring programme defined and running effectively
- 1.5: Effective dissemination of research results

Objective 2: Biodiversity, habitats and wildlife populations restored and protected

- 2.1: Elephant management strategy elaborated
- 2.2: Fire monitoring and management
- 2.3: Rare and endangered species research expanded
- 2.4: Special protection areas identified and a protection plan compiled
- 2.5: Invasive species controlled
- 2.6: Erosion sites controlled
- 2.7: Large mammal numbers reach optimal levels
- 2.8: Economic assessment of subsidiary quotas
- 2.9: Mining activities assessed and controlled

Objective 3: Land use issues in surrounding areas are addressed

- 3.1: Community hunting area identification

Objective 1: Monitoring and research effectively addresses management needs

The SWRA was established before the Chirisa Safari Area but was never gazetted. In 1968 it was incorporated into the Chirisa SA and whole area was formally gazetted in 1974. The research area was initially set aside in response to the controversy surrounding the resumption of game elimination to control the advance of tsetse fly in the Sebungwe region. The Government of the day allocated funds for research on the impacts of selective game elimination on both wildlife and tsetse flies. The Manyoni River catchment area to the east of the Sengwa-Lutope River confluence was selected in 1964 for the research but this was realigned to the west of these rivers as there was little game in the original area. A temporary research station was established close to the Sengwa Gorge in 1965 but this was superseded by significant investment into the Hostes Nicholle research station in 1972 further downstream on the Sengwa River, now the HQ for the area and the home of the Sengwa Wildlife Research Institute.

Research was aimed mainly at ecosystem level problems and the area was a central hub for a number of research projects. Unfortunately, financial inputs into the research station declined and currently only a low level of research and monitoring is carried out.

A guiding principle of this programme is that research and monitoring need to be adequate enough to guide management decisions and this objective sets out the steps that are necessary to achieve this.

1.1: Resuscitation of SWRA Research Station

The SWRA research station is currently functioning at a low level as it is hampered by staffing and funding difficulties. A resident ecologist and sometimes with students on attachment have always been present at the station and more recently Senior Ranger Scientific Officers have been recruited but are lacking equipment and funds to be effective. Although there are extensive offices, laboratories and other research space on site, any of the facilities are in a poor state of repair. Power, although supplied through the national grid, is sporadic and unreliable.

The resuscitation of the SWRA station should be relatively easy if the will and financial sacrifice is there. The building and accommodation is already existing, albeit in need of rehabilitation and repair. The first step would be a concept proposal for the station. What is the reason for the station, what would be the main research areas etc. It is recommended that the resuscitated research station focuses on research that is related to hunting and utilisation in the first instance. This will make it relevant to the Chirisa Safari Area and to other parts of the Parks and Wildlife Estate where trophy hunting is permitted. Obviously as time goes by, expansion of research into other areas should be considered, funds permitting.

There is one ecologist for Chirisa Complex and the other two ecologists for the entire Sebungwe Cluster expected also to cover this area. However, in practice this does not work because of limited resources.

The first step to ensuring that monitoring and research effectively addresses management needs is to ensure that the station has sufficient capacity to establish an effective long-term monitoring programme and to guide research. This includes sufficient and appropriately qualified staff who have the necessary equipment, given ample time on the station before being transferred elsewhere, to carry out their duties. The ecologist needs supporting staff and equipment for the station to function as planned. A detailed proposal should be drawn up. To maintain consistency especially in carrying out monitoring activities research teams need to have updated databases and proper hand over and takeover of monitoring databases needs to be done in the event of staff movements.

A Spatial Monitoring and Reporting Tool (SMART) system, linked to the one operational in Chizarira should be established. This will require a working GIS and SMART system for the safari area, which is also linked to the conservation wide GIS that is already on hand.

In terms of equipment, the station would need a dedicated vehicle. Sharing of vehicles for research and management activities is very difficult to manage and often research is relegated to the bottom of the queue.

Summary of Activities

- Concept proposal for resuscitation plan
- Ecologist (already on station) and supporting staff
- GIS and SMART operational
- Dedicated vehicle and equipment

1.2: Focussed research priorities

Currently there is no focussed research programme for Chizarira National Park or the Chirisa Safari Area.

The following listing is provided as a baseline for research priorities within the Chizarira-Chirisa ecosystem. In addition, research and monitoring should take into account the wider area (e.g. Sebungwe and even further afield if required). Research protocols need to be defined to ensure that all research is carried out in an appropriate format and within defined parameters.

- Predator dynamics
- Prey base dynamics
- Collared Lions and Elephant herd monitoring in collaboration with ALERT. Some funding has been secured from African Elephant Fund (AEF) for SMART implementation in the Sebungwe region.
- Buffalo as an indicator species
- Hydrological systems
- Leopard and Cheetah research (camera traps and spoor surveys) spearheaded by ZPWMA with technical assistance from Panthera
- Cultural and archaeological research (see Outreach Programme)
- Impact of tourism activities (See also tourism programme)

As it may be difficult to implement an ambitious research programme using only ZPWMA staff and equipment, appropriate conservation and academic partners should be approached and canvassed to implement research priorities.

Summary of Activities

- Research priorities defined and disseminated
- Active canvassing of appropriate partners to implement research priorities
- Research protocols defined

1.3: Compile baseline data and make it accessible

As mentioned previously the Sengwa Wildlife Research Station was the hub of an extensive research and monitoring programme extending over more than 30 years. However, during the compilation of this management plan it proved difficult to find a concise summary and documentation of this research and its findings.

In addition, a significant part of Chizarira related research was destroyed in the early 1970s when the fort (currently the ALERT HQ) was burnt down. This represented a serious loss for the understanding of the ecosystem.

Although the ongoing aerial survey data provides some information on the large mammal species of the area, the nature of the terrain and the cryptic behaviour of several species means that the data is indicative at best. There is need for a reliable and ongoing method of estimating wildlife numbers in the Safari Area (see monitoring programme as well). As use of the Chirisa Safari Area is based on extraction of wildlife it is vital that management has accurate estimates of wildlife. A baseline survey needs to be carried out (methodology to be defined) that will give accurate wildlife numbers for the area. These figures will allow an assessment of the effectiveness of any long-term operators (see Tourism Programme) as they provide a measure against which success or failure can be scored.

There is some existing data available on station, especially at the SWRA station, that needs to be compiled and made available in digital format. (e.g. SWRA vegetation map).

The GIS for both the Chirisa SA and Chizarira NP is adequate for management needs but needs to be expanded and made available for use by researchers and conservation partners. However, the GIS database for the Chirisa Safari Area needs to be updated and expanded and some data was collected during the current planning process.

Summary of Activities

- Compilation of existing research documentation on an ecosystem-wide basis
- Baseline intensive survey of large mammal species (incorporated into monitoring as well)
- Ecosystem-wide GIS updated and improved and made accessible

1.4: Monitoring programme defined and running effectively

Monitoring is a vital component of understanding a protected area and unfortunately has been lacking in Chirisa for the past few decades. The SWRA has a resident ecologist but there is a lack of equipment so it is difficult for him to fulfil his role. An ecological monitoring programme needs to be defined for the Chirisa Safari Area which takes into account the exceptional resources and conservation targets. This should be established for the entire area rather than for the individual components.

However, the programme also needs to take current capability into account. There is little value in defining a comprehensive monitoring programme when there are not enough staff and equipment to carry out the work. Ideally, and probably over time, the staff complement and equipment availability will be increased so that the programme can evolve to take advantage of the changing circumstances. A SMART data gathering programme should be established for both areas and the capacity to integrate this data into the monitoring programme must be on station.

A preliminary listing for a monitoring programme is shown below.

- Fire and burn scars– downloaded daily from NASA FIRMS interface
- Fixed point vegetation photography
- Climate data and its expansion
- Erosion sites
- Special protection site
- Species monitoring
- Springs and pans
- Leopard and Cheetah research (camera traps and spoor surveys) spearheaded by ZPWMA with technical assistance from Panthera

Two camera trap surveys aimed at predators have been carried out by WILDCRU and it is hoped that this, along with other similar surveys, will form part of an ongoing monitoring exercise.

In addition, the monitoring of offtakes and trophy quality is vital for management of hunting. The 2019 quotas are shown in table x (Tourism Programme). All information on animals shot during safaris is recorded on a TRAS2 hunting return form. This includes information on the professional hunters, their clients and the animals shot. Animal data includes species, sex, trophy size (horns etc) and a six figure location point. This information can form the baseline for a trophy monitoring system. As a first step as much data as possible for the past should be accessed and compiled, both on station and at HQ. In addition, the data was collated for a 2015 paper on trophy quality.

Strategy 1.3 recommends an accurate baseline of wildlife numbers be established to allow operator success to be measured. This then becomes a monitoring activity and should be carried out at intervals.

Summary of Activities

- Define realistic monitoring programme with capacity for expansion
- Effective monitoring of hunting - inside and outside
- Staff increased (see operations)
- Equipment available (see operations)

1.5: Effective dissemination of research results

Research does not exist in a vacuum. For it to be effective and worthwhile it needs to be disseminated and probably more importantly, used. The body of work that was produced at the SWRA station over 40 years is used as an example. Although papers and theses were written and some published there was also a body of "grey literature" that never made it to publication stage. In addition, since the station largely stopped functioning around 2000 there was no cohesive set of documents pertaining to the research that was located during the planning process.

As a first step an attempt to locate these documents and the associated research files should be made. This information represents an important baseline dataset. Secondly, a system needs to be established to ensure that any future research does not also become difficult to find. With electronic storage systems available today this should be easier. However, electronic storage is not without its problems and these should be investigated and addressed.

This programme objective is to ensure that research effectively addresses management needs and this is vital. Research results must be communicated up the chain to ensure that managers and HQ staff are aware of research outcomes and how they can enhance on-the-ground management. Researchers need to be aware that doing the research is one part of the equation - communicating it effectively is another. Ways of communicating results should be sought (e.g. bi-annual meetings, presentations, one page summaries, newsletters etc). Those methods that prove to be more effective than others should be pursued.

Summary of Activities

- Collate and organise past research
- Define a system for future storage and access of both past and ongoing research
- Develop methods to communicate research results

Objective 2: Biodiversity, habitats and wildlife populations restored and protected

As mentioned in the introduction to this programme the woodlands of Chirisa and Chizarira have been significantly affected by elephants and fire in the past. The protected areas and the Sebungwe Region as a whole have also seen large declines in most species of large mammals during the last decade.

This objective aims to protect and manage the key habitats of Chirisa by paying attention to the key drivers of change, in this instance, elephants and fire. In addition, the possibilities of restoration of some species is considered.

2.1: Elaborate an elephant management strategy

According to available research elephants (in conjunction with fire) have significantly altered the Chirisa and Chizarira woodlands in the past. As mentioned in the introduction previous management strategies for elephant in the Sebungwe (and both Chirisa and Chizarira) included culling large numbers to stop the degradation of the woodlands. The decline of elephants through poaching during the last decade has taken the pressure off the woodlands and this may be an opportune moment to re-examine the role of elephants in the ecosystem and define an elephant management strategy for the Safari Area going forward. This objective is also linked to Objective 1 through the research and monitoring components.

By the time of writing of this Plan ZPWMA is undergoing the review of the National Elephant Management Plan expiring this year. This will see the ushering in of the new era of the plan from 2021

– 2025. We believe this shall speak to both this Management Plan and Elephant Management Strategy for Sebungwe Elephant range.

Summary of Activities

- Compilation of past research and management activities for elephants within the Sebungwe
- Development of an agreed management strategy for elephants in the Sebungwe and Chirisa and Chizarira

2.2: Monitor and manage fires

Both the Chirisa SA and the SWRA carry out early burning, mostly focussed on strip burning along major roads to form firebreaks. The SWRA has a simple fire management plan (dated 2012 - which is currently under revision) but the Chirisa fire management activities form part of general management activities. A fire management plan needs to be compiled to cover both areas and this needs to be updated annually based on activities and climatic conditions experienced during the preceding year.

It is vital that the extent of prescribed fires used for blocks and firebreaks are recorded and mapped to build up the picture over time. This would be from a combination of data sources - Modis fire mapping from satellite, recent Landsat Thematic Mapper imagery, ground reconnaissance for fire mapping, drones and SMART recorded patrol based data.

The effect of fire on vegetation, water sources and animal movements also need to be monitored. Standard practice is for vegetation monitoring (and not just for the effects of fire) is a mosaic of vegetation plots in key habitats and fixed point photography. Monitoring of mammal movements into and out of burnt areas can be monitored using transects.

Summary of Activities

- Fire and vegetation monitoring system established - Fixed point photography, transects, vegetation plots etc
- Imagery and other satellite-based monitoring tools accessed
- Development of a fire management plan for both areas

2.3: Expand research on special interest species

Chirisa Safari Area is home to some rare and endangered species, both predators and herbivores. Important endangered predators known to have been in the area in the past include the wild dog as well as lions, leopards and the more common hyena. Brown hyena were recorded during a camera trapping exercise. Endangered herbivores include the elephant, as well as roan and sable, albeit at low levels. Tsessebe used to occur in the area but are now thought to be locally extinct. Very little species-specific research has been carried out in the park and most of the research has been focussed on elephants and their effect on the habitat. A conservation partner (ALERT) has a special interest in carnivores and specifically lions and research into this species is now ongoing.

Summary of Activities

- Defining the scope of investigations into rare and endangered species
- Factor into monitoring programme

2.4: Identify, and compile a plan for special protection areas

There are many sites within the Safari Area that require special protection. This includes pans, springs, vleis and escarpment vegetation areas. The first step will be the identification and inventorying of all these areas. People with expert knowledge of the Safari Area should be approached for advice. Once the inventory has been completed a protection plan should be compiled. At the very least this should consist of controlling inappropriate behaviour at these sites (e.g. camping, littering, etc). Construction of infrastructure and facilities must take these special protection areas into account.

Summary of Activities

- Database compiled
- Adaptive protection plan
- Water quality monitoring system

2.5: Control invasive species

There are a number of invasive species (mostly plants and notably *Lantana camara*) found within Chirisa. As with many aspects of Safari Area management, detailed knowledge is limited. The first step will be an inventory which will lead into an ongoing monitoring programme. Where appropriate steps should be taken for control of invasive species (physical removal as the first line of defence).

Summary of Activities

- Invasive species inventory
- Monitoring programme
- Interventions if required

2.6: Identify and control erosion sites

There are a number of erosion sites within the Safari Area which are a cause for concern. A detailed inventory of erosion sites and their description needs to be carried out. Once the inventory is complete a monitoring programme needs to be compiled and carried out. In addition, possible steps to halt erosion should be put forward and implemented.

Summary of Activities

- Inventory and characterisation of erosion sites
- Monitoring programme devised
- Erosion control measure where appropriate

2.7: Ecologically sound restocking and reintroduction

There is and have been significant declines of most large mammal species in the Sebungwe and Chizarira in the recent past. One of the central pillars of this plan is to improve law enforcement activities (see Operations Programme) to a level where animal populations will increase naturally.

However, restocking depleted wildlife areas is regarded as a legitimate conservation tool in the right circumstances. But it is important that the Safari Area should not be regarded as a convenient

"dumping ground" for species that are overstocked in other areas. Prior to any restocking or reintroduction exercise being carried out a full ecological assessment needs to be carried out. By the time of writing of this plan a feasibility ecological report was carried out around mid - March, 2020 in Chizarira NP and Sapi SA landscape plus Mavhuradonha Wilderness Area for a possible restocking of the areas with Elephants and ungulates mainly impalas from Save Valley Conservancy. A full report with recommendations addressing the IUCN guidelines will be produced and shared as this should take into account the aspects listed below (at the very least).

- Protection fundamentals need to be in place - There is little point in restocking an area where the wildlife cannot be protected.
- Social responsibility - Moving wildlife that could pose a threat to surrounding communities needs to be assessed. Example include predators that could move out of the Safari Area.
- Animal welfare and disease considerations - Stress from the translocation and release and the risk of animals settling into their new environment needs to be assessed. The aspect of disease also needs to be investigated.
- Habitat risks with mega herbivores - The woodlands in Chirisa and Chizarira have suffered from high elephant densities in the past. A strategy for elephant management needs to be in place prior to increasing numbers through restocking exercises (see 1.1).

Ideally Chirisa and Chizarira should develop a policy towards restocking and reintroductions based on best practice and taking into account experiences in other areas.

Summary of Activities

- Full ecological and social assessment of any proposed restocking exercises in the short-term
- Development of a restocking policy for the park in the longer term
- Determination of "optimal levels" for key species

2.8: Economic assessment of subsidiary quotas

Apart from animals taken out of the system through trophy hunting there are a number of other demands on the resource. These include management (ration and training) quota animals as well as ad hoc animals taken for ceremonies and national functions. This is poor use of the resource. For example, the Chirisa SA training and ration quota is almost 70% of that for the hunting operator. A buffalo on the operator quota represents a significant amount of income for Safari Areas whereas a buffalo on the training quota is worth the value of the meat only (apart from the training value for staff reacting to dangerous game). The extra quota also puts additional pressure on the wildlife populations, as well as creating significant disturbance. The training and ration quota for Chirisa Safari Area and Chizarira National Park is shown below. In addition to this quota there are other ad hoc offtakes for other purposes but the extent of these is not known.

Table 12: Training and ration quota			
Species	Chirisa	Sengwa	Chizarira
Elephant	6	6	5
Buffalo	5	6	6
Impala	20	12	0
Kudu	6	0	5
Warthog	0	2	3
Baboon			10
Hippo			1

Ways of offsetting the extra hunting pressure should be sought. This could include commercialising the training and management quota, as long as the wildlife populations can sustain this. The extra buffalo on the operator quota could be used to source livestock for station staff and remaining income used at the station level for food, supplies and management activities. This would require a full review and costing and perhaps be initiated on a trial basis at first. This activity also links into the Tourism Programme.

Summary of Activities

- Concept and costing of scheme
- Conduct a trial exercise of the commercialization of the training and management quota

2.9: Mining activities assessed and controlled

Both Chirisa and Chizarira sit atop Karoo sediments which are known for their coal deposits. The best known coal deposit is in the Simuchembu enclave between Chizarira and Chirisa and has been the subject of many attempts at exploitation. The scenario sees the establishment of a large coal fired energy plant on site and the exporting of the generated power throughout Zimbabwe. This project has recently been resuscitated (it was first mooted in the 1960s) and there are plans for a 2,100 megawatt power station just outside the Safari Area. If this project goes ahead it will see a massive infrastructural development in the area and a huge influx of people to construct and maintain the operation. This is expected to have significant impacts on the conservation status of both areas.

The authority, at HQ, Cluster and station level, needs to be fully informed about this project and be in a position to influence its development trajectory. Although a project in the "national interest", the authority needs to maintain their conservation mandate wherever possible.

In addition, there are prospecting activities within Chirisa itself, coalbed methane in the north-east and coal in the SWRA and in the north-west part of Chirisa on the Busi River. During compilation of this management plan data on the status of these projects was difficult to find. Management needs to be fully informed about the potential projects and must be ready to deal with environmental fallout should they be given permission to go ahead. In general, prospecting and mining inside protected areas should be avoided.

Summary of Activities

- Active engagement in the Sengwa Coalfield project
- Active engagement in other prospecting and mining projects inside the protected area

Objective 3: Land use issues in the surrounding areas area addressed

Land use planning for buffer areas surrounding protected areas is of paramount importance to alleviate human-wildlife conflicts and to ensure connectivity through the wider landscape. Accordingly, this objective seeks ways to ensure that ZPWMA participates meaningfully in District level planning and in any conservation planning initiatives. Chirisa like Chizarira is officially part of the KAZA landscape although the Safari Area is in danger of losing connectivity to the landscape due to resettlements.

3.1: Resuscitate/ protect corridors

Although recent population growth and the subsequent settlement have degraded the quality of wildlife habitat adjacent to the Safari Area and further away, there is still some hope for maintaining connectivity in the region with corridors between Chizarira and Chete and then Chizarira and Matusadona identified in the Sebungwe Elephant Management Plan. The Mucheni conservancy, which is still under development on the northern boundary of Chizarira NP, will form an important part of connectivity to Lake Kariba and the Chete lowlands. Elephants will be able to move from Chirisa through to Lake Kariba if these corridors remain open.

In association with conservation partners it is vital that corridors and dispersal areas are properly identified and mapped. Some of this work is already underway but it needs to be expanded. Once there is clarity on corridors efforts to informally protect and raise awareness should be carried out in tandem with more formal efforts at designation.

The Manyoni buffer area (part of the area that was excised from the Chirisa Safari Area/SWRA and given to communities) is also important and is discussed in the Outreach and Collaborative Management Programme.

Summary of Activities

- Corridor Identification
- Formal and informal protection plan(s)
- Manyoni buffer area (See Outreach Programme)

THREE YEAR ACTIVITY PLAN

Table 13: Summary and three-year Activity plan: Objective 1 - Ecological Management Programme

OBJECTIVE 1: MONITORING AND RESEARCH EFFECTIVELY ADDRESSES MANAGEMENT NEEDS					
Strategy	Activity	Notes	Implementation Schedule	Resp.	Verification
1.1: Resuscitation of SWRA Research Station	Concept proposal for resuscitation plan	Initially to define programme for sustainable use...	Immediately	Ecol CSA, CET	Proposal
	Ecologist and Senior Ranger Scientific (already on station) and there is need to add supporting staff	Ecologist to define supporting staff according to research and monitoring programme	Extra staff on site end June 2021	Ecol CSA, CET HQ HR	Report, Staff on station, Recruitment Registers, Attendance Registers
	GIS and SMART operational	SMART system to be instituted. Training to ensure system endures. Equipment requirements include laptop, hard-drives, cyber tracker devices	Ongoing	Ecol CSA, CP	SMART reports
	Dedicated vehicle and equipment	Equipment to be defined as part of monitoring and research programme	Wish lists by end 2020, equipment by end June 2021	Ecol CSA	Vehicle, equipment
1.2: Focussed research priorities <i>Ecosystem wide</i>	Research priorities defined and disseminated in a comprehensive strategy document	Predator dynamics, Prey base dynamics, Buffalo as an indicator species, Hydrological systems, Elephant monitoring, Leopard and Cheetah survey, Cultural and archaeological research	Functional programme by end April 2021 and some ongoing	Ecol CSA, CET, Ecol CNP	Strategy document, Reports, Publications (Journals and Reports)
	Active canvassing of appropriate partners to implement research priorities	Networking through conservation partners	Start once programme in place, then ongoing	Ecol CSA, CP	Emails, letters to CP, MoUs, Publications
	Research protocols defined	Based on existing ZPWMA protocols	With priorities, by end 2020	Ecol CSA, CET, Ecol CNP	Protocol document
1.3: Compile baseline data and make it accessible	Compilation of existing research documentation on an ecosystem-wide basis	In conjunction with Chirisa SA staff and conservation partners follow up on ecosystem research and make this accessible	By end April 2021 to tie in with 1.2	Ecol CSA, CET, Ecol CNP, CP	Research summary document
	Baseline intensive survey of large mammal species (incorporated into monitoring as well)	Establish road counts, dedicated aerial surveys with higher levels of precision for Chirisa. Goal is to have detailed species estimates	Operational by end April 2021	Ecol CSA, CP	Survey reports
	Ecosystem-wide GIS updated and improved and made accessible	Expansion of GIS, backup and availability. Must be an original clean version available. Metadata report	End 2020	Ecol CSA, CP	GIS metadata report

Table 13: Summary and three-year Activity plan: Objective 1 - Ecological Management Programme

OBJECTIVE 1: MONITORING AND RESEARCH EFFECTIVELY ADDRESSES MANAGEMENT NEEDS					
Strategy	Activity	Notes	Implementation Schedule	Resp.	Verification
1.4: Effective monitoring programme running	Define realistic monitoring programme with capacity for expansion. Start with current equipment/capacity. Joint monitoring between CNP and CSA is vital (esp. Busi and Domwe)	Fire and burn scars, Fixed point vegetation photography, Climate data and its expansion, Erosion sites, Special protection sites, Species monitoring, Springs and pans, Predator camera trap surveys, Road and walking transects	In place end April 2021	Ecol CSA, CET, Ecol CNP, CP	Monitoring document
	Effective monitoring of hunting inside and outside PA	Quota and utilisation data analysis to include Gokwe and Binga Districts for trend analyses. Trophy quality.	Starting 2021	Ecol CSA, RDCs	Reports Publications
	Wildlife movements monitored between PAs and into adjacent areas using local information and collars (funding permitting)	Repeated interviews in surrounding areas with community resource monitors and CAMPFIRE programme data Collars for elephants, buffalo, large carnivore etc	Starting 2021	Ecol CSA, RDCs	Document, Publications and reports
	Staff increased (see Safari Area operations) and 1.1			Ecol CSA, HQ HR	Staff on station
	Equipment available (see Safari Area operations)				Equipment on station
1.5: Effective dissemination of research results	Collate and organise past research	Locate past papers and files. Establish paper and electronic datasets. Compile summary paper	End April 2021	Ecol CSA,	Summary paper
	Define a system for future storage and access of both past and ongoing research	Based on system for past research but method of annual (?) updates		Ecol CSA,	Working system
	Develop methods to communicate research results	e.g. bi-annual meetings, presentations, one page summaries, newsletters etc		Ecol CSA,	Annual reports

Table 14: Summary and three year Activity plan: Objective 2 - Ecological Monitoring Programme

OBJECTIVE 2: Biodiversity, habitats and wildlife populations restored and protected					
Strategy	Activity	Notes	Implementation Schedule	Resp.	Verification
2.1: Elaborate an elephant management strategy	Compilation of past research and management activities for elephants within the Sebungwe	Past control measures, aerial and other survey data. Vegetation work	End 2020	Ecol CSA, Ecol CNP	Report Publications
	Development of an agreed management strategy for elephants in the Sebungwe and Chirisa which is in line with the active National Elephant Management Plan	Dedicated meeting to discuss and elaborate. Liaise with Chizarira	End April 2021	Ecol, CSA, CET	Workshop report Sebungwe Elephant Strategic Plan or Document
2.2: Monitor and manage fires	Fire and vegetation monitoring system established - Fixed point photography, transects, vegetation plots etc	Should be ecosystem wide	Annual and ongoing	Ecol CSA	Reports, Annual fire plan
	Imagery and other satellite based monitoring tools accessed	Consider free data sources	Sources established end 2020 then ongoing	Ecol CSA	As above
	Annual fire management plan	In collaboration with Chizarira	Annually, by March	Ecol CSA, Ecol CNP	Annual fire plan
2.3: Expand research on special interest species	Defining the scope of investigations into special interest species	See also 1.2. Canvass local and international academic institutions	End June 2021	Ecol CSA	Report
	Factor into monitoring programme	Road and walking transects. See also 1.4	End June 2021	Ecol CSA	Monitoring programme
2.4: Identify and compile a plan for special protection areas	Database compiled	Pans, springs, etc	End June 2021	Ecol CSA, CP	Database report
	Adaptive protection plan	Site and type specific	End June 2021	Ecol CSA	Report
	Water quality monitoring system	Water analysis	End June 2021	Ecol CSA	Reports
2.5: Control invasive species	Invasive species mapping and inventorying	Build on existing data	In place end 2020	Ecol CSA	Maps Inventory report
	Monitoring programme	Train patrol staff to collect data during patrols	Ongoing	Ecol CSA, AM	Patrol reports
2.6: Identify and control erosion sites	Inventory and characterisation of erosion sites	Include historical data	Database in place end 2020	Ecol CSA	Inventory report
	Monitoring programme devised	See also 1.4	Ongoing	Ecol CSA	Annual report
	Erosion control measures where appropriate	Seek advice prior to action	Ongoing and adaptive	Ecol CSA	Site reports
2.7: Ecologically sound restocking and reintroduction	Full ecological and social assessment of any proposed restocking exercises in the short-term	Take into account IUCN guidelines	End April 2021	Ecol CSA, CET	Assessment report

Table 14: Summary and three year Activity plan: Objective 2 - Ecological Monitoring Programme

OBJECTIVE 2: Biodiversity, habitats and wildlife populations restored and protected					
Strategy	Activity	Notes	Implementation Schedule	Resp.	Verification
	Development of a restocking policy for the Safari Area in the longer term	In conjunction with HQ	End June 2021	Ecol CSA, CET	Policy document
	Determination of "optimal levels" for key species	Adaptive, based on new information	End June 2021	Ecol CSA, CET	Report
2.8: Economic assessment of subsidiary quotas	Assessment of quota values and economic arguments	Development of realistic options	End June 2021	Ecol CSA, CET, Pvt Sect	Assessment report
	Concept of replacing wildlife quota with livestock	In collaboration with operators	End 2021		Proposal report
	Scheme run as a trial prior to becoming a de facto management strategy	Trial needs to be long enough (2-3 years)	Ongoing		Annual reports
2.9: Mining activities assessed and controlled	Active engagement in the Sengwa Coalfield project	Huge social and environmental affect expected. Active and ongoing participation in any EIA processes	Ongoing	Ecol CSA, CET,	EIA, Annual Reports
	Active engagement in other prospecting and mining projects inside the protected area	Coalbed methane, coal in Chirisa and coal in SWRA. Others as they emerge			

Table 15: Summary and three year Activity plan: Objective 3 - Ecological Monitoring Programme

OBJECTIVE 3: Land use issues in the surrounding areas area addressed

Strategy	Activity	Notes	Implementation Schedule	Resp.	Verification
3.1: Resuscitate/ protect corridors	Identify corridors	In collaboration with conservation partners	Ongoing	Ecol CSA, Ecol CNP, CP	
	Formal and informal protection	In collaboration with conservation partners	Ongoing		
	Manyoni buffer area	See Outreach Programme	Ongoing		

Core Implementation					Conservation Partners	
HQ HR	HQ Human Resources	CET	Chief	Ecologist	NPR	National Park Rescue
AM	Area Manager		Terrestrial		ALERT	African Lion and Environmental Research Trust
Ecol CNP	Ecologist Park	Tour	Tourism Park		WWF	World Wide Fund for Nature
Ecol CSA	Ecologist Chirisa/SWRA	Bus Dev	HQ	Business	CIRAD	Centre de Coopération Internationale en Recherche Agronomique pour le Développement
Comm	Community Officer		Development		CP	Unspecified conservation partner

TOURISM DEVELOPMENT AND MANAGEMENT PROGRAMME



PROGRAMME DESCRIPTION AND PURPOSE

The Tourism Development and Management Programme has two major components, as reflected in its name. The first one is the development of tourism and the second is the management of tourism. The development component of the programme sets out the way forward for tourism in the PA, while the management component is primarily for the management of tourist facilities and the tourists themselves. One of the most important functions of the management component is the collection of revenues and the tourism statistics that goes with this. Another function is the enforcement of rules and regulations in conjunction with the Operations Programme.

The purpose of the Tourism Management Programme was defined as:

To manage consumptive tourism so that it becomes the driving force for the recovery of the wildlife populations

MANAGEMENT PHILOSOPHY AND GUIDING PRINCIPLES

Introduction

In the late 1990s Chirisa SA was considered to be one of the prime hunting areas in Zimbabwe for the key species such as elephant, buffalo and the large cats. Plains game was also in abundance. The concession at that time excluded the Sengwa Wildlife Research Area (SWRA) which was a non-hunting zone. Currently the Chirisa Safari Area includes both the SWRA and the remainder of Chirisa SA, two separate hunting concessions and management units.

Twenty-five years later the situation has changed. In the Chirisa SA wildlife numbers are low and, although trophies are still taken out of the area, they are fewer in number and the hunting experience has been described as "hard" and it is difficult to turn a profit on the area. A 2015 publication confirmed trophy quality decline.

In 2002 the SWRA was turned into a hunting concession and wildlife numbers in this area are still enough to support a viable safari concession (the buffalo quota in SWRA is double that of the Chirisa SA, which is enough for economic viability). Most of the hunting is largely confined to the area close to the Lutope and Sengwa rivers where poaching is controlled.

What has led to this change in the Chirisa SA? Evidence points to several factors, one of which is related to use of the quota. Anecdotal data indicates that in earlier years the Chirisa SA was lightly hunted and the quota was seldom fully utilised. However, in the early 2000s the area was allocated to a consortium who were able to fully utilise the quota over an extended period. This led to a deterioration of the hunting experience and the eventual abandonment of the concession by the consortium. Coupled with this was a weak management and law enforcement capability, which led to increased poaching by local communities and others. In addition, the buffer areas that were vital for the Chirisa

Chirisa Safari Area = Both Areas
Chirisa SA = Area excl. SWRA



SA and the SWRA have disappeared in the last 20 years and now almost all of the protected area has a "hard" boundary with the communities. Combined, these factors were instrumental in the decline of Chirisa SA as a prime wildlife area.

In 2014 some 300km² of the safari area was excised and given to local communities. Had the area still been a prime wildlife area it is unlikely that this would have happened. The area was perceived as being depleted and this made it easier to bow to pressure for de-gazettement.

In addition to hunting activities within the two concessions inside the safari area, trophy hunting activities are also carried out on the Safari Area boundaries, notably on the Manyoni river enclave (the recently excised area) and on the northern boundary (Kautsiga). Rapid increases in human numbers and the expansion of settlement has reduced the area available for this activity in other areas.

The future of Chirisa Safari Area and SWRA relies on sufficient funding being available for its recovery. In view of the current economic situation in Zimbabwe it is very unlikely that there will be sufficient investment from ZPWMA into this marginal and low performing area. The Authority has responsibility for numerous other, higher profile areas and any available investment is likely to go there, rather than into Chirisa, an area that has already had 20% excised from it.

The question is then where to find sufficient and consistent investment. This plan recommends the investigation of innovative concessioning models as a way forward. Current leases have three years to run (SWRA) and six years (remainder of Chirisa SA). Obviously any change of tenure system and responsibilities needs to allow these to expire to avoid the possibility of court cases. The Chirisa SA lease also has a 10 year roll-over scheduled for 2026, so expiry in 2036. However, once a direction has been established negotiations with the incumbents could be initiated and hopefully outcome acceptable to all parties can be reached.

Guiding Principles

The following principles will guide the objectives, actions and activities that will be implemented to ensure that the tourism development and management programme achieves its objective.

1. Quotas will be based on scientific information
2. Tourism will be diversified
3. Ethical practices need to be followed
4. Conservation and commercialisation balanced through responsible tourism

1 Quotas will be based on scientific information

Quota setting is based on a number of factors which include a consideration of information on wildlife numbers (usually wide scale aerial surveys), hunting success and trophy quality. The better the quality of the source information the more likely it will be that quotas will be set more accurately. The Ecological Management Programme outlines data collection methods for the baseline estimates. In addition, careful monitoring of the offtake will provide clues related to adjustment of quotas prior to problems related unsustainable offtakes becoming evident.

2 Tourism will be diversified

Safari hunting will remain the primary form of utilisation for the foreseeable future. However, non-consumptive tourism may also be able to play a role. Rather than trying to introduce photographic tourism as a side activity to hunting operators should be encouraged to diversify. This way the operator can compartmentalise their activities to allow both hunting and non-hunting tourists to utilise the area.

3 Ethical practices need to be followed

Hunting should follow ethical and accepted practices, usually defined as fair chase. The ZPWMA has details of ethical practices that should be followed, both in the Act and its subsidiary legislation and also in the terms and conditions of the leases with operators. These are legal requirements but policing of ethics is more difficult. Ideally we need ethical operators.

4 Conservation and commercialisation balanced through responsible tourism

Prior to becoming an Authority, management of Zimbabwe's Parks and Wildlife was the responsibility of a government department. In the early 1990s the department became a Wildlife Authority and was no longer directly supported by the central government treasury. The Authority was expected to generate its own funds to protect the national assets under its control. This meant that there was a shift from being an organisation with its sole purpose being conservation to being an organisation where conservation had to be balanced with income generation. This is a fine and difficult line but the ZPWMA strives balance conservation and commercial interests through sustainable tourism.

Tourism Programme Joint Management Component - Chirisa and Chizarira

This section briefly summarises the main areas for collaborative and joint management between the two protected areas.

- Circuit for 4x4
- Others, if significant photo tourism investment found

Tourism Zones

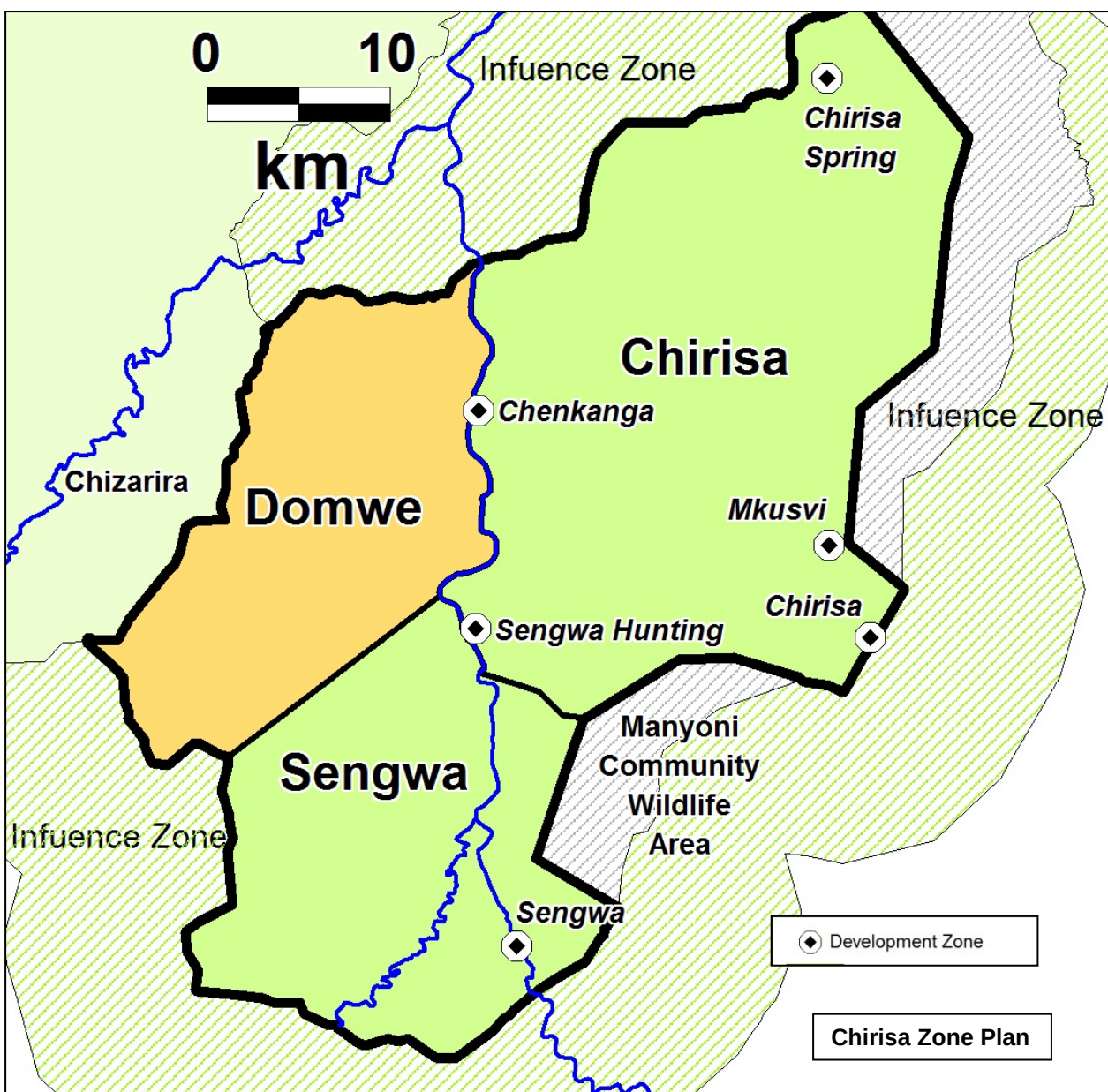
The rationale for the zoning of the Safari Area has been discussed in the plan foundations. This section deals with the tourism zones and the levels of use of the different areas. Three main zones were defined

Table 16: Chirisa and SWRA Zone Types

Type	Comments
SWRA 378 km²	Old SWRA with the Manyoni excision to the east and an addition to the northern boundary to compensate for the excision. Most wildlife along the Sengwa and Lutope Rivers. One of the 3 areas in the Sebungwe cluster still with appreciable wildlife. Currently a viable concession but anti-poaching operations need to be scaled up.
Chirisa 740 km²	Wildlife in pockets but variety and numbers have significantly declined during the last 20 years. Needs a recovery plan. Possibilities for philanthropic investment.

Table 16: Chirisa and SWRA Zone Types

Type	Comments
Domwe 336 km ²	The area to the west of the Sengwa River in the Chirisa SA is currently designated as a Restoration Zone as this area is perceived to have had its wilderness and wildlife values eroded. It is expected that this designation will be temporary and once order has been restored here it will be upgraded. Needs to be reopened and connected to Chizarira
Development	Safari Area HQ and Hunting camp complex in Chirisa SA
Special Prot	To be defined



OBJECTIVES, ACTIONS AND ACTIVITIES

Three management objectives have been described for the Tourism Development and Management Programme. The objectives and their targets (summarised below) were defined after analysis of the threats, issues and concerns and the guiding principles. There is a text description of the components prior to presentation of the first three - year activity plan.

Objective 1: Partnership models drive the recovery of Chirisa

- 1.1: Conservation investment sought for Chirisa Safari Area
- 1.2: Long-term concessioning and partnership model in place

Objective 2: Management and administration of hunting improved

- 2.1: Ethical hunting
- 2.2: Quota setting improved

Objective 3: Tourism diversified

- 3.1: Options for photographic and research tourism investigated

Objective 4: Education and interpretation improved

- 4.1: Promotion of educational trips

Objective 1: Partnership models drive the recovery of Chirisa

So what is the way forward for Chirisa, both the Chirisa SA and the SWRA? Certainly for the Chirisa SA we are talking about a recovery plan, not just maintaining the current status quo. Continuation of the current situation is unlikely to lead to any positive change for either protected area. There is no doubt that, without investment into infrastructure and law enforcement the Chirisa SA and the SWRA, will not survive into the future as viable hunting areas. The following scenario is put forward as a possibility to improve the conservation and utilisation of these areas, under the umbrella of the management plan. In short, the plan recommends long-term concessioning of both areas, with increased commitment from the leaseholder may be the way to initiate the rehabilitation of the Chirisa Safari Area.

Long-term concessioning will allow investment into the area by the lease holder and it is recommended that concession models that involve some kind of partnership are considered. There are already several variants of concession models both in Zimbabwe and elsewhere. Within Zimbabwe, Sapi Safari has been leased out for a 25 year period and this has effectively turned the safari area into a photographic area.

Other models have more of a partnership component and include the following variants

- Chizarira NP with several conservation partners on MoUs,
- Gonarezhou NP, as a type of joint venture, guided by a board with equal representation from ZPWMA and the private sector
- Matusadona NP, which is a variant of the Gonarezhou joint venture model. An NGO has a long-term joint management contract which is guided by a Board.

These, and other models should be investigated for suitability in the Chirisa and SWRA context. Only through long-term commitment with sufficient funding be found to resuscitate the area. Current thinking indicates that 25 years is a period that will allow lease holders to invest substantially into an area. A well-thought out management plan will help to guide any possible investors.

One possibility is that both models could work in Chirisa. A long-term hunting lease in the SWRA section where hunting appears to be sustainable at present. And a long-term, high investment lease in the remainder or northern part of the Chirisa SA. Any lease for the northern part of Chirisa SA will need a rest period to allow the recovery of the wildlife populations before any further hunting is permitted. It may be that a philanthropic or business investor may prefer a non-hunting lease such as the one ZPWMA has entered into for the Sapi Safari Area in the Zambezi Valley.

1.1 Conservation investment sought for Chirisa Safari Area

Philanthropic investment into poorly funded protected areas is becoming more common. The reasons for investment will vary between investors and therefore it is vital that a carefully crafted lease is in place that will protect the ZPWMA and ensure that Zimbabwe's national natural heritage is not sold off.

Business related investment in protected areas is also an option. However, businesses models based on profit alone may not work in an area such as Chirisa where the resource has been degraded.

This management plan sets the guidelines for the way forward. The parameters outlined in this management plan should be the starting points for any agreement with a potential investor. However, depending on the scale of investment and the commitment of the investor other possibilities that do not result in the alienation of the resource, or the weakening of the mandate of the ZPWMA, could be considered. Tourism programmes developed through the investor should consider catering for all segments of the market, and indeed, look at cooperating with community ventures such as that proposed for the Manyoni enclave (see Outreach Programme).

Summary of Activities

- Seeking interest of potential investor
- Carefully crafted lease agreement to define long-term commitments and partnership models

1.2 Long-term concessioning and partnership model in place for SWRA

A more pragmatic way to enter into a long-term concession agreement may be to work within the current concessioning system for hunting areas but seek ways to motivate concessionaires to become more involved as partners with ZPWMA. This model may be well suited to the SWRA which has a successful and ongoing hunting lease.

The SWRA is leased through an auction system with a five - year lease that has a five year "roll-over" clause. Although a ten - year lease period seems like a long time there is some uncertainty with the roll over clause, and current leases are usually structured to be a sale of use of the area and the quota, rather than coming with any legal management responsibilities.

Summary of Activities

- Definition of acceptable model - hunting, photographic, business, philanthropic
- Long-term concessions in place

Objective 2: Management and administration of hunting improved

Tourism needs to be managed effectively to ensure that it does not degrade the very resources that it relies on. This is especially true for a consumptive tourism model such as trophy hunting.

2.1 Implement ethical hunting protocols

The trophy hunting industry often comes under fire for unethical hunting practices. It is important that all hunting in the Chirisa SA and the SWRA abides by a strict code of conduct. A code of conduct has been prepared by Safari Club International and includes the following points.

- Hunting to take place on the principles of fair chase, as defined.
- Abide by relevant laws, other legal requirements and recognized codes of conduct.
- Enhance by action, the survival of wildlife populations, protection of biodiversity and the promotion of sustainable utilization.
- Ensure humane practices in the utilization of wildlife.
- Use of correct hunting methods and equipment.
- Engage at all times in fair and honest practices.
- Educate others to the benefits of sustainable use, conservation, correct procedures and the ethics of hunting.
- Recognition of indigenous rural community needs' relating to sustainable natural resource utilization.

Definition of "Fair Chase"

Every sport hunter shall pursue an animal only by engaging in fair chase of the quarry. Fair chase is defined as pursuit of a free ranging animal or enclosed ranging animal possessed of the natural behavioural inclination to escape from the hunter and be fully free to do so. Said animal is to be hunted without artificial light source, or motorized mode of transport and in an area that does not by its nature concentrate animals for a specific purpose or at a specific time, such as at a waterhole, salt lick or feeding station.

No ethical hunter while sport hunting shall take female animals with dependent young. A sport-hunted animal should exist as a naturally interacting individual of a wild sustainable population, located in an area that meets both spatial and temporal requirements of the population of which that individual is a member. Sport hunted animals should, wherever possible, be sustained within an ecologically functional system.

The above definition may be modified by the regional hunting associations based upon legal, customary and necessary circumstances that may be unique to each country or area.

Summary of Activities

- Hunters to abide by code of conduct

2.2 Quota setting improved

Quota setting needs to be considered as a holistic exercise. If the training and ration quota is to remain this also needs to be taken into account when considering numbers for offtake. The table below shows the 2019 quotas for leaseholders.

Table 17: Operator hunting quotas					
Key Species	SWRA	Chirisa	Plains Game	SWRA	Chirisa
Leopard (m)	1	2	Kudu(m)	6	8
Lion(m)	1	1	Kudu(f)	0	2
Buffalo(f)	2	0	Waterbuck(m)	9	3
Buffalo (m)	14	8	Zebra	12	10
Elephant(m)	1	2	Eland(m)	5	4
Elephant(t/l)	4	2	Bushbuck(m)	7	4
			Impala(f)	5	10
			Impala(m)	25	10
			Reedbuck(m)	2	2

In addition, the training and ration quota needs to be considered. The combined quotas for some key species are shown below.

Elephant = 21 (males and females)

Buffalo = 33 (males)

Impala = 67

Kudu = 20

A review of quotas and offtakes over the last thirty years should be attempted if the data is available. It would seem that there are some valuable lessons to be learnt from the decline of the Chirisa SA as a prime hunting area. This could be related to aerial survey data.

In addition, attention needs to be paid to the results and recommendations of the economic assessment of subsidiary quotas (Ecological Management Programme; 2.8. It is believed that, apart from the economic issues associated with this quota it also places ecological stress on the wildlife.

Summary of Activities

- Annual quota setting improved
- Review of past quotas and offtakes.

Objective 3: Tourism diversified

Although trophy hunting will be the main form of utilisation of Chirisa SA and the SWRA during the life of this plan opportunities for the diversification of tourism should be considered. These, if successful have the potential to improve incomes. It should also be noted that although Objective 1 promotes longer-term photographic and hunting leases, there is a possibility that these will not reach maturity. Should this happen options for diversifying tourism in the interim need to be considered.

3.1 Investigate and pursue photographic tourism options

If not properly managed conflicts can be expected between photographic and hunting operators. One way in which this can be minimised is if the same operator is responsible for both types of tourism. Operators in both areas should be approached for their ideas about including photographic tourism. In addition, the option should be part of the lease for any new operators, especially if they have long-term contracts.

Currently, Chirisa is well off any tourism circuit and access is difficult. In addition, the product is currently degraded. Ad hoc investments seem unlikely.

The possibilities of research or volunteer tourism should be considered once the Sengwa Research Station reaches a stage of its development where it could support this type of tourism. Cultural exchange tourism is another possibility that should be considered.

Summary of Activities

- Options for photographic tourism in Chirisa investigated
- Research or volunteer tourism options investigated
- Cultural exchange tourism

Objective 4: Education and interpretation

In keeping with the objectives for the Parks and Wildlife Estate, as outlined in the Wildlife Policy, education and interpretation are important functions for protected areas. The key areas for this programme are the development of interpretations facilities on the ground, the composing and dissemination of written materials and the education of the public, especially schools.

4.1 Museum established at Sengwa HQ

A museum should be established at the Sengwa HQ. The research station has sufficient buildings available for this to be relatively easy and inexpensive. The museum is expected to part of the itinerary for any educational trip initiated in the Safari Area (see below). Materials would need to be collected and appropriate designs for displays worked out. The possibility of a student intern (perhaps through ALERT) for this activity could be considered.

Summary of Activities

- Building secured for museum.
- Materials collected and displayed

4.2 Promote educational trips

Ideally the Safari Area should be a source of inspiration for the surrounding communities and one way of generating this positive outlook is to bring school children into the Safari Area. Although, it may be too early for a concerted programme involving school visits a start should be made on this. Firstly, the modalities surrounding school trip possibilities should be investigated and a trial using local schools conducted.

Another possibility is the development of camps for secondary and tertiary students. These could be of the "Outward Bound" type of camp. Educational and adventure camps. Again the modalities of this type of camp needs to be fully investigated. Appropriate instructors would be needed.

Summary of Activities

- Investigate modalities of school visits, especially local schools
- Investigate possibilities of "outward bound" style camps for secondary and tertiary students

THREE YEAR ACTIVITY PLAN

Table 18: Summary and three year Activity plan: Tourism Development and Management Programme

OBJECTIVE 1: Partnership models drive the recovery of Chirisa

Strategy	Activity	Notes	Implementation Schedule	Resp.	Verification
1.1 Conservation investment sought for Chirisa Safari Area	Seeking interest of potential investor	In the case of Chirisa some interest has already been expressed	Immediately	HQ, CM	Reports, Proposals and MoUs
	Carefully crafted lease agreement to define long-term commitments and partnership models	Current lessee has until 2026 and would need either to be brought on board or compensated	Immediately	HQ, CM	Lease agreement
1.1: Long-term concessioning model in place	Definition of an acceptable model	As with above, a carefully crafted and explicit lease needed	Immediately. Current lease SWRA is on 5 year rollover at end of 2020	HQ, CM	Model proposal
	Long term concession in place	Current operator has expressed interest in such a lease agreement		HQ, CM	Lease agreement

Table 19: Summary and three year Activity plan: Tourism Development and Management Programme

OBJECTIVE 2: Management and administration of hunting improved

Strategy	Activity	Notes	Implementation Schedule	Resp.	Verification
2.1: Implement ethical hunting protocols	Definition of fair chase and ethical practices	Amend and consolidate existing ZPWMA material	By April 2021	Ecol HQ	Amended doc
2.2: Quota setting improved	Carry out population survey and trophy trend analysis	Constant population surveys and trophy trend analysis should be effected	By end June 2021	Ecol	Annual reports
	Historical review of quotas and offtakes for the Chirisa SA and SWRA	This could be valuable material for management of hunting areas in other parts of the country See also subsidiary quota study under Ecological Management Programme	By end June 2021	Ecol, HQ	Report

Table 20: Summary and three year Activity plan: Tourism Development and Management Programme

OBJECTIVE 3: Tourism diversified					
Strategy	Activity	Notes	Implementation Schedule	Resp.	Verification
3.1 Investigate and pursue photographic tourism options	Options for photographic tourism investigated	Currently Chirisa is well off any tourism circuit and access is difficult. In addition, the product is currently degraded. Ad hoc investments seem unlikely	Ongoing	AM, Bus Dev	Report
	Research Tourism (Voluntary Tourism)	Luring volunteers, University students and any interested researchers	By end 2021	AM, CM, HQ	Monthly reports
	Cultural/ Exchange Tourism	Promoting all heritage sites and facilitating cultural exchange platforms	By end 2021	AM, Comm	Monthly reports

Table 21: Summary and three year Activity plan: Tourism Development and Management Programme

OBJECTIVE 4: Education and interpretation					
Strategy	Activity	Notes	Implementation Schedule	Resp.	Verification
4.1: Museum established at Sengwa HQ	Secure space/building for museum	Use of part of existing buildings on station	By end June 2021	AM, Ecol CSA	Museum operational, Assessment Report, Proposal
	Materials collected and displayed appropriately	Perhaps use a student intern for this	End 2021	Ecol CSA, CP	
4.2: Promotion of educational trips (Academic Tourism)	Investigate modalities of school visits, especially local schools	Concentrate on local schools	By end June 2021	CM/CET, Comm	Progress reports
	Creating conducive environment suitable for school students (Learning related tourism)	Encouraging schools to visit the Safari Areas by introducing conservation clubs, Junior ranger programmes and packaged educational tours	By end June 2021	CM/CET, Comm	Progress reports

Core Implementation					Conservation Partners	
HQ HR	HQ Human Resources	CET	Chief	Ecologist	NPR	National Park Rescue
AM	Area Manager		Terrestrial		ALERT	African Lion and Environmental Research Trust
Ecol CNP	Ecologist Park	Tour	Tourism Park		WWF	World Wide Fund for Nature
Ecol CSA	Ecologist Chirisa/SWRA	Bus Dev	HQ	Business	CIRAD	Centre de Coopération Internationale en Recherche Agronomique pour le Développement
Comm	Community Officer		Development		CP	Unspecified conservation partner

OUTREACH AND COLLABORATIVE MANAGEMENT PROGRAMME



PROGRAMME DESCRIPTION AND PURPOSE

This programme deals with conservation and management of wildlife resources outside the protected areas and education and awareness. However, much of its focus is on (1) fostering ZPWMA social mandate or responsibility in the management and containment of human-wildlife conflict, which is becoming increasingly common in areas adjacent to the Safari Area. Under this programme again (2) ZPWMA should also suffice its social corporate responsibility in providing or creating avenues for communities to realise any benefits from their immediate resources such as employing the locals, offering meat handouts, providing access to building materials from the Safari Area such as sand, thatch grass, poles or timber, firewood, among other benefits associated with resources in their confines. The third role is to assist and facilitate community development and empowerment that is for example financing or capacity building in projects that upheave community livelihoods such as construction of schools, supporting other income generation projects ie goats rearing, irrigation farming among others. This programme also deals with collaboration with conservation partners and NGOs in all the four facets such as biodiversity management, tourism development and management, Safari Area operations and community and collaborative work. More detail is found in the table below.

Table 22: Key components of the Outreach Programme

Component	Brief Description
Communities	Communities living adjacent to the park are a key focus for any outreach programme. Unless these close neighbours view the park in a positive light, the long-term future for the conservation area will be difficult. The flow of benefits is expected to be in both directions and in return for rights such as access to park for tourism, traditional rights and other cultural reasons community members are expected to respect the boundaries and limits of use of the protected area. Key to a successful relationship will be open and transparent communications. Control of problem animals by the relevant authorities is expected to be another community benefit. Under this component ZPWMA is obliged to fulfil (1) social co-corporate responsibility such as swift reaction to Human Wildlife Conflict reports and cases in communities, (2) community empowerment/ development such as initiating and supporting community livelihood empowerment projects in communities and (3) social services provision as delivering wildlife and environmental education and awareness in communities.
Education and awareness	Education and awareness programme are a long-term strategy for environmental protection. The benefits may not be immediately apparent and hence there is some reluctance on the part of management authorities to pursue this, but they may be the aspect that will ensure the long-term sustainability of the environment and wilderness areas such as Chirisa.
Corridors and Connectivity	The Chirisa Safari Area is currently surrounded on three sides by extensive settlement and cultivation and hence there appears to be no opportunity for corridors and linkages, apart from the Chizarira NP. However, the recently excised area along the Manyoni river still has intact habitat and this programme recommends that this area be managed as a wildlife conservancy in conjunction with the RDC. Some limited trophy hunting occurs in the area at the moment.
Partner agencies	Dealing with partner agencies who are assisting with management and development of the Safari Area is another facet of this programme (currently none for the Chirisa SA and the SWRA but they may be there in the future).

The purpose of the Outreach Programme was defined as:

To engage local communities and stakeholders in empowering and conserving biodiversity and promoting custodianship

MANAGEMENT PHILOSOPHY AND GUIDING PRINCIPLES

Introduction

The Sebungwe region is one of the driest and marginal environments in Zimbabwe but this has not stopped the pace of settlement expansion in the area. At the time of writing the previously game rich buffer areas surrounding the Safari Area are increasingly eroded and are giving way to settlement and agriculture.

Chizarira and Chirisa were on the conservation agenda of the Sebungwe region from the 1930s? Various boundaries and designations were seen since 1912 when the area was first recognised by the Government as having a conservation value. It should be remembered that Chirisa was one of the four protected areas in Zimbabwe that was established by the Ministry of Internal Affairs in 1968 on community land (Dande, Ruya and Malapati were the others) with express purpose of generating revenue for the District Development Fund. By 2000 all of these had been assimilated directly into the Parks and Wildlife Estate (Ruya, however, was deproclaimed).

A perennial problem facing communities living adjacent to protected areas is problem animals, both herbivores and carnivores. Animals such as elephants can do immense damage to crops and this can be especially severe in a marginal area such as the Sebungwe. Carnivore pose a danger both to people and their livestock and the hyena features high on the list of concerns for people living adjacent to Chizarira, especially in the Lusulu and Nsena hills areas. Lions are also a concern.

Safari hunting in areas adjacent to the PA is seen as being one way in which communities can benefit from wildlife. In the past the Manyoni area was a well renowned hunting area but with the expansion of settlement the opportunities for safari hunting in the areas adjacent to Chirisa are closing. However, the section along the Manyoni river that was deproclaimed in 2014 still has some promise if it is not opened to settlement.

In addition, to the obvious benefits from safari hunting the protected area also provides ecosystem services that are beneficial for communities and human well-being. These include water sources, clean air, a positive effect on climate from being wooded, pollinators for plants in the adjacent areas, etc. Although difficult to define and quantify the importance of these ecosystem services is becoming well known and should be considered in any assessment of the value of a protected area.

Ideally, communities living adjacent to the Safari Area should have a positive view of the protected area. However, in practice this is often difficult to achieve.

Guiding Principles

The following guiding principles were used during the development of the Outreach and Collaborative Management Programme.

1. Open and transparent relationships with stakeholders
2. Community involvement and participation
3. Community access
4. Education and awareness
5. Promotion of conservation agendas outside the Safari Area

These are briefly described below

1 Open and transparent relationships with stakeholders

As community livelihood activities taking place around the Safari Area increasingly impact on and are impacted by the area's conservation, good relations between Safari Area managers and communities are essential to ensure that both parties can raise issues of mutual concern before they escalate into serious problems. This will allow them to work together when livelihood and conservation goals align.

Experience from other protected areas has shown that, while law enforcement is an effective way of combating illegal activities within a PA, the development of good relations with surrounding communities is an essential complement to this approach, and can, if carried out effectively, result in a reduced need for law enforcement activities.

It is vital that PA management proactively engages the neighbouring communities, to ensure that community interactions do not simply focus on damage mitigation and conflict resolution. It is important that the ZPWMA interests are not seen as being restricted to dealing with problems that impact on the management of the protected area. Rather they should be seen to be addressing the concerns raised by communities themselves. Or indeed capitalising on potential synergies between communities and the Authority.

The ZPWMA will strive towards developing open and constructive relations between managers and neighbouring communities, in order to strengthen community collaborations and increase communities' support and contribution to the conservation of the Safari Area.

2 Community involvement and participation

Currently, community participation in Safari Area affairs is limited. Engagement of stakeholders, and of the adjacent and affected communities in particular, needs to be improved. Where feasible communities, through their local and governmental leadership structures need to be invited to participate.

3 Community access

Currently communities are permitted to access the Chirisa SA for grass collection and water. The Chirisa Spring is a vital water source for the adjacent communities. In the SWRA cattle are watered at several spring near the boundary but this activity is not legal. It is unknown if there are any sacred or historical sites within the Chirisa SA or SWRA.

4 Education and awareness

Awareness of the Chirisa-Chizarira protected area complex, its resources and its management needs to be promoted. A first step towards this can be achieved by liaising with key stakeholders and the Authority needs to be more proactive in this regard. Previously the ZPWMA was involved in active outreach and educational programmes that brought information about the Safari Area and its environment to the people.

5 Promotion of conservation agendas outside the Safari Area

Human populations in the Sebungwe area have increased dramatically since the gazettelement of the Safari Area 45 years ago. As a result of these increases in population the ecology and conservation of the Safari Area is increasingly impacted by activities that take place beyond its borders and these are likely to intensify during the lifespan of this management plan. This programme aims to promote conservation agendas outside the Safari Area.

Collaborative Management Programme Joint Management - Chirisa and Chizarira

This section briefly summarises the main areas for collaborative and joint management between the two protected areas.

- Joint approach to the wedge of settled land that comprises Chief Simchembu's area
- Coordinated awareness and education programmes
- Support community projects such as community conservancies

OBJECTIVES, STRATEGIES, TARGETS AND ACTIVITIES

Three main management objectives have been described for the Outreach and Collaborative Management Programme. The fourth objective pertains to collaborative management and is included here as this plan promotes a partnership model for the two areas going forward. Once this happens collaborative management will be important for the future of the conservation of the safari area. The objectives, their targets, actions and activities (objectives and targets summarised below) were defined after a detailed analysis of the current management systems and an analysis of the threats, issues and concerns facing the programme. The programme Purpose and the guiding principles also played a major role during the process.

There is a text description of the objectives and their subsequent activities prior to the tabular presentation of the three - year action plan, which represents the heart of the programme.

Objective 1: Human wildlife conflict resolution improved

- 1.1: Continued response to problem animal reports
- 1.2: Research into alternative PAC methodologies
- 1.3: Improved community outreach from ZPWMA

Objective 2: Stakeholder awareness of Chirisa raised

- 3.1: Stakeholders properly identified
- 3.2: Improve information about Chirisa made this available to stakeholders
- 3.3: Improve outreach and education component

Objective 3: Communities benefit from the protected area

- 3.1: Revenue from hunting benefits the frontline communities
- 3.2: Devise a collaborative benefit scheme
- 3.3: Local community members are employed in the Safari Area

Objective 4: Collaborative Management of Chirisa improved

- 4.1: Improve collaborative law enforcement with communities, local authorities, Researchers and NGOs
- 4.2: Participation in TFCA projects
- 4.3: Capacity building of partners

Objective 1: Human wildlife conflict resolution improved

Human wildlife conflict occurs along all the Safari Area boundaries (except in the common boundary with Chizarira National Park). The increasing population and expanding settlement have eroded much of the buffer wildlife areas that used to surround the Safari Area. This has led to increased conflict between wildlife and people.

1.1 Continued response to problem animal reports

Effective and prompt responses to problem animal reports can go a long way to improving the relationship between the Authority and the surrounding communities. Crop destruction by elephants and other large and small herbivores ranks very high on the list of complaints as does livestock destruction by lions, hyenas and other predators. The threats to humans by predators also need to be taken seriously by ZPWMA.

Routine PAC work needs to continue and be scaled up if required. People need to believe that their issues are taken seriously by the Authorities. The ZPWMA can be assisted by its conservation partners in this regard. These include ALERT and WWF, if they can be encouraged to broaden their operational areas to the south. Currently their mandates include the Lusulu area and the Sengwa River in Chief Simchembu's area.

There needs to be improved linkages between the different authorities responsible for PAC. In the first instance this includes ZPWMA and the RDCs (Gokwe North and Gokwe South). Regular communication channels need to be established and maintained.

Data on incidents, PAC reports and the actions undertaken in response need to be centrally coordinated so that an evolving picture of human wildlife conflict can be built up. This action relates to Action 1.6.1 in the Biodiversity Programme.

Summary of Activities

- Routine PAC
- Improved linkages between ZPWMA and RDCs on PAC response
- Cohesive dataset on incidents

1.2: Research into alternative PAC methodologies

Human-wildlife conflict can be about perception. Generally speaking the large and dangerous animals are perceived to be more of a threat than the smaller animals that also raid the crops and food stores.

Participatory research is needed into non-lethal methods of controlling problem animals. These include deterrents, chasing etc. The most promising appears to be olfactory deterrents such as chilli peppers or auditory deterrents such as bees. It should be noted that these are aimed mainly at elephants but can work for other species.

It has been demonstrated that most livestock are taken at night when they are out of bomas. If cattle and goats are secured inside predator-proof bomas at night the incidence of attacks is greatly reduced. Again this work can be assisted by cooperation with conservation partners such as ALERT and WWF. Again the possibilities of these NGOs extending their activities southwards should be investigated.

Summary of Activities

- Participatory research into non-lethal methods
- Boma research continued and promoted

1.3: Improved community outreach from ZPWMA

Community outreach is an important part of community liaison. This aspect of the linkages between ZPWMA and the communities around the Safari Area needs to be strengthened.

It appears that ZPWMA has limited contact with the communities. Most of the contact is in response to PAC and therefore takes place when communities are aggrieved. A proactive approach should be followed so that communities see ZPWMA personnel, not only when something negative has happened to them, their livestock or their crops, but also at times when things are good. Again this work can be carried in conjunction with conservation partners but it is important that communities do not perceive community outreach to be the purview of the conservation partners, but it must be seen to driven by the ZPWMA.

Community members and other stakeholders have been part of the participatory process followed during the preparation of the General Management Plan. It is recommended that this process be taken further and that community and RDC representatives should be consulted during the preparation of the annual plan for the Safari Area.

Summary of Activities

- Collaborative community outreach meetings
- Communities as stakeholders invited to participate in annual plan formulation

Objective 2: Stakeholder awareness of Chirisa raised

In the absence of clear information, many rumours about the protected area and its management will surface. In addition, it is important to ensure that the profile of both areas is raised both locally and further afield. This will require both print and electronic media items and, if necessary, these should targeted towards important stakeholders. Chirisa SA and the SWRA should collaborate with Chizarira NP on these efforts.

2.1 Stakeholders properly identified

There are a large number of stakeholders adjacent to the Safari Area. These include local government and traditional leaders. Although many of the players are known, a database must be compiled of all villages and traditional leaders (Chiefs and Headmen) and their spheres of influence clearly understood.

Summary of Activities

- Stakeholder database compiled

2.2 Improve information about the Safari Area and make this available to stakeholders

Generally, the level of awareness of what is happening in the Safari Area amongst stakeholders is low. If stakeholders were made more aware of what was happening in the Safari Area and the inputs from management it will help to engender a more positive attitude towards the Safari Area. A system for disseminating information to stakeholders on a regular basis needs to be devised.

Summary of Activities

- System for regular information to stakeholders devised

2.3 Improve outreach and education component

The ZPWMA has an outreach section but it is currently under-developed and under-funded. Outreach and community education are an important part of defining how a protected area fits into its socio-ecological system. Generally speaking community liaison in the Chizarira-Chirisa area is focussed on PAC work and anti-poaching, both being times when the community probably feels antagonistic towards the ZPWMA. It will be important to ensure that the community also feels that they are consulted because they are important neighbours.

An outreach programme cannot be successful without people to drive it. Currently neither the Chirisa SA nor the SWRA have any personnel dedicated to outreach except for the Community Education and Extension Officer based at Gokwe, Sebungwe Cluster Office to service the whole region. A vital first step will be the employment of someone based in the Chirisa Safari Area whose task will be to engage - primarily with communities - but also with other stakeholders. This person needs to collaborate with and provide direction to the conservation partners concerned with communities (ALERT and WWF). Strong linkages with Chizarira also need to be established.

Outreach and education are long-term activities and they need to be guided by an evolving strategy. It is important that a strategy for outreach and education is developed at the earliest opportunity. This will provide a framework and roadmap for the activities to guide the community people on station. Again it would be ideal if there was strong collaboration with Chizarira NP and conservation partners while developing this strategy.

The development of conservation and awareness programmes is linked to the outreach plan and these need to be developed by ZPWMA in consultation with the communities. The extent of these activities is likely to be very dependent on funding availability.

The Chizarira fire management plan already outlines a community awareness programme and this needs can be adapted and considered as being part of any awareness strategy for Chirisa.

Summary of Activities

- Community person employed for Chirisa
- Outreach strategy developed
- Conservation and awareness programmes developed
- Fire awareness outreach events

Objective 3: Communities benefit from the Safari Area

The Chirisa SA and SWRA are now on the frontline between the settled parts of the midlands province and the conservation areas in the Zambezi Valley. In the past there were unsettled "buffer areas" adjacent to the Safari Area and these were used for trophy hunting. Proceeds from this hunting benefitted the RDCs and the communities. However, opportunities for this activity have been eroded and only a few possible areas remain.

The challenge for this plan will be to ensure that those benefits from hunting are, at a minimum maintained, and ideally increased, that they are sustainable, and that they are reaching the right people.

3.1 Money from hunting benefits the "frontline" communities

A major way in which communities are able to benefit from the Safari Area is through trophy hunting. The protected areas are the source of most animals hunted in the surrounding areas with elephant and lion being the main contributors.

Another way in which communities can benefit is if livestock replaces the ration quota. This is already happening in Chizarira where cattle are purchased from the communities on a regular basis. Under such an arrangement areas maintain ration and training quotas.

A detailed study on the revenue flows from any hunting needs to be carried out in collaboration with RDCs and communities. Ways of improving the situation need to be established.

Summary of Activities

- Detailed study of situation and suggestions for improvement
- Ensure that proceeds from hunting reaches the intended beneficiary communities

3.2 Devise a collaborative benefit scheme

Communities need to have a positive view of the area to turn them from being antagonistic. It should be remembered that Chirisa was one of the four protected areas in Zimbabwe that was established by the Ministry of Internal Affairs in 1968 on community land (Dande, Ruya and Malapati were the others) with express purpose of generating revenue for the District Development Fund. By 2000 all of these were assimilated directly into the Parks and Wildlife Estate (Ruya, however, was de-proclaimed). Innovative ways of bringing benefits from the safari area to communities in adjacent areas need to be explored, in conjunction with long-term partners.

Possibilities include benefit schemes using the wildlife resource as a tradable unit to discourage poaching (this has been done with rhino in the South East Lowveld) and working with the community/RDC to properly protect and utilise the recently de-proclaimed area along the Manyoni River.

Using wildlife as a tradable resource involves establishing an accurate assessment of the resource and then allocating a monetary percentage to the community. If any poaching occurs then the value of the poached animal is removed from the community benefit share. When working properly communities will see a direct benefit from the area and if poaching increases then this benefit is eroded. Obviously ZPWMA would need to carefully define community beneficiaries of any such scheme and it is recommended that a trial be carried out using the SWRA.

The Manyoni (80 km²) has not been settled and represents a conservation opportunity with benefits for the community. In addition, having this area under a conservation agenda will also benefit Chirisa by providing a buffer to settlement and agriculture. An assessment of the area should be carried out proposals put to the appropriate authorities (RDC) and a quota issued, once agreements are in place.

Summary of Activities

- Exploration of possibilities using wildlife as a tradable resource
- Trial of possibilities initiated
- Manyoni community area assessment, protocols and modalities of operation

3.3 Employment

ZPWMA should give preference to local communities for employment, especially for casual work on a seasonal basis. Should funds be available for road maintenance and other infrastructure development preference for employment opportunities should be given to adjacent communities. ZPWMA employment policy advocates for 80% recruitment of permanent or casual employees on any recruitment batch. And this is adhered to.

Summary of Activities

- Seasonal employment opportunities

Objective 4: Collaborative management of Chirisa improved

The Chirisa Safari Area does not exist in isolation. It is embedded in an area which, with increasing settlement, is becoming more and more agricultural and predisposed towards rural rather than conservation activities. Management is increasingly having to collaborate with communities on matters of mutual concern.

In addition, Chirisa is part of the Kavango-Zambezi (KAZA) Transfrontier Conservation Area, an ambitious project involving five countries. Although not part of the central core of this TFCA management still needs to liaise with this initiative.

Dealing successfully with the full range of stakeholders is a challenge for the Collaborative Management Programme.

4.1 Improved collaborative law enforcement with communities

Community Law Enforcement Collaboration

Ideally one should reach a point where the communities themselves collaborate with the authorities such as NGOs, external researchers and/ or conservation partners over law enforcement. This requires that the communities feel they are benefitting from the protected area and it is in their interest to ensure that the wildlife laws are upheld. Thus, communities are the first line of defence to poaching.

The ZPWMA should actively engage and advise communities about community policing activities. These activities can take several forms, including an information network and active removal of snares in communities and along the boundaries of protected areas. It is expected that buy-in to this self-policing will be slow at first but then will become accepted as communities are more aware of the benefits from the Safari Area.

Resource monitors are selected at village or ward level to complement ZPWMA obligations such as assisting in curbing or reducing poaching among other ZPWMA mandates. Environmental committees are established through local government structures. Sub-committees are then devolved and these will form an important liaison body for linkages with the ZPWMA and other stakeholders involved in anti-poaching and resource protection. These linkages should be established and maintained.

NGO and Other Law Enforcement Collaboration

There are two active Safari operators. Both collaborate with the ZPWMA on law enforcement and will assist with the defined law enforcement strategies and activities outlined in the Safari Area operations programme.

Currently, there is no NGO operating in Chirisa Complex. Prospects are high of considering one if they come forward to collaborate in law enforcement in the Chirisa Complex.

Summary of Activities

- Community policing
- Environmental sub-committee liaison
- Coordination with conservation partners in law enforcement

4.2 Participation in TFCA projects

Three TFCA projects are currently ongoing in the Chizarira-Chirisa area. These include the USAID project Combatting Wildlife Crime, the EU funded project focused on strengthening community law enforcement and sustainable livelihoods and the CIRAD funded project for sustainable use of resources. These projects also extend to the Chirisa Safari Area, although implementation here lags behind that for Chizarira.

Summary of Activities

- Liaison with ongoing TFCA projects

4.3 Capacity building of administrative partners

There are a number of partners through local government and other administrative bodies that are associated with the Chirisa Safari Area. These include District Councils, CAMPFIRE Programme, Forestry Commission, the Environmental Management Agency etc. ZPWMA staff should liaise with these institutions to pass on expertise and training of resource monitors, community game scouts, environment sub-committees. Possibilities and synergies through an expansion of WWF project should be investigated.

Summary of Activities

- Training to community environmental organisations

4.4 Engage with NGOs as conservation partners

Four NGOs are currently active within the Chizarira-Chirisa Ecosystem - National Park Rescue (NPR), African Lion and Environmental Research Trust (ALERT), World Wide Fund for Nature (WWF) and Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD). Their activities cover a wide range of disciplines, especially related to conservation and community conservation. Although many of these are active in the Ecosystem the bulk of their efforts are focussed on Chizarira NP. They should be actively canvassed to extend their activities southwards to include Chirisa. Coordination between current operators and NGOS will obviously be important.

Summary of Activities

- Active engagement with existing conservation partners in the area

THREE YEAR ACTIVITY PLAN

Table 23: Summary and three year Activity plan: Objective 1 - Outreach and Collaborative Management Programme

OBJECTIVE 1: Reduced human-wildlife conflict					
Strategy	Activity	Notes	Implementation Schedule	Resp.	Verification
1.1: Continued response to problem animal reports	Routine PAC	Scaling up of current efforts. Assisted by conservation partners	Ongoing	Comm, AM	Station annual reports, Situational Reports, PAC register
	Improved linkages between ZPWMA and RDCs on PAC response	Binga and Gokwe as priorities. Schedule in place	Ongoing	Comm, AM, CM	
	Cohesive dataset on incidents	To be part of monitoring programme under 1.6.1 in Biodiversity programme	Bulk of dataset in place end June 2021	Comm, AM	Monitoring reports
1.2: Research into alternative PAC methodologies	Participatory research into non-lethal methods	Deterrents such as chilli, chasing methods, beehives etc. Synthesised report on alternatives pros and cons. Liaise with Chizarira	Report by end 2020	Comm, CP	Report, Publications
	Boma research continued and promoted	To find acceptable boma systems for local situation. Assisted by conservation partners active in Chirisa	Ongoing	Comm, CP, Ecol CSA	Station annual reports, CP reports, Publications
1.3: Improvement of community outreach from ZPWMA	Collaborative community outreach meetings	Proactive approach towards PAC, not only after the fact.. Schedule in place (see also fire management plan). Liaise with Chizarira	Ongoing	Comm, AM, Ecol CSA	Meeting reports
	Communities as stakeholders invited to participate in annual plan formulation	Involvement of local leadership, evaluation of previous years efforts	Ongoing and annual	Comm, CP, Ecol CSA, Planner	Meeting reports

Table 24: Summary and three year Activity plan: Objective 2 - Outreach and Collaborative Management Programme

OBJECTIVE 2: Stakeholder awareness and participation in Chirisa improved					
Strategy	Activity	Notes	Implementation Schedule	Resp.	Verification
2.1: Stakeholders properly identified	Database compiled	Contact numbers, names, positions etc . Community, RDC, DDC, EMA, FC, Agritex, Vet, ZPWMA, Pvt Sector, NGOs, Research Institutions, Universities etc.	End 2020	AM, Comm, CP	Database
2.2: Improve information about Safari Area and make this available to stakeholders	System for regular information to stakeholders devised	Modalities to be discussed. Meetings? emails, newsletter? Community meetings, Schools	System in place end June 2021 and then ongoing	Comm, AM, CM	Station annual reports, meeting reports etc
2.3: Improve outreach and education component	Community person employed for Chirisa	Appropriately qualified person	Appointed end June, 2021	HR HQ	Post filled
	Outreach strategy developed	Adaptive strategy in place driven by ZPWMA community person and local authorities	Strategy first task of Comm appointee - End 2021	Comm, AM, EMA, FC	Strategy Document, Meeting Report
	Conservation and awareness programmes developed	In collaboration with conservation partners, local authorities, EMA, FC and ZPWMA Anti-poaching and awareness outreach events are crucial	By end of 2021	Comm, AM, FC, RDC	Reports and station annual reports
	Fire awareness outreach events	As part of general community engagement	Ongoing	Comm, Ecol	Station annual reports, Fire Management Plan

Table 25: Summary and three year Activity plan: Objective 3 - Outreach and Collaborative Management Programme

OBJECTIVE 3: Communities benefit from the protected area					
Strategy	Activity	Notes	Implementation Schedule	Resp.	Verification
3.1: Revenue from hunting benefits the frontline communities	Detailed study	Report on current situation. Recommendations	By end June 2021	CM, AM	Report
	Ensure that proceeds from hunting reaches the correct beneficiary communities		Ongoing	Community, RDC, CAMPFIRE	Receipts. WEMC Minutes
3.2: Devise a collaborative benefit scheme	Exploration of possibilities using wildlife as a tradable resource	Detailed beneficiary identification	Proposal by end June 2021	CM, AM Pvt Sect	Proposal
	Trial of possibilities initiated	Trial should be long enough for results to be apparent (3 years?)	Ongoing	CM, AM, Pvt Sect	Reports
	Manyoni community area assessment	Protocols and modalities of operation. Investigate appropriate institutional setup (e.g. Trust or Cooperative)	Proposal by end June 2021	Comm, RDC, AM, ZCC	Proposal
3.3: Local community members are employed in the Safari Area	Seasonal employment opportunities	Road and other construction projects Priority given to key projects (e.g Dams, water sources)	Ongoing	AM, RDC	Payment vouchers, Recruitment registers

Table 26: Summary and three year Activity plan: Objective 4 - Outreach and Collaborative Management Programme

OBJECTIVE 4: Collaborative management of Chirisa improved					
Strategy	Activity	Notes	Implementation Schedule	Resp.	Verification
4.1: Improve collaborative law enforcement with communities	Community policing	Informer network, self policing	Ongoing	AM, CP, Comm	RDC reporting? Proof of Payment
	Environmental sub-committee liaison	To improve awareness in communities	Committees established end June 2021	AM, CP, Comm	Meeting minutes
4.2: Participate in TFCA projects	Liaison with ongoing TFCA projects	Currently Combatting Wildlife Crime, Community Law Enforcement, CIRAD sustainable use project	Ongoing	AM, CP, Comm	Project reports
4.3: Capacity building of administrative partners	Training to community environmental organisations	Resource monitors, community game scouts, environment sub-committees. Possible expansion of WWF project?	Starting 2022 and ongoing	AM, CM, Comm, CP (WWF)	Training records and reports
4.4: Engage with NGOs as conservation partners	Active engagement with existing conservation partners in the area	National Park Rescue, WWF, CIRAD, ALERT.	Ongoing	CM, AM Ecol, Comm	Meeting reports, agreements

Core Implementation					Conservation Partners	
HQ HR	HQ Human Resources	CET	Chief	Ecologist	NPR	National Park Rescue
AM	Area Manager		Terrestrial		ALERT	African Lion and Environmental Research Trust
Ecol CNP	Ecologist Park	Tour	Tourism Park		WWF	World Wide Fund for Nature
Ecol CSA	Ecologist Chirisa/SWRA	Bus Dev	HQ	Business	CIRAD	Centre de Coopération Internationale en Recherche Agronomique pour le Développement
Comm	Community Officer		Development		CP	Unspecified conservation partner

OPERATIONS PROGRAMME



PROGRAMME DESCRIPTION AND PURPOSE

The Operations Programme deals with day-to-day Safari Area management, including security issues. These include issues such as staff morale, housing, vehicles, plant and equipment. Administrative functions, including requests to change policy and address political issues etc are also the mandate of this programme. Control and management of wild fires also falls under this programme. A detailed of the mandate for this programme is shown below.

Table 27: Key components of the Operations Programme	
Component	Brief Description
Staffing	Pertains to staff compliment, leave, training etc
Morale	Staff morale is a very important part of Safari Area management and these issues need to be addressed effectively to ensure that the Safari Area is properly secured.
Access	Roads, tracks, bridges and airstrips. The Chirisa SA has approximately 200 km of roads and tracks while the SWRA has an estimated 230 km. Wet season access is restricted as the Sengwa and Lutope Rivers are impassable.
Buildings	Construction and maintenance of offices, staff housing, vehicle workshops, laboratory, gates and outposts. This component does not include the tourism infrastructure (campsites etc) which fall under the Tourism Programme.
Communications	Telephone, radio and other communication means between the Safari Area and the outside world. Also refers to internal Safari Area communications, usually by radio.
Finances	Correct management of finances, especially as each Safari Area is striving to financially self-sufficient as suggested by the Cluster arrangement in place for ZPWMA in the ZPWMA Strategic Plan (2019 - 2023), is an important component of the Operations Programme.
Transport	Reliable transport is vital for effective management of a Safari Area. Equipment needs to be properly cared for and maintained.
Boundaries	Concerns boundary demarcations and the resolution of disagreements about boundaries.
Anti-poaching	Policing and anti-poaching is a big part of the management of a protected area. Much of it is the routine patrolling but staff also need to be able to respond to specific incidents. This activity is strongly linked to the Ecological Management Programme.
Fire	Fire management is carried out through this programme but is also closely linked to the Ecological Management Programme.

Given the above, and taking into account the issues facing the Chirisa SA and the SWRA the purpose for the Operations Programme is defined below.

Effective management of Chirisa SA and the SWRA through transparent, accountable and efficient management of human, financial and physical resources.

MANAGEMENT PHILOSOPHY AND GUIDING PRINCIPLES

Introduction

The Operations programme is the “nuts and bolts” part of protected area management. This is the foundation on which effective protection of the environment, and utilisation of its resources through tourism and hunting depends. If the operations programme is not effective then it is likely that the protected area will fail to achieve its objectives outlined in the ecological, tourism and community programmes.

The road network in the Chirisa SA and the SWRA is poor and the access issues are complicated by the fact that two major rivers bisect the area. In the wet season the west side of area is largely inaccessible as the Sengwa and Lutope rivers are difficult to cross. The Safari Area as a whole has approximately 430 km of roads with over half of these in the SWRA.

Chirisa Safari Area is becoming increasingly isolated in a sea of settlement and this brings immense challenges to management especially from illegal activities that include poaching of wildlife, wood extraction and illegal livestock grazing. In addition, the wildlife threatens the livelihood of adjacent villagers (see Outreach Programme). The settlement increase has also eroded the buffer areas that were important for the wildlife populations.

The Chirisa Safari Area is effectively two separate protected areas, each with their own management systems. The Chirisa SA has its HQ at the old Sipani Gate on the boundary. Previously the area was managed from Chewonde Station on the Sengwa River but moved to the boundary in the late 1970s. . The area has an outpost at Chirisa Spring where staff are posted on extended patrols on a two-week rotational basis.

The SWRA has its management base at the now non-operation research centre on the Sengwa River. All deployments from the two HQs are on a patrol basis. Both HQs and the Chirisa Spring outpost are in radio communications through the Tundazi Repeater.

An organisation is only as good as its staff and strongly motivated staff mean that the chances of improving the implementation of this management plan are increased. Accordingly this programme deals with ways of improving the morale of the staff working within the Safari Area and conservation area as a whole.

An anti-poaching plan was prepared as a separate exercise for the Chizarira NP and buffer areas (including the Chirisa Safari Area) in 2019 as part of the Combating Wildlife Crime Project (CWCP). The CWCP is a multi-partner, multi country initiative funded by USAID. It runs in tandem with an EU funded project aimed at strengthening community law enforcement and sustainable livelihoods. The anti-poaching plan outcomes were considered and embedded into this management plan.

The security strategy for Chirisa Safari Area is based on the following

- Improvement of communications - road and radio
- Mobility upgrades to ensure security staff can be deployed
- Expansion of ranger force and training
- Upgrade of system for management - SMART
- Management of staff to ensure that a field force is always available and sufficient for duties
- Maintenance and expansion of outposts
- Linkages to Chizarira and other protected areas

The principles of this strategy are found in the appropriate objectives and activities.

Guiding Principles

The following guiding principles were used during the development of the Operations Programme.

1. Trained and motivated staff
2. Good access and communications are vital for effective management
3. Management and financial resources are finite
4. Collaborative management - the sum is greater than the parts

1 Trained and motivated staff

Staff are more likely to operate efficiently if they are well motivated. This includes fair salaries which are paid promptly, and decent living and working conditions. In addition, training is an important component for staff morale as it improves their effectiveness and value to the Authority, as well as to themselves. Furthermore, adherence to the disciplinary code also helps to ensure that morale remains high. Well trained staff is a valuable human resource capital investment.

2 Good access and communications are vital for effective management

One of the primary factors which will improve the effective management of protected areas is the existence of good communications infrastructure. Roads and bridges need to be up to certain standards to ensure that staff are able to respond to security situations and that resupply is feasible. Investment in upgrading and maintaining these links is of paramount importance.

In addition, an efficient and reliable communications system is necessary to ensure that Safari Area management is effective. This is true both for communications between the field and the Authority headquarters in Harare, and for communications at the local staff level, both on station and out in the field.

3 Management and financial resources are finite

The Operations programme recognises that management and financial resources are finite, and the use of available resources need to be deployed in the most effective way.

4 Collaborative management - the sum is greater than the parts

Chirisa Safari Area and Chizarira National Park are part of the same ecosystem. There are effectively three HQs in the two protected areas all of whom operate independently of each other. There should be more collaboration between and among the three areas and some plans (e.g. infrastructure, fire, community outreach) should be planned jointly. Anti-poaching is another area that could benefit from collaborative inputs.

Operations Programme Joint Management - Chirisa and Chizarira

This section briefly summarises the main areas for collaborative and joint management between the two protected areas.

- Radio linkages
- Road connectivity
- Joint patrols
- Joint intelligence

OBJECTIVES, ACTIONS AND ACTIVITIES

Four management objectives have been described for the Operations Programme. The objectives, their targets, actions and activities (objectives and targets summarised below) were defined after a detailed analysis of the current management systems and an assessment of the threats, issues and concerns facing the programme. The programme purpose and the guiding principles also played a major role during the process. Nowhere is the issue of cross cutting activities more apparent than for the Operations Programme and some activities - such as anti-poaching and fire management - are defined as part of other programmes, but their implementation is through this programme.

There is a text description of the objectives and their subsequent activities prior to the tabular presentation of the three year action plan. This three year action plan represents the heart of the programme.

Objective 1: Sufficient trained staff with high morale

- 1.1: Optimised staff numbers
- 1.2: Optimise staff management
- 1.3: Improve staff performance and professionalism
- 1.4: Upgrade recreational facilities

Objective 2: Infrastructure adequate for effective management

- 2.1: Improve roads, bridges and airstrips
- 2.2: Upgrade housing and facilities
- 2.4: Upgrade and maintenance of communications

Objective 3: Equipment required for management in place

- 3.1: Secure adequate equipment for Safari Area management
- 3.2: Effective maintenance of equipment

Objective 4: Resource protection improved

- 4.1: Strengthen anti-poaching activities
- 4.2: Consolidate boundaries
- 4.2: Prevention and control of fires

Objective 1: Sufficient trained staff with high morale

In order to effectively manage the Chirisa Safari Area, it is essential that the people employed to carry out this task are well motivated, have the requisite levels of training and are present in adequate numbers to implement management objectives. Current staff establishment and conditions in the Chirisa SA and the SWRA are not sufficient to meet management responsibilities.

1.1 Staff numbers optimised

The Chirisa SA has 29 staff while the SWRA has 28. This equates to a field ranger responsibility level of 45 km² per ranger for Chirisa SA and 23 km² per ranger for SWRA. Clearly more staff are needed. These staff will be necessary to carry out routine patrol activities effectively and ensure that the outposts are properly manned. For protection activities the most effective staff increases would be for the ranger force and, at the very least these could be doubled. However a detailed staffing increase proposal needs to be drawn up and submitted to consideration and approval through the ZPWMA structures.

Table 28: Staffing for Chirisa SA Complex						
	Chirisa SA			SWRA		
	Current	Establishment	Required	Current	Establishment	Required
Area Manager	1	1	0	0	1	1
Principal Ecologist	0	0	0	0	1	1
Ecologist		1	1	1	4	3
S/W Officer	1	1	1	1	1	0
Wildlife Officer	0	1	1	1	1	0
Senior Ranger	1	2	1	1	2	1
Clerk	1	1	0	1	1	0
Handyman	1	1	0	1	1	0
Ranger 1	14	14	0	12	9	-3
Ranger 2	5	10	5	2	12	10
Ranger 3	5	10	5	3	15	12
Totals	29	42	14	28	48	28

Summary of Activities

- Detailed proposal for additional staff, including numbers and housing needs
- Phased increase of patrol staff if housing adequate

1.2 Staff Management

Almost as important as increasing staff numbers is the necessity to improve their management. Poorly managed staff are a liability as they still need to be paid and catered for. Key to staff management will be to ensure that there are sufficient staff on station at all times to properly field security patrols. This will require management of days off for staff, training, HQ visits etc. Possible sick and compassionate leave needs to be factored in as well.

Summary of Activities

- Roster to ensure that security details can be fielded at all times.

1.3 Staff performance and professionalism improved

Staff morale is an important ingredient to the success of the management of the Chirisa Safari Area. Fair appraisals of staff, whether for promotion or for disciplinary action, is of cardinal importance to cultivate a positive working environment.

The ZPWMA has developed a detailed code of conduct complete with conditions of service and a disciplinary code. Staff will be made fully aware of content at all times, and managers will implement the code of conduct accordingly, referring to the appropriate clauses in the manual during disciplinary hearing.

In addition to the code of conduct the ZPWMA has an Operations Manual. Where appropriate this should be updated to take new technology and modes of operation into account. This should be carried out first at the Safari Area level prior to making recommendations for authority-wide additions to the manual.

The provision of sufficient and relevant training is also vital for improving the capacity of staff. This is not only important for improving their overall ability to carry out their assigned duties, but also for improving staff morale and opportunities for career advancement. In order to address this issue, a training requirements assessment that prioritises needs relevant to the Chirisa SA and the SWRA will be carried out. An initial listing of required training is presented below. National Park Rescue has carried out training courses in Chizarira NP and more are budgeted for. The possibilities of Chirisa staff attending some of these needs to be investigated. Permission for attendance from the Cluster Manager or ZPWMA HQ should be received well in advance of the course.

- Crime scene management
- Weaponry (refresher??)
- Ballistics, forensics
- First aid
- Legislation familiarity
- Driving, basic vehicle maintenance

In addition to standard training, it should be remembered that the range of duties of ZPWMA staff are wide, with certain positions requiring extensive contact with the public such as tourism officers, field rangers are often engaged in highly sensitive law enforcement operations and technical staff need to engage in specialised duties. Failure on the part of management to constantly appraise and provide ongoing training and refresher courses for staff could have serious public relations, legal, or safety consequences. A range of training options should be explored, inclusive of cost-effective in-house training programmes already offered by stakeholders. It is also important that some ZPMWA are trained to be trainers during stakeholder offered courses so that they can become the future instructors for the Authority.

As a point of interest, it has been noted that there are a significant number of experienced staff who are approaching retirement age. Some method of capturing their experience and passing it onto newer and less experienced staff should be sought.

In order to motivate staff an appraisal and incentive system to reward staff for good performances should be established. The incentive system would need to be transparent to ensure that hard work is rewarded.

A conservation partner (National Park Rescue) has already implemented an incentive scheme in Chizarira using an in-house currency reward scheme (Sables) and this has been embraced by staff on the ground. The incentive scheme rewards staff with sable units that can be exchanged for education fee payments or equipment. By far the greatest use of the system is for school fee payments. Extension of the system to Chirisa should be investigated. Or indeed, the establishment of a similar system more suited to Chirisa and the SWRA.

Worker's committees form an important link between management and staff and should meet regularly. Grievances should be communicated to management through the appropriate channels, and transparent and timely feedback to staff is of great importance.

Summary of Activities

- Code of conduct implemented
- Capacity building and training programmes implemented
- Appraisal and incentive system developed
- Industrial relations harmonised

1.4 Recreational facilities

Recreational facilities have not been high on the priority list for either the Chirisa SA or the SWRA. These are considered important for staff morale and possibilities need to be investigated. A recreational area is some kind of social hall with an entertainment area. Sports facilities such as a soccer field should be relatively easy to establish and maintain if there is interest from the staff.

Summary of Activities

- Expansion of recreational area
- Improvement of sports facilities

Objective 2: Infrastructure adequate for effective management

Management of any protected area requires a significant investment in infrastructure. Most of the roads in the Chirisa SA and SWRA were developed in the 1960s and 1970s and few new alignments put in since then apart from hunting tracks, especially in the SWRA. Both area HQs are quite extensive and has a significant number of buildings.

2.1 Improve roads, bridges and airstrips

Chirisa SA has approximately 200 km of road, with those on suitable geology being in adequate condition. River crossings and culverts are often the weak points for access through the area. The SWRA has over 200 km of roads with a significant number of hunting tracks. The Sengwa and Lutope rivers form seasonal barriers to access to a large part of both areas. There are no permanent crossings over these rivers. Improving wet season access is vital for effective management of the safari area.

Chizarira has a direct boundary with the Chirisa Safari Area and although there are a number of roads marked on the map that link these two areas virtually all of them are defunct. Some alignments are still

visible but will require significant work to reopen them. A consolidated joint road plan linking the two areas needs to be compiled and then these roads opened as a matter of urgency.

The airstrip at Sengwa Gorge is in useable condition but effective maintenance will be an ongoing concern. The operator in SWRA carries out annual maintenance on this strip. In addition, there are other airstrips in the area that need to be rehabilitated. These include those at Lusulu and Chirisa. There are two non-functional airstrips in the Chirisa SA, one adjacent to the HQ and one near Sipani Pan.

Summary of Activities

- Annual road maintenance plan
- Crossings for Sengwa and Lutope Rivers
- Linkages to Chizarira
- Airstrip maintenance

2.2 Upgrade housing and facilities

Both stations (Sengwa and Chirisa) have an extensive housing compounds, with facilities for both senior and junior staff. In addition there is the main office and workshop complex and the Sengwa Wildlife Research Institute buildings.

Type	SWRA	Type	Chirisa
3 roomed House	4	F15	3
2 roomed house	13	F13	8
Semi Detached	4	Semi-detached	16
Alpine Wood	2	Fabricated	4
Cottage	3	Round Walls	4
Manager	1	Round thatched	11
Total	27	Totals	46

Many of the houses are in need of refurbishment and a priority listing needs to be compiled. In addition to refurbishment an ongoing maintenance plan must be developed for all building in the Safari Area. If the number of staff are to be increased then this must come with additional housing to avoid cramped conditions that can lead to loss of morale.

Water for the Chirisa HQ is provided by borehole on a solar system which currently only provides water during daylight hours. At both stations ZINWA has tanks and staff but provision of water from this authority appears to be problematic. The water supply systems at both stations need attention.

The Sengwa station has access to ZESA mains but power seldom reaches the HQ. This is a common situation in Zimbabwe at present. There is also a small stand-by generator that is run several hours a day but fuel can become an issue. Chirisa HQ has a functional generator but there is no fuel to run it. A solar system provides some power for computers and phones at the HQ. This system needs to be expanded when funds are available. In addition, funds should be sourced to ensure that consumables inherent in any solar system (specifically batteries) can be replaced when the time comes.

Summary of Activities

- Detailed proposal for additional staff, including numbers and housing needs
- Water provision system upgraded
- Expansion of solar power
- Resuscitation of generator backup system

2.3 Upgrade and maintenance of communications

The Chirisa radios are incompatible with the digital repeater at Tundazi. This means there is no communication between Chirisa stations and Chizarira. This situation needs to be rectified as soon as possible.

Summary of Activities

- Equipping stations, outposts and patrols with radios compatible with the Tundazi repeater

Objective 3: Equipment required for management in place and maintained

Management of a national asset such as the Chirisa Safari Area requires a significant investment in equipment. This includes vehicles – both small and large, road maintenance equipment, fire fighting and workshop equipment etc. Maintenance of equipment is often overlooked during park planning but is vital part of park management and cannot be ignored. .

3.1 Secure adequate equipment for Safari Area management

The official vehicles available for both Chirisa SA and the SWRA are woefully inadequate. Chirisa SA has two running land cruisers while the vehicle fleet for the SWRA consists of one running (well almost running) land cruiser and one motorbike. As is common on field stations a vehicle is assigned to senior management and consequently is often off-station. The vehicle situation needs to be assessed.

Foot patrols take place in a remote and rugged environment, often under dangerous conditions. In order to maintain staff morale and safety it is important that staff is issued with the most appropriate equipment and rations. A minimum set of required equipment (see 3.1.3) and rations per patrol group have been established for field patrols in the Safari Area. The basic rations and equipment listing per patrol is listed below (Table 27).

Table 29 : Equipment and rations needed for each long-term patrol (Subject to change)				
Equipment		Rations		
Specialised	Basic		person/day	4 person/10 days
• 1 x VHF radio per group • 1 x GPS per group • 1 x basic first aid kit • 1 x light tent (or big tent for group)	• 1 Rifle and 60 live rounds of ammunition per head. • 1 handheld axe • 1 pair boots • pair socks • pairs field overall • 2 water bottle • 1 mosquito net • 1 ground sheet • 1 sleeping mat • 1 sleeping bag • 1 web belt	Mealie Meal	500g	20kg
		Kapenta	25g	1kg
		Soya Mince	25g	1kg
		Beans	100g	4kg
		Rice	100g	4kg
		Salt	20g	800g
		Cooking oil	35ml	1.4 litres
		Sugar	100g	4kg
		Tea	15g	600g
		Curry powder	5g	200g

	• 1 bush hat • 1 backpack • 1 bivvie /raincoat • 1 pair of handcuffs	Tomato paste	25g	1 tin/day
		Matches		2 boxes

Summary of Activities

- Two additional light trucks on station - both Chirisa and SWRA
- Sufficient equipment consumables for patrols
- Patrol rations

3.2 Effective maintenance of equipment

This plan recommends the upgrading of the vehicle fleet for the Safari Area. However, experience has shown that a maintenance plan for these vehicles is essential to ensure that they remain on the road. The first stage of any maintenance programme will be the establishment of a workshop with the appropriate equipment (tools, compressors, standby power etc). Once this is in place properly trained staff are needed to run it.

Summary of Activities

- Workshop
- Trained staff in place
- Regular maintenance schedules

Objective 4: Resource protection improved

Most of the Chirisa Safari Area is surrounded by community areas which can be a problem for resource protection. In some cases communities are "hostile" to the Safari Area and its conservation goals and take the opportunity of limited policing to use the Safari Area resources and enter illegally to poach wildlife and wood and to bring cattle in to graze. The 2014 excision has also brought communities closer into the core areas along the Sengwa and Lutope rivers.

4.1 Strengthen anti-poaching activities

There are many parts of Chirisa SA and the SWRA which are not easily accessible by vehicle, but which are frequently used by illegal poachers. The backbone of the patrolling system must therefore consist of rangers on foot patrols, supported by vehicles for deployment, upliftment and rapid response. Ongoing monitoring of law enforcement effort and results is essential, with regular feedback to management and field staff. For this system to be effective, data collection in the field must be consistent and accurate (see also 1.2 - management of staff).

Should funding for the rehabilitation become available, both stations should invest in establishing a SMART data recording system. The system requires equipment such as Cyber tracker device, LED monitor for the control room, rangers need training in the use and management of the system. A dedicated operator would be required to manage the system and ensure that data is collected, collated, recorded, analysed and produce reports for interpretation and guide the stations properly.

Chirisa SA has an outpost at Chirisa Spring where staff are sent on extended patrol on a two - week rotational basis. Management is discussing establishing a second out post at Chenkanga spring in the centre of the area on the Sengwa River.

Chirisa SA is a direct neighbour to the Chizarira NP and it is imperative that there is cooperation for patrol effort. A system for direct liaison between the two area managers needs to be established and adhered to. Both protected areas have adjacent "rehabilitation" zones and this is because these areas are currently overrun by illegal activities and enforcement here is weak.

An adaptive management approach must be taken with law enforcement. What seems reasonable and works today may not work in the future. Management must be aware of changes in technology and methodology, and also of changing tactics from illegal resource users and must be able to change and adapt to deal with new and changing threats.

An intelligence network will be developed and maintained around Chirisa to enable managers to be more proactive and specific in their intervention.

Summary of Activities

- Patrol system strengthened
- SMART system based around an effective control room centre
- Joint operations with Chirisa
- Informer network developed and maintained

4.2 Consolidate boundaries

The boundaries of the 2014 excision are still not marked on the ground.

The common boundary between Chizarira NP and the Chirisa Safari Area should be marked with a non - intrusive method as they are both conservation areas. However, the boundary needs to be known so that hunting parties from Chirisa do not stray into the Safari Area.

Summary of Activities

- Excision boundaries marked
- All boundaries well marked and maintained

4.3 Prevention and control of fires

The SWRA has a fire management plan based on early burning. The Chirisa SA lacks a formal fire management plan but a fire management scheme is in operation centred around early burning along the major roads.

Proactive fire management

An important component for pro-active fire management will be the annual fire management plan which will be prepared in conjunction with the Ecological Management Programme. It is recommended that at the very least Chirisa SA and the SWRA develop a joint management plan. However, it is also recommended that this plan links into the fire plan for Chizarira NP. The fire management plan should be updated on an annual basis taking into account prescribed and wild fires and the climatic conditions.

Reactive fire management

In the dry season, especially in the late hot dry season, there is need for quick reaction to respond to fires. A team of people need to be on standby at all times, and a duty roster drawn up, inclusive of weekends and holidays, and equipment such as water bowsters, beaters and backpack sprays, food rations need to be ready for deployment at all times. Adequate personal protective gear and water bottles should be issued to all staff involved in firefighting.

Summary of Activities

- Fire management plan
- Block and strip burning
- Clearing of firebreaks
- Reactive fire management preparedness

THREE YEAR ACTIVITY PLAN

Table 30: Summary and three year Activity plan: Objective 1 - Operations Programme

OBJECTIVE 1: Sufficient trained staff with high morale					
Strategy	Activity	Notes	Implementation Schedule	Resp.	Verification
1.1: Optimised staff numbers	Detailed proposal for staff numbers based on approved staff establishment	Includes housing assessment and phased implementation	End 2020	AM	Proposal
	Staff compliment increased, especially at ranger level	30% per annum	Phased starting in 2021	HQ HR, AM, CM	30% staff increase by end of 2020
1.2: Staff management	Roster to ensure that security details can be fielded at all times	Management of leave, sick leave, compassionate leave etc	Ongoing	CM, AM	Annual reports
1.3: Improve staff performance and professionalism	Code of conduct implemented	Ensure all staff aware, also Operation Manual through meetings and documents	Ongoing	AM, HQ HR, CM	Report of meeting
	Capacity building and training programmes implemented. Possible to liaise with those currently being implemented in Chizarira	Crime scene management, Weaponry, Ballistics, forensics, First aid, Legislation familiarity, Driving, basic vehicle maintenance. Need to liaise with ongoing training held in Chizarira. Vital that permission for ZPWMA to attend these are received in time.	As soon as possible	AM	Training reports
	Appraisal and incentive system developed	Look at Chizarira Sables incentive scheme but look for sustainability for Chirisa and SWRA context.	As soon as possible	AM	Incentive reporting and payments
	Industrial relations harmonised	Workers committee meetings with outputs acted on	Monthly, Quarterly and ongoing	AM, CM, HQ HR	Monthly and annual reports
1.3: Upgrade recreational facilities	Construction of recreational area in Chirisa, SWRA	Seating, element protection, ablutions, solar, TV etc	Mid 2021	AM, CM	Building exists
	Improvement of sports facilities	Soccer field	Mid 2021	AM	Area upgraded

Table 31: Summary and three year Activity plan: Objective 2 - Operations Programme

OBJECTIVE 2: Infrastructure adequate for effective management					
Strategy	Activity	Notes	Implementation Schedule	Resp.	Verification.
2.1: Improve roads, bridges and airstrips	Internal road upgrades and construction of new roads	Existing roads worked on with CP assistance. Road plan should be first step	Ongoing	AM, CM, CP	Station reports
	Link roads to Chizarira NP	Busi crossing to be dealt with. Permanent crossing design. Raft possibilities as permanent crossing may be problematic	By end of 2021	AM, CM, CP	Design documents, Crossings
	Bridge and crossing upgrades	Sengwa and Lutope Permanent crossings design. Raft possibilities as permanent crossing may be problematic	By end of 2021	AM, CM, CP	
	Airstrip maintenance	Especially Sengwa Gorge. Opening of other sites to be considered if necessary	Ongoing	AM, CP	Useable airstrip
2.2: Upgrade housing and facilities	Detailed proposal for housing needs for additional staff	Takes into account 1.1	By end June 2021	AM, CM, CP	Proposal
	Water provision system upgraded	Chirisa pumping and storage upgraded SWRA pumping and storage upgraded	By end June 2021	AM, CM, CP	Fresh water, Reports
	Implementation of solar power	Design and funding	By end June 2021	AM, CM, CP	System, Reports
	Resuscitation of generator backup system	Resuscitation of generator. Servicing of generators is important to ensure longevity	By end June 2021	AM, CM, CP	Power, Reports
2.3: Upgrade and maintenance of communications	Chirisa to get linked into digital repeater on Tundazi	Compatible radios procured	Immediate	AM, CM, CP	Radios operational, Reports

Table 32: Summary and three year Activity plan: Objective 3 - Operations Programme

OBJECTIVE 3: Equipment required for management in place

Strategy	Activity	Notes	Implementation Schedule	Resp.	Verification
3.1:Secure adequate equipment for Safari Area management	Two additional light trucks under ZPWMA budget for both Chirisa and SWRA so 4 in total	Deployment, general duties	By end June 2021	CM, HQ	Vehicles on station
	Patrol equipment and supplies sufficient for operations	Inspection and replacement schedule	Ongoing	CM, AM, HQ	Equipment, Reports
3.2:Effective maintenance of equipment	Upgrade of workshops - Chirisa and SWRA	Significant construction works required at Chirisa Assessment and refurbishment of existing building at SWRA (if necessary) Equipment assessment and procurement	Completed end 2021	CM, AM	Refurbishment reports, Workshops
	Mechanic and assistants on site	Refer to 1.1 above. Vital for vehicle sustainability	End 2021	AM, HQ HR	Manager on site
	Regular maintenance schedules	Schedule needs to be devised and adhered to. Records of servicing and repairs to be kept	Once workshop in place	AM	Maintenance schedule, Service records

Table 33: Summary and three year Activity plan: Objective 4 - Operations Programme

OBJECTIVE 4: Resource protection improved							
Strategy		Activity		Notes	Implementation Schedule	Resp.	Verification.
4.1: Strengthen anti-poaching activities		Patrol system strengthened. Staff (see 1.1), vehicles (see 2.1)		Initiate SMART system. Then deployment linked to SMART system Forward bases - Chirisa Spring, Chenkanga, Liaise with Chizarira Busi Base	Chenkanga base in 2021	AM	Reports Base established
		Rapid reaction force (8 + reserves). For Chizarira through WWF project? Could this be an ecosystem force?		Dedicated vehicle Force to be properly trained and equipped	Proposal with implementation dates by end 2020	AM	Reporting, SMART reports
		Joint operations with Chizarira		Synergy in patrol effort, intelligence and investigations	Formal establishment in 2020 and ongoing	AM, CM, CP	Reporting on operations
		Informer network developed and maintained		Informer management system needs to be in place	2021 and Ongoing	CM, AM, CP	Reporting on informer linked arrests
4.2: Consolidate boundaries		Marking of excision boundaries		Boundary road	As soon as possible	AM	Reports, boundary visible on ground, or from ai
		All boundaries well marked and maintained		Boundary clearing	Annually, as per quarter	AM	
				Marking of unclear or contested boundaries	Ongoing	AM	
4.3: Prevention and control of fires		Production of fire management plan		Based on previous years rainfall and burning activities	Annually by end March	Ecol CSA, AM	Fire plan
		Block and strip burning		Early burning is most practical tool	Ongoing in Chirisa, Annually based on database	AM	Report
		Clearing of firebreaks, Road strip burns		In accordance with fire management plan	Ongoing, Prior to burning season, By end of April	AM	Reports
		Reactive fire management preparedness		Standby team with equipment. Roster during burning season. Use of casuals and non rangers to free up ranger staff for anti-poaching activities	Ongoing, Annually May to onset of rains (Nov/Dec approx)	AM, Ecol	Reports
Core Implementation					Conservation Partners		
HQ HR AM Ecol CNP Ecol CSA Comm	HQ Human Resources Area Manager Ecologist Park Ecologist Chirisa/SWRA Community Officer	CET Tour Bus Dev	Chief Terrestrial Tourism Park HQ Development	Ecologist Business	NPR ALERT WWF CIRAD CP	National Park Rescue African Lion and Environmental Research Trust World Wide Fund for Nature Centre de Coopération Internationale en Recherche Agronomique pour le Développement Unspecified conservation partner	

ANNEX 1 - STAKEHOLDER ENGAGEMENT

1 MEETINGS

	Last	First	Designation	Meet 1	Meet 2
1	Ambrose	Malcolm	Sitatunga Safaris Director		
2	Chigowo	Pedzisai	ZPWMA Business Development Manager, Sebungwe Cluster		
3	Dube	Naphtali	ZPWMA Senior Wildlife Officer, SWRA		
4	Games	Ian	Facilitator		
5	Games	Damian	Rapporteur		
6	Hlomani	Amen	ZPWMA Snr Ranger, Chirisa		
7	Kagurabadza	Wendy	ZPWMA Snr Ranger Research, HQ		
8	Kapesa	Midwell	ZPWMA Cluster Manager, Sebungwe		
9	Karimanzira	Clasport	Forestry District Conservator, Gokwe South		
10	Lane	Trevor	Bhejane Trust, Manager		
11	Ledauphin	Remy	CIRAD, Researcher		
12	Lukuta	Goldwater	Sitatunga Safaris Director		
13	Machinya	Leonard	ZPWMA Intern		
14	Madodana	Velani	GSRDC Intern		
15	Mahakata	Innocent	ZPWMA Ecologist Sengwa		
16	Mahefu	Linda	Forestry Commission, Forester		
17	Mapuvire	George	Bio-Hub Trust, Researcher		
18	Mashange	Chamu	ZPWMA Area Manager Chirisa		
19	Mazvi	Lewis	Gokwe South EMA, District Environmental Officer		
20	Mbanje	Ruvarashe	Gokwe S RDC Intern		
21	Mhiripiri	S	ZWWMA Wildlife Officer, SWRA		
22	Moyo	GH	ZPWMA Principal Ecologist SWRA		
23	Moyo	Dumisani	ZPWMA Senior Ranger		
24	Mpofu	Valentine	Gokwe South Forestry Commission, Forester		
25	Mupandasekwa	Shumirai	Gokwe S RDC Intern		
26	Musiyiwa	Knowledge	Forestry Commission, Intern		
27	Mutema	Courage	ZPWMA Park Planning Officer		
28	Ndlovu	Collina	ZPWMA Wildlife Officer, Sengwa		

2 FIELD TRIPS

As a prelude to the management planning meeting two field trips were carried out. These are briefly summarised below.

Community trip	Stakeholder trip
Two week trip to introduce the planning process to as many community and local governance stakeholders as possible.	Two week trip to assess the situation on the ground in both Chizarira and Chirisa. To liaise with stakeholders on a one-to one basis.

ANNEX 2 - RECOVERY PLAN DISCUSSION

Although standard procedures and methodologies have been used during the preparation of this management plan it was recognised that the continuation of "business as usual" for the Chirisa Safari Area would probably result in its ongoing decline and that it would eventually cease to function as a protected area.

Therefore, the ZPWMA seeks to find innovative ways to facilitate the recovery of the Chirisa Safari Area. In the event of agreements being reached with operators and investors they would be expected to follow the basic concepts outlined in this management plan.

This section outlines the current situation and recommends possible way forwards.

Introduction

In the late 1990s Chirisa SA was considered to be one of the prime hunting areas in Zimbabwe for the key species such as elephant, buffalo and the large cats. Plains game was also in abundance. The concession at that time excluded the Sengwa Wildlife Research Area (SWRA) which was a non-hunting zone. Currently the Chirisa Safari Area includes both the SWRA and the remainder of Chirisa SA, two separate hunting concessions and management units.

Twenty five years later the situation has changed. In the Chirisa SA wildlife numbers are low and, although trophies are still taken out of the area, they are fewer in number and the hunting experience has been described as "hard" and it is difficult to turn a profit on the area.

In 2002 the SWRA was turned into a hunting concession and wildlife numbers in this area are still enough to support a viable safari concession (the buffalo quota in SWRA is double that of the Chirisa SA, which is enough for economic viability). Most of the hunting is largely confined to the area close to the Lutope and Sengwa rivers where poaching is controlled.

What has led to this change in the Chirisa SA? Evidence points to several factors, one of which is related to use of the quota. Anecdotal data indicates that in earlier years the Chirisa SA was lightly hunted and the quota was seldom fully utilised. However, in the early 2000s the area was allocated to a consortium who were able to fully utilise the quota over an extended period. This led to a deterioration of the hunting experience and the eventual abandonment of the concession by the consortium. Coupled with this was a weak management and law enforcement capability, which led to increased poaching by local communities and others. In addition, the buffer areas that were vital for the Chirisa SA and the SWRA have disappeared in the last 20 years and now almost all of the protected area has a "hard" boundary with the communities. Combined, these factors were instrumental in the decline of Chirisa SA as a prime wildlife area.

Chirisa Safari Area = Both Areas
Chirisa SA = Area excl. SWRA



In 2014 some 300km² of the safari area was excised and given to local communities. Had the area still been a prime wildlife area it is unlikely that this would have happened. The area was perceived as being depleted and this made it easier to bow to the pressure for de-gazettement.

Chirisa SA and the SWRA currently suffer from inadequate funding which leads to poor law enforcement and management. Staff levels are insufficient to be able to carry out effective law enforcement. Vehicles are too few to support law enforcement properly and most of those that are on the stations are in need of repair. Housing and services for staff are in need of attention and this all contributes to a low morale on the stations.

Concept

So what is the way forward for Chirisa, both the Chirisa SA and the SWRA? Certainly for the Chirisa SA we are talking about a recovery plan, not just maintaining the current status quo. Continuation of the current situation is unlikely to lead to any positive change for either protected area. There is no doubt that, without investment into infrastructure and law enforcement the Chirisa SA and the SWRA, they will not survive into the future as viable hunting areas. The following scenario is put forward as a possibility to improve the conservation and utilisation of these areas, under the umbrella of the management plan. In short, the plan recommends long-term concessioning of both areas, with increased commitment from leaseholder may be the way to initiate the rehabilitation of the Chirisa Safari Area.

At this point it seems unlikely (but not impossible) that a donor funded recovery project or philanthropic investor could be sourced. However, an approved management plan may help with this possibility.

A more pragmatic way may be to work within the current concessioning system but seek ways to motivate concessionaires to become more involved as partners with ZPWMA.

Currently both areas are leased through an auction system with a five year lease that has a five year "roll-over" clause. Although a ten year lease period seem like a long time there is some uncertainty with the roll over clause, and current leases are usually structured to be a sale of use of the area and the quota, rather than coming with any legal management responsibilities.

Long-term concessioning will allow investment into the area by the lease holder and it is recommended that concession models that involve some kind of partnership are considered. There are already several variants of concession models both in Zimbabwe and elsewhere. Within Zimbabwe, Sapi Safari has been leased out for a 25 year period. Other models have more of a partnership component and include the following variants

- Chizarira NP with several conservation partners on MoUs,
- Gonarezhou NP, as a type of joint venture, guided by a board with equal representation from ZPWMA and the private sector
- Matusadona NP, where an NGO has a long-term management contract.

These, and other models should be investigated for suitability in the Chirisa and SWRA context. Only through long-term commitment with sufficient funding be found to resuscitate the area. Current thinking indicates that 25 years is a period that will allow lease holders to invest substantially into an area.

Management Priorities

The following six points need to be addressed to secure a conservation future for the Chirisa Safari Area.

1. Improved and capacitated law enforcement
2. Upgraded internal access
3. Economic assessment of subsidiary quotas
4. Community engagement
5. Research
6. Collaboration

- 1). **Law Enforcement.** Obviously effective law enforcement is the base from which the recovery of the area can begin. Staff numbers need to be increased and they need to be capacitated with equipment and training. In addition, management and direction of these staff will be key to combating poaching. Increased staff numbers without effective management may be a poor use of resources.
- 2). **Internal Access.** The two large rivers in the area, the Lutope and the Sengwa which, while contributing greatly to the biodiversity of the area, also are a major issue for accessibility. In the rains Chirisa station is not able to access the western side of the Sengwa and the accessible part of the SWRA effectively becomes a small triangle between the Lutope and Sengwa rivers.

Many of the roads and smaller river crossings also need attention. There is one functional, albeit rough, airstrip at Sengwa Gorge which requires a significant annual maintenance budget. There are two other non-functioning airstrip sites in the Chirisa SA at Chirisa Station and Sipani Pan. With the appropriate expertise, dedication and equipment the improvement of access with the protected area should be possible without a huge budget. Maintenance of the infrastructure will be a vital component.

- 3). **Economic assessment of subsidiary quotas.** Apart from animals taken out of the system through trophy hunting there are a number of other demands on the resource. These include ration and training quota animals as well as ad hoc animals taken for ceremonies and political functions. This is poor use of the resource. For example, the Chirisa SA training and ration quota is almost 70% of that for the hunting operator. A buffalo on the operator quota represents a significant amount of income for the PA whereas a buffalo on the training quota is worth the value of the meat only. The extra quota also puts additional pressure on the wildlife populations, as well as creating significant disturbance. Ways of offsetting the extra hunting pressure should be sought.
- 4). **Community Engagement.** Communities need to have a positive view of the area to turn them from being antagonistic. It should be remembered that Chirisa was one of the four protected areas in Zimbabwe that was established by the Ministry of Internal Affairs in 1968 on community land (Dande, Ruya and Malapati were the others) with express purpose of generating revenue for the District Development Fund. By 2000 all of these were assimilated directly into the Parks and Wildlife Estate (Ruya, however, was de-proclaimed). Innovative ways of bringing benefits from the safari area to communities in adjacent areas need to be explored, in conjunction with long-term partners. Possibilities include benefit schemes using the wildlife resource as a tradable unit to discourage poaching (this has been done with rhino in the South East Lowveld) and working with the community/RDC to properly protect and utilise the recently de-proclaimed area along the Manyoni River.
- 5). **Research.** The SWRA was devoted solely to research for nearly 40 years during which over 100 scientific papers and numerous reports were published. Initially established to study the effects of tsetse control measure the portfolio of research projects expanded and diversified from the mid 1970s onwards probably peaking in the mid 1990s. In the last two decades funding for the station declined as did research effort and the 2000 SWRA management plan declared the research institute to be "clinically dead". As part of any recovery plan the station should be revived but focus turned to management orientated research on hunting and related topics. Again, especially in the early stages, a clear direction and research plan that allowed the research programme to evolve may be a better option than throwing money at it.
- 6). **Collaboration.** Chirisa and Chizarira are remnant wildlife areas in what was previously a much larger interconnected landscape. Settlement and agricultural patterns over the last 50 years have fragmented the ecological viability of the area. Chirisa and Chizarira are joined at the hip with a common boundary of approximately 10% of the boundary of each area. They also share common problems such as poaching, burning and accessibility. The Busi-Lutope-Sengwa rivers, once flooded, effectively cut off an area of 900 km² from management access (over 25% of the area of both protected areas). Wet season access into this area, from either side, should be regarded as a priority. The road, radio and airstrip plan should be developed with both areas in mind. In addition, collaboration on law enforcement is vital going forward.

In addition, there needs to be a close collaboration between management of the Chirisa SA and management of the SWRA. For example, fire management and law enforcement planning should consider the whole area as a single unit.