



**EZEMVELO
KZN WILDLIFE**

Conservation, Partnerships & Ecotourism

ISANDLWANA HERITAGE RESERVE

Protected Area

MANAGEMENT PLAN



Isandlwana Heritage Reserve

KwaZulu-Natal

South Africa

Protected Area Management Plan

Prepared by
Ezemvelo KwaZulu-Natal Wildlife
Protected Area Management Planning Unit
And Isandlwana Heritage Reserve Planning Committee & AMAFA
(Developed 2015)

Citation

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AMENDMENTS PAGE

| Date | Amendment | Amendment Nu, Page Nu and date | Approved by | Signature |
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PREFACE

This Protected Area Management Plan for Isandlwana Heritage Reserve is its primary and overarching management document. It forms the framework within which the reserve will be managed towards the achievement of its management objectives, derived in collaboration with the reserve's stakeholders during February 2015.

Isandlwana Heritage Reserve is managed as a trilateral partnership between Ezemvelo KZN Wildlife, Amafa aKwaZulu-Natali and the Mangwebuthanani Traditional Council, this plan was developed in close consultation with the abovementioned parties. The protected area management planning process has been designed to meet the statutory requirements of the National Environmental Management: Protected Areas Act and in this case, the KZN Heritage Act and other relevant legislation.

The protected area management planning process requires participation from the protected area's stakeholders, the general public and specialists during the various stages of plan development and implementation. An annual review process of the management plan and its sub-component, will ensure an active adaptive management planning approach.

A long-term business approach has also been introduced that ensures that the protected area's management objectives are operationalised and reflected, a financial Plan will, at the same time, actively pursue additional and improved funding and income towards the achievement of the natural and cultural heritage conservation objectives of the reserve over the next five years and into the future. The Isandlwana Heritage Reserve is currently jointly funded by AMAFA and Ezemvelo.

Ezemvelo KwaZulu-Natal Wildlife, as the appointed Management Authority for Isandlwana Heritage Reserve, hereby commits itself to the implementation of this plan.

Dr. MD Mabunda
Chief Executive Officer

EXECUTIVE SUMMARY

Introduction

The Isandlwana Heritage Reserve is strategically situated in the midst of well-known Anglo-Zulu war and Anglo-Boer war sites of central KwaZulu-Natal. The reserve falls within the Nquthu Local Municipality and the uMzinyathi District Municipality, situated approximately 22 km from the town of Nquthu on the R68 and approximately 74 km from Dundee. The reserve was first proclaimed as a National Monument in 1969, several further proclamations led to the latest proclamation as a nature reserve in terms of the Protected Areas Act.

The reserve consists of 781 hectares that are jointly managed and maintained by Ezemvelo KZN Wildlife, AMAFA and the Mangwebuthanani Community. Although the reserve was initially proclaimed for its historical and cultural importance it also conserves portions of the KwaZulu-Natal Highland Thornveld and the Thukela Thornveld vegetation types, both types are listed as least threatened. It is also important to note that the recent discovery of new invertebrate species is a good indication of the important and potentially undiscovered biodiversity present in the reserve.

The Buffels River – the largest tributary of the Thukela River is classified in terms of the National Freshwater Ecosystem Priority Area (NFEPA) system as a largely natural free flowing river and forms the south western boundary of the reserve. Various non-perennial streams also occur in the reserve.

Isandlwana Heritage Reserve forms part of a corridor that includes Ntinini Nature Reserve to the North East and Ophathe Nature Reserve to the east, this broad scale landscape corridor that links Ophathe Nature Reserve, Ntinini Nature Reserve and Chelmsford. This corridor is also called the Chelmsford corridor and links two of the main corridors namely the Berg Corridor and the HiP Corridor (Jewitt, 2009)¹.

Management issues, challenges and opportunities at Isandlwana Heritage Reserve

One of the key management issues identified was the lack of clarity in terms of the roles and responsibilities of the various role-players involved in the management of the Isandlwana Heritage Reserve. The tri-lateral agreement between AMAFA, Ezemvelo and the Mangwebuthanani Community is in need of review and at a higher level the process to review the AMAFA/Ezemvelo Liaison Agreement, which provides the framework for the Isandlwana Memorandum of Understanding is currently underway. Once the overarching agreement is in place the sub agreement will be revised and updated accordingly.

Other challenges, as in many small reserves include lack of financial and human resources, equipment and appropriate infrastructure to ensure the effective management of the reserve. The fencing is not appropriate as it does not prevent the illegal entry of livestock into the reserve, and a capital investment will be required to improve the fence.

Furthermore the increased and uncontrolled grazing pressure which includes both game and livestock impacts on the reserve vegetation, erosion and bush encroachment. Alternative grazing should be investigated as the ecological carrying capacity of the reserve is constantly exceeded. As per the memorandum of understanding, resource use in the form of thatch and wood collection is allowed - currently this is not appropriately, controlled, monitored and recorded due to lack of staff.

Managing the issues, challenges and opportunities at Isandlwana Heritage Reserve

The key issue of updating and reviewing the relevant agreements that would provide the framework for this management plan is currently underway. The AMAFA/ Ezemvelo KZN Wildlife Liaison Committee have revised the main agreement and this is now in process of approval. It is recommended that sufficient funding be sourced as per the financial plan in Appendix H in order to fence the reserve to the appropriate standard and thus preventing the illegal entry of livestock.

Other key issue include sufficient human capacity to manage the reserve effectively, currently the reserve is managed by a District Conservation Officer who not only has a wide district to look after but also manages another protected area (Ntinini Nature Reserve). Furthermore, two field ranger positions that are currently filled are not sufficient to effectively patrol and secure the reserve and there should be at least another two field rangers, one general assistant and one handyman appointed to rectify the situation.

Annual plan of operation

Each year an annual plan of operation will be prepared, based on the objectives, strategic outcomes, management activities and targets contained in the protected area management plan.

Records of recommendations for update/changes to the plan should be kept so that when the plan is revised, these recommendations can be assessed and included where necessary. This should be undertaken in the form of a running list, which is updated in each annual report so that the final annual report before the review of the management plan contains the complete list of recommendations. Any proposed significant changes to the management plan that are likely to result in amendment to the vision, objectives and zonation must be supported by the Regional Operations Committee and the Biodiversity Operations Committee before being subjected to the appropriate

¹ Jewitt. 2009. Popular document: development of the macro-ecological corridors of KZN. Ezemvelo KZN Wildlife. Unpublished Report

stakeholder participation process and before recommendation that the proposed amended protected area management plan be submitted for authorisation to the Ezemvelo KZN Wildlife Board and to the MEC.

ABBREVIATIONS

| | |
|----------|--|
| AMAFA | Amafa aKwaZulu-Natali (KwaZulu-Natal Provincial Heritage Agency) |
| A.S.L. | Above sea level |
| APO | Annual Plan of Operation |
| CARA | Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) |
| CCA | Community Conservation Area |
| CDP | Concept Development Plan (Component of Ezemvelo KZN Wildlife protected area management planning process) |
| CEO | Chief Executive Officer |
| CRMP | Cultural Resource Management Plan |
| CMS | Co-management Structure |
| DEDTEA | Department of Economic Development, Tourism and Environmental Affairs |
| DCO | District Conservation Officer |
| DEA | National Department of Environmental Affairs |
| DWS | Department of Water and Sanitation |
| EIA | Environmental Impact Assessment |
| Ezemvelo | Ezemvelo KwaZulu-Natal Wildlife |
| EMF | Environmental Management Framework |
| EMP | Environmental Management Plan |
| EWT | Endangered Wildlife Trust |
| FP | Financial Plan |
| FPA | Fire Protection Association in terms of the National Veld and Forest Fire Act (No.1 of 1998) |
| GDP | Gross Domestic Product |
| GIS | Geographical Information System |
| IDP | Municipal Integrated Development Plan |
| IHR | Isandlwana Heritage Reserve |
| IUCN | International Union for the Conservation of Nature |
| KZN | KwaZulu-Natal Province of the Republic of South Africa |
| KZNCMA | KwaZulu-Natal Nature Conservation Management Act, 1997 (Act No. 9 of 1997) |
| KZNHRA | Kwa-Zulu Heritage Resources Act 1997, (Act No. 10 of 1997) |

| | |
|--------|---|
| MEC | Member of the Executive Council |
| MoA | Memorandum of Agreement |
| MoU | Memorandum of Understanding |
| MP | Management Plan |
| NEMA | National Environmental Management Act, 1998 (Act No 107 of 1998) |
| NEMBA | National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) |
| NEMPAA | National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) |
| NHRA | National Heritage Resources Act, 1999 (Act No. 25 of 1999) |
| NPAES | National Protected Area Expansion Strategy |
| NRPC | Nature Reserve Planning Committee |
| NSBA | National Spatial Biodiversity Assessment |
| PA | Protected Area |
| PFMA | Public Finance Management Act, 1999 (Act No. 1 of 1999) |
| SA | Republic of South Africa |
| SAHRA | South African Heritage Resources Agency |
| SAPPI | South African Pulp and Paper Industry |
| SAPS | South African Police Service |
| SDF | Municipal Spatial Development Framework |
| SMME | Small, Micro and Medium Enterprises |
| SWOT | Strengths, weaknesses, opportunities and threats analysis |
| UNESCO | United Nations Educational, Scientific and Cultural Organisation |
| WWF | World Wildlife Fund |

1. BACKGROUND

1.1. Purpose of the plan

Protected area management plans are high-level, strategic documents that provide the direction for the development and operation of protected areas. They inform management at all levels, from the staff on-site through to the CEO, the Board and the MEC. The purpose of this management plan is to:

- facilitate compliance with the National Environmental Management: Protected Areas Act No. 57 of 2003, the KZN Heritage Act No. 4 of 2008 and the South African Heritage Resources Act No. 25 of 1999;
- provide the primary strategic tool for management of Isandlwana Heritage Reserve, informing the need for specific programmes and operational procedures;
- provide motivations for budgets and provide indicators that the budget is spent correctly;
- build accountability into the management of Isandlwana Heritage Reserve and
- provide for capacity building, future thinking and continuity of management.

Enable Ezemvelo KZN Wildlife, AMAFA and the Mangwebuthanani Community to develop and manage Isandlwana Heritage Reserve in such a way that its values and the purpose for which it was established are protected.

1.2. Structure of the plan

Table 1: Structure of the management plan for Isandlwana Heritage Reserve

| | |
|------------|--|
| Section 1: | Provides an introduction and background to the management plan and Isandlwana Heritage Reserve. |
| Section 2: | Establishes the context of the nature reserve, providing the basis for the strategic and operational management frameworks that follow. |
| Section 3: | Sets out the vision and objectives that must be achieved in efforts to effectively conserve the nature reserve. |
| Section 4: | Sets out the zonation of the Isandlwana Heritage Reserve, outlining the permissible land uses in particular zones. |
| Section 5: | Describes the administrative structure required to effectively manage Isandlwana Heritage Reserve. |
| Section 6: | Sets out the detailed management targets that must be achieved in managing the nature reserve. |
| Section 7: | Sets out the monitoring measures required to determine if management targets are being met and the requirements for reporting on performance in implementing the plan. |
| Section 8: | Describes the components that must be included in the annual plan of operation. |

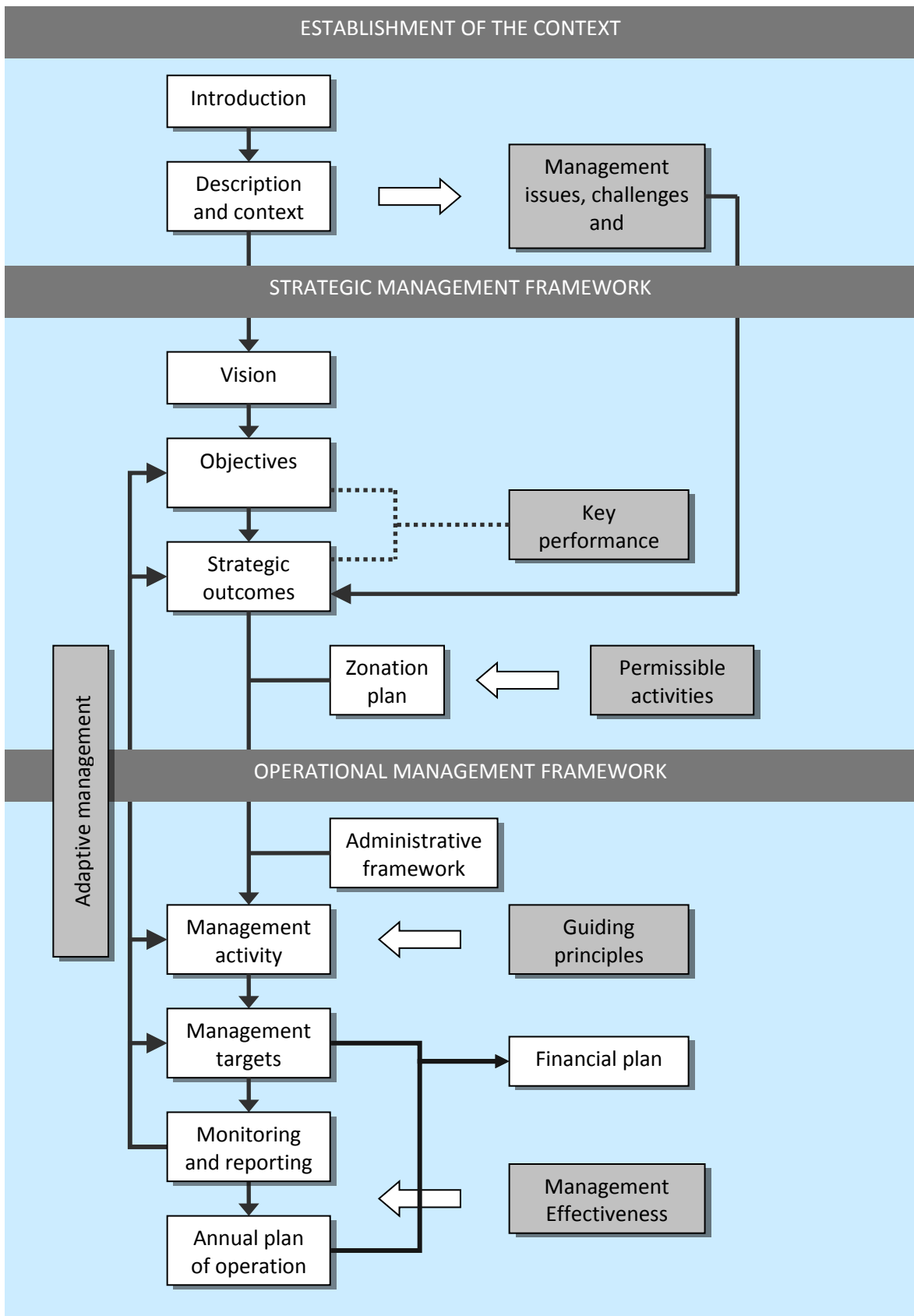


Figure 1: Structure of the Protected Area Management Plan

1.3. Introduction

The Isandlwana Heritage Reserve is strategically situated in the midst of well-known Anglo-Zulu war and Anglo-Boer war sites of central KwaZulu-Natal. The reserve falls within the Nquthu Local Municipality and the uMzinyathi District Municipality, situated approximately 22 km from the town of Nquthu on the R68 and approximately 74 km from Dundee. The reserve was first proclaimed as a National Monument in 1969, several further proclamations led to the latest proclamation as a nature reserve in terms of the Protected Areas Act.

The Reserve consists of 781 hectares that are jointly managed by Ezemvelo KZN Wildlife, AMAFA and the Mangwebuthanani Community. Although it was initially proclaimed for its historical and cultural importance it also conserves portions of the KwaZulu Natal Highland Thornveld and the Thukela Thornveld vegetation types. It is important to note that the recent discovery of new invertebrate species are a good indication of the important and potentially undiscovered biodiversity present in the reserve.

The Buffels River – the largest tributary of the Thukela River is classified in terms of the National Freshwater Ecosystem Priority Area (NFEPA) system as a largely natural free flowing river and forms the south western boundary of the reserve. Various non-perennial streams also occur in the reserve.

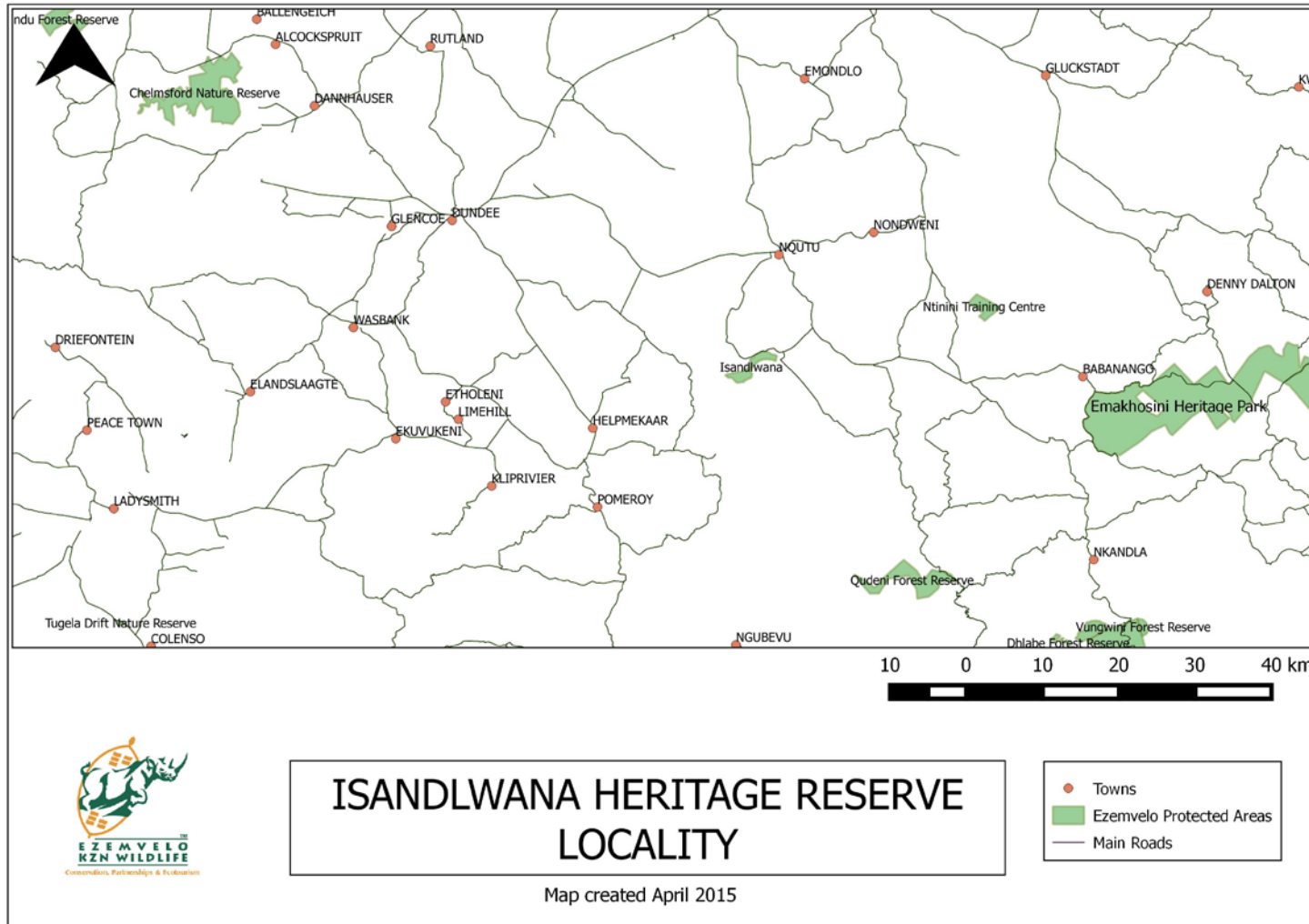
On the north eastern side the reserve is wedged between two district roads namely the D897 and the L1333 with the turnoff on the main R68 between Melmoth and Nquthu. The access to the reserve is controlled by AMAFA and traversing for communities on bona fide business through the reserve is taking place, subject to them not contravening the rules and regulations of the reserve.

Isandlwana Heritage Reserve forms part of a corridor that includes Ntinini Nature Reserve to the North East and Ophathe Nature Reserve, a broad scale landscape corridor that links Ophathe Nature Reserve, Ntinini Nature Reserve and Chelmsford. This corridor is also called the Chelmsford corridor and links two of the main corridors namely the Berg Corridor and the HiP Corridor (Jewitt, 2009)¹.

See Map A – Locality of Isandlwana Heritage Reserve.

¹ Jewitt. 2009. Popular document: development of the macro-ecological corridors of KZN. Ezemvelo KZN Wildlife. Unpublished Report

Map A: Isandlwana Heritage Reserve Locality



1.4. The values of Isandlwana Heritage Reserve

The values of a place are those remarkable attributes that exemplify it and are largely the reason that it has been proclaimed as a protected area (PA). The values are important in planning and management, as they are the aspects of the place that must be protected.

The protected area's values, in particular those that underlie the functioning of its ecosystems, will be given the highest degree of protection to ensure the persistence of these systems and their ecological processes.

Human activities within the Isandlwana Heritage Reserve that threaten the integrity of, or a component of the reserve's ecosystems will not be permitted. Where ecosystem integrity is threatened by human activities outside the protected area, Ezemvelo KZN Wildlife will initiate collaborative action with relevant stakeholders to eliminate or mitigate the threat.

The values of Isandlwana Heritage Reserve include:

Table 2: Values of Isandlwana Heritage Reserve

| | |
|------------------------|---|
| Natural values | <ul style="list-style-type: none"> ▪ Contribute to protection of important vegetation types (i.e. Thukela Thornveld & KZN Highland Thornveld) and habitat types and species. ▪ New invertebrate species have recently been discovered (potentially more biodiversity that we are unaware of). ▪ Ecosystem goods and services (Resources, water, soil etc.) ▪ Buffalo River forms a portion of protected area (Boundary) |
| Tourism values | <ul style="list-style-type: none"> ▪ Important component of the central KZN battlefield tourism initiative. ▪ Historical tourism component with an international profile. ▪ Actively used as part of British Military training on an annual basis. |
| Heritage values | <ul style="list-style-type: none"> ▪ Protection of an internationally important historical site. ▪ Protect important living heritage including spiritual and ritual values for the Zulu nation including cultural tradition, oral history and rituals as well as indigenous knowledge and cultural landscapes. ▪ Grave and burial sites. |
| Social values | <ul style="list-style-type: none"> ▪ Contribute to the local economy through seasonal job opportunities. ▪ Environmental and cultural awareness program. |

Consistent with Section 17 of the Protected Areas Act, the purpose of Isandlwana Heritage Reserve is to:

- protect ecologically viable representative portions of Thukela Thornveld and KwaZulu-Natal Highland Thornveld;
- preserve the ecological integrity of the area;
- protect the heritage values of the reserve;
- conserve the important biodiversity in Isandlwana Heritage Reserve;
- protect areas representative of ecosystems, habitats and species naturally occurring in Isandlwana Heritage Reserve;
- protect Isandlwana Heritage Reserve's endangered and vulnerable species;
- assist in ensuring the sustained supply of environmental goods and services;
- augment destinations for nature-based and heritage tourism;

- manage the interrelationship between natural biodiversity, human settlement and economic development;
- to contribute to human, social, cultural, spiritual and economic development;
- to rehabilitate and restore degraded ecosystems and promote the recovery of endangered and vulnerable species.

1.5. Planning approach

The preparation of this management plan has been undertaken based on the following guiding principles:

1.5.1. Protecting and managing protected area ecosystems

Within the protected area, effort must be directed at maintaining ecosystems in as natural a state as possible and human induced disturbance must primarily be avoided. In rare circumstances where avoidance cannot be achieved the disturbance must be mitigated and minimised in compliance with Ezemvelo KZN Wildlife’s conservation policies and norms and standards; and, in particular, the Integrated Environmental Management Policy.

It is recognised that the Isandlwana Heritage Reserve does not contain complete or unaltered ecosystems. This, combined with increasing and cumulative disturbances from sources outside of the protected area such as adjacent land use, upstream effects of pollution, colonisation of invasive and alien species, and visitor use, is likely to result in irreversible degradation of the protected area’s ecosystems, the loss of biodiversity and impoverishment of gene pools.

Ecosystem management must be derived from a conceptual and strategic basis for the protection of the protected area’s natural ecosystems which should be based on sound research and monitoring. It must involve a holistic view of the natural environment to ensure that all management decisions take into the consideration the complex interactions and dynamic nature of the ecosystems and their limited capacity to withstand and recover from human induced disturbance.

It is recognised that the Ezemvelo KZN Wildlife’s protected areas are becoming increasingly important, if not vital, in national and international efforts to maintain biodiversity and genetic resources of South Africa. Thus the management of the protected areas ecosystems must be credible and solidly based on science and best management practice. In doing so, a rigorous application of conservation science in the collection and interpretation of research and monitoring data must be achieved.

It is further recognised that, in particular, cumulative human induced disturbance or poor management practices have far-reaching, long-lasting and potentially irreversible negative impacts on species, habitats, ecosystems and the protected area as a whole. It is, therefore, recognised that a cautious and risk averse approach must be exercised.

1.5.2. Ecosystem-based management

Decision-making associated with the protection of the protected area’s ecosystems will be scientifically based on internationally accepted principles and concepts of conservation

biology. The protected area's ecosystems will be managed with minimal interference with natural processes. Specific management may be desirable, when the structure or function of a habitat or ecosystem has been significantly altered by human induced impacts or previous poor management practices. Specific management will only be considered when such option is the only possible alternative available to restore ecological integrity.

Provided that the PA's ecosystems will not be impaired, the manipulation of naturally occurring processes (e.g. creation of firebreaks, damage causing animals) may take place when no reasonable alternative exists and when monitoring has demonstrated; that without direct intervention:

- there will be serious adverse effects on neighbouring lands; or
- protected area's facilities, public health or safety will be threatened; or
- the objectives of a PA's management plan prescribing how certain natural features or cultural resources are to be maintained cannot be achieved otherwise.

Where directed management is required, it will be based on scientific research, and will employ techniques that emulate natural processes as closely as possible.

Ezemvelo KZN Wildlife will be exemplary in the implementation of conservation and other environmental legislation including but not limited to, environmental impact assessment and review.

1.5.3. Adaptive management

Adaptive management is a structured, iterative process in which decisions are made using the best available information, with the aim of obtaining better information through monitoring of performance (Figure 2). In this way, decision making is aimed at achieving the best outcome based on the current understanding, whilst accruing the information needed to improve future management. Adaptive management can lead to revision of a part or the whole management plan.

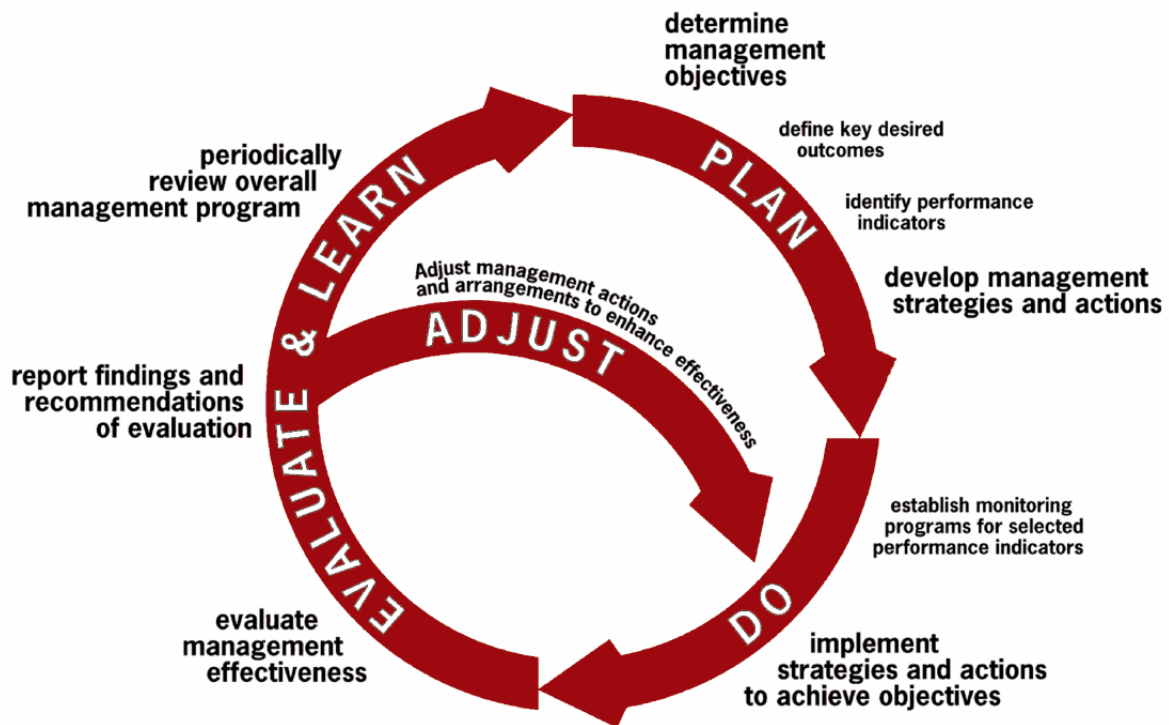


Figure 2: The adaptive management cycle

Adaptive management enables protected area managers to:

- learn through experience;
- take account of, and respond to, changing factors that affect the protected area;
- continually develop or refine management processes;
- adopt best practices and new innovations in biodiversity conservation management and;
- demonstrate that management is appropriate and effective.

1.5.4. Collaboration and transparency

Stakeholder involvement and support is an important aspect of effective protected area management. It is also a requirement in terms of Sections 39(3) and 41(2) (e) of the National Environmental Management: Protected Areas Act (No.57 of 2003). Accordingly, the development of this management plan has been undertaken through a collaborative process, involving local communities and other key stakeholders.

Public consultation has been undertaken through a series of meetings and discussions with key stakeholders culminating in a key stakeholder workshop, held on the 25th of February 2015. Additional meetings with the Mangwebuthanani Community, the municipalities and AMAFA provided further input and integration into the management plan development. Furthermore, the draft management plan has been made available for public review and comment prior to its finalisation. This process has ensured a great deal of valuable input into the development of the management plan, the outcomes of which have been incorporated into it. A detailed public participation report is available upon request from the reserve’s management.

2. DESCRIPTION OF ISANDLWANA HERITAGE RESERVE AND ITS CONTEXT

2.1. Institutional and administrative framework for the management of Isandlwana Heritage Reserve

In terms of the Isandlwana Heritage Reserve proclamation, the land is owned by the Mangwebuthanani community, AMAFA is the custodian of the land and the management will be the joint responsibility of AMAFA and Ezemvelo. AMAFA operates within the framework of the KZN Heritage Act (Act No. 4 of 2008) and the South African Heritage Resources Act (No. 25 of 1999)

The KwaZulu-Natal Nature Conservation Board, established in terms of the KwaZulu-Natal Nature Conservation Management Act No. 9 of 1997, was appointed by the KwaZulu-Natal MEC: Agriculture and Environmental Affairs as the management authority for all provincial protected areas in KwaZulu-Natal. The Board's implementing agency is Ezemvelo KZN Wildlife.

Biodiversity management of Isandlwana Heritage Reserve will be undertaken in accordance with relevant legislation and the management policies of Ezemvelo KZN Wildlife, which includes a commitment to maintain the character, ecological, cultural and aesthetic integrity of the site.

The KwaZulu-Natal Nature Conservation Board will be responsible for reporting on the management of Isandlwana Heritage Reserve to the designated KwaZulu-Natal Provincial Member of the Executive Committee (MEC) and the Premier, thus ensuring coordination of those matters that may affect the nature reserve through the relevant provincial departments, district and local municipalities.

Although Ezemvelo is responsible for the biodiversity management of the reserve the management operations of the reserve are jointly funded by both Ezemvelo and AMAFA as per the Memorandum of Agreement contained in Appendix D forming the basis of this tri-lateral project and Appendix E containing the Management Guidelines for the heritage sites.

There is a large body of legislation that is relevant to the management of Isandlwana Heritage Reserve, but the primary legislation guiding the management of protected areas is the National Environmental Management: Protected Areas Act (No.57 of 2003), KZN Heritage Act (Act No. 4 of 2008) and the South African Heritage Resources (Act No. 25 of 1999).

The Protected Areas Act establishes the legal basis for the creation and administration of protected areas in South Africa, as its objectives include provisions *“for the protection and conservation of ecologically viable areas representative of South Africa’s biological diversity and its natural landscapes”*. The Act sets out the mechanisms for the declaration of protected areas and the requirements for their management.

A detailed list of relevant legislation is provided in Appendix B. Managers are required to familiarise themselves with the purpose and contents of the statutes and their subsequent amendments and regulations.

2.1.1. Proclamation status of Isandlwana Heritage Reserve

The Isandlwana battlefield is one of the premier battlefield sites in Southern Africa. A component of the battlefield was initially proclaimed in 1972 in Government Notice 1658 of 22/9/1972. The Isandlwana Historic Reserve was proclaimed in terms of the KwaZulu Monuments Act in KZN Government Notice 579 of 1989 after five years of negotiations between AMAFA and the Mangwebuthanani Community.

In 2012 the Isandlwana Heritage Reserve proclamation established the reserve as a protected area in terms of the National Environmental Management Protected Areas Act No 57 of 2003. *The proclamation documents and final SG Diagram are contained in Appendix C.*

2.1.2. Public Trust Doctrine

Section 3 of the National Environmental Management: Protected Areas Act (No. 57 of 2003) mandates the State, and hence Ezemvelo KZN Wildlife to act as the trustee of protected areas. This trusteeship is derived from the Public Trust Doctrine, which in this context obligates the Ezemvelo KZN Wildlife to support the management of all protected areas and the resources therein for the benefit of current and future generations (the beneficiaries of the Public Trust). Thus it is incumbent on Ezemvelo KZN Wildlife to use all practical means to fulfil its responsibilities as trustee of the protected area for current and succeeding generations.

[See White Paper on Environmental Management — Policy for South Africa GG 749 of 1998]

2.1.3. Invasive species control in terms of the Biodiversity Act

In terms of Section 76 of the National Environmental Management: Biodiversity Act (No.10 of 2004), the management authority of a protected area must incorporate an invasive species control plan in the protected area management plan. This is addressed in Sections 3 and 4 below. As such, an alien plant control plan has been developed for Isandlwana Nature Reserve and awaits costing and implementation once the necessary budget is available.

2.2. The policy framework guiding the management of Isandlwana Heritage Reserve

In conserving and managing the biodiversity of KwaZulu-Natal, Ezemvelo KZN Wildlife operations are undertaken within a broad framework of policies. At a national level, overarching policy is set out in:

- The White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity of 1997.
- The Bioregional Approach to South Africa's Protected Areas, 2001/2002.
- Community Based Natural Resource Management Guidelines, 2003.
- National environmental management principles set out in section 2 of the National Environmental Management Act.

Relevant norms and standards set by the Minister and MEC in terms of the Protected Areas and Biodiversity Acts.

Within the province, Ezemvelo KZN Wildlife has adopted a Five Year Strategic Plan and Performance Plan for 2015-2020, which has developed the following corporate strategic profile:

| | |
|--|---|
| VISION | |
| “To be a world renowned leader in the field of biodiversity management” | |
| MISSION STATEMENT | |
| “To ensure effective conservation, sustainable use of biodiversity, and promote ecotourism within KwaZulu-Natal in collaboration with stakeholders for the benefit of present and future generations.” | |
| STRATEGIC OUTCOMES | |
| <p>Environmental assets and natural resources that are well protected and continually enhanced;</p> <p>An efficient, effective and development-orientated public service and an empowered, fair and inclusive citizenship;</p> <p>Decent employment through inclusive economic growth;</p> <p>To be an efficient, effective and compliant organisation, with good governance;</p> <p>To effectively promote the mandate of the organisation to stakeholders.</p> | |
| CORE VALUES | |
| Passion | We shall be passionate in what we do. |
| Respect | We shall perform our duties in a professional, ethical manner. |
| Trust | We shall act transparently with integrity and honesty in all we do. |
| Innovation | We shall embrace a culture of learning, adaptation and creativity at all times. |
| Excellence | We shall strive to best apply best practices to achieve the highest quality and standards at all times. |

A number of policies, specific to particular areas of operation, have also been developed by Ezemvelo KZN Wildlife (Appendix F). These policies have been considered and applied within the plan, where relevant. The protected area’s managers are required to be familiar with them and to apply them in managing Isandlwana Heritage Reserve.

This body of policies has been utilised in the management plan to develop a strategic and operational management framework for Isandlwana Heritage Reserve that is consistent with the broad management goals and specific policy requirements of Ezemvelo KZN Wildlife.

2.3. The regional and local planning context of Isandlwana Heritage Reserve

Isandlwana Heritage Reserve forms part of the Nquthu Local Municipality and the UMzinyathi District Municipality. The Nquthu Municipality’s Draft Integrated Development

Plan for 2014 and 2015¹ recognises the importance of the Isandlwana site as a worldwide tourism destination. Furthermore it states that community based tourism potential of the area remains untapped. Despite the recognition of the site as an important site in terms of history and cultural aspects, the Integrated Development Plan does not mention the importance of the Isandlwana Heritage Reserve's contribution to biodiversity conservation, nor does it recognise the important link between sustainable tourism, biodiversity conservation and the heritage aspects of the area.

The UMzinyathi District Municipality in their 2014/2015 IDP review² recognises the conservation value of Isandlwana. The review states that the conservation value of the area is focused on the Battlefield route, heritage and to a limited extent on the scenery and biodiversity. This perception should be changed as the visual landscape, history and cultural landscape are intricately linked and inter-dependant. The UMzinyathi District Municipality does support the annual re-enactment event that commemorates the Battle of Isandlwana. There are currently a project to build a museum and cultural village outside of the protected area.

2.3.1. The National Protected Area Expansion Strategy

In an effort to address a lack of effective protection and representation of all vegetation types within the protected areas system, a National Protected Area Expansion Strategy (NPAES, DEAT 2008) has been developed and approved at a national ministerial level. The purpose of the NPAES is to provide a national framework for the expansion and consolidation of the protected area system, focussing on priority areas for representation and persistence of biodiversity.

In terms of the NPAES, Isandlwana Heritage Reserve falls within Region 37 of the National Protected Area Expansion Strategy focus areas, the Thukela Focus Area in KwaZulu-Natal.

On the basis of the NPAES, at a national level, Isandlwana Heritage Reserve is a strategically important protected area that forms a critical nodal point for the expansion of protected area efforts.

2.3.2. The Provincial Protected Area Expansion Plan

The KwaZulu-Natal Protected Area Expansion Plan (Ezemvelo KZN Wildlife 2010) also identified areas around the borders of IHR as priorities for protected area expansion and the reserve forms a key hub in creating a connected protected area system in the region.

Certain areas around Isandlwana Heritage Reserve are characterised by high levels of irreplaceability, largely due to losses of natural habitat within the grassland biome and the individual vegetation types in which they occur. This is exacerbated as the grassland biome and many of its vegetation types are poorly protected.

Isandlwana Heritage Reserve forms part of a corridor that includes Ntinini Nature Reserve to the North East and Ophathe Nature Reserve which is a broad scale landscape corridor that

¹ Nquthu Local municipality, 2014. Draft Integrated Development Plan

² UMzinyathi District Municipality, 2014. Integrated Development Plan

links Ophathe Nature Reserve, Ntinini Nature Reserve and Chelmsford. This corridor is also called the Chelmsford corridor and links two of the main corridors namely the Berg Corridor and the HiP Corridor (Jewitt, 2009)¹.

2.3.3. EIA Regulations in terms of NEMA

In terms of the National Environmental Management Act (No.107 of 1998) environmental impact assessment (EIA) Regulations, various activities require environmental authorisation before they may commence. In addition, in terms of Regulation RN.546, Listing Notice No.3, there are a number of activities that require environmental approval specifically as a result of their proximity to a protected area. The implication of this is that if any of the *activities listed in Appendix G* are proposed in the protected area, or within five kilometres of it, they will be subject to either a basic assessment or a full scoping and EIA process. Appendix H2 provides a spread sheet that indicates the relevant triggers. A number of general activities and those proposed for either tourism development or operational management within the nature reserve or its buffer areas will thus also require environmental authorisation.

2.4. The history of Isandlwana Heritage Reserve



Figure 3 - Isandlwana as seen from the slopes of Black's Koppie looking north across the monuments and cairns in the foreground, ridge on which Mostyn and Cavaye were posted to right of mountain.²

2.4.1. Origins of the name of Isandlwana Heritage Reserve

Isandlwana Heritage Reserve took its name from the historically significant mountain of Isandlwana that is located in the north-eastern part of the reserve. The name Isandlwana has become synonymous with the victory that the Zulu nation achieved over the British forces in 1878.

2.4.2. Location and extent of the Isandlwana Heritage Reserve

Isandlwana Heritage Reserve is located more or less in the centre of KwaZulu-Natal Province of the Republic of South Africa. The PA is situated west of the R68 provincial road, approximately 15 km south of Nquthu Town and 45.2 km east of Dundee and falls within the West Region.

¹ Jewitt. 2009. Popular document: development of the macro-ecological corridors of KZN. Ezemvelo KZN Wildlife. Unpublished Report

² <http://samilitaryhistory.org/vol044gc.html> Accessed 25 March 2015

The protected area lies and extends from 28° 21' 00" S to 28° 23' 24" S, and from 30° 36' 00" E to 30° 40' 12" E. It is more or less rectangular and linear in shape and has a maximum length of 8.3 km and breadth of 1.58 km. The PA stretches across an altitude from 947 m in the Buffalo River in the south-west to 1334 m a.s.l. on top of the Isandlwana Mountain in the north-east.

2.4.3. History of conservation in Isandlwana Heritage Reserve

Originally a small part of the Isandlwana battlefield was proclaimed in 1972. In 1984 the KwaZulu Monuments Council and the Mangwebuthanani community commenced negotiations with a view to establish a historic reserve. This led to the proclamation of the Isandlwana Historic Reserve the KwaZulu Monuments Act in 1989.

The Cabinet of the KwaZulu government also resolved that the area should be proclaimed a conservation area administered by the then BNR. Post 1994 the reserve was managed by AMAFA and in 2004 the biodiversity management component was taken over by the KZN nature Conservation Service (Ezemvelo).

AMAFA entered into a Memorandum of Agreement with Ezemvelo in 2005 to facilitate mutual support and collaboration (*See Appendix D*). In 2006 the KwaZulu-Natal Nature Conservation Board, the Mangwebuthanani Traditional Council and AMAFA entered into a Memorandum of Agreement relating to specifically the proclamation and management of Isandlwana (*See Appendix E*). These two agreements are currently under review to ensure they remain relevant and up to date. In terms of this agreement revenue of entrance fees and management of these fees will be AMAFA's responsibility and 25% of the revenue earned will be paid to the community.

In 2012 Isandlwana Heritage Reserve, 781 ha in extent and encompassing the Isandlwana Battlefield site was proclaimed as a nature reserve under the National Environmental Management: Protected Areas Act.

2.4.4. History of eco-cultural tourism in Isandlwana Heritage Reserve

Although the Isandlwana Heritage Reserve has limited tourism infrastructure inside the protected area, there is a close link to the Isandlwana Lodge which is approximately a kilometre away from the reserve entrance in the community and the museum. The lodge was built high on the iNyoni Rock just below where the Zulu Commander stood during the battle of Isandlwana on the 22nd of January 1879. It is important to realise that the area of historical importance goes far beyond the boundary of the Isandlwana Heritage Reserve and that these links should be strengthened to support the tourism product of the region.

The establishment of the Isandlwana lodge brought about employment opportunities and created a revenue stream to the community which contributes to improved village life, better schools, clinics etc. Visitors from around the globe have visited the lodge since its establishment in 1999, from this base visitors take guided or unguided walks to the reserve to look at the battlefield site, and walking the trail linked to the historic events. Various other private tourism operations in proximity of the reserve such as the Fugitive's Drift Lodge are also linked to the historical important landscape and specifically the battlefield

site in the reserve. Visitors from these establishments visit the reserve to see the battlefield and grave sites.

2.5. Ecological context of Isandlwana Heritage Reserve

2.5.1. Climate and weather⁷

Isandlwana has a temperate climate with mild temperatures during the summer months with maximum ranges of temperatures ranging between 25 ° Celsius and 27 ° Celsius. Whilst the minimum temperatures range between 10 ° Celsius and 13 ° Celsius during the same period. The area experience experiences fairly cold winters with maximum temperatures below 20 ° Celsius and minimum temperatures often reaching sub-zero during the winter months. The mean relative humidity ranges from 67% during the winter months (i.e. May to July) to 76% during the summer months (i.e. November to February).

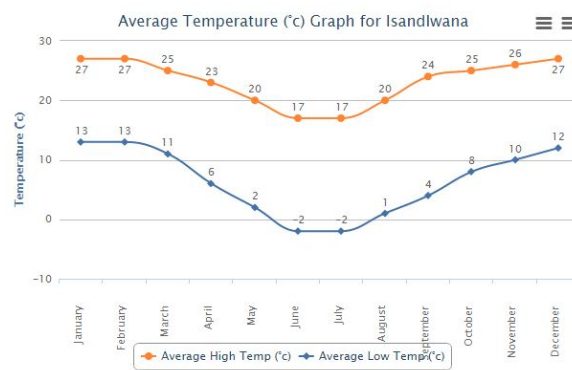


Figure 3: Average minimum and maximum temperature for Isandlwana⁸

Isandlwana receive most of its rainfall during the months of December, January and February. Its average rainfall is 708 mm per annum in the altitudinal higher northern parts but relatively lower in the southern parts (i.e. 676 mm) which are characterised by the Thukela Thornveld compared to the KZN Highland Thornveld in the northern parts. Heavy frost occasionally occurs during the year on an average of 1 days of heavy frost within a period of eight days. Such heavy frost occurs mainly during June and are expected in 21% of the years (Camp, 1995).

⁷ <http://www.worldweatheronline.com>. Accessed 29 April 2015

⁸ The data for Figure 4 and 5 were collected from 2000 to 2012

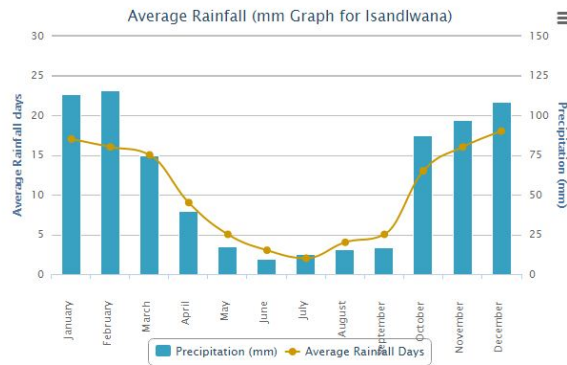


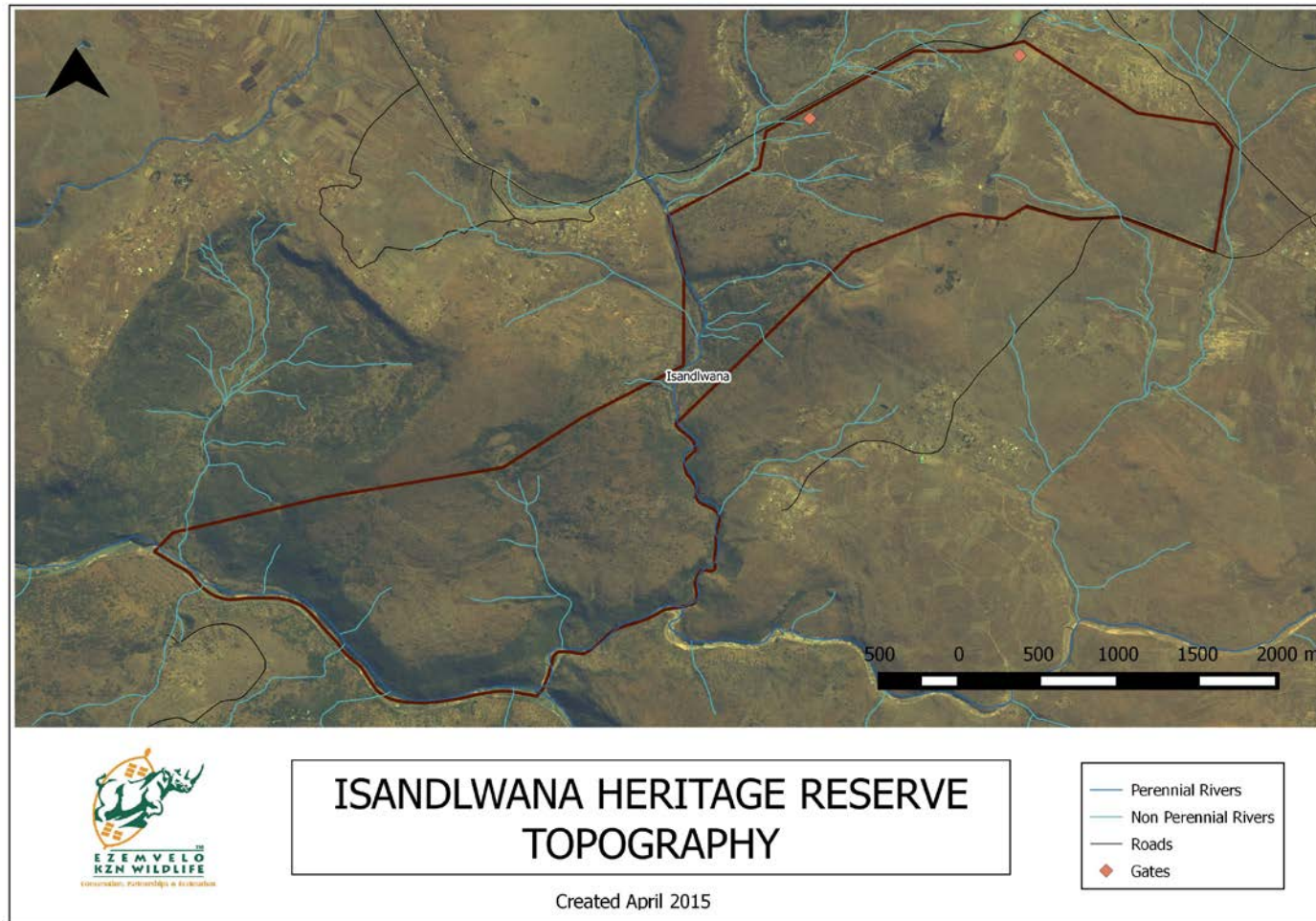
Figure 4: Average rainfall for Isandlwana

2.5.2. Topography

Isandlwana Heritage Reserve and the surrounding landscape have a unique topography, ranging from a relatively flat to gentle-sloped grassy north-eastern section, where the main entrance gate is situated, to a rugged south-western section with deep incised valleys and steep slopes encroached by pre-dominantly Acacias and a variety of other woody species.

Furthermore the events that unfolded during the Anglo-Zulu War in 1878 were intricately linked to this topographical landscape. The reserve is situated above 1000 m a.s.l. with the lowest point at 947 m a.s.l., found in the southern south-western section of the reserve where the Buffels River forms the boundary to the reserve. The highest point, at 1334 m a.s.l., is found on top of the well-known Isandlwana Battlefield site Mountain, around which the Battle of Isandlwana took place (*See Map B – Topography of Isandlwana Heritage Reserve*).

Map B: Isandlwana Heritage Reserve Topography

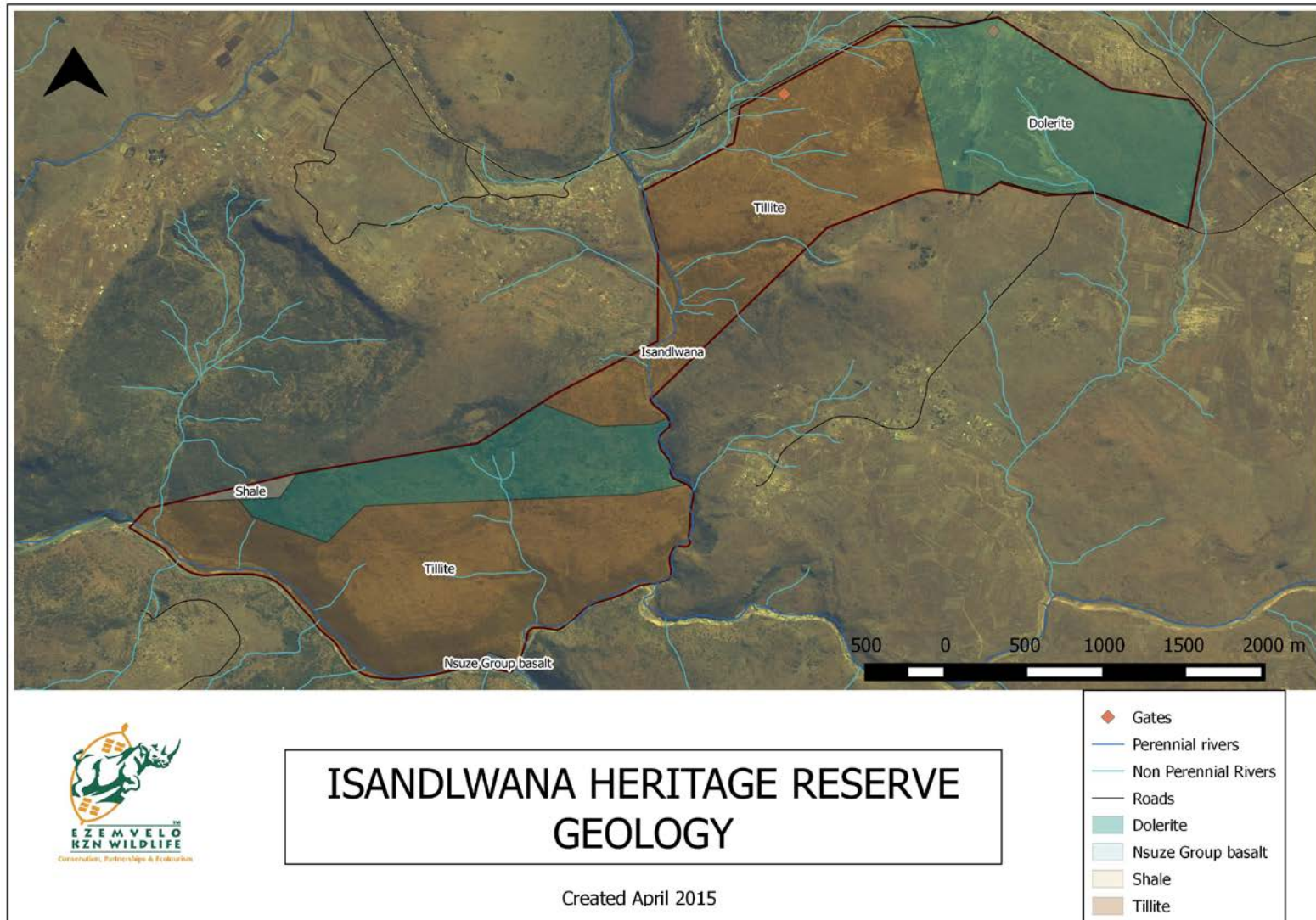


2.5.3. Geology and soils

The Isandlwana Heritage Reserve's geology consist of mainly Tillite in the south western and central sections of the reserve and dolerite in the north east and central parts. However, there are also pockets of sandstone of the Vryheid Formation deposited over the dolerite in the north-eastern section of the reserve and the evidence thereof is in the Isandlwana Mountain itself which is comprised of sandstone. There are limited shale intrusion into the Dolerites and Tillites and a single basaltic intrusion of the Nsuze Group in the south western boundary of the reserve along the Buffalo River (*See Map C – Geology for Isandlwana Heritage Reserve*).

The soils of Isandlwana comprise mainly of Glenrosa and/or Mispah soil forms from just south-east of Isandlwana Mountain all the way to the Buffalo River. However, there is also a Plinthic Catena which is comprised of undifferentiated, upland duplex and/or marginalitic soils just south west and partially north to north-east of the Isandlwana Mountain. There is a small component of rocky areas with miscellaneous soils in the northern edge of the reserve. *See Map C – Geology for Isandlwana Heritage Reserve.*

Map C: Isandlwana Heritage Reserve Geology



2.5.4. Hydrology

The Buffels/Buffalo River, – the largest tributary of the Thukela River, is classified in terms of the National Freshwater Ecosystem Priority Area (NFEPA) system as a largely natural, free flowing river and forms the south western boundary of the reserve. The Buffels River originates north east of Volksrust and joins the Thukela River near Nkandla. Various non-perennial streams also occur in the reserve and include the Manzimnyama River which is the main drainage line traversing the central part of the reserve at its smallest position flowing from north of the reserve to the south and eventually joining the Ngxobongo River which in turn flows into the Buffalo River. Immediately south-west of the Manzimnyama River is the Bbobhobho seasonal stream which flows into the Buffalo River. Another seasonal stream, which is crossed by the access management track that leads to the Field Ranger camp is called Ngcobhozana. Just north-east of the Isandlwana Mountain are two more seasonal streams, with Mpofana being the north-eastern most and Nyokana situated just south of Mpofana. Although all the streams within Isandlwana stop flowing during the dry season, however, there are intermittent pools that remain along some of the streams thus ensuring continued water supply for game even during the dry season.

2.5.5. Vegetation

Scott-Shaw and Escott (2011) developed the KwaZulu-Natal Provincial Pre-Transformation Map. According to this map the greater part of Isandlwana Heritage Reserve has Thukela Thornveld vegetation type with the exception of the north eastern side of the reserve where the KwaZulu Natal Highland Thornveld is found. The conservation status of both these vegetation types is listed as Least Threatened, but the Isandlwana Heritage Reserve is still contributing to provincial and ultimately national targets for these vegetation types. The Thukela Thornveld comprises of diverse woody species, wooded grassland and dense thickets, whereas the KZN Highland Thornveld comprises predominantly open grassland which is dominated by the Common Thatch Grass (*Hyparrhenia hirta*) and has been encroached by Acacia species and other shrubs, the most prominent being the Sweet Thorn (*Acacia karroo*).

The following extract and description of the vegetation types was extracted from Mucina & Rutherford (2006)

Gs 6 KwaZulu-Natal Highland Thornveld

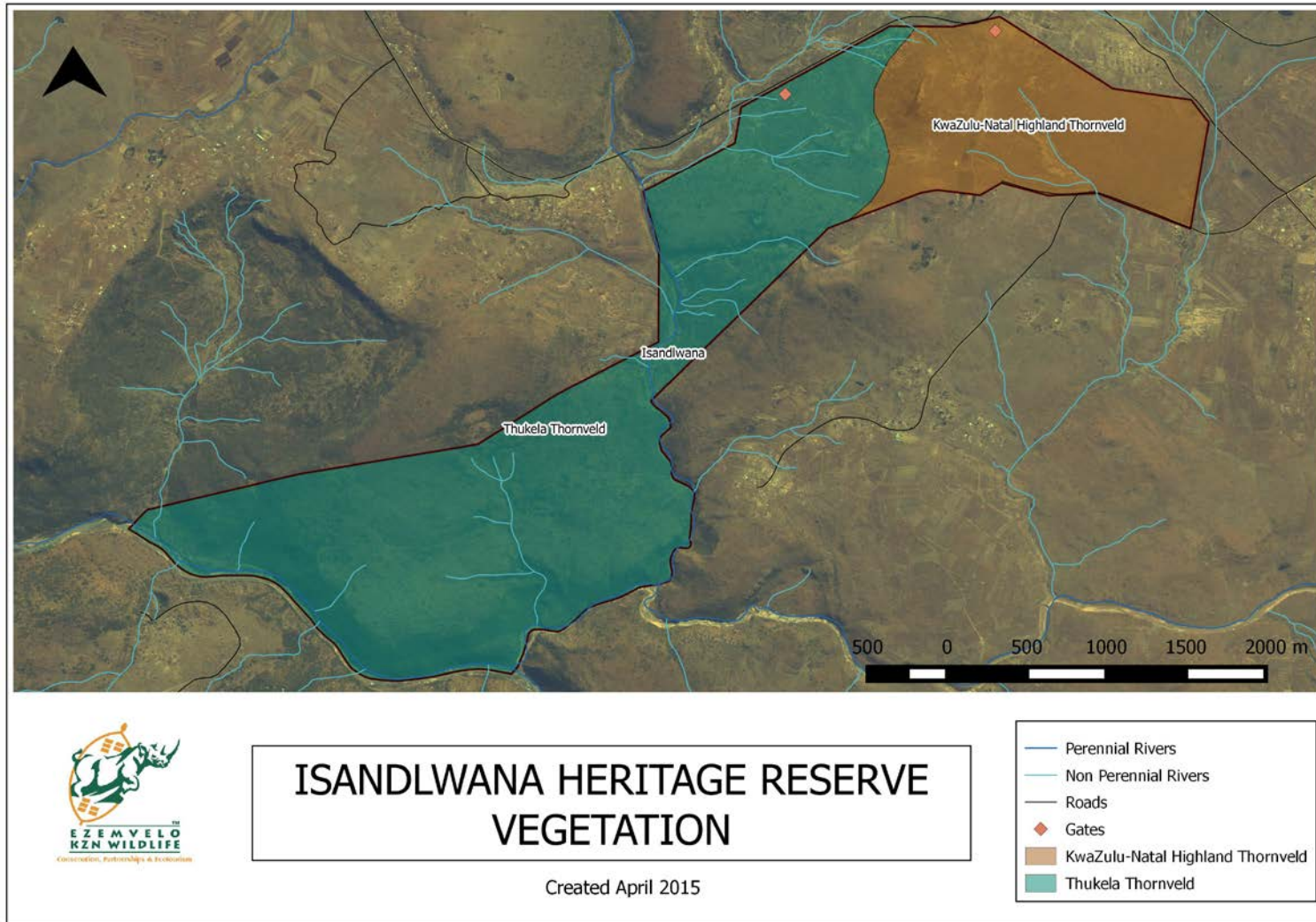
Hilly, undulating landscapes and broad valleys supporting tall tussock grassland usually dominated by *Hyparrhenia hirta*, with occasional savannoid woodlands with scattered *Acacia sieberiana* var *woodii* and in small pockets with *A. karroo* and *A. nilotica*.

SVs 2 Thukela Thornveld

The dominant landscape features are valley slopes to undulating hills. Vegetation is Acacia – dominated bushveld of variable density (ranging from wooded grassland to dense thickets) with dense grassy undergrowth.

See Map D – Vegetation of Isandlwana Heritage Reserve.

Map D: Isandlwana Heritage Reserve Vegetation

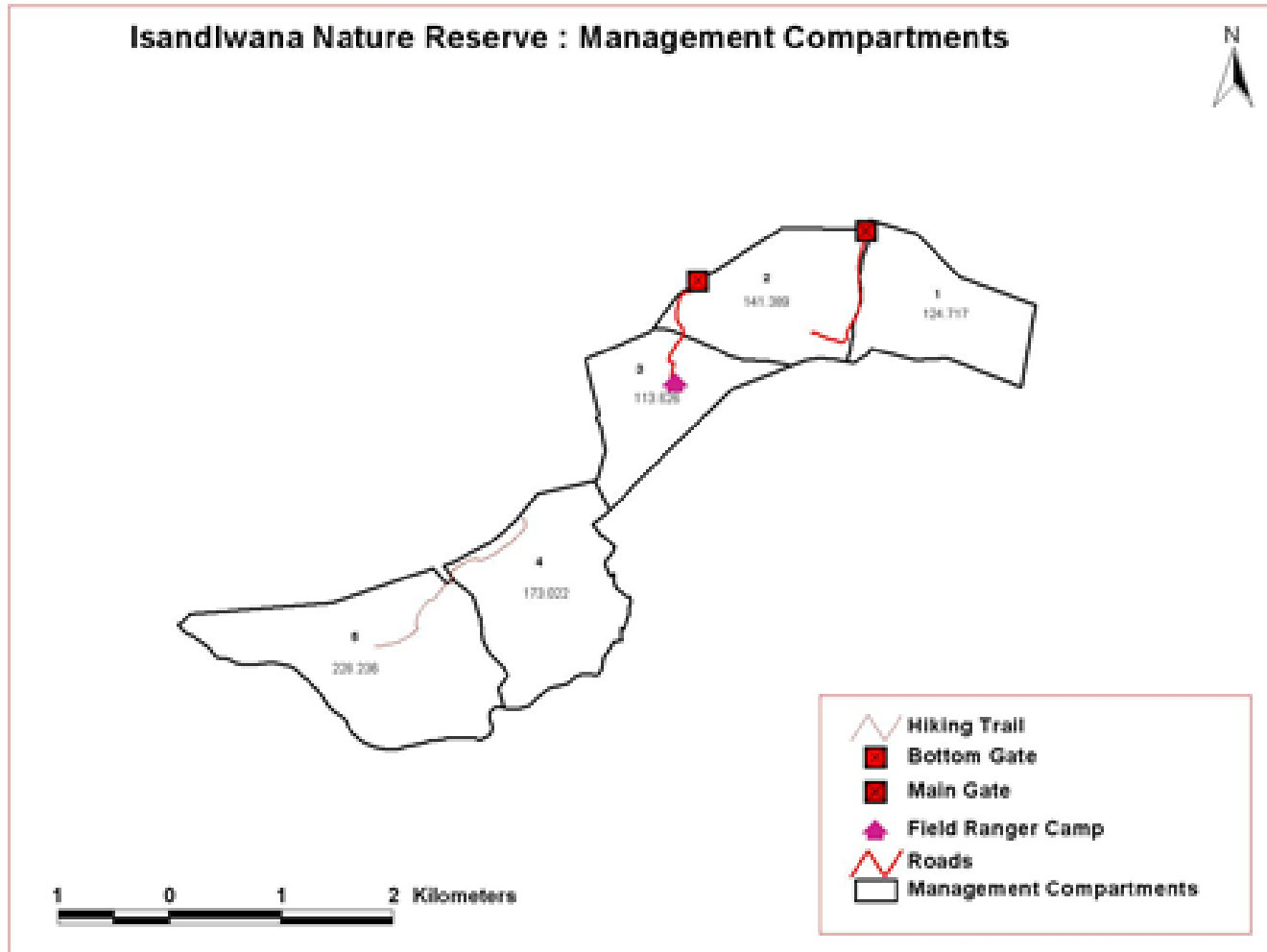


2.5.6. Fire regime

Fire regime refers to the type and intensity of fire and the season and frequency of burning (Trollope, 1993). The most commonly occurring types of fire at Isandlwana Nature Reserve are the “surface fires” which burn in the grass sward either as head fires (i.e. burning with the wind) or sometimes back fires (i.e. burning against the wind). “Crown fires” also do occur, mainly in the southern parts of the PA, when the aerial portions of trees and shrubs occasionally ignite during fierce, high intensity head fires but such fires are rare. At Isandlwana Nature Reserve, flexible biennial high intensity head fires are applied mostly in the southern portion of the PA in order to counteract the eminent bush encroachment. Such fires are ignited as controlled, scheduled burns during early spring after the first spring rains, commencing at noon when the moisture has evaporated from biomass in order to promote high intensity fires to deal with bush encroachment. Cooler fires with relatively low intensity are applied in the north-eastern part of the PA which is predominantly grassland to remove moribund material on a biennial basis provided there is sufficient biomass/fuel to carry the fire. However, due to overgrazing by livestock from the neighbouring Mangwebuthanani Community some areas, mostly the north-eastern parts, are sometimes not burned for three to four years. The current fire regime is essential both spatially and structurally as it influences the vegetation pattern (i.e. counteracts bush encroachment) but also benefits various fauna and flora which require fire for their persistence in a patch mosaic landscape. Despite the Management’s efforts to apply controlled burns as scheduled, some fires are Arson Fires (Figure 9 & 10) which are burned by members of the neighbouring community, probably to facilitate their livestock grazing. Such fires are often burnt outside the scheduled burning season (i.e. often in winter) and may also be burnt on blocks not planned to burn, which may lead to negative effects on biodiversity.

Although biennial burning regime is applied at Isandlwana, this regime is not inflexible since the frequency of burning is determined by the availability of sufficient herbaceous biomass to support a fire. Pre-burn inspection is conducted annually at the beginning of the fire season in order to determine whether there is sufficient biomass (i.e. grass) in each management block due for burning. Should it be found that herbaceous biomass is insufficient to carry an effective fire, then no burning takes place until sufficient biomass has accumulated. “Ground fires”, being one of the three main types of fires do not occur at Isandlwana due to local environmental conditions not suitable for ground fires. Ground fires usually a forest fire that burns humus and may not appear on the surface.

Map E: Isandlwana Heritage Reserve Management Compartments



2.5.7. Invasive species

Currently there are low levels of alien plant density (*Agave sisalana*) in Isandlwana HR and this need to be carefully monitored to detect any changes. The alien plant species recorded in Isandlwana HR include *Agave sisalana*, *Opuntia stricta*, *Jacaranda imosifolia* and *Opuntia ficus-indica* and, their density is less than 1%. Even though there are currently low levels of infestations in Isandlwana Heritage Reserve, this is something that needs to be closely monitored for any changes.

2.5.8. Mammalian fauna

The large mammal species occurring in the PA include Impala (*Aepyceros melampus*), Red Hartebeest (*Alcelaphus buselaphus*), Blesbok (*Damaliscus pygargus phillipsi*), Plains Zebra (*Equus quagga antiquorum*) and Kudu (*Tragelaphus strepsiceros strepsiceros*). The population numbers of the abovementioned mammal are managed such that populations they do never exceed the ecological carrying capacity of the PA. This is critically important considering that the livestock grazing agreement between AMAFA and the Mangwebuthanani community puts increased pressure on PA's grazing resources during the winter months which tends to far exceed the grazing capacity of the PA (i.e. cattle as many as more than 600 have counted by Field Rangers) and, furthermore, the livestock is often illegally grazed year round instead of the agreed upon grazing period.

For full species list see Appendix H.

2.5.9. Avifauna

Bird species that occur in Isandlwana Heritage Reserve include the following:

- Cape vulture *Gyps coprotheres*
- Black Kite, Yellow-billed Kite *Milvus migrans*
- Martial eagle *Polemaetus bellicosus*
- Brown-hooded Kingfisher *Halcyon albiventris*
- Southern Bald Ibis, Bald Ibis *Geronticus calvus*

For full species list see Appendix H.

2.5.10. Herpetofauna

Reptiles and amphibians form an important part of the ecosystem and certain species serve as bio-indicators due to their sensitivity to environmental factors. Much remains to be discovered about the reptile and amphibian species complement of the area, their life histories, inter-relationships and contributions to the functioning of its ecosystems.

Species of amphibians occurring in the PA include the Natal sand frog (*Tomopterna natalensis*), the Dwarf dainty frog (*Cacosternum nanaum*), the Bushveld rain frog (*Breviceps adpersus adpersus*) and the Raucous toad (*Amietophrynus rangeri*). Reptiles occurring in

Isandlwana Heritage Reserve include the Variable skink (*Trachylepis varia*) and the Southern rock agama (*Agama atra atra*).

2.5.11. Invertebrates

Invertebrate fauna constitutes the greatest component of species diversity in natural systems but it is often poorly understood while their role in ecosystems is important and often overlooked. In terms of biodiversity and the provision of ecosystem services however, it is important to acknowledge that they are fundamentally important. Invertebrates form important components of food webs, assist nutrient cycling and aeration of soil, decomposition and pollination of plants and trees. For many of these invertebrate species habitat conservation is the most important management intervention required with habitat loss being the biggest threat to their survival.

Species occurring in the PA include the Yellow-bellied garden fruit chafer (*Pachnoda sinuate flaviventris*), Rose chafer (*Pegylis sommeri*) and the Shady fruit chafer (*Phoxomela umbrosa*).

2.5.12. Fish

During 2011¹ a brief fish survey was conducted in the Buffels River in close proximity to the reserve and a number of fish species (*Table 3*) were recorded.

Table 3: Fish species sampled in the Buffels River

| Common Name | Species | Notes |
|--------------------------|-------------------------------|--------------------|
| Longfin Eel | <i>Anguilla mossambica</i> | New species record |
| Chubbyhead Barb | <i>Barbus anoplus</i> | Species present |
| Goldie Barb | <i>Barbus pallidus</i> | Species absent |
| Straightfin Barb | <i>Barbus palludinosus</i> | Species absent |
| Sharptooth Catfish | <i>Clarius gariepinus</i> | New species record |
| Common Carp | <i>Cyprinus carpio</i> | Species present |
| KwaZulu-Natal Yellowfish | <i>Labeobarbus natalensis</i> | Species present |
| Leaden Labeo | <i>Labeo molybdinus</i> | New species record |
| Banded Tilapia | <i>Tilapia sparrmanii</i> | Species absent |

Karssing (2011) indicates that:

*“New fish species records for the Buffalo River include Long fin Eel (*Anguilla mossambica*), Sharptooth Catfish (*Clarius gariepinus*) and Leaden Labeo *molybdinus*. The discovery of a catadromous species like *A. mossambicus* in the Buffalo is quite significant since it bears testimony to the importance of retaining free flowing river systems in KZN.”*

2.6. Cultural context of Isandlwana Heritage Reserve

The following cultural resources are located within the Isandlwana Heritage Reserve:

- The colonial cemetery
- The memorial to the Zulu soldiers that were slain

¹ Karssing R, 2011. Fish species associated with Isandlwana Nature Reserve

- The carbineer memorial
- The firing line and associated cairns
- Memorials and cairns on the saddle between Black's Koppie and Isandlwana
- Cairns in the camp area
- Cairns on Isandlwana Hill (Younghusband)
- Cairns and graves on the south western slopes of the hill (Shepstone)
- Cairns on Fugitives trail

See Appendix E Battlefield Management Guidelines for Isandlwana Heritage Reserve.

2.7. Socio-economic context

The Isandlwana Heritage Reserve, more so than most other protected areas is an integrated component of the rural landscape. The area surrounding the reserve is predominantly rural in nature with expansive low-density rural settlements identified by the Nquthu Local Municipality 2014/2015 Integrated Development Plan (IDP)¹ as the key feature of the area. The municipal area can further be divided into 9 Traditional Authority areas with the Mangwebuthanani Area that includes the Isandlwana Heritage Reserve.

The Nquthu Local municipality serves a population of approximately 165 000 with the community spread unevenly across the landscape. The IDP indicates agriculture and more specifically dryland subsistence farming including livestock and crops such as maize and beans as the primary land use in the area. Some of the challenges that are experienced by the local municipality despite the support provided by the UMzinyathi District Municipality and that could have an influence on the management of Isandlwana Heritage Reserve include:

- high rates of unemployment;
- water and sanitation service backlog;
- high levels of poverty;
- lack of investment and infrastructure;
- unplanned settlements in areas that are not appropriate for human settlement;

These could potentially impact on the Isandlwana Heritage Reserve and as such should be considered during the development and management of the reserve.

¹ Nquthu Local municipality, 2014. Draft Integrated Development Plan

2.8. Operational management within Isandlwana Heritage Reserve

2.8.1. Infrastructure

Isandlwana Heritage Reserve has limited infrastructure in the reserve. Tourism facilities are located outside the boundaries of the reserve, visitors access the reserve and trails from various points to access the heritage sites and walk the well-known Fugitives trail. Roads in the reserve are limited and a 2 km road takes visitors to the grave sites and the historical trails.

The gatehouse that serve as entry to the reserve is manned by AMAFA and people arriving at the gate, have to drive to the AMAFA offices where the entrance fee is paid before they could gain access to the reserve. The most critical infrastructure challenge is that the fence line standard does not prevent uncontrolled access of livestock including cattle, sheep and goats. This leads to overgrazing of the area with increased bush encroachment and erosion, specifically on the shale areas around the battlefield site the most critical concern.

2.8.2. Staffing establishment

Isandlwana Heritage Reserve is currently managed by a District Conservation Officer of the district who has many other commitments including all district work and the management of Ntinini Nature Reserve. This situation is exacerbated by the fact that there is only 2 field ranger position currently filled in the reserve, with the third position a vacant post.

It is clear that the reserve is under capacitated in terms of staff and taking cognisance of all he required human resource requirements such as leave, sick leave and the fact that it is not good practice for one field ranger to patrol on their own – this impact severely on the management of the reserve.

AMAFA has a Heritage officer stationed at the AMAFA offices and 3 gate guards that are responsible for the gate access control. An additional two staff members take responsibility for site maintenance issues on the battlefield. Any other labour required is sourced from the Mangwebuthanani Community on a seasonal basis for example during the fire season. During 2014/2015 Amafa made a budget of R30 000 available for contract labour at Isandlwana Heritage Reserve.

2.8.3. Funding levels at Isandlwana Heritage Reserve

The funding of the operations at Isandlwana Heritage Reserve is currently jointly shared between AMAFA and Ezemvelo. The component currently funded by AMAFA includes firebreaks, R 10 000 p/a, Fencing, R 20 000. Soil reclamation R 8 000 and amount to R 38 000. The operational budget from Ezemvelo caters for law enforcement, and it is clear that the reserve is underfunded and a consolidated budget requirements is contained in *Appendix I – Financial Plan for Isandlwana HR.*

2.8.4. Management effectiveness in Isandlwana Heritage Reserve

Ezemvelo KZN Wildlife strives to continually improve management effectiveness of Isandlwana Heritage Reserve in line with the levels adopted for all protected areas within the KZN protected area network (67% as per the national standard). In 2010 Ezemvelo KZN Wildlife conducted management effectiveness assessments for all of its protected areas (Carbutt and Goodman, 2010) and these assessments have subsequently been done on an annual basis. Management effectiveness assessments consider protected area design, the appropriateness of management systems and processes, and delivery of protected area objectives. These assessments assist with the following:

- Promote adaptive management
- Improve project planning
- Promote accountability

Such assessments are intended to enable conservation organisations to refine their conservation strategies, re-allocate budget expenditures, and develop strategic, system-wide responses to the most pervasive threats and management weaknesses (Carbutt and Goodman, 2010). They are not performance assessments of individuals but serve to reflect an organisation's proficiency for protected area management as a whole.

In the 2014 assessment Isandlwana Heritage Reserve scored 58.22%, which is below the accepted standard of 67%. Even though the development of the management plan for the Reserve will contribute to increasing the score, the following issues were highlighted and need to be addressed:

- Adjacent land-use and water-use planning does not take into account the objectives of the reserve.
- Environmental education takes place on an ad hoc basis.
- Staff numbers are below the optimal level for the effective management and capacity and equipment are also not optimal.
- There is a need for additional critical information on the biodiversity of Isandlwana HR.
- There is currently no buffer and therefore incompatible land uses are a great concern.
- The lack of a management plan.
- The lack of a fleet.
- Maintenance of infrastructure is not scheduled and takes place on an ad hoc basis.
- Alien and invasive species control takes place on an ad hoc basis.
- There are limited communication between management and the tour operators that make use of the reserve.
- Lack of monitoring and reporting for natural resource use. (Not quantified)

2.9. Summary of management issues, challenges and opportunities

Table 3: Management challenges and issues

| Key performance area | Issue that must be addressed |
|--------------------------------------|--|
| Legal compliance and law enforcement | <ul style="list-style-type: none"> Functions and roles of the various partners are unclear. Trilateral agreement between Amafa, Ezemvelo and the Mangwabuthanani community needs to be updated. |
| | <ul style="list-style-type: none"> Cooperative efforts required between neighbours, SAPS and Ezemvelo to address poaching. |
| | <ul style="list-style-type: none"> SG Diagram description in the proclamation needs to be corrected. The description of two different sections of the reserve both contains the same number. |
| | <ul style="list-style-type: none"> Poaching (Groups of people hunting with dogs) problems are exacerbated by lack of human resource capacity, fleet and staff numbers. |
| Stakeholder engagement | <ul style="list-style-type: none"> Link between the strategic and operational committee needs to be strengthened. |
| | <ul style="list-style-type: none"> No regular and effective communication with stakeholders. |
| | <ul style="list-style-type: none"> Lack of cooperation with direct neighbours in terms of poaching and fire management. Cooperation with specifically the private game farms on northern boundary in terms of operations. |
| | <ul style="list-style-type: none"> Land use and water use planning do not consider the reserve's requirements. |
| | <ul style="list-style-type: none"> There are limited communication between management and the tour operators that make use of the reserve. |
| Eco-cultural tourism management | <ul style="list-style-type: none"> The linking of the various eco-tourism activities in the region e.g. the museum, education centre, the lodge and the battlefield site as well as private accommodation products. |
| | <ul style="list-style-type: none"> Branding as part of the battlefield sites in the region. |
| | <ul style="list-style-type: none"> Maintenance of hiking trail and tourism areas. There is currently no clarity in terms of who is responsible for maintaining trails. |
| Conservation management | <ul style="list-style-type: none"> Functions and roles of various partners need to be clarified. |
| | <ul style="list-style-type: none"> Overgrazing due to sheep, goats and cattle in the reserve outside of the times agreed to between Amafa, the community and Ezemvelo. (Especially in the shale areas) |
| | <ul style="list-style-type: none"> Lack of clarity on actual numbers of livestock in protected area. |

| | |
|------------------------|---|
| | <ul style="list-style-type: none"> ▪ Overgrazing during certain times of the year. The carrying capacity of 120 Animal Units is constantly exceeded and this is not sustainable. |
| | <ul style="list-style-type: none"> ▪ Insufficient biodiversity knowledge. |
| | <ul style="list-style-type: none"> ▪ Controlled sustainable resource use – thatch, wood & grazing – this benefits the local community and ensures support for the PA. There is a need to monitor; record and determine the value of the resources that are extracted from the reserve. |
| | <ul style="list-style-type: none"> ▪ Alien plants – at this stage the threat is limited but if it remains unchecked it could increase. |
| | <ul style="list-style-type: none"> ▪ Arson fires threaten the biodiversity in PA. |
| | <ul style="list-style-type: none"> ▪ Bush encroachment – due to overgrazing. |
| Operational management | <ul style="list-style-type: none"> ▪ Staff capacity in terms of numbers, training, equipment and fleet needs to be addressed. |
| | <ul style="list-style-type: none"> ▪ Lack of financial resources for the effective management of IHR. |
| | <ul style="list-style-type: none"> ▪ Lack of Standard Operating Procedures to guide staff and management. |
| | <ul style="list-style-type: none"> ▪ State of the fence not sufficient to secure the area and prevent unregulated entry from livestock. |

3. STRATEGIC MANAGEMENT FRAMEWORK

In an effort to ensure that Isandlwana Heritage Reserve is effectively managed, the following strategic framework has been developed. It is aimed at providing the strategic basis for the protection, development and operation of the nature reserve over the next five years and has been prepared collaboratively through a process involving stakeholders within Ezemvelo KZN Wildlife, the communities around the nature reserve, local and provincial government departments and other stakeholders.

The vision describes the overall long-term goal for the operation, protection and development of Isandlwana Heritage Reserve. The objectives and strategic outcomes that follow are intended to provide the basis for the achievement of the vision. The objectives provide a broad description of the goals for each key performance area. The strategic outcomes, which flow from the objectives, set out what is needed to achieve the objectives, based on the management challenges, issues and opportunities described in Section 2 above.

3.1. Isandlwana Heritage Reserve vision

Protect the natural and cultural landscape of the reserve for current and future generations, whilst contributing to the local economy

3.2. Objectives and strategic outcomes

An objective has been identified for each of Isandlwana Heritage Reserve key performance areas, which follow from the management challenges, issues and opportunities, and relate to the important functions and activities necessary to protect, develop and manage it effectively. The objectives have then been translated into strategic outcomes, which form the basis for the management activities and targets set out in the operational management framework, described in Section 6 below. Table 3.1 sets out the key performance areas, the objective for each key performance area and the strategic outcomes, required to realise the objectives.

Table 4: Objectives and strategic outcomes for Isandlwana Heritage Reserve

| Key performance area | Objective | Strategic outcome |
|--|--|---|
| Legal compliance and law enforcement | Comply with and enforce legislation pertaining to the protection, development and management of IHR. | <ul style="list-style-type: none"> ▪ Ensure adequate legal protection of the Isandlwana Heritage Reserve. ▪ Ensure there is adequate law enforcement within the reserve to protect the values and the purpose of Isandlwana Heritage Reserve. |
| Stakeholder engagement | Enable and maintain effective stakeholder relations through communication and collaboration. | <ul style="list-style-type: none"> ▪ Constructive involvement in the reserve’s management through effectively functioning meetings with relevant stakeholders. ▪ Adoption and implementation of revised AMAFA, Ezemvelo and Mangwebuthanani Community. |
| Buffer zone protection and regional management | Protect the biodiversity and cultural assets of IHR by promoting compatible land-use and activities in areas surrounding the nature reserve. | <ul style="list-style-type: none"> ▪ Determination of the buffer zone requirements around the reserve. ▪ Capture buffer zone considerations in municipal spatial plans. |
| Nature based tourism | Maintain sustainable nature-based tourism in IHR to provide a high quality visitor experience whilst promoting the natural and cultural values of the reserve. | <ul style="list-style-type: none"> ▪ Promote the linkages between the Isandlwana Heritage Reserve and the regional tourism initiatives. ▪ Support the local tourism economy through effective communication and a good conservation product. |
| Cultural heritage management | Ensure the protection and public appreciation of all cultural and heritage resources within the nature reserve in accordance with statutory regulations. | <ul style="list-style-type: none"> ▪ Ensure the protection and the improved awareness of the cultural heritage values and Living heritage values of IHR. |
| Conservation management | Protect the ecological integrity of IHR through active interventions based on principles of adaptive management. | <ul style="list-style-type: none"> ▪ Develop and implement fire management plan for Isandlwana Heritage Reserve. ▪ Adequate fire safety within Isandlwana Heritage Reserve is ensured. ▪ Development and implementation of an alien and invasive control plan for Isandlwana Heritage Reserve. |

| | | |
|------------------------|--|---|
| | | <ul style="list-style-type: none"> ▪ Identify, rehabilitate and manage areas that may potentially be impacted by soil erosion. ▪ Implementation of procedure to manage alien animals found within Isandlwana Heritage Reserve. ▪ Ensure that extractive resource use is done legally and according to Ezemvelo policy. ▪ If bio-prospecting is undertaken, it is done legally and conforms to Ezemvelo policy. ▪ Develop a strategy to manage game species within the reserve with due consideration to the community grazing requirements as stated in the MOU. |
| Operational management | Provide adequate human resources, equipment, infrastructure and funding to enable the effective protection, development and management of Isandlwana Heritage Reserve. | <ul style="list-style-type: none"> ▪ Development of a five-year financial plan that identifies the resource needs to achieve the objectives for the reserve. ▪ The reserve is adequately staffed for its effective management and operation. ▪ All infrastructure and equipment of the Isandlwana Heritage Reserve are adequately maintained. |

4. ZONATION PLAN

The purpose of zonation within a protected area is to identify types and levels of usage that are acceptable based on an area's sensitivity and resilience, and to manage visitor experience and inter-user conflict. Zonation is used to identify areas in which infrastructure may be located.

4.1. Zonation of Isandlwana Heritage Reserve

A standardised zonation system has been developed for all of Ezemvelo KZN Wildlife's protected areas. This system enables a protected area to be zoned according to six categories, which are spread along a continuum, from pristine wilderness to higher intensity nature-based uses. The zonation system recognises and reflects:

- Sensitive features associated with a protected area (i.e. biophysical, cultural and sense of place).
- A general gradation in the zonation categories, in which the next use level provides a buffer to the lower use level.
- Influence of existing and historic facilities, infrastructure and use.

Opportunities and constraints (biophysical, social or managerial constraints) for use.

Zonation is a composite of ecological zonation (based on natural resource sensitivity), sense of place, cultural features, patterns of environmental settings, and existing development and use patterns. The final zonation map is represented as a desired state, i.e. directing management towards a vision for each zone, which reflects and respects the broader conservation and eco-cultural tourism objectives for the protected area.

Not all zonation categories have been applied in determining the system of zonation for Isandlwana Heritage Reserve, as some are not appropriate to it.

General principles:

- There is a general gradation in the zonation categories ranging from high to low protection.
- An overlay zone provides additional protection and may be overlaid onto another zone in order to strengthen the protection e.g. Key Feature Protection Zone.
- A node is an area where tourism, management and service infrastructure can be developed and that has a specified footprint.
- Where possible both management and tourism infrastructure should be developed outside the protected area.
- Development of infrastructure should preferably be on the periphery of the zone towards a higher impact/less sensitive adjacent zone.
- Deviations or exceptions in any zones require approval from the management authority. (Operations Committee level)

Any activities permitted in a category of higher protection are also permitted in a category of lower protection, e.g. activities permitted in the Low Use Zone can also be permitted in the Moderate Use Zone.

All activities will take place in accordance with the local protected area rules and regulations.

4.2. Concept development guidelines

The purpose of the zonation of Isandlwana Heritage Reserve is to control the intensity and type of use within it, in efforts to ensure the overriding goals of biodiversity conservation are met whilst enabling acceptable levels of eco-cultural tourism and other resource use. On this basis, within some zones, the permissible intensity of use will be relatively higher than in others. Any developments or events held within the protected area will require internal DevCo and/ or external departmental approval in terms of EIA regulations.

See Map E: Isandlwana Heritage Reserve Zonation

Map F: Isandlwana Heritage Reserve Zonation

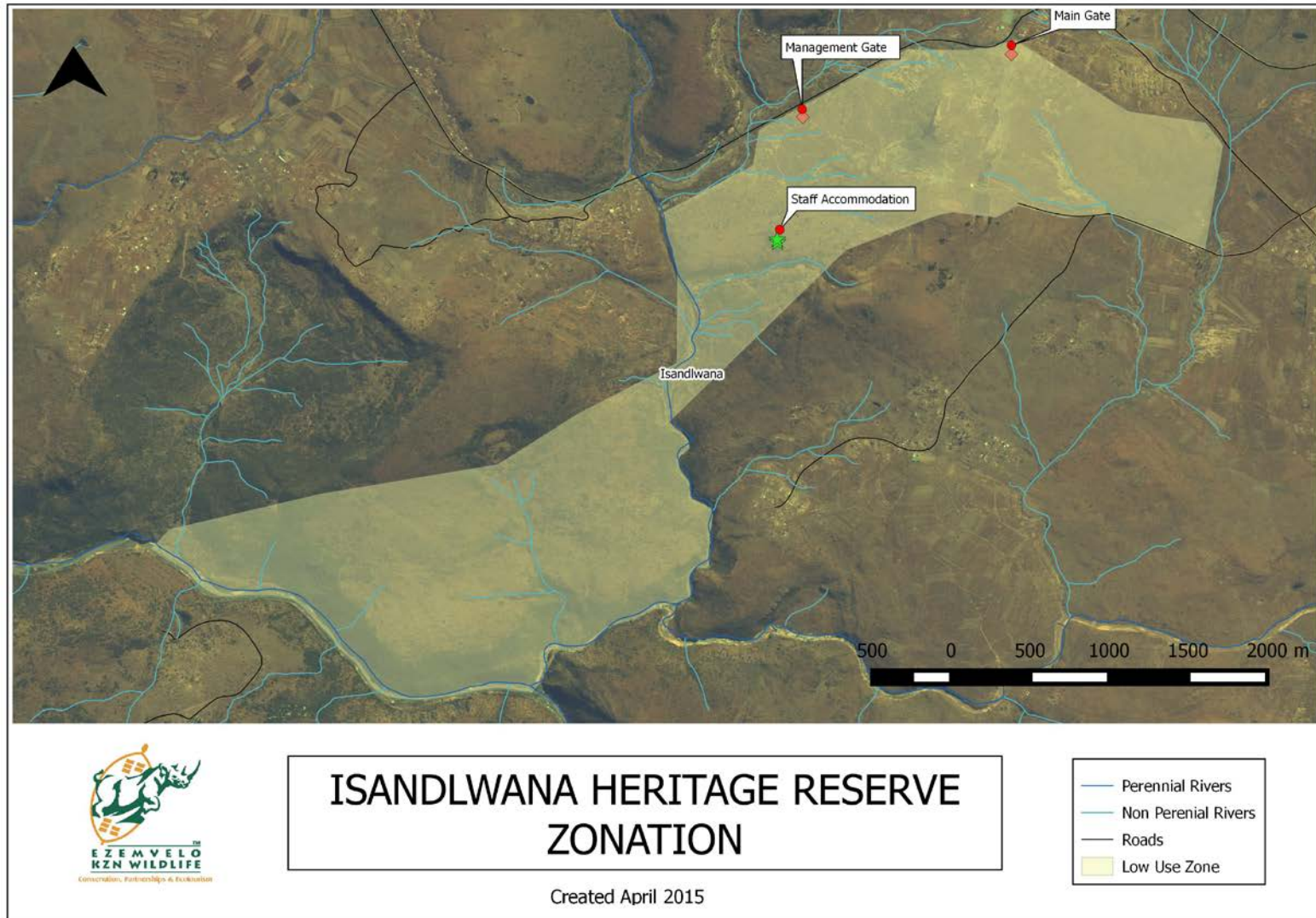


Table 5: Zonation Categories for Isandlwana Heritage Reserve

| Key feature protection overlay | |
|---------------------------------------|---|
| Description | An area that is vulnerable and or scientifically important, where specific additional controls are imposed in order to prevent undesirable impacts on identified sensitive or threatened species, habitats, ecosystems, bio-control release sites, research sites, archaeological, living heritage and paleontological sites. |
| Objective | This zone is for permanent, temporary or seasonal protection of important core protected area values. It aims to provide additional protection for the integrity of key areas. |
| Activities and infrastructure | <ul style="list-style-type: none"> ▪ The zone may overlay other zones so a range of infrastructure may already exist. ▪ In addition to restrictions of the underlying zone site specific rules and regulations will apply. |
| Constraints and implementation | <ul style="list-style-type: none"> ▪ This is a protection zone and would only allow for access and development under site specific constraints. (Does not cater for further developments or resource utilization) ▪ This zone provides a higher level of protection than the underlying zone. ▪ Could be permanent, temporary or seasonal overlay. ▪ Changes to this overlay can be implemented through the Park planning committee and the annual management meeting and recorded as such. |
| Low use zone | |
| Description | An area where there is little evidence of modification of natural processes and landscapes, that is more sensitive than the moderate use zone and where the ecotourism principles of low human impact will prevail. The zone also serves as a buffer to the wilderness zone. |
| Objective | To designate an area for tourism experiences and management activities that are focused primarily on low impact activities and where general sensitivity requires that management and tourism impacts on the natural landscape should be mitigated. |
| Activities and infrastructure | <ul style="list-style-type: none"> ▪ Facilities of a rustic nature such as trails. ▪ Motorized access is low-key and 4 x 2 access is provided to points where trails start. ▪ Hiking and formalised trails. Management activities must focus on protecting reserve resources and core values. ▪ Limited management roads and tracks. ▪ Controlled extractive resource use in line with Ezemvelo KwaZulu-Natal Wildlife policies and norms and standards. |
| Constraints and implementation | <ul style="list-style-type: none"> ▪ Activities are mostly low impact and low density. ▪ No modern facilities such as restaurants and shops are permissible in this zone. ▪ Where possible, facilities should be developed on the periphery of the zone towards the less sensitive adjacent zone. |

Protected area buffer zone

| | |
|---------------------------------------|---|
| Description | An area outside the boundary of the protected area where actions are taken and agreements are made to protect the integrity of the protected area and to enhance the livelihoods of protected area neighbours. |
| Objective | An area outside the boundary of the protected area where actions are taken and agreements are made to protect the integrity of the protected area and to enhance the livelihoods of protected area neighbours. To influence land use adjacent to the protected area to manage external pressures and threats that may threaten its values and objectives. |
| Activities and infrastructure | <p>The Park management must define these activities in terms of its specific values and objectives and taking into consideration the following:</p> <ul style="list-style-type: none">▪ Alien and invasive species management▪ Pollution control and prevention▪ Impact on sense of place▪ Habitat fragmentation and isolation▪ Water resource protection▪ Human/ Wildlife conflict▪ Climate change adaptation▪ Compatible land use▪ Priority species management |
| Constraints and implementation | <p>It is desirable for the intensity of land use to decrease closer to the protected area. Activities that are not compatible with the adjacent protected area zonation must be discouraged.</p> <p>Management activities will focus on:</p> <ul style="list-style-type: none">▪ Strategically promoting and monitoring compatible land-use and land-care on adjacent lands and upstream catchments▪ Integrated alien species control▪ Biodiversity stewardship and environmental awareness▪ Working collaboratively with neighbours to secure sensitive sites that contribute to the protection of values and objectives of the protected area.▪ Influencing and input into the municipal and regional planning tools such as SDFs, Schemes, IDPs and Bioregional Plans.▪ The Buffer should spatially reflect the 5 km border of listed activities as per National Environmental Management Act No. 107 of 1998 Notice 3 of 2010. |

5. ADMINISTRATIVE STRUCTURE

A recommended organisational structure for Isandlwana Heritage Reserve is set out in Figure 5.1. The figure represents the staff complement and positions that are required to enable the effective operation, management and protection of Isandlwana Heritage Reserve.

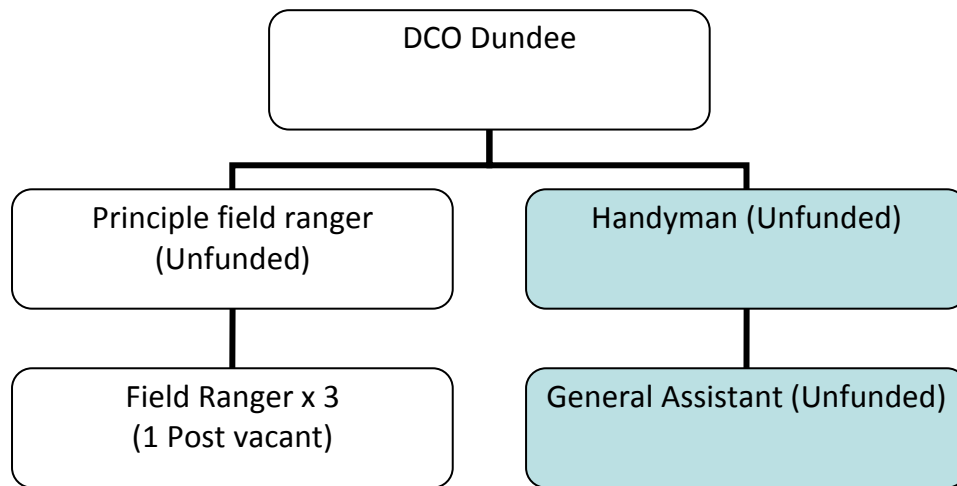


Figure 5: Organisational structure of Isandlwana Heritage Reserve

6. OPERATIONAL MANAGEMENT FRAMEWORK

This section translates the strategic framework described in Section 3 above into management activities and targets, which will be used to inform annual plans of operation and the resources required to implement them. The management targets will form the basis for monitoring of performance in implementing the plan and are thus measurable.

6.1. Determination of priorities for strategic outcomes

In the tables that follow in this section, a column has been included entitled “Priority”, which is intended to convey the level of priority attached to its management target. The purpose of prioritising activities is to direct funds and resources to the most important activities, in the event that there are insufficient funds or resources to undertake all of the activities outlined in a particular year. Priorities are ordered in three categories, which have been determined on the following basis:

| | |
|-------------|---|
| Priority 1: | A management target that is central to the responsibilities and mandate of Ezemvelo KZN Wildlife or that addresses an aspect of management that is fundamental to the protection of the values and purpose of Isandlwana Heritage Reserve. |
| Priority 2: | A management target that addresses an aspect of management that contributes towards community involvement and support for the conservation of Isandlwana Heritage Reserve, which is a key principle of effective protected area management. |
| Priority 3: | A management target that indirectly contributes towards the protection of biodiversity or the development of social and/or economic benefits and opportunities for Isandlwana Heritage Reserve and/or its surrounding local communities. |

6.2. Legal compliance and law enforcement

Through its mandate to undertake the conservation and management of protected areas in KwaZulu-Natal, Ezemvelo KZN Wildlife must ensure that the province's protected areas are appropriately legally protected and that the laws governing the use of protected areas and the prohibition of particular activities are enforced. In fulfilling this role, the managers of Isandlwana Heritage Reserve will adhere to the following guiding principles:

- All reasonable efforts must be made to ensure the effective conservation of biodiversity within and on the boundaries of the protected area.
- Cooperative structures should be established to enable participation by key stakeholders such as local communities and the South African Police Service in addressing offences and breaches of the law.
- Law enforcement within the protected area will be undertaken through surveillance, monitoring and appropriate reaction in the event of an offence.

6.3. Stakeholder engagement

Constructive relationships with adjacent landowners and communities are an important aspect of the effective conservation of protected areas. Stakeholder engagement should be aimed at developing a strong sense of partnership between the neighbours and communities around the nature reserve and its managers. The following guiding principles should be adhered to:

- Efforts should be made to ensure that the communities living around the protected area are aware of the role that it fulfils in biodiversity protection and the provision of ecosystem services to the region.
- Stakeholder engagement should be undertaken to engender a sense of ownership of the protected area, within the communities, and support for its biodiversity conservation objectives.
- A common understanding of the issues that affect both the protected area and the surrounding communities should be developed and efforts to resolve them should be undertaken cooperatively.

The operational requirements for legal compliance and enforcement, and stakeholder engagement are set out in Table 6.1 below.

Table 6: Framework for legal compliance and law enforcement, stakeholder engagement and co-management

| Strategic outcome | Management activities | Management targets | Indicators of Concern | Priority | Responsibility |
|---|---|---|---|----------|------------------------------------|
| LAW ENFORCEMENT | | | | | |
| Ensure adequate legal protection of the Isandlwana Heritage Reserve. | <ul style="list-style-type: none"> Ensure that the reserve boundaries are appropriately demarcated through appropriate fencing and signage. | <ul style="list-style-type: none"> Sufficient demarcation signage at least at the entrance gate to the reserve. Effective fencing that prevent illegal livestock entry. | <ul style="list-style-type: none"> Overgrazing due to illegal livestock in the reserve. Increased security incidents and or prosecution of these. | Year 2 | Conservation Manager with AMAFA |
| | <ul style="list-style-type: none"> SG diagram description to be corrected on the proclamation documents. | <ul style="list-style-type: none"> Correct proclamation documents and SG Diagrams. | <ul style="list-style-type: none"> Correct description of site on the SG diagram. | Year 1 | Conservation Manager with Planning |
| Ensure that there is adequate law enforcement within the reserve. | <ul style="list-style-type: none"> Collaborate with relevant institutions and local communities in addressing security issues in the nature reserve. | <ul style="list-style-type: none"> Participation in monthly local community policing forum. | <ul style="list-style-type: none"> Frequent recovery of snares. Arson fires. | Year 1 | Conservation Manager |
| | <ul style="list-style-type: none"> Ensure that staff are equipped and trained to undertake patrols within the nature reserve for law enforcement purposes. Implement a programme of patrols of the nature reserve and its boundaries. | <ul style="list-style-type: none"> Regular patrols covering the full extent of the nature reserve. Prosecution of any offender caught committing an offence. | <ul style="list-style-type: none"> Recorded losses of game species. Recorded losses of known rare and endangered plant species. | Year 1 | Conservation Manager |
| Strategic outcome | Management activities | Management targets | Indicators of Concern | Priority | Responsibility |
| STAKEHOLDER ENGAGEMENT | | | | | |
| Constructive involvement in the reserve's management through effectively functioning meetings | <ul style="list-style-type: none"> Ensure open lines of communication between stakeholders and the reserve's management. | Annual meeting with relevant stakeholders. (Open day). | Lack of effective communication with all stakeholders. | Year 1 | Conservation Manager |

| | | | | | |
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| with relevant stakeholders. | | | | | |
| Adoption and implementation of revised AMAFA, Ezemvelo and Mangwebuthanani Community MoA. | <ul style="list-style-type: none"> ▪ Redraft MoA to be consistent with global Amafa / Ezemvelo MoU. ▪ Implement the requirements of the revised MOA in line with the AMAFA / Ezemvelo global agreement. | <ul style="list-style-type: none"> ▪ Implement revised MOA for Isandlwana Heritage Reserve | No clarity on roles and responsibilities. | Year 1 then on-going | Ezemvelo and AMAFA |

6.4. Buffer zone protection and regional management

6.4.1. Protected area expansion and buffer zone management

In order to safeguard the biodiversity within the reserve and to counter any threatening processes or edge effects, suitable buffer zones and appropriate land uses in these zones should be identified. Appropriate actions may then be taken to secure these buffer zones through protected area expansion mechanisms and local planning tools, as described in Section 6.4.2 below. In ensuring the protection of its biodiversity, the following guiding principles will be adopted in terms of protected area expansion and buffer zone management:

- If under threat, efforts must be made to formally protect the areas of critical habitat, located outside of the nature reserve.
- Threatening processes and edge effects on the protected area's boundary and beyond it must be identified.
- Appropriate actions must be taken to manage threatening processes and edge effects on the reserve's boundary and beyond it.

6.4.2. Local and regional planning

It is important, in managing the buffer areas around the nature reserve, that Ezemvelo KZN Wildlife work with local government authorities to ensure that their land use planning considers the biodiversity conservation imperatives of Isandlwana Heritage Reserve. In this regard it is necessary to ensure that buffer zone considerations are captured in planning tools such as IDPs and SDF's. In developing relationships with the local and district municipality, Ezemvelo KZN Wildlife will adhere to the following guiding principles:

- Relationships with local government and other provincial and national departments will be developed in the spirit of cooperative governance.
- Ezemvelo KZN Wildlife will endeavour to assist the local and district municipality in determining appropriate land uses and development strategies in the areas surrounding the protected area.
- Ezemvelo KZN Wildlife will endeavour to align its plans and strategies with the programmes and strategies of the local and district municipality, where appropriate.

The detailed operational requirements for buffer zone protection and regional management are set out in Table 6.2 below.

Table 7: Framework for buffer zone protection and regional management

| Strategic outcome | Management activities | Management targets | Indicators of Concern | Priority | Responsibility |
|---|---|---|---|----------|--|
| PROTECTED AREA EXPANSION | | | | | |
| Determination of the buffer zone requirements around the reserve. | <ul style="list-style-type: none"> ▪ Determine the ecological impacts and edge effects influencing the ecology of the nature reserve on its boundary. ▪ Determine the areas that should be demarcated as buffer zones for the purposes of protecting the biodiversity within the reserve. | Identification of threatening processes on the reserve's boundary. | Edge effects such as invasive plant encroachment along the reserve's boundary. | Year 2 | Ezemvelo KZN Wildlife Ecological Advice Unit |
| Strategic outcome | Management activities | Management targets | Indicators of Concern | Priority | Responsibility |
| LOCAL AND REGIONAL PLANNING | | | | | |
| Capture of buffer zone considerations in municipal special plans. | Provide inputs into the development of local and district municipality IDP's, Land Use management Schemes and SDF's in an effort to avoid environmentally harmful land uses in Isandlwana Heritage Reserve's buffer zone. | <ul style="list-style-type: none"> ▪ Adoption of environmentally appropriate land uses in IDPs and SDFs in the areas immediately surrounding the reserve. ▪ Retention of existing benign land uses in the areas immediately surrounding the protected area. | Identification/approval of environmentally harmful land uses on the boundaries of the nature reserve. | Annually | Conservation manager and Ezemvelo KZN Wildlife Planning Unit |

6.5. Eco tourism

6.5.1. Tourism product development and management

Ezemvelo KZN Wildlife has the mandate to support AMAFA and the private sector to fully realise the tourism potential in the regional context, whilst still protecting its biodiversity and cultural values.

Tourism should be used as a tool for the generation of economic activity and employment in the communities surrounding the protected area.

Ezemvelo will support the efforts of AMAFA to maintain the tourism and heritage infrastructure in the reserve. Tourism infrastructure should be maintained to an acceptable standard based on the Ezemvelo standard and infrastructure must be incorporated in the scheduled maintenance programme of the protected area.

6.5.2. Environmental education and interpretation

Environmental interpretation and education of Isandlwana Heritage Reserve natural and cultural resources will be aimed at creating awareness, understanding and appreciation of its biodiversity and ecological function, and their significance. In developing an environmental interpretation and education programme, the following guiding principles should be adhered to:

- There should be a strong focus on neighbouring communities, in efforts to engage, inform and benefit them.
- Wherever possible, local community members should be trained to assist and operate environmental interpretation and education tours.

The detailed operational requirements for eco-cultural tourism development and environmental education and interpretation are set out in Table 6.3 below.

Table 8: Framework for eco-cultural tourism

| Strategic outcome | Management activities | Management targets | Indicators of Concern | Priority | Responsibility |
|--|---|---|---|---------------------|--|
| TOURISM PRODUCT MANAGEMENT | | | | | |
| Promote the linkages between the Isandlwana Heritage Reserve and the regional tourism initiatives. | Develop partnerships with organisations and associations involved in tourism and nature-based activities in the region in an effort to integrate marketing efforts. | Agreements with relevant partners in an effort to retain and market Isandlwana as an attractive destination for visitors. | Lack of coordinated tourism marketing and management. | Year 2 and on-going | Conservation Manager, Ezemvelo KZN Wildlife Tourism and Marketing Unit |
| Support the local tourism economy through effective communication and a good conservation product. | Support the tourism efforts that are linked to Isandlwana Heritage Reserve. | Regular meeting with tourism operators and stakeholders. | Lack of coordinated tourism marketing and management. | On-going | Conservation Manager |
| Strategic outcome | Management activities | Management targets | Indicators of Concern | Priority | Responsibility |
| ENVIRONMENTAL INTERPRETATION AND EDUCATION | | | | | |
| Development and implementation of an environmental interpretation and education programme. | <ul style="list-style-type: none"> ▪ Focus on environmental interpretation and education amongst the nature reserve's neighbouring communities and visitors. ▪ Employ and train members of the local community to assist in and to implement the programme. | Provision of an environmental interpretation and education tour to each school in the neighbouring local communities. | Lack of planned and relevant environmental education and awareness. | Year 3 | Ezemvelo KZN Wildlife Community Conservation |

6.6. Conservation management

6.6.1. Fire management

Fire plays an important role in the ecological dynamics of grasslands and wetlands, and has important effects on vegetation composition, primary productivity and nutrient cycling. In developing burning and fire management strategies for the protected area, the following guiding principles should be adhered to:

- Burning should be undertaken in such a way that it maintains spatial and temporal heterogeneity within the landscape.
- A patch mosaic of burnt and un-burnt areas should be maintained.
- The burning of areas should be undertaken in such a way that promotes patchy burns (i.e. within the block being burnt, some patches will remain un-burnt rather than aiming for a complete burn).
- Burning must be undertaken with due consideration to the biodiversity conservation requirements of the protected area and the need to protect rare and endangered species.
- Burning and fire management must be undertaken in a safe manner that is legally compliant with the National Veld and Forest Fire Act (No.101 of 1998).

In terms of Section 17 of the National Veld and Forest Fires Act, a landowner (in this case the nature reserve) must have such equipment, protective clothing and trained personnel for extinguishing fires as may be prescribed or, if not prescribed, reasonably required in the circumstances. It is therefore necessary to consider the following in relation to firefighting:

- The need to maintain a system of firebreaks to enable the management of controlled burns and to effectively fight wildfires.
- The size of the protected area and the requirements necessary to access different areas in the event of a wildfire, this relates to both roads and vehicles.
- The number of personnel necessary to effectively fight wildfires.
- The equipment necessary to effectively fight wildfires.
- This would include:
 - Water tankers and pressure pumps mounted on or pulled behind tractors.
 - Firefighting equipment mounted on the backs of vehicles.
 - Backpack sprayers
 - Beaters
 - Safety equipment for personnel involved in firefighting.

The detailed operational requirements for fire management are set out in Table 6.4 below.

Table 9: Framework for conservation management - fire management

| Strategic outcome | Management activities | Management targets | Indicators of Concern | Priority | Responsibility |
|---|--|--|--|----------|---|
| FIRE MANAGEMENT | | | | | |
| Develop and implement fire management plan for Isandlwana Heritage Reserve. | <ul style="list-style-type: none"> The fire management plan must address fire management objectives, scientific understanding, legal compliance, equipment, personnel training requirements, monitoring and research required. | Adoption and implementation of the fire management plan. | Burning regimes that result in ecological degradation of the nature reserve. | Year 1 | Conservation Manager and Ecological Advice Unit |
| Adequate fire safety within the reserve is ensured. | <ul style="list-style-type: none"> Maintain a system of firebreaks within the nature reserve that are of adequate extent, which are prepared at the correct time of the year under the appropriate weather conditions. Ensure that staff are trained and that adequate firefighting equipment is available within the nature reserve. Become a member of the local Fire Protection Association, or if one does not exist, champion the creation of one. | Compliance with the National Veld and Forest Fires Act. | <ul style="list-style-type: none"> Inadequate personnel, equipment or an inability to communicate effectively in fighting fires. Wildfires spreading from the nature reserve to neighbouring properties. | Ongoing | Conservation Manager |

6.6.2. Invasive plant control

A listed invasive species means any species, which is listed in terms of section 70 of the Biodiversity Act, whose establishment and spread occurs outside of its natural distribution range. Such plants are considered to be a serious threat to the ecological functioning of natural systems and to water production, and must be strictly controlled. In undertaking invasive plant control, the following guiding principles will be adhered to:

- Invasive plant control will require an on-going programme that prioritises key infestations along water courses, drainage lines and upper catchment areas.
- Initial clearing efforts should focus on containing infestations that are most likely to spread into new areas.
- All follow-up requirements must be strictly adhered to otherwise the problem will be exacerbated.

Strategic partnerships and poverty relief programmes such as the Working for Water programme should be utilised in controlling invasive plants.

6.6.3. Soil erosion control

In addressing soil erosion, the following guiding principles should be adhered to:

- Areas impacted by soil erosion should be stabilised and re-vegetated with indigenous plant species to prevent the spread of listed invasive plant species.
- Areas susceptible to soil erosion, or showing early signs of soil erosion such as loss of vegetation cover, must be managed to prevent soil erosion.
- Soil erosion control and rehabilitation measures may include the need to re-vegetate disturbed areas. A detailed assessment of the nature and extent of soil erosion within the nature reserve will determine the appropriate responses required and the costs associated with them.
- Due to the sensitivity of cultural heritage sites care should be taken not to use historic rocks from graves or other cultural heritage remains for rock packing during erosion control.

The detailed operational requirements for invasive plant and soil erosion control are set out in Table 6.5 below.

Table 10: Framework for conservation management - invasive plant control and soil erosion

| Strategic outcome | Management activities | Management targets | Indicators of Concern | Priority | Responsibility |
|--|--|--|---|----------|---|
| INVASIVE PLANT CONTROL | | | | | |
| Development of an invasive species control plan for the nature reserve. | <ul style="list-style-type: none"> ▪ Develop a detailed inventory of the listed invasive species. ▪ Map the areas and extent of invasive species infestations. ▪ Describe previous efforts to control and eradicate invasive plants. ▪ Outline the measures required to monitor, control and eradicate the listed invasive species. ▪ Identify measurable indicators of progress and success in implementing the invasive species control plan. | Compliance with the Biodiversity Act. | <ul style="list-style-type: none"> ▪ Further spread of existing levels of infestation of listed invasive species. ▪ Persistence of existing infestations. ▪ New infestations of listed invasive species. | Year 1 | Conservation Manager, Ecological Advice Unit and Alien Plant Control Unit |
| Strategic outcome | Management activities | Management targets | Indicators of Concern | Priority | Responsibility |
| SOIL EROSION CONTROL | | | | | |
| Implementation of procedures to identify, rehabilitate and manage areas that have been significantly impacted by soil erosion. | <ul style="list-style-type: none"> ▪ Undertake a detailed survey of the nature reserve to identify the extent and severity of soil erosion. ▪ Identify the requirements for soil erosion control and rehabilitation within the nature reserve. ▪ Implement soil erosion control and rehabilitation measures, focussing strategically on key areas such as those impacting on watercourses or that are growing larger. ▪ Undertake preventative measures in areas with low plant cover that may be at risk of soil erosion. | <ul style="list-style-type: none"> ▪ A detailed map depicting areas of soil erosion within the nature reserve. ▪ Implementation of soil erosion control measures in areas in which plant cover is low, which are susceptible to erosion. | <ul style="list-style-type: none"> ▪ Further erosion of impacted areas. ▪ Sedimentation impacts in watercourses and wetland areas. | Year 1 | Conservation Manager and AMAFA |

6.6.4. Alien animal control

Alien animal species can threaten the ecological, genetic or natural and aesthetic integrity of Isandlwana Heritage Reserve and can be vectors for the spread of diseases. In dealing with the control of alien animals, procedures to deal with animals that stray into the nature reserve should be developed. In addressing alien animal control, the following guiding principles should be adhered to:

- Domestic animals such as horses and donkeys will only be allowed if kept at the nature reserve for official purposes such as patrolling.

Feral and alien animal species that pose a threat to indigenous species will be destroyed (as humanely as practicably possible with due regard to the tourist experience).

6.6.5. Resource utilisation

It is an accepted tenet of biodiversity conservation in South Africa and KwaZulu-Natal that the sustainable use of natural and biological resources may be undertaken within a protected area, provided that it does not compromise its ecological functioning or biodiversity conservation imperatives. Accordingly, applications for the extractive use of resources within the nature reserve will be considered, based on the following guiding principles:

- The context of the reserve's zonation plan, in particular the ecological sensitivity of particular areas.
- The benefits that such resource use will provide to the neighbouring communities around the protected area.
- The equitable access of members of the neighbouring communities to such resource use opportunities.
- Whether activities such as the collection of biological materials/samples are for legitimate scientific purposes, are from bona fide South African research institutions and are undertaken in accordance with relevant Ezemvelo KZN Wildlife policies.

The ability of the protected area's managers to effectively control and monitor such resource use.

The detailed operational requirements for alien animal control and resource utilisation are set out in Table 6.6 below.

Table 11: Framework for conservation management - alien animal control and resource utilisation

| Strategic outcome | Management activities | Management targets | Indicators of Concern | Priority | Responsibility |
|--|--|--|--|--------------------|--|
| ALIEN ANIMAL CONTROL | | | | | |
| Implementation of procedures to manage alien animals found within the reserve. | <ul style="list-style-type: none"> ▪ Together with neighbouring communities, agree on the approach to dealing with stray livestock and domestic animals found in the nature reserve, particularly dogs, which may be used for illegal hunting. ▪ Implement an appropriate grazing strategy in consultation with AMAFA and the Mangwebuthanani Community. | <ul style="list-style-type: none"> ▪ Creation of cooperative structures between Ezemvelo KZN Wildlife, local communities and law enforcement officials to control alien animals. ▪ Grazing strategy that does not lead to overgrazing and erosion. | Uncontrolled access of domestic animals or livestock within the reserve. | Year2 | Conservation Manager, Eco-Advice Unit, AMAFA and Mangwebuthanani Community |
| Strategic outcome | Management activities | Management targets | Indicators of Concern | Priority | Responsibility |
| RESOURCE UTILISATION | | | | | |
| If extractive resource use is undertaken, it is done legally and conforms to Ezemvelo KZN Wildlife policy. | <ul style="list-style-type: none"> ▪ Together with neighbouring communities, agree on the approach to sustainable extractive resource use in the nature reserve. ▪ Ensure that any approved extractive resource use is aligned to the protected area zonation plan. ▪ Ensure monthly monitoring, quantifying and reporting on resource use. | <ul style="list-style-type: none"> ▪ An agreed upon approach to any extractive resource use. ▪ Resource use monitoring returns | Uncontrolled or unsustainable resource extraction | Year 1 On-going | Conservation Manager and AMAFA |
| If bio-prospecting is undertaken, it is done legally and conforms to Ezemvelo KZN Wildlife policy. | Only allow the collection of biological materials or samples if the appropriate permits or permission has been given in accordance with Ezemvelo KZN Wildlife policy. | No illegal collection of biological material or samples. | Illegal collection of biological material or samples. | If required | Conservation Manager and Resource Use Ecologist |

6.6.6. Wildlife management

Management interventions related to indigenous wildlife will be limited to those that are for the purposes of appropriately managing all indigenous populations, including rare and endangered species or to meet set conservation targets. Interventions may also be required for problem animal management. In addressing wildlife management, the following guiding principles should be adhered to:

- Wildlife management must be focussed primarily on protecting the ecological functioning of the nature reserve and meeting set provincial conservation targets for species and vegetation types.
- The introduction of indigenous species into the nature reserve must be undertaken in accordance with relevant Ezemvelo KZN Wildlife policies.

Population management of wildlife species may be required to ensure that such species are not causing ecological degradation of the nature reserve.

Animals that become a danger or excessive nuisance to persons and property due to either habituation or aberrant behaviour must be managed in accordance with relevant Ezemvelo KZN Wildlife policies.

6.6.7. Conservation targets

The 2011 version of the KwaZulu-Natal systematic biodiversity plan identifies the provincial conservation targets referred to in Section 6.6.6, above. The conservation of Isandlwana Heritage Reserve contributes towards the achievement of a certain percentage of some of these targets. Targets will continue to be updated as knowledge develops about the ecology of areas, connectivity between them, and other process requirements for ecosystems, communities and species. On this basis, the conservation targets should be viewed as a set of working hypotheses around which conservation planning and evaluation can take place. An advantage of developing strategies around targets is that this process highlights critical knowledge deficits thus guiding future research.

Table 12: Systematic biodiversity planning conservation targets to which Isandlwana Heritage Reserve contribute

| Feature | Description | Percentage of target located within Isandlwana Heritage Reserve | Notes |
|----------------------------------|-----------------|---|------------------|
| <i>Whitea alticeps</i> | | 0.31 | |
| <i>Doratogonus falcatus</i> | Millipedes | 5.31 | |
| <i>Cochlitoma simplex</i> | Snails | 9.01 | |
| KwaZulu-Natal Highland Thornveld | Vegetation Type | 0.16 | Least Threatened |
| Thukela Thornveld | Vegetation Type | 1.02 | Least Threatened |

The detailed operational requirements for wildlife management and the achievement of conservation targets are set out in Table 6.8 below.

Table 13: Framework for conservation management - wildlife management and conservation targets

| Strategic outcome | Management activities | Management targets | Indicators of Concern | Priority | Responsibility |
|---|--|---|--|----------|---|
| WILDLIFE MANAGEMENT | | | | | |
| Development and implementation of a strategy for the management of wildlife in the reserve in accordance with Ezemvelo KZN Wildlife policies. | Ensure that adequate population control measures are included in the strategy for the management of wildlife in the reserve. | Control of population numbers of species that are exceeding identified carrying capacities in line with the strategy. | Ecological degradation as a result of overstocking of wildlife species | Year 2 | Ezemvelo KZN Wildlife Ecological Advice Unit and Conservation Manager |
| Development and implementation of a strategy for problem animal control. | <ul style="list-style-type: none"> ▪ Undertake preventative measures, such as boundary fence maintenance, to minimise the need for problem animal control. ▪ Apply appropriately humane methods, if problem animals must be destroyed or captured. | Effective procedures and relationships with neighbours in dealing with problem animal control. | Frequent complaints from neighbours with no clear response. | Year 1 | Conservation Manager |
| Strategic outcome | Management activities | Management targets | Indicators of Concern | Priority | Responsibility |
| CONSERVATION TARGETS | | | | | |
| Processes are established to determine success of management interventions in protecting the ecosystems, communities and species of the nature reserve. | Develop surveillance and monitoring plans for key management interventions in accordance with the Ezemvelo KZN Wildlife policies and norms and standards. | <ul style="list-style-type: none"> ▪ Surveillance and monitoring plans for key threatening processes. ▪ Monitoring plans for key rare and endangered species. | Lack of awareness of the status of key threatening processes including infestations of invasive plant species and severity and extent of soil erosion. | Year 3 | Ezemvelo KZN Wildlife Ecological Advice Unit |

6.6.8. Heritage management

According to the National Heritage Resources Act No. 25 of 1999 the “conservation, in relation to heritage resources, includes protection, maintenance, preservation and sustainable use of places or objects so as to safeguard their cultural significance.”

The Isandlwana Heritage Reserve has both natural and cultural values that need to be protected. In addressing Cultural heritage management, the following guiding principles should be adhered to:

- Access to cultural heritage sites must be of a nature that considers the safety of the visitors.
- The cultural heritage sites including grave sites needs to be properly demarcated in order to prevent accidental damage by fire or other means.

Sites (if required and based on the AMAFA recommendation) must be cleared of excess vegetation to reduce fire risk and provide access.

In managing the cultural assets of Isandlwana Heritage Reserve, in accordance with the National Heritage Resources Act the following guiding principles will apply:

- All cultural resources must be carefully managed to ensure their survival.
- Heritage resources contribute significantly to research, education and tourism and must be managed and used in a way that ensures respect for cultural values.

Promote the use and enjoyment of and access to heritage resources, in a way consistent with their cultural significance and conservation needs.

Heritage resources must be researched, documented and recorded. *Also see Appendix E – Isandlwana Battlefield Heritage Management Guidelines.*

The detailed operational requirements for Heritage management are set out in Table 6.9 below.

Table 14: Framework for conservation management - cultural heritage management

| Strategic outcome | Management activities | Management targets | Indicators of Concern | Priority | Responsibility |
|--|---|--|--|----------|---------------------------------|
| HERITAGE MANAGEMENT | | | | | |
| Ensure the protection and the improved awareness of the cultural heritage and living heritage values of Isandlwana Heritage Reserve. | Support AMAFA where necessary to manage cultural heritage sites within the Isandlwana Heritage Reserve. | Effectively implemented management guidelines for all cultural sites within Isandlwana HR. | Damage to cultural heritage sites due to ineffective management. | On-going | Conservation Manager with AMAFA |

6.7. Operational management

6.7.1. Financial and human resources

Isandlwana Heritage Reserve cannot be effectively managed without adequate sustained funding and sufficient human resources. In addressing the financial and human resource needs of the protected area, the following guiding principles should be adhered to:

- Adequate funding must be provided for the management of the Isandlwana Heritage Reserve to ensure the protection of its biodiversity and cultural values and the continued provision of its ecosystem services.
- Commercial operations within the Isandlwana Heritage Reserve must be self-sufficient and, if profitable, should be used to subsidise its conservation and community programmes.
- Adequate, properly trained and experienced staff must be employed at the Isandlwana Heritage Reserve to undertake the operations required for its effective management.

6.7.2. Facilities and infrastructure

In order for Isandlwana Heritage Reserve to operate appropriately, adequate facilities and infrastructure need to be developed and maintained both for management and eco-cultural tourism purposes. In addressing facilities and infrastructure needs in the protected area, the following guiding principles will be adhered to:

- Facilities and infrastructure must be maintained to avoid any damage to the environment and ensure the safety of staff and visitors to the protected area.
- Facilities and infrastructure must be provided to ensure the effective management and operation of the nature reserve.
- Practical solutions to the provision of electricity should be sought at the nature reserve based on available renewable energy technologies.
- Facilities and infrastructure must be provided to support the eco-cultural tourism activities in the protected area.

The detailed operational requirements for financial and human resource, and facilities and infrastructure development and management are set out in Table 6.9 below.

Table 15: Framework for operational management - financial and human resources, facilities and infrastructure

| Strategic outcome | Management activities | Management targets | Indicators of Concern | Priority | Responsibility |
|---|---|---|--|----------|--|
| FINANCIAL RESOURCES | | | | | |
| Development of a five-year financial plan that identifies the resource needs to achieve the objectives for the reserve. | <ul style="list-style-type: none"> ▪ Undertake an assessment of past expenditure trends in the reserve. ▪ Develop a five-year consolidated financial plan. | Adequate funding to achieve the objectives of the nature reserve. | Inadequate funding to effectively protect and operate the nature reserve. | Year 1 | Ezemvelo KZN Wildlife Regional Management Unit and AMAFA |
| Strategic outcome | Management activities | Management targets | Indicators of Concern | Priority | Responsibility |
| HUMAN RESOURCES | | | | | |
| The nature reserve is adequately staffed for its effective management and operation. | <ul style="list-style-type: none"> ▪ Undertake a review of current staffing levels to determine the human resource needs to effectively manage the nature reserve. ▪ Employ sufficient, appropriately skilled staff to meet the management and operational requirements of the nature reserve. ▪ Undertake regular training and skills development to ensure that staff are able to effectively complete their duties. | Appointment of staff in all positions in the nature reserve. | Inadequate staff numbers or skills for the effective management of the nature reserve. | Year 2 | Ezemvelo KZN Wildlife Regional Management Unit |

| Strategic outcome | Management activities | Management targets | Indicators of Concern | Priority | Responsibility |
|--|---|--|--|----------|----------------------|
| FACILITIES AND INFRASTRUCTURE | | | | | |
| All infrastructure and equipment in the reserve are adequately maintained. | <ul style="list-style-type: none"> ▪ Ensure that the boundary fence is regularly inspected and adequately maintained to ensure security and to contain game species within the nature reserve. ▪ Develop and implement a schedule maintenance programme to maintain infrastructure and equipment in a condition that meets relevant environmental, health and safety requirements. ▪ Service infrastructure and practices do not cause environmental harm. | Regular scheduled maintenance of all equipment and infrastructure to ensure safe and effective operations. | Environmental, health or safety incidents associated with inadequately maintained facilities and infrastructure. | Ongoing | Conservation Manager |

7. MONITORING AND REPORTING

Monitoring and reporting is a critical component of the adaptive management cycle. It enables the effective assessment of management interventions and, if necessary, can be used to direct modifications of management in an effort to achieve the outcomes required.

Annual game populations monitoring is undertaken and game census figures are produced from this exercise and submitted to Eco Advice by the PA Management for the purposes of decision-making at the annual animal population control (APC) meetings.

Ten permanent veld monitoring plots have been established for the purposes of veld condition monitoring. The veld monitoring plots are surveyed every five year interval to determine the veld condition status as well as the tree density trends at Isandlwana Nature Reserve. Reports are produced on a regular basis on the veld condition status of the PA.

7.1. Annual monitoring

The annual monitoring schedule should be designed to monitor the implementation of aspects of the management plan. It should be designed to be straightforward and relatively easy to implement by on-site staff. In accordance with the Ezemvelo KZN Wildlife norms and standards for surveillance and monitoring (Goodman 2011), monitoring is characterised by:

- An objective, target or desired state of the attribute or resource (as described in the management targets in Section 6 above).
- Being part of a formalised adaptive management cycle.
- Establishing and repeatedly evaluating the measures of success of conservation project or management intervention.

Records should be maintained of all key management interventions and of problem events or incidents such as uncontrolled access, poaching, illegal plant collection or uncontrolled/arson fires. In terms of the norms and standards set for surveillance and monitoring (Goodman 2011) these incidents would be deemed to be surveillance.

Scientific monitoring programmes may be established to monitor specific management interventions such as measures for the protection of flagship species. Not all of the management interventions will be monitored through the monitoring schedule. Most of the outcomes of the monitoring process will be captured in an annual report, which will be used to inform the following year's annual plan of operation.

On this basis, a monitoring schedule for Isandlwana Heritage Reserve is set out in Table 7.1.

Table 16: Annual surveillance and monitoring schedule for Isandlwana Heritage Reserve

| Management issue | Parameters to be monitored | Monitoring measures | Monitoring frequency | Responsibility | Reporting requirements |
|-----------------------------|--|--------------------------------|----------------------|--|------------------------|
| Law enforcement | Schedule of patrols | Written record | Weekly | Conservation Manager | Annual report |
| | Recovery of snares | Photographs/written record | Weekly | | Annual report |
| | Illegal incidents | Photographs/written record | Per event | | Record of event |
| Stakeholder engagement | Minutes of meetings of the local board and community trust | Written record | Bi-monthly | Conservation Manager | Annual report |
| Buffer zone management | Influx of listed invasive vegetation on the nature reserve's boundaries. | Surveillance plan | To be determined | Conservation Manager supported by Ecological Advice Unit | Annual report |
| Local and regional planning | Land uses that are approved in the areas around the nature reserve in local and regional IDPs and SDFs | Written record | Annually | Ezemvelo KZN Wildlife Senior Conservation Manager | Annual report |
| Nature based tourism | Visitor statistics | Completion of questionnaire | Ongoing | AMAFA | Annual report |
| Fire management | Burning of firebreaks as part of fire management | Written record/map/photography | Annually | Conservation Manager | Annual report |
| | Burning of blocks as part of controlled burning | | Annually | | Annual report |
| | Unplanned wildfires | Written record/map/photography | Per event | | |
| Invasive plant control | Areas subject to invasive plant control | Monitoring plan | To be determined | Conservation Manager supported by Ecological Advice Unit | Annual report |
| | State of areas in which invasive plants have been eradicated | | | | |
| | Records of labour hours/days | Written record | Annually | | Annual report |
| | Herbicide usage | Written record | Annually | | Annual report |

| | | | | | |
|-------------------------------|--|--------------------------------------|------------------|--|-----------------|
| Soil erosion control | Areas subject to erosion control | Monitoring plan | To be determined | Conservation Manager supported by Ecological Advice Unit | Annual report |
| | State of rehabilitated areas of erosion | | | | Annual report |
| Conservation targets | Incidents related to flagship species | Photographs/written record | Per event | Conservation Manager | Record of event |
| | Status of key rare and endangered species, particularly those for which conservation targets have been set | Monitoring plan | To be determined | Conservation Manager supported by Ecological Advice Unit | Annual report |
| Resource utilisation | Extraction of resources from the nature reserve | Photographs/written records | Per event | Conservation Manager | Annual report |
| Human resources | Staffing levels | Number of full-time staff | Annually | Conservation Manager | Annual report |
| Facilities and infrastructure | State of roads, 4x4 tracks and paths | Photographs/written records | Quarterly | Conservation Manager | Annual report |
| | State of the boundary fence | Photographs/written records | Monthly | | Annual report |
| | Weather data | Surveillance plan | To be determined | Ezemvelo KZN Wildlife Ecological Advice Unit | Annual report |
| | State of facilities and service infrastructure | Maintenance schedule/written records | Monthly | Conservation Manager | Annual report |
| | Pollution events | Photographs/written records | Per event | Conservation Manager | Per event |

As set out in Table 7.1 the following issues require a surveillance plan:

- The influx of listed invasive vegetation on the Isandlwana Heritage Reserve's boundaries.

In addition, the following issues require a monitoring plan:

- Measures taken to control invasive plant species.
- Measures taken to control soil erosion.
- Measures taken to manage rare and endangered species, particularly those for which conservation targets have been set.
- The ecological status of the wetlands and rivers within the protected area.

These surveillance and monitoring plans must be developed and implemented in accordance with the Ezemvelo KZN Wildlife Norms and Standards: Surveillance and Monitoring Plans for Biodiversity (Goodman 2011).

The preparation of these plans must be undertaken by the Ezemvelo KZN Wildlife Ecological Advice Unit with the support of the Surveillance and Monitoring Working Group of Ezemvelo KZN Wildlife.

7.2. Annual protected area management plan implementation review

The purpose of undertaking an annual performance review of implementation of the protected area management plan will be to:

- Determine how effectively the management plan has been implemented.
- Assist in determining the focus for the annual plan of operation and the setting of appropriate time frames and budgets.
- Enable effective adaptive management by identifying changes and modifying management interventions.

The report produced from the annual protected area management plan implementation review should be submitted to the Regional Operations Committee, prior to the annual management meeting for Isandlwana Heritage Reserve, for its review and comment. Records of recommendations for update/changes should be kept on record so that when the plan is revised, these recommendations can be assessed and included where necessary. The review process should include:

Any recommended minor amendments to the management plan that do not affect the substance of the vision, objectives or zonation.

Any proposed significant changes to the management plan that are likely to result in amendment to the vision, objectives and zonation must be supported by the Regional Operations Committee and the relevant Operations Committee before being subjected to the appropriate stakeholder participation process and before recommends that the proposed amended protected area management plan be submitted for authorisation to the Ezemvelo KZN Wildlife EXCO Committee, Board and to the MEC.

8. ISANDLWANA HERITAGE RESERVE ANNUAL PLAN OF OPERATION

Each year an annual plan of operation will be prepared, based on the objectives, strategic outcomes, management activities and targets contained in the protected area management plan.

8.1. Implementation of the protected area management plan

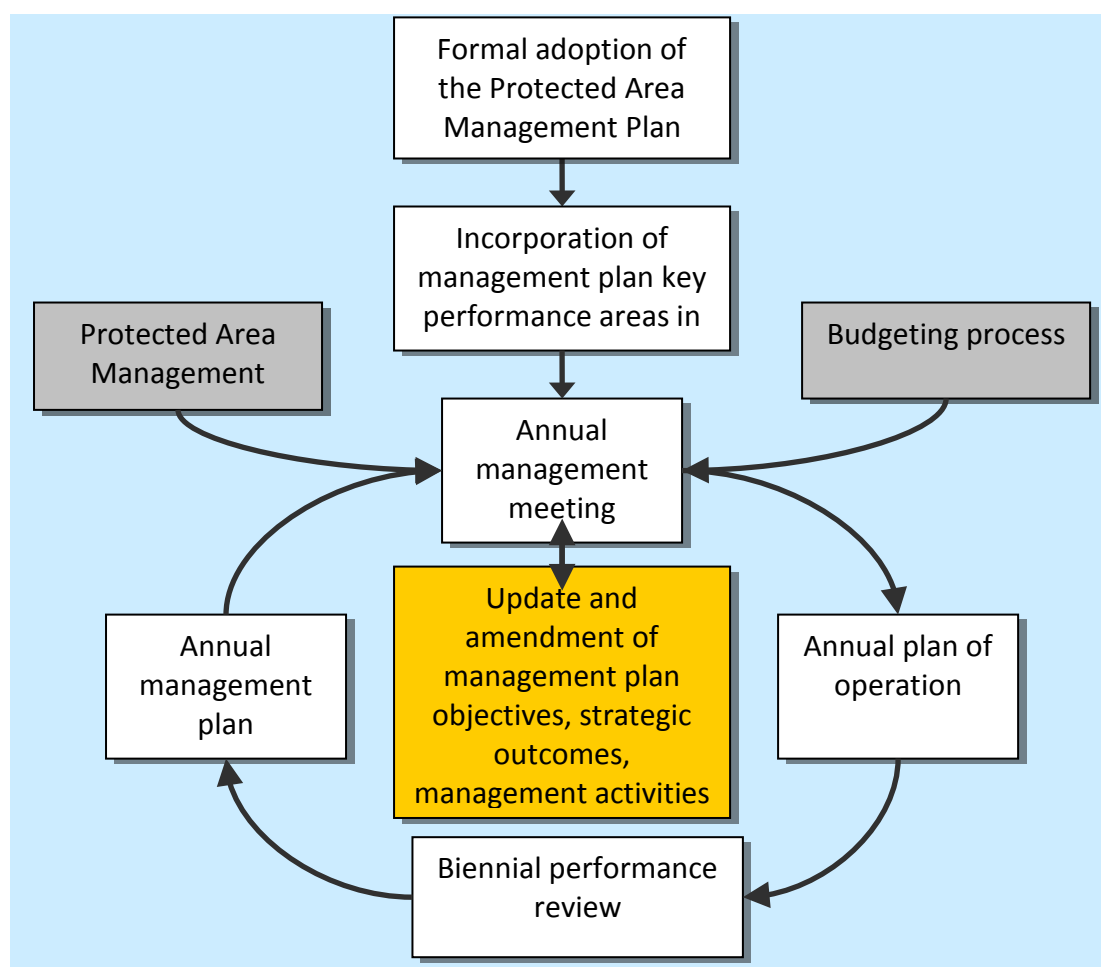


Figure 6: Process for the implementation of Protected Area management Plans

Each year an annual management meeting is held for each protected area managed by Ezemvelo KZN Wildlife. In terms of the implementation of the protected area management plan, the purpose of the annual management meeting for Isandlwana Heritage Reserve will be to:

Finalise the annual report, as part of the annual protected area management plan implementation review described in Section 7.2 above.

As part of the annual performance review, determine the need to modify or change any of the management plans objectives, strategic outcomes, management activities or targets.

Determine management activities for the coming year and to set goals for the year, based on the key performance areas set out in the management plan, in accordance with the Isandlwana Heritage Reserve manager's performance contract.

Determine how budgets will be spent in an effort to achieve the goals for each of the quarters of the coming year.

The minutes and notes of the annual management meeting will be compiled in an annual plan of operation, which will include all of the information, set out above, and will determine what management activities need to be completed for the coming year, based on the management plan. The annual plan of operation will be tied to staff performance contracts, and goals set in them will be categorised within the same key performance areas as the integrated management plan. A pro forma annual plan of operation is set out in Appendix J.

8.2. Responsibilities in implementing the protected area management plan

In the tables in the operational management framework, the responsibilities for the completion of management activities are identified. In many cases the people responsible for implementing the activities will be in attendance at the annual management meeting and the requirements for the achievement of the management activities can be discussed and agreed to at the meeting. In some cases, however, the management activities may be required to be referred to the Regional Operations Committee and the relevant Operations Committee in order to assign responsibility for the completion of the management activity.

8.3. Isandlwana Heritage Reserve resource requirements

In developing annual plans of operation for Isandlwana Heritage Reserve the resource requirements, associated with management activities and targets set out in the operational management framework must be considered and budgeted for. The following section broadly identifies the issues that must be considered in determining adequate human resources, funds and equipment for the protected area.

8.3.1. Staff and equipment

Annual plans of operation must consider the staff and equipment needs to undertake the following activities:

- Administration and management of the nature reserve.
- Patrolling of the nature reserve and its boundaries.
- An annual burning programme and firefighting response to wildfires.
- An ongoing invasive plant species control programme.
- An ongoing soil erosion control and rehabilitation programme.
- Ecological monitoring and data capture.
- Maintenance of roads, paths and fences within the nature reserve.
- Maintenance of facilities and infrastructure within the nature reserve.
- Capture of visitor information and statistics.

- Admitting visitors to the nature reserve and charging entrance fees.
 - Community liaison and cooperation.
- Environmental interpretation and education.

8.3.2 Projects

In addition to the requirements for annual recurrent funding for the issues outlined above, there will be a need to identify funding requirements for the following capital projects:

- Installation of signage for demarcation and law enforcement purposes.
- Upgrade 10 km of fence line to prevent illegal livestock entry.

8.4. Annual financial plan

The annual plan of operation must contain a financial plan, which must be approved by the Regional Operations Committee. The annual goals, contained in the annual plan of operation, will be prioritised with the approved budget and guided by the strategic direction of the protected area management plan.

8.5. Financial accounting system

It is accepted that all fiscal management will be guided by the Public Finance Management Act (No.1 of 1999) and the Ezemvelo KZN Wildlife Financial Policy and Procedures directive. Funding sources not generated internally will be accounted for in the prescribed process as determined by the donor source.

8.6. Financial reporting

Annual and quarterly fiscal reports will be submitted as directed by the Regional Operations Committee.

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Appendix A: Definitions of Terms

| | |
|----------------------|---|
| Alien species | Species or genotypes, which are not indigenous to Isandlwana Heritage Reserve and the surrounding area including hybrids and genetically altered organisms. |
| Biodiversity | The variability among living organisms from all sources including, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part and also includes diversity within species, between species, and of ecosystems (as per the National Environmental Management: Biodiversity Act, 2004 [Act No. 10 of 2004]). |
| Bioprospecting | In relation to indigenous biological resources, means any research on, or development or application of, indigenous biological resources for commercial or industrial exploitation, and includes – the systematic search, collection or gathering of such resources or making extractions from such resources for purposes of such research, development or application (as per the National Environmental Management: Biodiversity Act, 2004 [Act No. 10 of 2004]) |
| Board | The KwaZulu-Natal Nature Conservation Board as defined by the KwaZulu-Natal Nature Conservation Management Act, 1997 (Act No.9 of 1997). |
| Buffer zone | An area surrounding Isandlwana Heritage Reserve that has restrictions placed on its use or where collaborative projects and programmes are undertaken to afford additional protection to the nature reserve. |
| Co-management | The term 'Co-management' must be understood within the context of Section 42 of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003). |
| Cultural heritage | As defined in Article 1 of the World Heritage Convention (UNESCO) 1972 , 'cultural heritage' is considered as "monuments, architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of (...) value from the point of view of history, art or science, groups of buildings, groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of significance from the point of view of history, art or science, sites, works of man or the combined works of nature and man, and areas including archaeological sites which are of (...) value from the historical, aesthetic, ethnological or anthropological point of view." For the purpose of this MP, living heritage features such as mountains, pools, rivers, boulders, etc. as well as paleontological features are included under this definition. |
| Ecological integrity | The sum of the biological, physical and chemical components of an ecosystem and its products, functions and attributes (as per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]). |
| Ecosystem | A dynamic complex of animal, plant and micro-organism communities and their non-living environment interacting as a functional unit (as per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]). |
| Ecosystem services | As defined in Section 1 of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) as "environmental goods and services" meaning: <ul style="list-style-type: none"> a. Benefits obtained from ecosystems such as food, fuel and fibre and genetic resources. b. Benefits from the regulation of ecosystem processes such as climate |

Appendix A

| | |
|---------------------------|--|
| | <p>regulation, disease and flood control and detoxification.</p> <p>c. Cultural non-material benefits obtained from ecosystems such as benefits of a spiritual, recreational, aesthetic, inspirational, educational, community and symbolic nature;”</p> <p>For the purposes of this management plan, sustainable water production is also specifically included under this definition.</p> |
| Environmental degradation | The deterioration of the environment through depletion of resources such as air, water and soil; the destruction of ecosystems and the loss of species or undesirable reduction of species population numbers from a specific area from an environmental health perspective |
| Ezemvelo KZN Wildlife | Nature Conservation Service as established in terms of the KwaZulu-Natal Nature Conservation Management Act No. 9 of 1997. |
| Indigenous species | In relation to a specific protected area, means a species that occurs, or has historically occurred, naturally in a free state of nature within that specific protected area, but excludes a species introduced in that protected area as a result of human activity (as per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]). |
| Invasive species | <p>Means any species whose establishment and spread outside of its natural distribution range –</p> <p>a. Threaten ecosystems, habitats or other species or have a demonstrable potential to threaten ecosystems, habitats or other species.</p> <p>b. May result in economic and environmental harm or harm to human health.</p> <p>(As per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]).</p> |
| Joint management | The agreed co-ordination of management and/or management actions by landowners and/or mandated managers on their individual or combined properties in order to achieve common management objectives. |
| Local community | Any community of people living or having rights or interests in a distinct geographical area (as per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]). |
| Management | In relation to a protected area, includes control, protection, conservation, maintenance and rehabilitation of the protected area with due regard to the use and extraction of biological resources, community-based practices and benefit sharing activities in the area in a manner consistent with the Biodiversity Act (as per the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003). |
| Management authority | In relation to a protected area, means the organ of state or other institution or person in which the authority to manage the protected area is vested (as per the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]). |
| Monitoring | The collection and analysis of repeated observations or measurements to evaluate change in status, distribution or integrity in order to track the impacts of directed management implemented to achieve a stated management objective. |
| Nature | The conservation of naturally occurring ecological systems, the sustainable |

Appendix A

| | |
|-------------------------------------|--|
| conservation | utilisation of indigenous plants and animals therein, and the promotion and maintenance of biological diversity (as per the KwaZulu-Natal Nature Conservation Management Act, 1997 [Act No.9 of 1997]). |
| Neighbouring community | The communities and people permanently living in the local municipal area/s bordering onto the Nature Reserve. |
| Natural heritage | As defined in Article 2 of the World Heritage Convention (UNESCO) 1972 'natural heritage' is as: "natural features consisting of physical and biological formations or groups of such formations, which are of (...) value from the aesthetic or scientific point of view, geological and physiographical formations and precisely delineated areas which constitute the habitat of threatened species of animals and plants of (...) value from the point of view of science or conservation, natural sites or precisely delineated natural areas of (...) value from the point of view of science, conservation or natural beauty." For the purposes of this IMP, this would include the required ecological integrity of the protected area for the production of ecosystem services. |
| Partnerships | A co-operative and / or collaborative arrangement between the Game Reserve management / Ezemvelo KZN Wildlife and a third party that supports the achievement of the Game Reserve management objectives. |
| Protected areas | Means any area declared or proclaimed as such in terms of section 3 or listed in the Second Schedule to the KwaZulu-Natal Nature Conservation Management Act, 1997 (Act No. 9 of 1997); or Means any of the protected areas referred to in section 9 of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003). |
| Protected area management committee | The management body that deals with the day-to-day management of the protected area and is chaired by the Conservation Manager. |
| Ramsar Convention | Means: "The Convention on Wetlands of International Importance, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty, which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources." (There are presently 158 Contracting Parties to the Convention, the Convention has broadened its scope to cover all aspects of wetland conservation and wise use, recognising wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities.) |
| Stakeholders/ interested parties | These are interested individuals or groups concerned with or affected by an activity and its consequences. These include the authorities, local communities, investors, work force, consumers, environmental interest groups and the general public. According to the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004), "stakeholder" means a person, an organ of state or a community contemplated in section 82 (1) (a), or an indigenous community contemplated in section 82(1) (b). |
| Surveillance | The collection and analysis of single or repeated measurements to establish status or distribution or integrity at a point in time in the absence of a specific management context or objective. |
| Sustainable | In relation to the use of a biological resource, means the use of such resource in a way and at a rate that would not lead to its long-term decline; would not disrupt the ecological integrity of the ecosystem in which it occurs; and would ensure its continued use to meet the needs and aspirations of present and future generations of people (as per National Environmental Management: Biodiversity Act, 2004 (Act |

Appendix A

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|---------------------|--|
| | No. 10 of 2004). |
| Wilderness area | Means an area designated in terms of section 22 or 26 for the purpose of retaining an intrinsically wild appearance and character, or capable of being restored to such and which is undeveloped and roadless, without permanent improvements or human habitation (as defined by the National Environmental Management: Protected Areas Act, 2003 [Act No. 57 of 2003]). |
| World heritage site | Means a World Heritage Site as defined in the World Heritage Convention Act, No. 49 of 1999 under Chapter 1, section 1 subsection (xxiv). |

Appendix B: List of Statutes to which Isandlwana Heritage Reserve is subject

Biodiversity and Cultural Resource Management and Development:

- Animals Protection Act [No. 71 of 1962]
- Atmospheric Pollution Prevention Act [No. 45 of 1965]
- Conservation of Agricultural Resources Act [No. 43 of 1983]
- Constitution of the Republic of South Africa [No. 108 of 1996]
- Criminal Procedures Act [1977]
- Environment Conservation Act [No. 73 of 1989]
- Forest Act [No. 122 of 1984]
- Hazardous Substances Act [No. 15 of 1973]
- KwaZulu Nature Conservation Act [No. 8 of 1975]
- KwaZulu-Natal Heritage Act [No. 4 of 2008]
- KwaZulu-Natal Nature Conservation Management Act [No. 9 of 1997]
- National Environmental Management Act [No. 107 of 1998]
- National Environmental Management: Biodiversity Act [No. 10 of 2004]
- National Environmental Management: Protected Areas Act [No. 57 of 2003]
- National Forests Act [No. 84 of 1998]
- National Water Act [No. 36 of 1998]
- National Water Amendment Act [No. 45 of 1999]
- National Veld and Forest Fire Act [No 101 of 1998]
- Nature Conservation Ordinance [No. 15 of 1974]
- South African Heritage Resources Act [No. 25 of 1999]

General Management:

- Development Facilitation Act [No. 67 of 1995]
- Disaster Management Act [No. 57 of 2002]
- Fire Brigade Services Act [No. 99 of 1987]
- Local Government: Municipal Systems Act [No. 32 of 2000]
- National Road Traffic Act [No. 93 of 1996]
- National Building Standards Act [No. 103 of 1977]
- Natal Town Planning Ordinance [No. 27 of 1949]
- Occupational Health and Safety Act [No. 85 of 1993]

Appendix B

- KwaZulu-Natal Planning and Development Act [No. 5 of 1998]
- Water Services Act [No. 108 of 1997]

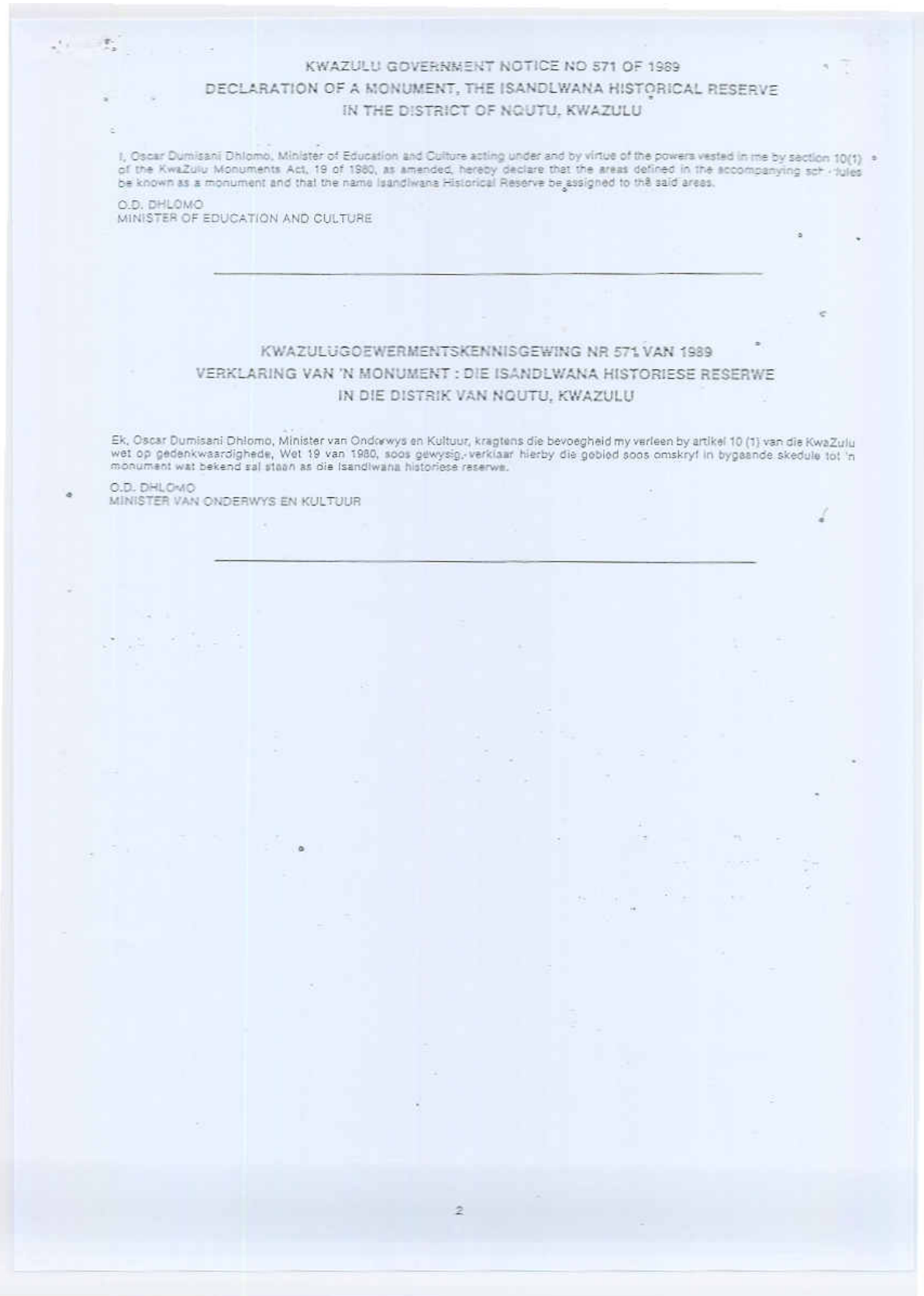
Financial Management:

- Public Finance Management Act [No. 1 of 1999]

Human Resource Management:

- Basic Conditions of Employment Act [No. 75 of 1997]
- Broad-Based Black Economic Empowerment Act [No. 53 of 2003]
- Compensation for Occupational Injuries and Diseases Act [No. 130 of 1993]
- Employment Equity Act [No. 55 of 1998]
- Labour Relations Act [No. 66 of 1995]
- Pension Funds Act [No. 24 of 1956]
- Skills Development Act [No. 97 of 1998]
- Skills Development Levies Act [No. 9 of 1999]
- Unemployment Insurance Act [No. 63 of 2001]

Appendix C: Isandlwana Heritage Reserve Proclamation



PROVINCIAL NOTICE

No. 83

30 August 2012

DEPARTMENT of AGRICULTURE ENVIRONMENTAL AFFAIRS AND RURAL DEVELOPMENT

**NATIONAL ENVIRONMENTAL MANAGEMENT: PROTECTED AREAS, 2003
(ACT NO. 57 OF 2003)**

OFFICE OF THE MEC FOR AGRICULTURE ENVIRONMENTAL AFFAIRS AND RURAL DEVELOPMENT

DECLARATION OF NATURE RESERVES AND ASSIGN EZEMVELO KZN WILDLIFE AS THE MANAGEMENT AUTHORITY IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT: PROTECTED AREAS ACT, 2003 (ACT NO. 57 OF 2003);

I, Dr Meshack Radebe, MEC for Agriculture, Environmental Affairs and Rural Development in KwaZulu-Natal, by virtue of the powers vested in me by section 23(1) and section 38(2) of the National Environmental Management: Protected Areas Act No. 57 of 2003 hereby declare that, with effect from the date of publication hereof, Amatikulu Nature Reserve, Blinkwater Nature Reserve, Chelmsford Nature Reserve, Dlinza Forest Nature Reserve, Enseleni Nature Reserve, Hluhluwe-Imfolozi Park, Isandlwana Nature Reserve, Ithala Game Reserve, Karkloof Nature Reserve, Mbumbazi Nature Reserve, Mpenjati Nature Reserve, Ncandu Nature Reserve, Ngoye Forest Reserve, Oribi Gorge Nature Reserve, Pocolan Bush Reserve, Robinsons Bush Reserve, Tembe Elephant Park, uMgeni Vlei Nature Reserve, Umlalazi Nature Reserve, Umtamvuna Nature Reserve as Nature Reserves and assign Ezemvelo KZN Wildlife as the Management Authority. The properties listed in the Schedule constitute the named Nature Reserves.



Dr Meshack Radebe
MEC for Agriculture, Environmental Affairs and Rural Development
KwaZulu-Natal

SCHEDULE**AMATIKULU NATURE RESERVE**

Region: Situated in the province of KwaZulu-Natal, the Uthungulu District Municipality and in the KZ282 Umhlathuze Local Municipalities.

| Properties Comprising the Amatikulu Nature Reserve | Surveyor General diagram No. | Extent (ha) |
|--|------------------------------|-------------|
| Sub 1 of Matikulu Leper Location No. 16632 | 604 / 1996 | 797.2867 |
| Sub 1 of Annexe Reserve No. 8 No. 14264 | 599 / 1996 | 12.0485 |
| Portion of Annexe Reserve No. 8 No. 14264 | 598 / 1996 | 602.2736 |
| Amatikulu River | | 88.0026 |

ISANDLWANA HERITAGE RESERVE

Region: Situated in the province of KwaZulu-Natal, the Umzinyathi District Municipality and in the Nqutu Local Municipality

| Properties Comprising the Isandlwana Heritage Reserve | Surveyor General diagram No. | Extent (ha) |
|--|------------------------------|-------------|
| Isandlwana Historical Site No.1 on Reserve No. 18 No 15838 | 522/1988 | 2.7999 |
| Isandlwana Historical Site No.1 on Reserve No. 18 No 15838 | 3440/1987 | 813.5479 |

ITHALA NATURE RESERVE

Region: Situated in the province of KwaZulu-Natal, the Zululand District Municipality and in the KZ262 Uphongolo and KZ263 Abaqulusi Local Municipalities

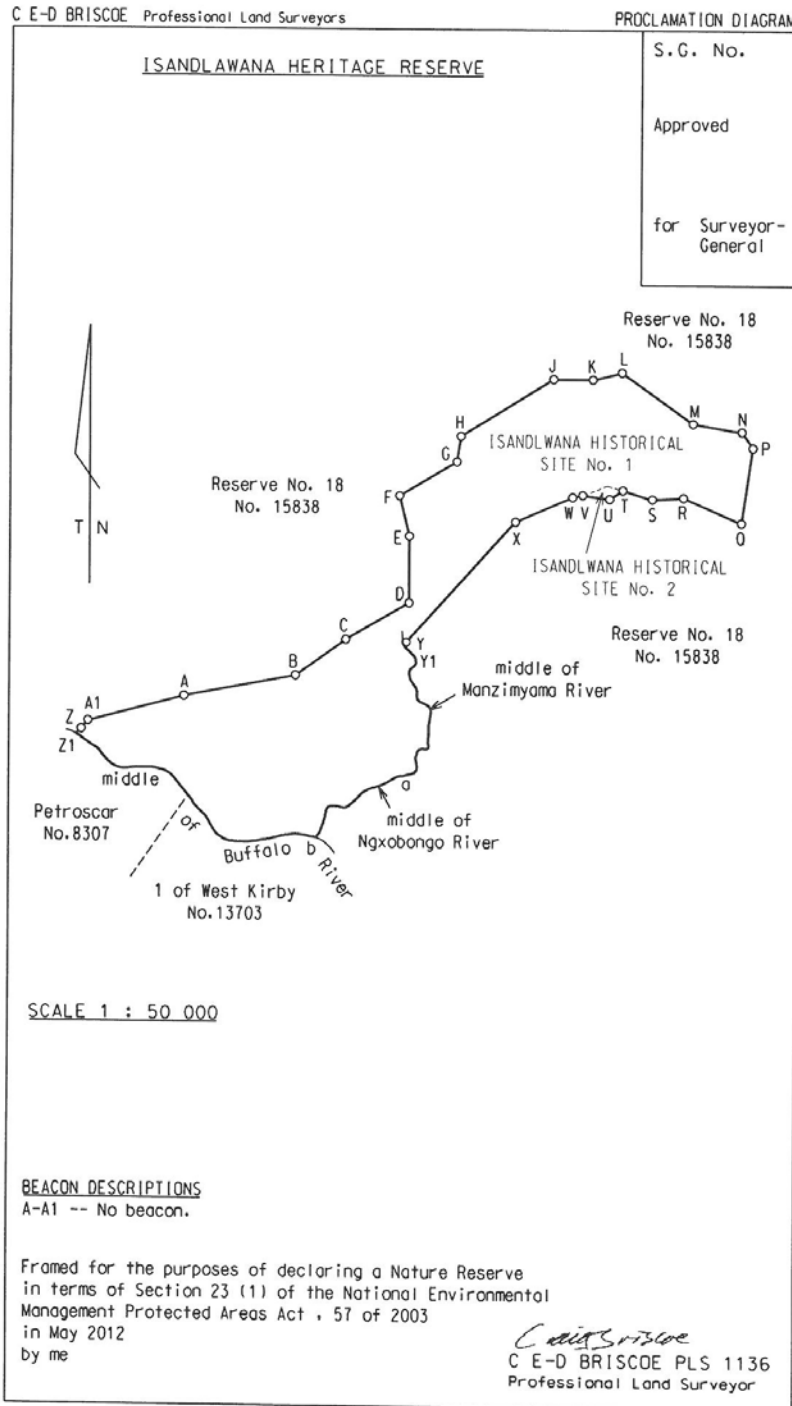
| Properties Comprising the Ithala Nature Reserve | Surveyor General diagram No. | Extent (ha) |
|---|------------------------------|-------------|
| Remainder of the farm Ongegund No. 393 | S. G. 505 / 1951. | 849.498 |
| Sub 1 of the farm Ongegund No. 393 | S. G. 506 / 1951. | 1699.0021 |
| Sub 2 of the farm Ongegund No. 393 | S. G. 507 / 1951. | 849.5011 |
| The farm Onverwagt No. 395 | VRY 476. | 987.0311 |
| Sub 1 of the farm Onverwacht No. 395 | S. G. 1059 / 2007 | 630.2812 |
| The farm Eldorado No. 13 | VRY 442. | 1429.8474 |
| Remainder of the farm Doornpan No. 177 | VRY 143. | 2600.3669 |
| Sub 3 of the farm Doornpan No. 177 | S. V. 492 F. 33. | 136.4065 |
| Sub 4 of the farm Doornpan No. 177 | S. G. 1824 / 1947. | 41.1135 |
| Erf 616 Louwesburg Township | S. V. 492 F. 3. | 223.6042 |
| The farm Vergelegen No. 373 | VRY 540. | 1977.7624 |
| Remainder of the farm Bergvliet No. 452 | VRY 483A. | 680.0023 |
| Sub 1 of the farm Bergvliet No. 452 | S. V. 717 F. 83. | 237.0161 |
| Sub 2 of the farm Bergvliet No. 452 | S. G. 5097 / 1965. | 341.7271 |
| Sub 3 of the farm Bergvliet No. 452 | S. G. 1060 / 2007 | 5.7953 |
| Sub 4 of the farm Bergvliet No. 452 | S. G. 1061 / 2007 | 38.5517 |
| Sub 5 of the farm Bergvliet No. 452 | S. G. 1062 / 2007 | 376.8268 |
| Remainder of the farm Wonderfontein No. 486 | VRY 295. | 1460.3432 |
| Sub 1 of the farm Wonderfontein No. 486 | S. G. 4680 / 1969. | 1526.7779 |
| Remainder of the farm Langverwacht No. 493 | VRY 455. | 469.4163 |
| Sub 1 of the farm Langverwacht No. 493 | S. V. 477 F. 5. | 853.7736 |
| Remainder of the farm Doornkraal No. 504 | VRY 381. | 919.1173 |
| Sub 1 of the farm Doornkraal No. 504 | VRY 381F1. | 919.1159 |
| Remainder of the farm Geluk No. 521 | VRY 294. | 612.0660 |
| Sub 1 of the farm Geluk No. 521 | S. G. 4529 / 1970. | 431.5686 |
| Sub 2 of the farm Geluk No. 521 | S. G. 1063 / 2007 | 682.6400 |
| Remainder of the farm Craig Adam No. 534 | VRY 436. | 2852.9754 |
| The farm Jammerdal No. 574 | VRY 451. | 2620.07 |
| The farm Breda No. 17060 | VRY 516. | 2815.1224 |
| Sub 4 of the farm Tochgevonden No. 33 | S. G. 79 / 1988 | 4.0712 |

KARKLOOF NATURE RESERVE

Region: Situated in the province of KwaZulu-Natal, the Umgungundlovu District Municipality and in the KZ223 Mooi Mpfana and KZ222 Umgeni Local Municipalities.

| Properties Comprising the Karkloof Nature Reserve | Surveyor General diagram No. | Extent (ha) |
|---|------------------------------|-------------|
| The remainder of the farm Dartmoor No. 5093 | G. V. 93A F. 4 | 779.3593 |
| The farm Melmoth No. 7673 | G. V. 219 F. 16 | 790.3846 |
| The remainder of the farm Welgevonden No. 969 | G. V. 24 F. 5 | 291.9670 |
| Nature reserve area no. 1 over the remainder of the farm Spitze Kop No. 970 | S. G. No. 2095 / 2010 | 355.0442 |
| The remainder of portion 1 of the farm Spitze Kop No. 970 | S. V. 15 F. 113 | 432.2363 |

Appendix C



Appendix C

| C E-D BRISCOE Professional Land Surveyors | | PROCLAMATION DIAGRAM | | | |
|---|------------------------|---|----------------|--------------|---|
| SIDES Metres | ANGLES OF DIRECTION | CO-ORDINATES Y System W ^o X | | | S.G. No. |
| | Constants | + | 0,00 | +3100 000,00 | Approved |
| AB | 1138,36 | 259 10 07 | A + 38 059,61 | + 40 235,10 | for Surveyor- General ACT 57/2003 |
| BC | 618,66 | 234 16 10 | B + 36 941,53 | + 40 021,19 | |
| CD | 730,69 | 239 36 00 | C + 36 439,31 | + 39 659,91 | |
| DE | 664,88 | 180 04 20 | D + 35 809,08 | + 39 290,15 | |
| EF | 417,16 | 166 13 40 | E + 35 808,22 | + 38 625,27 | |
| FG | 669,08 | 239 05 40 | F + 35 907,53 | + 38 220,11 | |
| GH | 257,99 | 188 46 30 | G + 35 333,45 | + 37 876,45 | |
| HJ | 1096,07 | 238 11 28 | H + 35 294,10 | + 37 621,48 | |
| JK | 399,60 | 270 25 10 | J + 34 362,64 | + 37 043,75 | |
| KL | 300,16 | 256 03 20 | K + 33 963,05 | + 37 046,69 | |
| LM | 875,15 | 305 30 40 | L + 33 671,74 | + 36 974,36 | |
| MN | 497,11 | 279 11 00 | M + 32 959,38 | + 37 482,72 | |
| NP | 193,75 | 325 20 40 | N + 32 468,64 | + 37 562,05 | |
| PO | 762,10 | 8 29 10 | P + 32 358,46 | + 37 721,42 | |
| QR | 634,34 | 113 11 50 | O + 32 470,93 | + 38 475,17 | |
| RS | 309,78 | 86 48 00 | R + 33 053,99 | + 38 225,31 | |
| ST | 307,96 | 106 58 10 | S + 33 363,29 | + 38 242,61 | |
| TU | 160,96 | 56 43 20 | T + 33 657,84 | + 38 152,73 | |
| UV | 272,81 | 97 42 00 | U + 33 792,40 | + 38 241,04 | |
| VW | 103,88 | 78 36 50 | V + 34 062,75 | + 38 204,49 | |
| WX | 631,05 | 66 32 20 | W + 34 164,59 | + 38 225,00 | |
| XY | 1628,61 | 42 07 24 | X + 34 743,47 | + 38 476,24 | |
| YZ | 3370,95 | 74 41 33 | Y + 35 835,83 | + 39 684,18 | |
| ZA1 | 106,67 | 220 30 10 | Z + 39 087,19 | + 40 574,10 | |
| A1A | 992,40 | 254 56 20 | A1 + 39 017,91 | + 40 492,99 | |
| YY1 | | 42 07 20 | | | |
| ZZ1 | | 40 30 08 | | | |

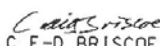
The figure C D E F G H J K L M N P O R S T U V W X Y1 middle of
 Manzinyama River a middle of Ngxobongo River b middle of Buffalo River Z1 A1
 represents 816,3478 of land, being


ISANDLAWANA HERITAGE RESERVE

and comprises :-

1. ISANDLAWANA HISTORICAL SITE No. 2 ON RESERVE No. 18 No. 15838
 vide diagram S.G. No. 522/1988.
2. ISANDLAWANA HISTORICAL SITE No. 1 ON RESERVE No. 18 No. 15838
 vide diagram S.G. No. 3440/1987.

Situate in the Nqutu Municipality Registration Division GT
 Province of KwaZulu-Natal
 Framed for the purposes of declaring a Nature Reserve
 in terms of Section 23 (1) of the National Environmental
 Management Protected Areas Act, 57 of 2003
 in May 2012
 by me


C E-D BRISCOE PLS 1136
 Professional Land Surveyor

| | | |
|--|---|--|
| This diagram relates to No. Registrar of Deeds |  | File No. S.R. No. Comp. GTNT |
|--|---|--|

**Appendix D: Memorandum of Agreement between Ezemvelo, Amafa and the
Mangwebuthanani Community**

**MEMORANDUM OF AGREEMENT
Entered into and between**

**AMAFA HERITAGE
Duly represented by James van Vuuren**

AND

**KWAZULU NATAL NATURE CONSERVATION BOARD
Duly represented by CEO: Mr. K. Mkhize**

AND

**MANGWEBUTHANANI TRIBAL AUTHORITY
Duly represented by iNkosi M. Mazibuko**

Appendix D

DEFINITIONS

Acts & Ordinances

- - KwaZulu Nature Conservation Act of 1992
 - KwaZulu-Natal Nature Conservation Management Act of 1997
 - National Environmental Management: Biodiversity Act 10 of 2004
 - National Environmental Management: Protected Areas Act of 2003
 - Natal Nature Conservation Ordinance No. 15 of 1974
 - National Heritage Act 28 of 1969 and Provincial predecessors.

AMAFA

- Provincial Heritage Organization

EKZNW

- KwaZulu-Natal Nature Conservation Board trading as Ezemvelo KwaZulu-Natal Wildlife

JIMP

- Joint Integrated Management Plan

Appendix D

PREAMBLE

WHEREAS the Isandlwana Heritage Reserve is proclaimed under the Proclamation 522/1988.

WHEREAS AMAFA have Permission to Occupy the Isandlwana Heritage Reserve in terms of the relevant PTO (Permission To Occupy) official documents.

WHEREAS AMAFA are the Custodians of the Isandlwana Heritage Reserve in terms of Acts and Ordinances.

WHEREAS AMAFA and EKZNW are joint managers of the Isandlwana Heritage Reserve in terms of Acts and Ordinances.

WHEREAS The Mangwebuthanani Traditional Authority has controlled access to the Isandlwana Heritage Reserve in terms of Resource Utilization as set out in the EKZNW Resource Use Policies.

WHEREAS AMAFA and EKZNW have the authority to employ members of the Mangwebuthanani Community in terms of work carried out on the Isandlwana Heritage Reserve.

1

COMMENCEMENT AND DURATION

This memorandum of Agreement shall come into effect on the date of signature and shall remain in force throughout the duration of the agreement.

Reassessment of the Joint management to be undertaken should the agreement be deemed satisfactory to both parties further parties may be agreed to.

2

MANAGEMENT

The parties undertake to manage the Isandlwana Heritage Reserve in respect of the relevant Heritage, Biodiversity and Conservation Acts and Ordinances, in accordance with the Joint Integrated Management Plan.

3

ASSETS

AMAFA will remain the Custodians of the Reserve. KZNNCB will maintain and retain ownership of relevant fixed assets (Structures as they appear in Appendix 1 -).

4

BIODIVERSITY

KZNNCB will manage the Biodiversity component of the Isandlwana Heritage Reserve according to the relevant legislations and policies including but not limited to Mammal Population Control, Resource Utilization (Appendix 2 -).

5

FIRE MANAGEMENT

Relevant Fire Management will be undertaken by EKZNW according to legislation and policies to which they are bound. Community participation in terms of employment will be undertaken in the execution of such work.

6

ENTRANCE FEES / COMMUNITY BENEFIT

Revenue from Entrance fees and management of these fees will remain the responsibility of AMAFA whereby 25% of revenue earned will be passed onto the Mangwebuthanani Community.



Appendix D

7

NEIGHBOUR RELATIONS

The parties undertake to maintain sound working relations with the Mangwebuthanani Community in terms of Resource Use, Employment opportunities and access rights. Access in terms of neighbour properties will be in terms of the agreement.

Mangwebuthanani Community access and utilization of resources within the Isandlwana Heritage Reserve will be controlled in terms of Resource Utilization and Law Enforcement policies.

Free access to school groups from the Mangwebuthanani Community will be allowed under teacher-supervision.

8

LAW ENFORCEMENT

Relevant Law Enforcement will be undertaken jointly by AMAFA and EKZNW according to legislation and policies to which they are bound.

9

OPERATIONAL COSTS

Operational costs in terms of maintenance and employment of casual labour, for firebreaks, fencing and soil reclamation will be the responsibility of AMAFA until such time that relevant budgets sourced from the Government can be transferred to EKZNW.

Recognizing that Operational cost to biodiversity needs to be carried by KZNNCB and that this budget should be sourced from Treasury. The Board undertakes to investigate the transfer of this budget from AMAFA. During the period of this agreement AMAFA undertakes to provide an adequate budget with regards to provision of op costs.

10

TRAINING

Staff employed by the relevant parties will be responsible for the training in suitable and relevant fields of work.

11

LIABILITIES

In terms of the relevant activities on the Isandlwana Heritage Reserve, AMAFA will be responsible for any actions that take place within the boundary of the Reserve by any member of public.

12

DISPUTE RESOLUTION

In the event that a dispute arises from this memorandum, the relevant parties shall appoint a professional mediator to resolve such a dispute. These mediations shall be concluded within three months from the time of a dispute being declared by either party. In the event that such mediation fails, each party reserves the right to withdraw from this process.

13

DOMICILIUM AND NOTICES

Each party chooses the addresses set below as its address to which all notices; legal processes and other communications must be delivered for the purpose of this Memorandum.

AMAFA
Private Bag
Ulundi

Ezemvelo KZN Wildlife

Mangwebuthanani Community

Thus done and signed at _____ on _____ 2006.



Appendix D

For AMAFA

Witness 1

Witness 2

For Ezemvelo KZN Wildlife

Witness 1

Witness 2

For Mangwebuthanani Community

Witness 1

Witness 2

Appendix E: isandlwana Battlefield Site - Heritage Management Guidelines

Isandlwana Battlefield: Heritage Management Guidelines

- 1. Background**
- 2. Conditions of Proclamation**
- 3. Heritage resources**
- 4. Heritage management guidelines**
- 5. Public access**
- 6. Management**
- 7. Appendices**

Isandlwana Battlefield: Heritage Management Guidelines

1. Background.

The Isandlwana battlefield is one of the premier battlefield sites in southern Africa and forms an important part of KwaZulu Natal's tourism product. A small part of the battlefield was proclaimed in 1972 (Government Notice 1658 of 22/9/1972).

In 1984 the KwaZulu Monuments Council and the Mangwebuthanani commenced negotiations with a view to establishment of a historic reserve. This led to the proclamation of the Isandlwana Historic Reserve in terms of the KwaZulu Monuments Act of 1980. (KZN Government Notice 579 of 1989)

The Cabinet of the KwaZulu Government also resolved that the area be proclaimed a conservation area to be administered by the then BNR. Post 1994 the reserve was managed by Amafa AkwaZulu Natali, and in 2004 the biodiversity component of the reserve was taken over by the KZN Nature Conservation Service.

2. Conditions of Proclamation

- i. The reserve boundaries would exclude all existing homesteads, and only the store and school would be resituated.
- ii. The area between the Manzimnyama and Mzinyathi would become a resource area.
- iii. No further homesteads would be permitted within the proclaimed area.
- iv. No new fields would be permitted within the proclaimed area.
- v. Cattle would be allowed to graze within the proclaimed area in controlled numbers. This would be at the discretion of the Traditional Authority.
- vi. People living around the reserve would be permitted to gather natural resources in a controlled manner.
- vii. Residents of the Traditional authority wards would have free access to the reserve.
- viii. Outsiders and tourists would be charged a gate entry fee to the reserve.
- ix. The Traditional Authority would derive 25 % of gate takings.
- x. A single check gate would be built.
- xi. A perimeter fence would be erected.
- xii. The road to the east of the reserve would be closed and a new road skirting the northern boundary of the reserve would be built.
- xiii. The telephone line running through the reserve would be resituated.
- xiv. Labour would be drawn from the ward in which the reserve is situated.
- xv. A liaison committee comprising the traditional authority and the reserve management would be established.

3. Heritage resources

The following heritage resources are located within the reserve:

- i. The colonial cemetery
- ii. The memorial to the Zulu Dead
- iii. The carbineer memorial
- iv. The firing line and associated cairns
- v. Memorials and cairns on the saddle between Black's Koppie and Isandlwana.
- vi. Cairns in the camp area
- vii. Cairns on Isandlwana Hill (Younghusband)
- viii. Cairns and graves on the south western slopes of the hill (Shepstone)
- ix. Cairns on the fugitives trail.

4. Management guidelines

- i. **Colonial cemetery** - The site is well visited and needs to be well maintained at all times. During the summer months it should be mowed / brush cut twice a month, while the frequency of cutting can be reduced to once monthly or less in the winter months. The cairns within the cemetery should be whitewashed annually during the winter months. Litter should be removed daily
- ii. **Memorial to the Zulu Dead** – The site is well visited and should be maintained at all times. The area around the base should be mowed to a distance of 10 metres, at the same frequency as item i. Bronze work needs to be checked for damage and any cracks or broken items welded as soon as possible. No detergents or cleaning materials should be used on the bronze work. Rock work needs to be kept flush and stable. Litter should be removed daily
- iii. **The Carbineer Memorial** – A path to the sites needs to be maintained at all times. The area within the perimeter fence to be maintained as per the above frequency.
- iv. **The firing line and associated cairns** – The path from the gate to the firing line needs to be cut at least once a month. Cairns in this area to be whitewashed annually in the winter months.
- v. **Memorials and cairns on the saddle** – These features are well visited and need to be well maintained at all times. The area around the memorials should be kept mowed as per the above frequency. The litter bin on the saddle should be emptied once a week.
- vi. **Cairns in the Camp area** – Whitewash annually. Erosion in this area needs to be prevented. Any graves in danger of being undercut should be identified in good time.
- vii. **Cairns on the hill** – whitewash annually. The condition of the path to these sites needs to be monitored for erosion and counter measures implemented should traffic cause detrimental effects.
- viii. **Cairns on the fugitives trail.** – A register of all cairns needs to be kept and these should be inspected for vandalism / grave robbery / undercutting at least twice a year. The trail path should be cleared twice a year at beginning and end of the summer months. The cairns close to the trail should be whitewashed annually, those further, every two years. Erosion on the trail needs to be monitored and counter measures implemented should traffic cause detrimental effects.
- ix. **Erosion** – Several sites within the reserve are prone to erosion:
 - a. The stone packs to the south of the through road should be repacked during the winter months. Sandy areas should be planted with *cynodon dactylon* grass plugs during the early part of summer.
 - b. The donga area in the north eastern area of the reserve needs to be closely monitored and any new donga formation arrested. The older dongas form an important part of the battlefield and cannot be reclaimed.
 - c. Certain areas on the fugitives trail are prone to erosion and have resulted in undercutting of cairns. This area needs to be monitored.
- x. **Self-guided trail** – The self-guided trail is well used and should be well maintained at all times. The path should be mowed at least once a month. Self-guided trail markers need to be legible and should be replaced if damaged.
- xi. **Check Gate** – Should be furnished with a chair and table and be kept tidy at all times. The toilets at the gate should be cleaned every morning and water supply to these maintained at all times.
- xii. **Roads** – Every effort should be made to prevent water damage to the roads within the reserve. The road should be graded only when necessary.
- xiii. **Firebreaks** – Where possible, firebreaks should be completed not later than the end of June of each year.
- xiv. **Resource Collection** – Residents of the area may on authority of the reserve manager collect firewood. (*Appendix 2*)
- xv. **Cattle grazing** – Controlled numbers of cattle may graze in the reserve for a limited period. These numbers and the period to be determined in consultation with the traditional authority. (*Appendix 3*)

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- xvi. **Hunting** – No hunting is permitted in the reserve. Only management of the reserve may be involved with off-takes. Off-takes to be conducted only before or after public access hours.

5. Public Access

- i. The battle field is open to the public on all days except Christmas day and Good Friday.
- ii. Hours of opening: Weekdays 08h00 to 16h00, Weekends and public holidays 09h00 to 16h00.
- iii. Visitors are required to obtain a ticket from the visitor center before they will be permitted entry to the reserve.
- iv. Entry fees will be determined by the Amafa Council.
- v. Entry to the reserve is free on Museums Day and any other day so determined by the Amafa Council.
- vi. Free entry to the reserve may be granted by the Amafa CEO.
- vii. Vehicles may only travel and park on designated areas.
- viii. Visitors making use of the fugitives trail should report this to the gate.
- ix. A filming fee is payable by film crews.
- x. Special permission for after-hours access can be arranged with reserve management.
- xi. Use of the battlefield for reasons other than viewing of the sites requires the permission of the Amafa Council.
- xii. Access to the reserve for research purposes requires special permission.

6. Management.

The heritage component of the reserve is managed by the heritage officer: Isandlwana, who reports to the Senior Heritage Officer: Battlefields (within the Support Technical and IT sub directorate of Amafa). All staff operating on the reserve do so in terms of a duty sheet and instructions from the reserve management. An annual budget for heritage management in the reserve is made available by Amafa in terms of its 5 year plan. Procurement is in terms of the Amafa policy on expenditure. A management committee will meet at least quarterly to monitor implementation of this plan.

The proclamation in terms of the KwaZulu Monuments Act , and superseded by the KwaZulu Heritage Act Of 1997, of the Isandlwana Historic Reserve as a heritage site was made possible by combining the existing proclaimed area with an area of roughly 800 ha which was made available by the Mangwebuthanani Traditional authority.

The cabinet resolution proclaiming the site listed several conditions benefiting the local community which were to be implemented. One of these conditions was that members of the community could collect firewood from the battlefield under controlled circumstances.

7. Circumstances under which firewood can be collected.

- i. Only members of the community represented by the four wards of the Mangwebuthanani TA have access to the battlefield to collect firewood.
- ii. Prior to collection, the member obtain written permission to collect firewood, in the form of a permit form, signed by the Conservation Manager: Isandlwana.
- iii. Only one head load of wood per day per person permitted.
- iv. No collection of wood by motorised or animal-drawn vehicle within the reserve.
- v. Firewood may not be collected and sold for gain.
- vi. Only living trees identified by the officer-in-charge may be felled.
- vii. No dogs may accompany members collecting firewood.
- viii. No firearms permitted to be carried by members collecting firewood in the reserve.
- ix. Persons collecting firewood may not interfere with the work of reserve staff or interfere with tourists.
- x. Persons collecting firewood may not make fires of any kind in the reserve.
- xi. Persons collecting firewood may not interfere with wildlife or damage/ destroy any plant other than plants identified by the officer-in-charge.

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- xii. Access points to and out of the reserve should be specified, preferably the main access.
- xiii. Fences may not be damaged in the process of collecting firewood
- xiv. The Officer-in-charge can determine a reasonable period during which access to the reserve is prohibited.
- xv. The policy regarding collection of firewood should be reviewed on a regular basis

8. Policy With regard to providing access for cattle to the Isandlwana Historic Reserve.

Circumstances under which cattle can be allowed to graze on the battlefield:

- i. A cattle committee must be established to allocate and monitor cattle introduced into the reserve. The committee to represent Amafa AkwaZulu Natali and members from each ward of the TA
- ii. Only members of the community represented by the four wards of the Mangwebuthanani TA have access to the battlefield for the purpose of grazing their cattle.
- iii. The condition of the veld will determine the numbers of cattle permitted onto the battlefield.
- iv. A maximum period of three months, determined by the Conservation Manager: Isandlwana, in consultation with the above committee will be made available for grazing purposes.
- v. Owners of cattle are responsible for ensuring the safety of their animals.
- vi. Cattle herds placed in the reserve are prohibited from making any form of fire, or from carrying firearms.
- vii. Cattle herds placed in the reserve may not interfere with the work of reserve staff or interfere with tourists.
- viii. Reserve fences may not be damaged and access should only be via the main access gate to the reserve.
- ix. The Conservation Manager can, as a result of poor veld condition, limit access to any portion of the reserve.
- x. Should the condition of the veld be such that introduction of cattle poses a threat to the reserve and compromises the biodiversity, this should be communicated to the traditional authority in good time.
- xvi. The policy regarding access to the battlefield for cattle should be reviewed on a regular basis

Appendix F

Appendix F: List of policies, unpublished documents and supporting documentation

Copies available from:

- a) Reserve Management and / or,
- b) Regional Ecologist

Item:

Ezemvelo KZN Wildlife Corporate Strategic Plan and Performance Plan for 2015 - 2020.

Ezemvelo KZN Wildlife Corporate Policies and Procedures (Norms & Standards) listed in the table below.

Ezemvelo KZN Wildlife Biodiversity Database Checklists for Isandlwana Heritage Reserve.

Proclamations of Isandlwana Heritage Reserve

Isandlwana Heritage Reserve Public Participation Report, 2015.

Memorandum of Understanding between AMAFA and Ezemvelo KZN Wildlife.

Memorandum of Agreement between AMAFA, Ezemvelo KZN Wildlife and Mangwebuthanani Community.

Management Guidelines for the Isandlwana Battlefield Site.

The table below lists the Ezemvelo KZN Wildlife corporate policies (norms and standards) referenced from the intranet that are most relevant to Ezemvelo KZN Wildlife protected area management. It is the responsibility of all management and other personnel associated with management of protected areas to ensure that they familiarise themselves and comply with the most recent versions of all Ezemvelo KZN Wildlife Board Approved Policies.

| <u>EZEMVELO KZN WILDLIFE POLICIES (NORMS & STANDARDS)</u> | |
|--|---|
| File No. | CORPORATE AFFAIRS |
| B 2 | ➤ Access to Ezemvelo KZN Wildlife Areas and Employment. |
| B 5 | ➤ Outsourcing of Functions and Services |
| B 7 | ➤ Monuments, Memorials and Names of Protected Areas under the control of Ezemvelo KZN Wildlife. |
| B 8 | ➤ Restricted use of Board Theatres, Halls and Conference Facilities etc. |
| B 9 | ➤ Code of Ethics / Conduct. |
| B 10 | ➤ Photography in Board Protected Areas. |
| B 13 | ➤ Mission Statement |
| B 14 | ➤ Access to Information. |
| File No. | INTERNAL AUDIT |
| C 5 | ➤ Management Control |
| BIODIVERSITY CONSERVATION OPERATIONS | |
| 1. NATURAL RESOURCE SUSTAINABILITY | |
| File No. | Threatened Species and Ecosystems |
| D 1.1 | ➤ Disposal of Black Rhino. |
| D 1.2 | ➤ Disposal of Surplus White Rhino. |
| D 1.3 | ➤ Strategy for the Management of Southern White Rhino in KwaZulu-Natal. |
| D 1.4 | ➤ Strategy for the Biological Management of Black Rhino in KwaZulu-Natal. |
| D 1.5 | ➤ Rhinoceros Products. |
| D 1.6 | ➤ Crocodilians |

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| D 1.7 | ➤ Cycads. |
| D 1.8 | ➤ Disposal of Threatened Species. |
| BIODIVERSITY CONSERVATION OPERATIONS | |
| 1. NATURAL RESOURCE SUSTAINABILITY | |
| File No. | Exotic and Invasive Species |
| D 1.9 | ➤ Release of Alien Species. |
| D 1.10 | ➤ Control Measures for Red-billed Quelea. |
| D 1.12 | ➤ Grass Carp. |
| D 1.13 | ➤ Establishment of Alien Plantations. |
| File No. | Migratory Species |
| D 1.14 | ➤ Black Wildebeest and Blue Wildebeest Hybridization and Conservation. |
| D 1.15 | ➤ Permit authorising the collection of Biological Material within Board Areas. |
| 2. CONSERVATION EFFECTIVENESS | |
| File No. | Strategic Applications |
| D 2.1 | ➤ Involvement of the KwaZulu-Natal Nature Conservation Board in Project 8 of the MAB (Man and Biosphere) Programme. |
| File No. | Conservation Management: Protected Area Management |
| D 2.2 | ➤ Management of Wilderness Areas. |
| D 2.3 | ➤ Protected Area Development. |
| D 2.4 | ➤ Prohibition of Works and Servitudes in Board Areas. |
| D 2.5 | ➤ Zonation and Regulations for the control of off-road vehicles on beaches controlled by the Board. |
| D 2.6 | ➤ Quarries in KZN Protected Areas. |
| D 2.7 | ➤ Re-establishment and Management of Vegetation on Development Sites in the Ezemvelo KZN Wildlife Protected Areas. |
| D 2.8 | ➤ Ecotourism and Protected Areas. |
| D 2.9 | ➤ Solid Waste Management within Protected Areas. |
| D 2.10 | ➤ State Security Service Activities within Board Areas. |
| D 2.11 | ➤ Shark Nets in or bordering KwaZulu-Natal Nature Conservation Board Controlled Areas. |
| File No. | Integrated Environmental Management |
| D 2.12 | ➤ Integrated Environmental Management - incorporating the procedure for the assessment of the impact of proposed development projects on nature conservation concerns. |
| D 2.13 | ➤ Precautionary Principle. |
| D 2.14 | ➤ Shark Net Installations. |
| D 2.15 | ➤ Bioprospecting in KwaZulu-Natal. |
| D 2.17 | ➤ Use of Pesticides by the Ezemvelo KZN Wildlife: Safety to Humans and the Environment. |
| D 2.18 | ➤ Interference with the Mouth of a Lagoon or River (Breaching). |
| File No. | Ex Situ Wild Animal Management |
| D 2.21 | ➤ Re-establishment of Terrestrial Mammals in Board Areas. |
| D 2.22 | ➤ Translocation of Animals. |
| D 2.25 | ➤ Elephant Introductions and Elephant in Enclosures. |
| D 2.27 | ➤ Introduction and Keeping of Large Predators in Enclosures in KZN. |
| D 2.28 | ➤ Use of Narcotic Drugs. |
| D 2.29 | ➤ Falconry. |

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| BIODIVERSITY CONSERVATION OPERATIONS | |
|---|--|
| 2. CONSERVATION EFFECTIVENESS | |
| File No. | Human Animal Conflict - Inside and Outside Protected Areas |
| D 2.30 | ➤ Disposal of Leopard from Ezemvelo KZN Wildlife Protected Areas. |
| D 2.31 | ➤ Problem Animal Control. |
| D 2.32 | ➤ Compensation claims in respect of damage caused by Lion, Cheetah, Wild Dog and Elephant to Stock and Crops. |
| D 2.33 | ➤ Instances of Death as a result of an Unprovoked Attack by a Wild Animal Normally contained and originating from within a Fenced Protected Area under the Control of the KwaZulu-Natal Nature Conservation Board. |
| File No. | Environmental Awareness |
| D 2.34 | ➤ Environmental Education Policy. |
| 3. BIODIVERSITY PROTECTION | |
| File No. | Co-management |
| D 3.1 | ➤ Supply of Game to Conservancies, Community Conservation Areas and Biosphere Reserves in KwaZulu-Natal |
| D 3.2 | ➤ Establishment and Management of Community Conservation Reserves (CCR) |
| D 3.4 | ➤ Community Conservation Programmes |
| D 3.5 | ➤ Neighbours' Access to Board Protected Areas |
| D 3.6 | ➤ Relationship with Local Boards |
| D 3.7 | ➤ Conservation Partnerships Between KwaZulu-Natal Nature Conservation Board and Adjacent Landowners |
| D 3.8 | ➤ Community Trust |
| D 3.9 | ➤ Community Levy Policy and Guidelines |
| D 3.10 | ➤ Land Claims on Proclaimed and Unproclaimed Provincial and Assigned National Protected areas in KwaZulu-Natal |
| D 3.11 | ➤ Amafa Policy Guidelines for the access of rock art sites in KwaZulu Natal |
| File No. | Resource-use benefits |
| D 3.12 | ➤ Disposal of Venison from Ezemvelo KZN Wildlife Management Operations. |
| D 3.13 | ➤ Sustainable use of wildlife resources. |
| D 3.14 | ➤ Freshwater Angling. |
| D 3.15 | ➤ Freshwater species utilisation. |
| D 3.16 | ➤ Use of plant resources from protected areas. |
| D 3.17 | ➤ Use of doomed biological material. |
| D 3.19 | ➤ Provision of hunting by Ezemvelo KZN Wildlife. |
| File No. | 4. RELATIONSHIPS |
| D 4.1 | ➤ Neighbour Relations. |
| D 4.2 | ➤ Participation - Non Government Organisations. |
| D 4.3 | ➤ Data Access. |
| D 4.4 | ➤ Consultation and Communication with Stakeholders: Policy and Guidelines. |
| File No. | COMMERCIAL OPERATIONS |
| E 1 | ➤ Concessions for Welfare Groups. |
| E 2 | ➤ Hiking and Mountaineering. |
| E 3 | ➤ Educational Concessions. |
| E 4 | ➤ Club Facilities within Board Areas. |

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| E 5 | ➤ Hutted Camps. |
| E 6 | ➤ Joint Venture Scheme. |
| E 7 | ➤ Allocation of Sites in terms of the Joint Venture Scheme. |
| E 8 | ➤ Access to Protected Areas through Unofficial Entry Points. |
| E 9 | ➤ Visitor Facilities Management by Ezemvelo KZN Wildlife. |
| E 10 | ➤ Lease of Lakeshore at State Dam Protected Areas. |
| E 11 | ➤ Execution, Control and Management of Leases and Concession Contracts (excluding Biodiversity Conservation Partnerships and Leases of Wildlife). |
| E 12 | ➤ Private Sector Reservations Policy. |
| E 13 | ➤ Partnerships for Eco-Tourism Development within or Adjacent to Protected Areas. |
| E 14 | ➤ Discounting of Tariffs for Walk-in Guests. |
| E 15 | ➤ Ecotourism Discounting Strategy. |
| E 16 | ➤ Travel Trade Commissions: Tour Operator/ Travel Agency. |
| E 17 | ➤ Policy and Procedure for the establishment and monitoring of Commercial Operations Public Private Partnership (PPP) Agreements. |
| E 18 | ➤ Administrative and operational policy on Professional hunting in South Africa. |
| E 19 | ➤ Commercialisation. |
| | |

Appendix G: Listed activities in terms of Regulation R.546, Listing Notice 3

If any of the following activities are proposed in a protected area, proclaimed in terms of the Protected Areas Act, or within five kilometres of one, they will be subject to either a basic assessment or full scoping and environmental impact assessment process:

- The construction of billboards exceeding 18 square metres in size.
- The construction of reservoirs for bulk water supply with a capacity of more than 250m³.
- The construction of masts or towers of any material or type used for telecommunication broadcasting or radio transmission purposes where the mast:
 - Is to be placed on a site not previously used for this purpose.
 - Will exceed 15 metres in height but excluding attachments to existing buildings and masts on rooftops.
- The construction of a road wider than four metres with a reserve less than 13.5 metres.
- The construction of resorts, lodges or other tourism accommodation facilities.
- The conversion of existing structures to resorts, lodges or tourism accommodation facilities that sleep 15 people or more.
- The construction of aircraft landing strips and runways.
- The construction of above ground cableways and funiculars.
- The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good.
- The construction of tracks or routes for the testing, recreational use or outdoor racing of motor powered vehicles excluding conversion of existing tracks or routes for the testing, recreational use or outdoor racing of motor powered vehicles.
- The clearance of an area of 1ha or more of vegetation where 75% of the vegetative cover constitutes indigenous vegetation, except where such removal is required for:
 - The undertaking of a process or activity included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), in which case the activity is regarded to be excluded from this list.
- The undertaking of a linear activity falling below the thresholds mentioned in Listing Notice 1 in terms of GN No.544 of 2010.
- The construction of facilities and infrastructure or structures of any size for any form of aquaculture (this applies only inside a protected area, not within five kilometres of it).
- The construction of:
 - Jetties exceeding 10m² in size.
 - Slipways exceeding 10m² in size.
 - Buildings with a footprint exceeding 10m² in size.

- Infrastructure covering 10m² or more. Where such construction occurs within a watercourse or within 32 metres of watercourse, measured from the edge of the watercourse, excluding where such construction will occur behind the development setback line.
- The expansion of reservoirs for bulk water supply where the capacity will be increased by more than 250m³.
- The expansion of a resort, lodge, hotel and tourism or hospitality facilities where the development footprint will be expanded.
- The widening of a road by more than four metres or the lengthening of a road by more than one kilometre.
- The expansion of runways or aircraft landing strips where the expanded runways or aircraft landing strips will be longer than 1.4 kilometres in length.
- The expansion of above ground cableways and funiculars where the development footprint will be increased.
- The expansions of tracks or routes for the testing, recreational use or outdoor racing of motor powered vehicles excluding conversion of existing tracks or routes for the testing, recreational use or outdoor racing of motor powered vehicles, where the development footprint will be expanded.
- The expansions of facilities or infrastructure for the storage, or storage and handling of a dangerous good.
- The expansion of:
 - Jetties where the jetty will be expanded by 10m² in size or more.
 - Slipways where the slipway will be expanded by 10m² or more.
 - Buildings where the buildings will be expanded by 10m² or more in size.
 - Infrastructure where the infrastructure will be expanded by 10m² or more.
 - Where such construction occurs within a watercourse or within 32 metres of watercourse, measured from the edge of the watercourse, excluding where such construction will occur behind the development setback line.
- The expansion of facilities, infrastructure or structures of any size for any form of aquaculture (this applies only inside a protected area, not within five kilometres of it).
- Phased activities for all activities listed in the Schedule and as it applies to a specific geographical area, which commenced on or after the effective date of the Schedule, where any phase off the activity may be below a threshold but where a combination of the phases, including expansions or extensions, will exceed a specified threshold.

Appendix H

Appendix H: Isandlwana Heritage Reserve Species List

The species lists was sourced from the Ezemvelo KZN Wildlife biodiversity database to ensure that the information presented is the most current and accurate, both in terms of the species present or absent in the protected area and their threatened status.

Abbreviations:

| | |
|-----------|--|
| DD | Data Deficient |
| E | Endangered |
| L | Least Concern |
| NT | Near Threatened |
| Ordinance | KwaZulu Nature Conservation Act No. 8 of 1975 |
| P | Protected |
| SARDB | South African Red Data Book |
| SP | Specially Protected |
| ToPS | Threatened or Protected Species status in terms of the Biodiversity Act No. 10 of 2004 |
| V | Vulnerable |

| Amphibians | |
|------------------------------------|--|
| Taxon Name | English Name |
| <i>Amietophrynus gutturalis</i> | |
| <i>Amietophrynus rangeri</i> | Raucous toad |
| <i>Breviceps adpersus adpersus</i> | Bushveld rain frog |
| <i>Cacosternum nanum</i> | Dwarf dainty frog |
| <i>Tomopterna natalensis</i> | Natal sand frog |
| Birds | |
| Taxon Name | English Name |
| <i>Accipiter melanoleucus</i> | Black sparrowhawk |
| <i>Alcedo cristata</i> | Malachite Kingfisher |
| <i>Andropadus importunus</i> | Sombre Greenbul, Sombre Bulbul |
| <i>Anthus cinnamomeus</i> | African Pipit, Grassveld Pipit |
| <i>Anthus similis</i> | Long-billed Pipit |
| <i>Apalis thoracica</i> | Bar-throated Apalis |
| <i>Apus affinis</i> | Little Swift |
| <i>Apus barbatus</i> | African Black Swift, Black Swift |
| <i>Apus horus</i> | Horus Swift |
| <i>Batis capensis</i> | Cape Batis |
| <i>Batis molitor</i> | Chinspot Batis |
| <i>Bostrychia hagedash</i> | Hadedda Ibis |
| <i>Bubulcus ibis</i> | Cattle Egret |
| <i>Buteo vulpinus</i> | Steppe Buzzard |
| <i>Camaroptera brachyura</i> | Green-backed Camaroptera, Bleating Warbler |
| <i>Campepthera abingoni</i> | Golden-tailed Woodpecker |
| <i>Caprimulgus tristigma</i> | Freckled Nightjar |

Appendix H

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|--------------------------------|---|
| <i>Centropus burchellii</i> | Burchell's Coucal |
| <i>Cercomela familiaris</i> | Familiar Chat |
| <i>Cercotrichas leucophrys</i> | White-browed Scrub-Robin, White-browed Robin |
| <i>Charadrius tricollaris</i> | Three-banded Plover |
| <i>Chrysococcyx caprius</i> | Diederick Cuckoo |
| <i>Cinnyris talatala</i> | White-bellied Sunbird |
| <i>Cisticola aberrans</i> | Lazy Cisticola |
| <i>Cisticola fulvicapilla</i> | Neddicky |
| <i>Cisticola juncidis</i> | Zitting Cisticola, Fan-tailed Cisticola |
| <i>Cisticola natalensis</i> | Croaking Cisticola |
| <i>Colius striatus</i> | Speckled Mousebird |
| <i>Corvus albicollis</i> | White-necked Raven |
| <i>Corvus albus</i> | Pied Crow |
| <i>Cossypha caffra</i> | Cape Robin-Chat, Cape Robin |
| <i>Cossypha humeralis</i> | White-throated Robin-Chat, White-throated Robin |
| <i>Crithagra gularis</i> | Streaky-headed Seedeater, Streaky-headed Canary |
| <i>Crithagra mozambicus</i> | Yellow-fronted Canary, Yellow-eyed Canary |
| <i>Cuculus clamosus</i> | Black Cuckoo |
| <i>Cuculus solitarius</i> | Red-chested Cuckoo |
| <i>Emberiza capensis</i> | Cape Bunting |
| <i>Emberiza flaviventris</i> | Golden-breasted Bunting |
| <i>Emberiza tahapisi</i> | Cinnamon-breasted Bunting, Rock Bunting |
| <i>Euplectes albonotatus</i> | White-winged Widowbird, White-winged Widow |
| <i>Euplectes ardens</i> | Red-collared Widowbird, Red-Collared Widow |
| <i>Euplectes axillaris</i> | Fan-tailed Widowbird, Red-shouldered Widow |
| <i>Euplectes progne</i> | Long-tailed Widowbird, Long-tailed Widow |
| <i>Falco biarmicus</i> | Lanner falcon |
| <i>Geronticus calvus</i> | Southern Bald Ibis |
| <i>Gyps coprotheres</i> | Cape vulture |
| <i>Halcyon albiventris</i> | Brown-hooded Kingfisher |
| <i>Hirundo albigularis</i> | White-throated Swallow |
| <i>Hirundo cucullata</i> | Greater Striped Swallow |
| <i>Hirundo fuligula</i> | Rock Martin |
| <i>Hirundo rustica</i> | Barn Swallow, European Swallow |
| <i>Jynx ruficollis</i> | Red-throated Wryneck |
| <i>Laniarius ferrugineus</i> | Southern Boubou |
| <i>Lanius collaris</i> | Fiscal Shrike |
| <i>Lybius torquatus</i> | Black-collared Barbet |
| <i>Milvus migrans</i> | Black Kite, Yellow-billed Kite |
| <i>Mirafra africana</i> | Rufous-naped Lark |
| <i>Muscicapa striata</i> | Spotted Flycatcher |

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| <i>Myrmecocichla formicivora</i> | Ant-eating Chat |
| <i>Nilaus afer</i> | Brubru |
| <i>Oenanthe monticola</i> | Mountain Wheatear, Mountain Chat |
| <i>Onychognathus morio</i> | Red-winged Starling |
| <i>Oriolus larvatus</i> | Black-headed Oriole |
| <i>Parisoma subcaeruleum</i> | Chestnut-vented Tit-Babbler, Tit-Babbler |
| <i>Passer diffusus</i> | Southern Grey-headed Sparrow, Grey-headed Sparrow |
| <i>Passer domesticus</i> | House Sparrow |
| <i>Passer melanurus</i> | Cape Sparrow |
| <i>Ploceus cucullatus</i> | Village Weaver, Spotted-backed Weaver |
| <i>Ploceus velatus</i> | Southern Masked-Weaver, Masked Weaver |
| <i>Polemaetus bellicosus</i> | Martial eagle |
| <i>Prinia subflava</i> | Tawny-flanked Prinia |
| <i>Pternistis natalensis</i> | Natal Spurfowl, Natal Francolin |
| <i>Pternistis swainsonii</i> | Swainson's Spurfowl, Swainson's Francolin |
| <i>Pycnonotus tricolor</i> | Dark-capped Bulbul, Black-eyed Bulbul |
| <i>Quelea</i> | Red-billed Quelea |
| <i>Rhinopomastus cyanomelas</i> | Common Scimitarbill, Scimitar-billed Wood-Hoopoe |
| <i>Riparia cincta</i> | Banded Martin |
| <i>Sagittarius serpentarius</i> | Secretarybird |
| <i>Sigelus silens</i> | Fiscal Flycatcher |
| <i>Spermestes cucullatus</i> | Bronze Mannikin |
| <i>Sphenoecus afer</i> | Cape Grassbird, Grassbird |
| <i>Streptopelia capicola</i> | Cape Turtle-Dove |
| <i>Sylvietta rufescens</i> | Long-billed Crombec |
| <i>Tachymarptis melba</i> | Alpine Swift |
| <i>Tchagra senegalus</i> | Black-crowned Tchagra |
| <i>Telophorus sulfureopectus</i> | Orange-breasted Bush-Shrike |
| <i>Telophorus zeylonus</i> | Bokmakierie |
| <i>Terpsiphone viridis</i> | African Paradise-Flycatcher, Paradise Flycatcher |
| <i>Thamnolaea cinnamomeiventris</i> | Mocking Cliff-Chat, Mocking Chat |
| <i>Trachyphonus vaillantii</i> | Crested Barbet |
| <i>Tricholaema leucomelas</i> | Acacia Pied Barbet, Pied Barbet |
| <i>Turtur chalcospilos</i> | Emerald-spotted Wood-Dove, Greenspotted Dove |
| <i>Upupa africana</i> | African Hoopoe, Hoopoe |
| <i>Uraeginthus angolensis</i> | Blue Waxbill |
| <i>Vidua macroura</i> | Pin-tailed Whydah |
| <i>Zosterops virens</i> | Cape White-eye |
| Insects | |
| Taxon Name | English Name |
| <i>? Prosephus sp.</i> | |
| <i>Africophanes amicus</i> | |

Appendix H

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| <i>Amegilla kaimosica</i> | Kaimost bee |
| <i>Ammophila ferrugineipes</i> | |
| <i>Anachalcos convexus</i> | Convex dung beetle |
| <i>Anisorrhina flavomaculata</i> | |
| <i>Anisorrhina umbonata</i> | Knobbed fruit chafer |
| <i>Anomalipus parallelus</i> | Parallel toktokie beetle |
| <i>Anoplolepis custodiens</i> | |
| <i>Anthaxia cf. splendida</i> | |
| <i>Anthia thoracica</i> | Yellow-patched ground beetle |
| <i>Axiocerses tjoane</i> | Common Scarlet |
| <i>Azanus jesus</i> | |
| <i>Belenois creona severina</i> | African Common White |
| <i>Bulaea anceps</i> | Two-edged ladybird beetle |
| <i>Cardiophorus sp.</i> | |
| <i>Catomismus cf. angulicollis</i> | |
| <i>Ceroplesis hottentotta</i> | |
| <i>Ceroplesis thunbergi</i> | |
| <i>Chlaenius bohemani</i> | Boheman's ground beetle |
| <i>Copris sp.</i> | |
| <i>Coryphosima stenoptera</i> | Narrow-winged grasshopper |
| <i>Cryptocephalus bistrispustulatus</i> | Pustulate leaf beetle |
| <i>Cueta trivirgata</i> | Three-streaked antlion |
| <i>Cupidopsis cissus</i> | |
| <i>Cyrtothyrea marginalis</i> | Marginal fruit chafer |
| <i>Dichostates ayresi</i> | |
| <i>Dichostates lignarius lacunosus</i> | |
| <i>Dischista cincta</i> | Girdled fruit chafer |
| <i>Dromica sculpturata</i> | Sculptured tiger beetle |
| <i>Dung beetle sp.</i> | |
| <i>Elaphinis irrorata</i> | |
| <i>Eurema brigitta</i> | Broad-bordered Grass Yellow |
| <i>Eyprepocnemis plorans</i> | |
| <i>Graphipterus cordiger</i> | Heart-patterned velvet beetle |
| <i>Hagenomyia lethifer</i> | |
| <i>Harpalus dubius</i> | Dubius ground beetle |
| <i>Harpalus hybridus</i> | Hybrid ground beetle |
| <i>Hypselogenia geotrupina</i> | |
| <i>Kheper sp.</i> | |
| <i>Lagria sp.</i> | |
| <i>Laxenecera albicincta</i> | |
| <i>Leucocelis aeneicollis</i> | Coppery-necked fruit chafer |
| <i>Leucocelis rubra</i> | Red fruit chafer |
| <i>Litopus latipes</i> | Wide-footed longhorn beetle |
| <i>Lobosceliana cinerascens</i> | Ash-greyish grasshopper |
| <i>Machla mendica</i> | |
| <i>Machlomorpha sp.</i> | |
| <i>Macrocoma aureovillosa</i> | Furry grassland leaf beetle |

Appendix H

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| <i>Macrotoma natala</i> | |
| <i>Malachiine sp.</i> | |
| <i>Megachile frontalis</i> | Frontal leaf-cutter bee |
| <i>Megachile sp.</i> | |
| <i>Micrantereus sp.</i> | |
| <i>Microstylum sp. 1</i> | |
| <i>Microstylum sp. 2</i> | |
| <i>Microstylum sp. 3</i> | |
| <i>Mogoplistidae sp.</i> | |
| <i>Moth sp.</i> | |
| <i>Mutillid sp.</i> | |
| <i>Orphninae sp.</i> | |
| <i>Pachnoda sinuata flaviventris</i> | Yellow-bellied garden fruit chafer |
| <i>Pegesimallus aulicus</i> | |
| <i>Pegylis sommeri</i> | Rose chafer |
| <i>Phoxomela umbrosa</i> | Shady fruit chafer |
| <i>Physcaeneura panda</i> | Dark Webbed Ringlet |
| <i>Plaesiorrhinella plana</i> | Yellow-belted fruit chafer |
| <i>Platypleura haglundi</i> | Haglund's cicada |
| <i>Polybaphes balteata</i> | |
| <i>Polybaphes subfasciata</i> | Almost parallel-banded fruit chafer |
| <i>Polystalactica perroudi</i> | Perroud's fruit chafer |
| <i>Porphyronota hebraea</i> | |
| <i>Precis archesia</i> | |
| <i>Precis octavia sesamus</i> | Gaudy Commodore |
| <i>Promachus sp.</i> | |
| <i>Prosopocera maculosa</i> | |
| <i>Pycnosis brachyptera</i> | |
| <i>Pyrrhoscolia fax</i> | Blue-winged fiery-tailed mammoth wasp |
| <i>Raceloma jansoni spp. nov.</i> | |
| <i>Rhabdotis aulica</i> | |
| <i>Scarabaeus rusticus</i> | Rural dung beetle |
| <i>Sisyphus fasciculatus</i> | Fascicled spider dung beetle |
| <i>Stagira virescens</i> | Green cicada |
| <i>Systoechus sp.</i> | |
| <i>Tephraea dichroa</i> | Wild potato fruit chafer |
| <i>Tephraea simonsi</i> | |
| <i>Vanessa cardui</i> | Painted Lady |
| <i>Vutsimus sp.</i> | |
| <i>Xeloma maura</i> | |
| <i>Xeloma tomentosa</i> | |
| <i>Ypthima asterope</i> | African Ringlet |
| <i>Zizula hylax</i> | Gaika Blue |
| <i>Zonocerus elegans</i> | |

Appendix H

| Reptiles | |
|--|---------------------------------------|
| Taxon Name | English Name |
| <i>Agama atra atra</i> | Southern rock agama |
| <i>Pachydactylus maculatus</i> | Spotted thick-toed gecko |
| <i>Panaspis wahlbergi</i> | |
| <i>Trachylepis varia</i> | Variable skink |
| Millipedes | |
| Taxon Name | English Name |
| <i>Doratogonus falcatus</i> | |
| <i>Doratogonus sp. nov.</i> | |
| <i>Odontopygid sp.</i> | |
| <i>Orthoporooides pyrhocephalus</i> | |
| <i>Sphaerotherium giganteum</i> | |
| <i>Sphaerotherium sp.</i> | |
| <i>Spinotarsus sp. nov.</i> | |
| <i>Spinotarsus zuluinus</i> | |
| <i>Zinophora levis</i> | Light spined millipede |
| Spiders and Scorpions, ticks and mites | |
| Taxon Name | English Name |
| <i>Damon annulatipes</i> | Ring-legged whip-spider |
| <i>Hadogenes trichiurus pallidus</i> | Tugela Valley flat rock scorpion |
| <i>Latrodectus geometricus</i> | House widow spider |
| <i>Opisthophthalmus praedo</i> | Tugela Valley burrowing scorpion |
| <i>Phyxelididae sp.</i> | |
| <i>Riphicephalus sp.</i> | |
| <i>Solpugema derbiana</i> | Derbi's sun-spider |
| <i>Uroplectes triangulifer marshalli</i> | Marshall's triangular-telson scorpion |
| Slugs and Snails | |
| Taxon Name | English Name |
| <i>Cochlitoma simplex</i> | Thukela agate snail |
| <i>Opeas sp.</i> | |
| Mammals | |
| Taxon Name | English Name |
| <i>Aepyceros melampus melampus</i> | Impala |
| <i>Alcelaphus buselaphus caama</i> | Red hartebeest |
| <i>Damaliscus pygargus phillipsi</i> | Blesbok |
| <i>Equus quagga antiquorum</i> | Plains Zebra |
| <i>Neoromicia capensis</i> | Cape serotine bat |
| <i>Tragelaphus strepsiceros strepsiceros</i> | Greater Kudu |

Appendix I: Financial Plan for Isandlwana Heritage Reserve

Purpose and aim

The National Environmental Management: Protected Areas Act (No.57 of 2003) stipulates the requirement of a costing plan to be prepared for the approval of a Protected Area Management Plan by the MEC or Minister.

Management Effectiveness of protected areas relates directly to the availability of financial resources to achieve biodiversity conservation objectives. It is recognised that most protected areas do not have adequate financial resources to achieve their vision and stated objectives.

The Financial plan has been developed in the context of the management plan in the interests of proper planning and sustained conservation management of the Isandlwana Heritage Reserve.

Certain management recommendations in the Management Plan which requires dedicated financial resources include:

- Replace and upgrade sections (10 km) of the fence to secure the boundary of the protected area.

Financial management of Isandlwana Heritage Reserve

The financial objective for the reserve is to:

*Provide adequate human resources, equipment, infrastructure and funding to enable the effective protection, development and management of **Isandlwana Heritage Reserve**.*

Current funding is not sufficient to effectively maintain the reserve and the table below provides a cost estimate of the requirements for the implementation of the management plan. The operational budget for Isandlwana also include the budget for the district work of the District Conservation Officer. This should be changed in order for the reserve to have a dedicated budget allocation.

Appendix I

Table 17: Isandlwana Heritage Reserve - a Cost Estimate

| | | | | | | |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|
| Ezemvelo provincial budget allocation (2014) | | | | | | R152 398.00 |
| AMAFA budget allocation (2014) | | | | | | R 38 000 |
| Total Budget allocation | | | | | | R 190 398 |
| EXPENSES (Projected operational requirement for critical activities) | | | | | | |
| | Year 1 -2016 | Year 2 -2017 | Year 3 -2018 | Year 4- 2019 | Year 5 -2020 | |
| Road maintenance | 30 000 | 40 000 | 45 000 | 50 000 | 55 000 | |
| Security | 20 000 | 25 000 | 30 000 | 35 000 | 40 000 | |
| Services (Water and electricity) | 6000 | 6500 | 7000 | 7200 | 7500 | |
| Fence maintenance | 60 000 | 30 000 | 60 000 | 40 000 | 50 000 | |
| Fleet maintenance | 0 | 0 | 0 | 0 | 0 | |
| Building maintenance | 2000 | 6000 | 2000 | 2000 | 7000 | |
| Equipment maintenance | 5000 | 6000 | 6000 | 6000 | 6500 | |
| Alien and invasive plant control | 20 000 | 20 000 | 20 000 | 20 000 | 20 000 | |
| Fire management | 15 000 | 15 000 | 15 000 | 15 000 | 15 000 | |
| Erosion control and rehabilitation | 5000 | 5000 | 5000 | 5000 | 5000 | |
| TOTAL | 163 000 | 147500 | 190 000 | 180 200 | 206 000 | |
| TOTAL PAYROLL | 926 619.00 | | | | | |

Appendix J: Pro forma annual plan of operation

Notes of a management meeting for Isandlwana Heritage Reserve held at ... office on ...

Present:

Apologies:

CC:

In the notes set out below two separate tables are presented. The first sets out all of the management targets, which are the responsibility of the Isandlwana Heritage Reserve Conservation Manager and the second sets out all of the management targets that are the responsibility of other units or individuals.

Appendix J

Table 18: Progress and goals set for the Isandlwana Heritage Reserve

| Management target | 2014/15 Progress | 2013/14 goals | Completion date | Responsibility | Action |
|--|------------------|---------------|------------------|---------------------------------|--------|
| LEGAL COMPLIANCE AND ENFORCEMENT | | | | | |
| Sufficient demarcation signage at least at the entrance gate to the reserve. | | | Year 2 | Conservation Manager with AMAFA | |
| Effective fencing that prevent illegal livestock entry. | | | Year 2 | Conservation Manager with AMAFA | |
| Participation in monthly local community policing forum meeting. | | | Year 1 | Conservation Manager | |
| Regular patrols covering the full extent of the nature reserve. | | | Ongoing | Conservation Manager | |
| Prosecution of any offender caught committing an offence. | | | Ongoing | Conservation Manager | |
| STAKEHOLDER ENGAGEMENT | | | | | |
| Annual meeting with relevant stakeholders. (Open day). | | | Year 1 - ongoing | Conservation Manager | |
| Implement revised MOA for Isandlwana Heritage Reserve | | | Year 1 - ongoing | Ezemvelo and AMAFA | |



Appendix J

| Management target | 2014/15 Progress | 2013/14 goals | Completion date | Responsibility | Action |
|---|------------------|---------------|-----------------|---|---|
| TOURISM PRODUCT MANAGEMENT | | | | | |
| Regular meeting with tourism operators and stakeholders. | | | On-going | Conservation Manager | |
| CONSERVATION MANAGEMENT | | | | | |
| Adoption and implementation of a fire management plan. | | | Year 1 | Conservation Manager and Ecological Advice Unit | Requires support from the Ecological Advice Unit |
| Compliance with the National Veld and Forest Fires Act. | | | Ongoing | Conservation Manager | |
| Compliance with the Biodiversity Act in terms of the preparation of an invasive species control plan. | | | Year 1 | Conservation Manager | Requires support from the Ecological Advice and Alien Plant Control Units |
| A detailed map depicting areas of soil erosion within the nature reserve. | | | Year 1 | Conservation Manager | Requires support from the Ecological advice unit and AMAFA |
| Implementation of soil erosion control measures in areas in which plant cover is low, which are susceptible to erosion. | | | | | |
| Creation of | | | Year 2 | Conservation | |



Appendix J

| Management target | 2014/15 Progress | 2013/14 goals | Completion date | Responsibility | Action |
|---|------------------|---------------|-----------------|---|---|
| cooperative structures between Ezemvelo KZN Wildlife, local communities and law enforcement officials to control alien animals. | | | | Manager, AMAFA and Mangwebuthanani Community | |
| Grazing strategy that does not lead to overgrazing and erosion. | | | Year 2 | Conservation Manager, Eco-advice, AMAFA and Mangwebuthanani Community | |
| An agreed upon approach to any extractive resource use. | | | Year 1 on-going | Conservation Manager | Requires support from the Senior Conservation Manager and AMAFA |
| Resource use monitoring returns | | | On-going | Conservation Manager | |
| No illegal collection of biological material or samples. | | | If required | Conservation Manager | Requires support from the Ecologist |
| Control of population numbers of species that are exceeding identified carrying capacities in line with the strategy. | | | Ongoing | Conservation Manager | Requires support from the Ecologist |

Appendix J

| Management target | 2014/15 Progress | 2013/14 goals | Completion date | Responsibility | Action |
|--|------------------|---------------|-----------------|--|--------|
| Effective procedures and relationships with neighbours in dealing with problem animal control. | | | Year 1 | Conservation Manager | |
| OPERATIONAL | | | | | |
| Adequate funding to achieve the objectives of the nature reserve. | | | Year 2 | Ezemvelo KZN Wildlife Regional Management Unit and AMAFA | |
| Appointment of staff in all positions in the nature reserve. | | | Year 2 | Ezemvelo KZN Wildlife Regional Management Unit | |
| Regular scheduled maintenance of all facilities, assets and infrastructure. | | | On-going | Conservation Manager | |

Appendix J

Table 19: Progress and goals set for all units within Ezemvelo KZN Wildlife

| Management target | 2011/12 Progress | 2012/13 goals | Completion date | Responsibility | Action |
|---|------------------|---------------|-----------------|--|--|
| LEGAL COMPLIANCE AND ENFORCEMENT | | | | | |
| Correct proclamation documents and SG Diagrams. | | | Year 2 | Ezemvelo KZN Wildlife Planning Unit | Refer management activity to Planning Unit |
| BUFFER ZONE PROTECTION AND REGIONAL MANAGEMENT | | | | | |
| Identification of threats on the nature reserve's boundary. | | | Year 2 | Conservation Manger and Ecological Advice Unit | Refer management activity to Eco Advice Unit |
| Adoption of environmentally appropriate land uses in IDPs and SDFs in the areas immediately surrounding the nature reserve. | | | Annually | Conservation Manager and Planning Unit | Refer management activity to Planning Unit |
| ECO TOURISM | | | | | |
| Agreements with relevant partners in an effort to retain and market Isandlwana as an attractive destination for visitors. | | | Year 2 | Conservation Manager Ecotourism and Marketing Unit | Refer management activity to Ecotourism and Marketing Unit |
| ENVIRONMENTAL INTERPRETATION AND EDUCATION | | | | | |
| Provision of an environmental interpretation and education tour to each | | | Year 3 | Conservation Manager and Community Conservation | Refer management activity to Ezemvelo KZN |

Appendix J

| Management target | 2011/12 Progress | 2012/13 goals | Completion date | Responsibility | Action |
|--|------------------|---------------|-----------------|---------------------------------|--|
| school in the neighbouring local communities. | | | | | Wildlife Community Conservation |
| CONSERVATION TARGETS | | | | | |
| Surveillance and monitoring plans for key threatening processes. | | | Year 3 | Conservation Manager | Refer management activity to Eco Advice Unit |
| Monitoring plans for key rare and endangered species | | | Year 3 | Conservation Manager | Refer management activity to Eco Advice Unit |
| HERITAGE MANAGEMENT | | | | | |
| Effectively implemented management guidelines for all cultural sites within Isandlwana HR. | | | On-Going | Conservation manager with AMAFA | |

Appendix K: History of the Isandlwana battle¹¹

When relations between Britain and the Zulus became strained during the latter half of 1878, Lord Chelmsford, K.C.B., the Lieut. General commanding the British Forces in South Africa, transferred his headquarters from the Cape Colony to Pietermaritzburg the capital of Natal, while steps were taken to strengthen the British forces there, including the transfer of both battalions of the 24th Regiment from the eastern frontier. In all, eight battalions of regular British troops were available, supported by several batteries of Royal Artillery and supplemented by mounted colonial volunteers, as well as blacks recruited in Natal, the latter to form what was known as the Natal Native Contingent.

When it appeared that hostilities were a distinct probability, a general plan for the invasion of Zululand was prepared and steps taken to position the troops in order to put it into action. The main objective was to occupy the Zulu royal kraal at Ulundi by advancing on it from three directions, in an operation similar to the Zulu tactic of attacking from three sides by means of the main force or chest in the centre and extended left and right horns on each side. Number I Column commanded by Colonel C.K. Pearson was to cross the lower Tugela river and advance towards Ulundi by way of Eshowe. The main force, Number III Column, advanced from Pietermaritzburg via Greytown to Helpmekeer. From here it was to enter Zululand at Rorke's Drift and move eastwards to the royal kraal. It is the fortunes of this column with which we are concerned. The left or Number IV Column, commanded by Brevet Col Sir H. Evelyn Wood, V.C., C.B. concentrated at Utrecht with the object of reaching Ulundi from the north-west. In addition, two minor forces guarded the borders, Number II Column at Krantzkop, under Brevet Col A.W. Durnford to prevent the Zulus crossing the Tugela drifts and Number V Column at Luneberg to safeguard the Transvaal which had been annexed by the British in 1877.

An ultimatum was issued to the Zulus at the drift over the lower Tugela on 11 December 1878 but, as no reply had been received after twenty days had expired a concession was granted until 11 January 1879, after which a state of war was deemed to exist.

The composition and movements of Number III Column

The Column was commanded by Brevet Col R.T. Glynn, C.B. of the 24th Foot. He was supported by several staff officers, namely, Lieutenant N.J.A. Coghill, orderly officer; Major C.F. Clery, principal staff officer; Captain A.C. Gardner, general duties; Captain E. Essex, transport; Assistant Commissary, W.A. Dunne; Paymaster Elliot and Surgeon Major P. Shepherd.

'N' Battery of the 5th Brigade Royal Artillery was commanded by Brevet Lieut Col A. Harness, while Captain W.P. Jones was in charge of No.5 Coy of the Royal Engineers, but was detached before the column entered Zululand. The 1st and 2nd Battalions of the 24th Foot, commanded by Brevet Lieut-Col H.B. Puleine and Brevet Lieut-Col H.J. Degacher respectively formed the core of the column. The mounted troops were composed of No. 1 Squadron Mounted Infantry, commanded by Lieut-Col J.C. Russell, the Natal Mounted Police under Major J.G. Dartnell, the Natal Carbineers led by Captain T. Shepstone and the Newcastle Mounted Rifles commanded by Captain R. Bradstreet, while Captain Smith headed the Buffalo Border Guard. In addition, there was the 3rd Regiment of the Natal Native Contingent commanded by Commandant R. de la T. Lonsdale, with Lieut H.C. Harford as his Staff Officer. The regiment was two battalions strong, the 1st commanded by Commandant G. Hamilton-Browne and the 2nd by Commandant A.W. Cooper. Number I Company of the Natal Native Pioneer Corps was commanded by Captain J. Nolan. The column was accompanied by Lieut-General Lord Chelmsford and his staff, notably the Assistant Military Secretary Brevet Lieut Col N.J. Crealock and his Aides-de-camp, Brevet Major M.E.W. Gosset and Lieut A.B. Milne, R.N. The strength of this column is given in the official records as 20 staff, 132 Royal Artillery (six 7 pounder guns and two rocket troughs), 1 275 infantry, 320 cavalry, 2 566 Natal Native Contingent, i.e., a total of 4 313 potential combatants. In order to transport and supply services to this large force there were 220 wagons, 82 carts, 1 507 oxen, 49 horses (excluding those of the cavalry) and 67 mules controlled by 346 conductors, drivers and voorlopers. In all, 4 659 officers and men. As can be imagined, this diverse body of troops moved very slowly.

The road from Pietermaritzburg to Greytown was in a fair state of repair but between Greytown and Helpmekeer was little more than a track which needed much attention, while ponts had to be placed on the Mooi and Tugela Rivers at the spots known today as Keate's Drift and Tugela Ferry. Early in January 1879 Lord Chelmsford established his headquarters at Helpmekeer where part of Number III Column was encamped. The rest had already moved forward to a camp on the northern side of the Shiyane (Oskarberg). By the 9th of January the column had concentrated at Rorke's Drift leaving a garrison commanded by Major H. Spalding at the fortified post at Helpmekeer, while some elements were still advancing along the road from Greytown. On 10th January orders were issued for the troops to cross the river and commence the invasion of Zululand on the following day.

The 11th of January dawned a gloomy day with drizzling rain early in the morning but despite this the crossing was commenced at 04h30. The mounted men and Natal Native Contingent crossed by the ford while the infantry were ferried over in the ponts which had been prepared. The crossing was covered by the artillery mounted on a knoll on which Fort Melvill was later erected and a screen of cavalry on the Zululand side, but no opposition was encountered. However, some of the Natal Native Contingent were drowned in the strongly flowing river. By 06h30 all the troops were across the river and the rest of the day was taken up by establishing a camp and moving the wagons, stores and equipment across. Lord Chelmsford rode off in a northerly direction to consult with Col Wood who had crossed the Blood River and camped near Bemba's Kop and when Chelmsford returned he had an interview with Col Durnford who had ridden across from Krantzkop.

Due to the obstacle posed by the wide sandy bed of the Batshe River and the rocky ridges beyond, it was evident that a track would have to be made before the column could advance, but Sihayo's kraal, situated in the Batshe valley threatened the left flank. Although Sihayo and his son Mehlakazulu were at Ulundi his actions had been one of the ostensible causes of the war and Chelmsford decided to attack his kraal. Early on 12 January the attacking force, consisting of cavalry scouting ahead, the Natal Native Contingent with the 1st Battalion in the lead and four companies of the 1st/24th in support, moved across the Batshe to attack a rocky gorge into which

¹¹ G A Chadwick: Military History journal Vol 4 No 4 Zulu War Centenary Issue – January 1979

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Sihayo's men had retreated, driving their cattle before them. The Natal Native Contingent showed reluctance to face the Zulus, some of whom were armed with rifles. Stones were also rolled down on the attackers. After a sharp action the Zulus retreated, having lost 30 dead and 4 wounded while 10 were captured. On the British side, two of the Natal Native Contingent were killed and twelve wounded, while one officer and two N.C.O.s had been wounded. The latter were taken back to the hospital at Rorke's Drift along with two badly wounded Zulus. Lieut Coghill fell from his horse and wrenched his knee in an attempt to catch a fowl but was able to remain with the column.

Two days later four companies of the 2nd/24th, the 1st/3rd Natal Native Contingent and the Pioneers moved into the Batshe valley to prepare a road for the advance. On 15 January Lieut-Col Russell undertook a reconnaissance as far as the Isepezi Hill, while on the 17th Chelmsford rode to Isandlwana which he had selected as the site for his next camp. He has often been criticised for this choice, but it should be taken into account that it is the only site in the immediate vicinity offering parking and camping facilities for a large force, while brushwood for fires was fairly easily obtainable. The site commands a good field of fire with a steep hill at the rear and although it is overlooked by hills to the north these are too far away to be significant for the arms used at the time. The troops moved forward on the 20th but despite the efforts of the road builders all the wagons could not get through. However, by the afternoon the camp had been laid out on the eastern side of Isandlwana as shown in Map C. To the south is a lower eminence divided from Isandlwana by a col or neck and which later became known as Black's Koppie. It will be noted from Map B that the camp site faced eastwards over the wide valley of the Nxobongo River bounded on the south by the Malakatha and Hlazakazi mountains, on the east by the Magogo, Silutshana and Siphezi mountains, while on the north a low plateau, often erroneously referred to as the Nquthu plateau some two kilometres from the camp, obscures the Ngwebeni valley and the true Nquthu ridge behind it. A small conical kop lies about two kilometres to the east of Isandlwana. It is interesting to note that even from the top of Isandlwana no view across this low plateau can be obtained, while from the ridges on which the vedettes were posted the view is unsatisfactory.*

*[*Note: The reference made in some texts to the Nkandla is confusing. Nkandla is a place, not a range of hills and the heights on which it stands, i.e. the southerly extension of the Tala is separated from the Magogo by the valley of the Nsuzi River and is some 20 kilometres distant.]*

To safeguard the camp during the day vedettes were posted at three points along the edge of the plateau to the north, on the conical kop and on a low hill to the south-east, while infantry picquets were posted some 1 500 metres to the front and on the flanks. Each battalion supplied a company for this purpose. At night the vedettes were withdrawn and the outposts drawn in to form a complete circle some 500 metres from the camp. The Natal Native Contingent manned a detached outpost about 1 000 metres to the north where a footpath ran down from the plateau. The 24th Foot manned a permanent guard in the col. Chelmsford had issued field regulations dealing with laagers and entrenchments. No laager was formed although warnings that this was necessary had been received from Paul Kruger and Paul Bester. However, it must be taken into account that many of the wagons were used for transporting goods from Rorke's Drift during the day and it would have needed more than the 110 wagons, the number available, to accommodate the large force. The camp was temporary and the difficulty which would have been experienced in forming and breaking up a laager must not be discounted. No trenches were dug, probably because of the lack of tools and the hardness of the substratum of shale. It would have been possible to build breastworks but a system long enough to protect the camp would have taken several days to complete. In fact, a British force armed with Martin-Henry rifles and supported by artillery needed only to form up in close order to repel a vastly superior force armed, as were the Zulus, mainly with stabbing assegais.

Chelmsford arrived at the new camp at midday and shortly after set off to examine Matyana's stronghold which was thought to lie in the valley of the Mangeni River, some 15 kilometres to the south-east of the camp.

Looking down into the ravine which has a waterfall at its head and very precipitous sides, no Zulu force could be seen, but groups of huts and some women were visible. However, when the general returned to camp at 18h30 he received reports that many Zulus were in the valleys near Matyana's Kraals and he issued orders that a reconnaissance be made in this direction on the following day.

The advance and disposition of the Zulu forces

As the arms and military tactics of the Zulus are discussed in another article in this Journal it is not necessary to re-examine these but the encircling movement and the limitation placed on the Zulu warrior by the use of a stabbing assegai should be borne in mind. Cetshwayo had a well-developed espionage system and there is no doubt that he had accurate if verbal knowledge of the advance of the three main columns. The coastal and the central columns posed the main immediate threats and its is noteworthy that in the event the Zulus were forced to fight two major actions on the same day (22 January), Inyezane near Eshowe and Isandlwana with which we are concerned here. The main elements of the army which was to oppose the centre column concentrated on the Ulundi plain and on 17 January was mustered at the Nodwengu military kraal to receive instruction from the king. As he had no details of the British plan these could be of a general nature only. The army was to move slowly to conserve its energies and to attack by daylight, probably because of the difficulty of communication by night. The warriors were warned not to enter Natal and to kill the soldiers who could be recognised by their red coats.

If one goes by the careful contemporary count made by Fynney the army would have totalled 24 500 but many regiments were not up to strength and it is probable that the figure of 22 000 is more accurate. Mnyamana the leading inDuna who was some 60 years old moved with the army but did not exercise supreme tactical control. Tshingwayo, some ten years older, is given by British sources as the commander but it appears that he shared his responsibilities with the younger Mavumengwana. Dubulamanzi, the king's brother, also played a significant role. The impi left Nodwengu late on 17 January and progressed no further than the banks of the White Umfolozi River that night. On the two succeeding days it made comparatively short marches of some 15 kilometres each, bringing it to near the headwaters of the Umhlatuzi River (see map A). A similar move apparently in two lines brought the Zulus to the Siphezi mountain where they spent the night in a hollow slightly to the north of it. To get within striking distance of the British camp they now had the choice of moving south and then eastwards through Matyana's country or almost due west to the plateau north of Isandlwana. Apparently, because of differences of opinion with Matyana and the good tactical position offered by the plateau, the latter alternative

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was chosen. On the afternoon of 21 January the Zulus established themselves in the valley of the Ngwebeni stream out of sight of the vedettes but only some eight kilometres from the camp. A new moon was due on 22 January and as this was regarded as inauspicious, it would appear that the Zulus intended to attack at dawn on the following day. The line of march had allowed of provisions being obtained up to the 20th but on the 21st the impi had no food and on the next day groups left the valley to obtain grain and cattle. It seems evident that these alarmed the vedettes and lured Lieut Raw to discover the Zulu bivouac.

The British Reconnaissance in strength

In accordance with Chelmsford's instructions of the previous day Lonsdale left camp before dawn with all but two companies of the 3rd Regiment, N.N.C. to work through the Malakatha and turning north to meet up with Dartnell at Mangeni. Dartnell followed later with 150 mounted men drawn from the Natal Mounted Police, the Natal Carbineers, the Newcastle Mounted Rifles and the Buffalo Border Guard. Dartnell's force rode across the plain until it was under the northern slope of the Hlazakazi where it was divided into two. The Carbineers climbed the slopes while Dartnell took a force of about 40 across the Mangeni stream. About 1.5 kilometres to their front they saw a force of several hundred Zulus moving northwards to take up a position on the slopes of the Magogo. Dartnell withdrew to the northern slopes of the Hlazakazi where he found the Carbineers. The N.N.C. climbed the Malakatha by way of the valley of the 'nDweni stream but found no Zulus although a herd of cattle was captured and sent back to Isandlwana escorted by two companies. After some dissension among the officers the N.N.C. moved to Dartnell's position and a bivouac was formed. Maj. Gosset and other staff officers returned to camp with Dartnell's request for blankets and rations as well as for permission to attack on the next day. They met Chelmsford on his way back from Ispezi and the requests were reluctantly granted as Dartnell had exceeded his orders. At about sundown it was noted that the numbers of Zulus on the Magogo had grown to some 1 500. Dartnell sent out a patrol which was almost encircled and had to withdraw. A message was then sent back to camp requesting several companies of infantry to support an attack on the next day. The blankets and rations arrived very late but were insufficient to provide for the N.N.C. who had last eaten on the previous day. The night was cold and false alarms caused two stampedes amongst the N.N.C. and when dawn broke their morale was low.

At 08h30 Lieut E.S. Browne and a small party of the Mounted Infantry was sent from Isandlwana to reconnoitre the vicinity of the Siphezi hill, past which ran the track to Ulundi. Several large parties of Zulus were seen and shots were exchanged with a smaller group but there was no sign of the main impi. This is surprising as it must have been very near and one can only assume that Browne confined his attentions to the south-western slopes. He returned to camp during the early afternoon.

Chelmsford's morning had been occupied by a visit to Sihayo's brother Gamdana who lived at the foot of the Malakatha and who, after the attack on his brother's kraals, had sent messages of submission to the magistrate at Umsinga, H.F. Fynn, as well as to the general. Fynn's acceptance of the surrender incensed Chelmsford who rode out to Gamdana's kraal only to find he had fled. However, he arrived in camp after lunch and promised his submission. Fynn also obeyed a summons to visit the camp and patched up his differences with the general. Later a visit was paid to the vedettes posted on the plateau. From the first position just north of the camp nothing was to be seen but on reaching the Itusi 14 mounted Zulus came into view 1,5 kilometres to the north-east. They turned and disappeared, whereupon Chelmsford returned to camp.

When Dartnell's final note was received at 01h30 on 22 January, Lord Chelmsford gave orders that approximately half the troops available should move out in support. The factors considered by Chelmsford in taking this decision are unknown, but it should be borne in mind that a route used by the Zulus when attacking the Voortrekkers thirty years before had been through the Skala semBomvu (Red Pass) to the south of the Tala mountain. If they had used it on this occasion it would have brought them to the eastern slopes of the Magogo some ten kilometres east of Dartnell's position and near to the territory of the anti-British Matyana. Before leaving camp with this force Lord Chelmsford sent orders to Colonel Durnford who was at Rorke's Drift to move forward to Isandlwana with all the troops of Number II Column which were available.

By 03h30 the troops commenced the march, each man carrying one day's cooked rations and 70 rounds of ammunition. Lord Chelmsford and his staff rode ahead. Col Glynn commanded the troops made up of four guns Royal Artillery, commanded by Lieut Col Harness with about 60 men; six companies and the band of the 2nd/24th Foot, totalling about 500 men; mounted troops numbering some 122, 16 companies of the N.N.C., totalling about 1 660 and some 90 Pioneers. In all, approximately 2 500 officers and men.

Chelmsford arrived at the bivouac area at about 06h00 by which time the Zulus who had encamped on the Magogo had withdrawn. The mounted men were sent out in an encircling movement to the south while the N.N.C. moved directly up its north-western slope. As the sun rose the Zulus reappeared on the crest but retired again before the advance of the N.N.C. As they were crossing the valley of the Nondweni River to gain the heights of the Phindo, Dartnell attacked from the south and killed about thirty of them. The N.N.C. attacked and accounted for another fifty. Matyana fled on horseback with Captain T. Shepstone in pursuit but managed to slip from his horse to find

The column was some way in the rear and Chelmsford sent word for them to move towards the northern slopes of the Magogo. In the very rough going after they left the track, the guns fell far behind and Glynn detached two companies to escort them. Chelmsford now rode across to join the column which was passing between the Silutshana and the Magogo, the main camp being hidden from view by the slopes of the former. Here the general stopped to have breakfast at 09h30 and, having received a report that Zulus had been seen in the distance to the north-east of Isandlwana, sent Lieut B. Milne up to a hill from which the camp was visible. He could detect no Zulus but reported by flag signal that the cattle had been driven in close to the tents. After an hour and a half he rejoined Chelmsford who, in the meantime, had ordered Hamilton-Browne of 1st/3rd N.N.C. to return to camp by way of the Nxobongo valley, mopping up as he went. At the same time, Harness was ordered to Mangeni and moved away under the north-western face of the Magogo to reach it. Lieut Colonel Russell moved north-east across the Nondweni valley and scouted the slopes of the Ispezi, returned along the track to Isandlwana and off-saddled on the plain some three kilometres west of the Silutshana. All the other troops were now in the Nondweni valley and were moved round the southern slopes of the Magogo to Mangeni which had been chosen as the site for the new camp. Captain Gardner was sent back at about 10h30 with an order for the tents and equipment to be sent forward. At about 11h45



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Chelmsford proceeded over the high ground to the place where the action had taken place and then moved on to Mangeni where he pointed out the new camp site. Unwittingly Chelmsford had made a bad choice. The new camp lay on the track to the Qudeni range and had he occupied it he would have had to cross the Magogo and the Phindo with his ungainly wagon train to regain the track leading to Ulundi, a task which would have posed a major roadmaking problem.

At about noon Col Harness halted in the col between the Hlajakazi and the Magogo and shortly after, it was noticed that the guns at Isandlwana were firing. Soon after this a message was received from Comdt Browne which read, "For God's sake come with all your men; the camp is surrounded and will be taken unless helped". Maj Gosset was present when this was received and when Harness decided to move off to assist, he carried the message to Chelmsford who had already received a report that the Zulus were attacking Isandlwana. He had galloped up the slopes of Mdutshana, a nearby koppie from which Isandlwana is clearly visible, seeing nothing amiss he apparently discounted both reports and sent orders for Harness to return.

At 14h00 the general set off to return to Isandlwana but had not gone far when he met Lieut Col Russell who had also received news of the attack on the camp, moved his men to the Mangeni track and gone in search of Chelmsford. However, no great importance was attached to the message and the return to camp continued. At about 14h30 the party came up with the 1st/3rd N.N.C. Shortly after 10h00 this unit had captured a Zulu scout from whom it was ascertained that an attack on the camp was imminent. Comdt Browne had sent back a message and moved forward with the object of reinforcing the defenders. After advancing some five kilometres it was seen that an attack had commenced. A further message was dispatched and as many Zulus were visible the battalion retired to the left rear. An attempt was made to advance but the men would not move. Hamilton-Browne himself rode forward and watched the attack from a distance of some six kilometres. Returning to his men he sent the last desperate message and retreated still further to a low rise. When Chelmsford came within sight a message was sent saying that the camp had been overrun and at first it was not believed. Shortly after this the party met Comdt Lonsdale who had returned to the camp during the morning and had approached near enough to be aware of the awful truth. Orders were immediately sent back for Col Glynn to march for Isandlwana immediately.

When Lord Chelmsford marched out of the camp early on 22 January he left Lieut Col Pulleine in charge of his staff (2 officers, an interpreter and 13 men), 2 guns R.A. with 2 officers and 70 men, 3 men Royal Engineers, the H.Q. and 5 companies of the 1st/24th Foot (13 officers and about 402 men), one company of the 2nd/24th Foot with 5 officers and 170 men, 6 men of the 90th Foot, 5 officers and 110 mounted men, Army Service and Hospital Corps (1 officer and 18 men), 1st and 2nd/3rd N.N.C. (19 officers, an interpreter and approximately 400 men and the Pioneer Corps (1 officer and 10 men). This gave him approximately 750 white combatant troops and 420 N.N.C.; total 1 170.

Once the general had left the camp settled down to normal routine. The mounted vedettes rode out to their posts, the night picquets were relieved and work was continued on the road. Firing could be heard from the east and at 08h00 while most of the men were at breakfast, a vedette rode in to report a large force of Zulus approaching from the north-east. The troops were called to arms and assembled in front of the tents with the regular infantry in column of companies facing the enemy. The picquet companies of the 1st/24th were brought in but the N.N.C. on the escarpment to the north and rear of the Conical Kop remained in position. In the meantime, Pulleine dispatched a message to Chelmsford. Zulus appeared on the skyline about three kilometres to the north-east and vedettes reported several groups on the high ground. As a precaution Pulleine ordered the transport oxen to be collected and tied to the yokes while the working party on the road was called in.

In accordance with the orders received from Chelmsford, Durnford moved his force up from Rorke's Drift. He arrived in camp at about 10h00 bringing with him his staff, 3 rocket battery troops commanded by Brevet Maj F.B. Russell, with 9 men, 5 troops of the Natal Native Horse with Capt W. Barton in charge (about 259 men) and 1st/I.N.N.C. numbering some 240 men. This increased the numbers of the N.N.C. in camp to approximately 1 000, including the well-equipped and trained Natal Native Horse. As senior officer, the command of the forces automatically evolved on Durnford but it would appear that there was no serious difference of opinion with Pulleine over troop dispositions and Durnford assured him that he would not interfere as he would be leaving camp. On learning of the force of Zulus which had been seen on the left front Durnford decided to use his own men to clear the area. Capt G. Barton, Capt George Shepstone with the Natal Native Horse troops led by Lt S.C. Raw and Roberts were sent out to drive the enemy from the plateau above the escarpment. To support them they picked up the N.N.C. picquet which was replaced by Capt C.W. Cavaye's company on the western end of the escarpment. The rest of the troops were dismissed but were to keep their equipment on and get their dinners as quickly as possible. The artillery teams remained in harness and the Natal Native Horse which were now joined by the rocket battery and escort were not to off-saddle. Durnford now joined Pulleine for lunch.

While they were at lunch a picquet which Durnford had posted on top of Isandlwana reported that the Zulus were retiring and some appeared to be moving eastwards.* It might be inferred that this force could turn south and attack Chelmsford in the flank. It was apparently this consideration that caused Durnford to advance eastwards past the Conical Kop with two troops of the N.N.H., the rocket battery and one company of the 1st N.N.C. at approximately 11h30. Although he had requested the support of two companies of infantry this had not been forthcoming. However, a message was sent to Shepstone to engage in an encircling movement.

[*Note the previous remark that from the top of Isandlwana, as well as from the positions of the vedettes on the escarpment, the view of the plateau is very limited.]

Cavaye extended his company along the crest and sent Lt E. Dyson some 500 metres further to the left. Raw's troops moved north-east across the plateau while Roberts at first went almost due north. Raw's men were extended in groups, one of which pursued a herd of cattle several kilometres in front of them, but as they topped a rise they came upon the Zulu army. Having been discovered the Zulu commanders realised that an action was inevitable. The umCijo moved forward first, followed by the uThulwana. Very soon the whole army was moving forward in fighting formation but without the typical preliminary instructions which Mavumengwana and Tshingawayo vainly tried to transmit. The right horn moved along the valley between the plateau and the heights driving back Roberts' and Raw's troops as it went and coming under fire from Cavaye's men on its flank. The centre moved towards the crest of the plateau while the left were streaming towards the declivity which leads down to the Conical Kop.

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Shepstone galloped to warn Cavaye and then went into camp to bring the news to Puleine. As he was speaking, the message from Chelmsford to send the baggage forward arrived. Puleine wrote a note indicating that he could not move camp and sounded the alarm. The time was about 12h00. Capt W.E. Mostyn's company was sent to support Cavaye who had been joined by Raw and Roberts. In front of them the uNokenke and the uDududu were moving towards the back of Isandlwana while the N.N.C. were wavering. A withdrawal was started and Puleine sent Capt R. Younghusband's company forward to cover it. The N.N.C. ran down to the camp in disorder but the rest formed up at the foot of the escarpment and inflicted severe losses on the uNokenke as they appeared over the ridge. It would appear that at this stage the main threat was from the north and the other companies under Lt F.P. Porteus, Capt G.V. Wardell and Lt C.D. Pope were extended to face in that direction. As the uMciJo came over the crest they suffered considerable losses from fire directed from these positions.

Durnford's movements on the plain are not at all clear. According to some accounts he was six kilometres from camp when he bore to the left and ascended the escarpment but a message was received that the Zulus were close by and shortly afterwards they came into sight. A retreat was ordered and this was carried out in an orderly fashion by alternate troops. The rocket battery had lagged behind in the difficult terrain and had turned to the north on the advice of a Carbineer. As it approached the base of the Itusi the Zulus appeared over the crest. Before more than one rocket could be discharged, it was overrun and all but three of the crew were killed. The company of the N.N.C. which was in the rear of the battery returned to camp. Meanwhile, Durnford had reached the bed of the stream which flows south past the western face of the Conical Kop where he deployed his men in the shelter of the bank to face the inGobamakhasi and the uMbonambi. Here his men gave a very good account of themselves and were reinforced by some of the Newcastle Mounted Rifles. Durnford, with Pope's men to the rear left, had managed to stop the advance of the left horn but ammunition began to run low and horsemen sent back to the 24th Regiment wagons were told to go to their own which they could not find. There was no alternative but to desert the stream bed and withdraw to the saddle. The British right was exposed to the fierce attack of the Zulu left.

As more Zulus and in particular the uVe descended from the escarpment the British would appear to have adjusted their positions to that of a rough "L" with Younghusband's company at the base of Isandlwana with Mostyn and Cavaye facing north on his right. Near Cavaye's position there is a slight rise and a rocky ridge runs down to the south-east. It is evident that Porteus and Wardell were positioned on this which has a good field of fire towards the east while Pope fell back to the lower part of this ridge after Durnford's withdrawal. At this stage the British were in a strong position and the Zulus were suffering heavy losses. Observers made mention of the humming and buzzing of the Zulus like a huge swarm of bees, while Zulu inDunas were doing their best to encourage the men. A sudden turn of fortunes came giving the Zulus the advantage. The reason for this has been hotly debated. The traditional view is that the supply of ammunition dried up, the firing ceased and the N.N.C. fled, allowing the Zulus to break through and surround the various companies. Modern researchers are of the opinion that there was no shortage of ammunition but that the British withdrew to the camp and as they did so the Zulus charged in amongst them. Whether lack of ammunition or the withdrawal of Durnford caused the retreat it was fatal. The Zulus saw their chance and rushed forward. The N.N.C. broke and led the flight to Fugitive's Drift and it is evident that the individual companies fought to the last with their bayonets, surrounded on all sides by the Zulus. Capt T. Shepstone was sent to the west face of the mountain to face the uDududu and the uNokenke but was overrun. Durnford himself rallied a group of about 70 including some of Pope's company in front of the wagon park. Both the inGobamakhasi and the uMbonambi attacked them and Mehlakazulu described how they held out until their ammunition was exhausted and the Zulus even flung their own dead on the bayonets to break the defence. A group also rallied in the left rear of the 1st/24th tents and it seems that Pope and Lt F. Godwin-Austin tried to shoot their way out when this was overrun. Some survivors of the companies rallied just on the western side of the neck. Younghusband's company retreated under the shoulder of the mountain and held out on its south-eastern edge until the end.

The entire camp became a scene of confusion. The Zulus, as was their tradition, ripped open the dead bodies, dressed themselves in uniforms and raided the stores including the medicines which were consumed without regard to doctors' prescriptions. The casualties have been assessed as: Whites, 858, N.N.C. 471 (total 1 329) and Zulus almost 3 000.

Although little could be done by the Zulu commanders to co-ordinate the attack the Undi Corps and the uDloko regiment had been held back and under the command of Dabulamanzi were ordered to move to the western end of the plateau, go behind Isandlwana and cut off the retreat to Rorke's Drift. Reaching the track they spread across it but took no part in the actual battle.

The bulk of the N.N.C. had fled from the field at an early stage, about 12h45 or 13h00, but by this time the Undi Corps were already across the track to Rorke's Drift so that they were forced to follow a more direct route to the Buffalo River which led under the slopes of Black's Koppie. Observing this, Dabulamanzi sent the inDlu-yengwe to attack them in the flank and although many had already cast away their weapons, headbands or any other signs of allegiance to the British in the hopes of becoming unrecognisable, most were discovered and killed although some managed to escape.

To the fleeing Whites, the route offered many obstacles. The first was the so called rocky torrent, or stony stream bed, which hampered the horses and which brought the guns to grief. The latter had got through the camp but were upset on the bank of the stream bed and the horses suspended by the traces, were killed by the Zulus. The fugitives who negotiated this feature were then confronted by what some accounts called a "chasm", i.e. a donga some four metres deep and apparently only fordable near its junction with the Manzimyama stream. One rider put his horse to jump the chasm but was crushed when it fell to the rocks in the bottom. The Manzimyama has very steep banks and a rocky bed. It was described as a gorge and many were killed trying to cross it. Some respite was given in climbing the slopes of the Mpete ridge which is capped by a marsh where P. Brickhill (interpreter) lost his spectacles but from here the descent into the Buffalo River valley is steep and difficult. On the Zululand side there is a small flat area where the fugitives congregated. However, as the river was running in spate, the crossing was a dangerous operation. At the point where the fugitives reached it, it was flowing turbulently but in a straight course. About 100 metres downstream there was a rocky island of boulders amongst which the water boiled. Below this was a whirlpool from which several horses were vainly struggling to escape, while further downstream the water roared through a boulder-strewn gorge where man and animal would be battered to death. After the N.N.C. had crossed very few men on foot managed to escape the Zulus and by 13h30 it would seem that the inDlu-yengwe were in control of the route and the inGobamakhasi and uMbonambi had crossed Black's Koppie to close it from the east. The number of the N.N.C. who escaped is unknown but about 74 Whites survived.

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Lieut Melvill, Adjutant of the 1st/24th Foot was instructed by Col Pulleine, his commanding officer, to rescue the Queen's colour of the Regiment and attempt to escape from the Isandlwana battlefield with it. Not only did he take the colour in its case, but he carried the pole as well. On leaving camp, he fell in with Lieut Coghill who had hurt his knee during the attack on Sihayo's stronghold and was hardly able to walk, but had managed to find a pony on the battlefield. When they reached the Buffalo River Coghill swam his horse safely through to the Natal bank. Melvill's horse slipped on a submerged boulder, threw him into the river and was swept away. While attempting to retain his grip on the colour he was washed into deep water. Coghill, seeing his plight, rode back into the river to assist him but his horse was killed by a bullet fired by the Zulus who had now reached the Zululand bank. After a desperate struggle the two officers, and Lieut W. Higginson who vainly attempted to assist with the colour, reached the Natal bank. Lieut Higginson was able to escape, but it is apparent that Melvill refused to leave Coghill and they were overtaken and killed just below the crest of the ridge. It is evident that Coghill being mounted, could easily have escaped had he left Melvill to his fate, and it would seem that Melvill once on the Natal side, could have reached safety had he left Coghill to struggle on alone. Just above the crest the Natal Native Horse were holding some spare mounts. Had Melville reached them he would have been safe.

The bodies were found on 1 February 1879 and were buried under a common cairn by the Rev G Smith two days later when a patrol, consisting of Maj W. Black, Lieut H.C. Harford, Lieut Harber and others, was sent to look for the colours. Descending the krantz overlooking the river they erected a sangar to give protection from possible Zulu fire from the opposite bank. An old fortification, probably the remains of this sangar, has been discovered near the river bank. Lieut Harber recovered the colour case which was first spotted by Lieut Harford in the bend of the river, which had fallen two metres since the day of the battle. The pole with the colour still attached was found about fifty metres further upstream on a rocky island and the crown about twenty metres away.

Chelmsford's return to the battlefield

After his meeting with Lonsdale, Chelmsford formed up the N.N.C. and advanced towards the camp. The mounted infantry went forward to reconnoitre and they came back with a report of Zulus swarming amongst the tents. Gosset reached the new camp site at about 16h00 but it was after 18h00 by the time Glynn's forces arrived. The men had been marching all day and were very tired. Forming up the troops with the guns in the centre, the regular infantry on either side, a battalion of N.N.C. on each side and mounted men on the flanks, Chelmsford moved forward to near the Conical Kop. Night had almost fallen and all that could be seen were the silhouettes of the wagons in the saddle and some Zulus disappearing over the escarpment. Four rounds were fired into the wagons but as no response was observed Maj Black led three companies of the 24th to occupy the Koppie which now bears his name.

The whole force now moved up to the col where it arrived at 21h00. It was obviously impossible to pitch camp and the men had to sleep on the ground wherever a space could be found. Many encountered the bodies of their comrades when groping for a place to lie down. To make matters worse firing could be heard and the glow of flames above Rorke's Drift could be seen. Before dawn the force marched away from the bloody field but as they approached the Batshe River the Zulus who had attacked Rorke's Drift emerged from a valley to their left barely 400 metres away. No action was taken as the Zulus were probably even more exhausted than Chelmsford's men, while the latter did not have sufficient ammunition to become involved in further hostilities.

The burial of the dead and the preservation of the cairns

The battlefield was not revisited until 17 May but the burial party of the Dragoon Guards spent four days there from 21 to 24 May, exactly four months after the battle. Some bodies which had been disemboweled dried up but others had decomposed. Vultures, crows, hyenas and jackals had also attacked many of the bodies, large numbers of which were unrecognisable. In many cases the tunics had been removed by the Zulus making identification even more difficult. In some areas, British and Zulu dead were lying together and could not be identified separately. Because of the lack of time and tools, as well as the hardness of the ground, no graves were dug, but the bodies pulled together in heaps and stones piled over them. This gave the characteristic appearance of the battlefield covered by cairns instead of graves with headstones. It is not known if the cairns were whitewashed at this time but it appears very unlikely. It is known that attention was paid to the battlefield after the annexation of Zululand and the cairns were probably whitewashed during the early 1900's. Later several regimental monuments were erected.

During 1928 just before the 50th anniversary, that part of the battlefield where most of the cairns were situated was fenced off and cairns outside this were not regularly cared for. As a result those on the remoter parts of the battlefield became indistinguishable from ordinary heaps of stones. During 1958 a graves curator, in ignorance, flattened many cairns to make them look like ordinary graves. This exposed some remains. The writer was requested to rebuild the cairns, and after studying all available old photographs and relying on his own memory, work was commenced. However, many of the grave-like structures made by the curator were simply covered with stones and are clearly recognisable as incompletely restored cairns. The opportunity was taken to search for neglected cairns. Some forty of these were found, carefully examined for remains, fully documented, photographed, and marked on a plan and rebuilt. These cairns include those out on the ridge where the British companies were stationed and along the route of the fugitives. In view of recent statements that very few British were killed at the advanced positions, it is interesting to note that buttons, boot protectors and bones were found when the neglected cairns were dismantled and documented. This is, of course, not evidence that the casualties at these positions were very heavy.

After the main British force had moved off to Isandlwana the garrison at Rorke's Drift busied itself with the improvement of the roads, the maintenance of the pont and the handling of the supplies. There were two important buildings on the site - the house and the store. Rorke's house had been converted into a hospital. It had eleven rooms and a verandah but like many colonial houses of the period, some of the rooms had no interior communication with the rest of the house, the doors being on the outside. Not all had windows, but those that did exist were small and shuttered. The outside walls were of round stones and homemade bricks, but the interior ones were of mud bricks. The roof was thatched, and was thus high and steep. The store built by Rorke, and converted to a chapel by the Swedish Missionaries, was built of stone, and had a very high roof, making it appear almost double storeyed. It was used as a commissariat store. There was a toilet west of the house, a cookhouse and ovens south of the store, two kraals to the east and a

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wall one metre high in the garden, which lay below the 1,5 metre high rocky outcrop on which the buildings stood. The tents of the garrison were below the garden, to the north.

On the morning of 22 January, Maj H. Spalding from Helpmekaar, was at the drift making arrangements to move troops forward and he gave Lieut J.R.M. Chard, R.E., permission to ride to Isandlwana with Lieut H.L. Smith-Dorrien. On hearing that there were Zulus to the north of the camp, Chard returned to Rorke's Drift as he feared that the road might be threatened. He arrived at 12h00 and shortly after, distant firing could be heard and a black mass moved across the col, but as no messages were received, Maj Spalding returned to Helpmekaar, leaving Chard in charge. While he was busy at the pont Lieuts J. Vane and Adendorff arrived on horseback bringing news of the disaster at Isandlwana. Vane had been amongst the fugitives, became separated from them and rode north along the river for eight kilometres before meeting Adendorff who had 'escaped by the road' although how this was possible has never been explained. These two carried the message to Lieut G. Bromhead at the station and rode off.

Chard rode up to the station to find that Bromhead, who had received a note telling of the disaster from Capt E. Essex, had struck the tents, unloaded and manhandled two wagons to near the hospital with the intention of evacuating the sick to Helpmekaar. After consultation with Quartermaster (Acting Commissariat Officer) J.L. Dalton it was decided that any evacuation would be overtaken by the Zulus, that an attempt to hold the ponts would be futile and the only hope was to fortify the station for which no defensive measures had been taken. A start was made on a mealie bag wall along the rocky ledge between the kraal and the house, while on the south side the corner of the commissariat store was connected to the house by a similar wall incorporating the two wagons. In the process, heaps of mealie bags (approximately 100 kilograms in weight) and biscuit boxes (approximately 50 kilograms in weight) were made in front of the store. The walls of the buildings were loopholed and outside doors and windows barricaded. However, it was felt that the perimeter was too long to be defended by the men available, that is, one company of the 2nd/24th Foot and one company of the N.N.C. As a result, the arrival of a company of Durnford's Horse was welcomed. They were posted at the drift, told to hold it as long as possible if attacked and fall back if necessary. Some other survivors rode by but none stayed. By 16h30 the Zulus were seen from the top of Oskarberg and at that stage the company of Durnford's Horse rode off, followed by the N.N.C. and their officer. This reduced the strength of the defenders drastically and placed them in a precarious position. Chard now commenced dividing the defences into two by means of a wall of biscuit boxes but it was only partly completed when the attack came. At this stage the strength of the garrison was: Royal Engineers, Lieut Chard and one man; 24th Foot, Lieut Bromhead and 109 other ranks, of whom 22 were ill; other units, 27 of whom 13 were sick, giving a total of 139 of whom 35 were sick, but of the latter 15 were walking patients and could help, that is, 120 to man the post. In the barricaded rooms in the house there were six able-bodied men, four walking patients and twenty bed patients.

The uThulwana, about 1 500 strong and the uDlobo, numbering some 2 000 had turned aside from the col at Isandlwana to make their way to the bend of the Buffalo River where they crossed by means of forming a chain of linked arms and moved towards Rorke's Drift on the Natal side. The inDlu-yengwe which had been led by Usibebu had followed the fugitives, crossed in their wake, killed Melvill and Coghill and turned north, burning kraals as they went. Usibebu was wounded and had turned back. The two groups met on a small knoll and advanced against Rorke's Drift under the command of Dubulamanzi. The Rev G. Smith, O. Witt and Pte Wall who were posted on Oskarberg fled down the slope to warn the post. Witt did not wait to see the outcome but abandoned his property and left. The inDlu-yengwe appeared round the western flank of the Oskarberg deployed under the rocky terrace and attacked the rear of the post suffering heavily from the concentrated fire. They were followed by the uThulwana and the uDloke who attacked the western end. Losses were heavy and they withdrew to mass behind the trees in the garden, from where a second furious attack was launched on the south side of the post. Here the fight reached a climax, the Zulus storming over their own dead to breast the ledge and the mealie bag wall. While this was happening some Zulus took position on the terrace of the Oskarberg and fired down into the post causing some casualties to the British holding the south wall. Those British soldiers in front of the hospital were especially hard pushed and Chard pulled them in, closing the gap between the front wall and the building with a short wall. The Zulus poured into the space which had been evacuated and threatened the house which had empty rooms in front but no loopholes.

During the first attacks many Zulus had taken position against the walls and were attempting to batter down the doors and grab the rifles protruding from the loopholes. The first door to give was that to the middle room on the west face but Pte John Williams cut a hole through the wall while Pte Joseph Williams and Pte William Harrigan (walking sick) held the Zulus at bay. They evacuated two patients but two patients, as well as Joseph Williams and Harrigan were killed. In the room on the south-west corner, Pte Thomas Cole suffered from claustrophobia. He charged out of the front of the house and was killed, leaving Pte Henry Hook alone with the Zulu wounded at the attack on Sihayo stronghold. As the Zulus battered at the door Hook went into the next room alone where he found William and the two patients coming through the other door. There were now two soldiers and eleven patients in the room. Hook held the doors against attacks while Williams dug a hole into the next room where the only occupant was Pte John Waters, a walking patient. Again Williams did the digging and Hook the defence until all were in the next room except Waters who hid in a cupboard and eventually escaped. In the last rooms Pte Robert Jones had already helped four patients to escape through the window and when Hook and William brought the other patients in, all got through the window except Sgt Robert Maxfield who was delirious and could not be moved and was killed by the Zulus. Gnr Arthur Howard and Adams were in the north-west corner room, the door of which opened on to the space occupied by the Zulus. Howard charged out through the Zulus and hid but Adams was killed. While the evacuation was taking place the thatch on the house was fired and the flames lit up the surrounding area giving the defenders some advantage.

Although the evacuation shortened the perimeter to be defended, it released many Zulus from the attack on the house to circle round to the eastern side. The British lost a few lives getting the wounded across the open space to behind the biscuit box wall but they built up a redoubt of mealie bags in which the sick could be accommodated while it afforded a vantage point for the riflemen. The Zulus concentrated on the eastern side of the defences and were eventually able to occupy both kraals but despite heroic efforts were unable to break into the last defensive system. At about midnight Chard led an attack to drag the water cart near the biscuit box wall to slake his men's thirst. After this, Zulu attack slackened and by about 04h00 on 23 January they withdrew. At 05h00 Chard sent out patrols but at 07h00 the Zulus reappeared at the western end of the Oskarberg, sat down and took snuff. Chard's men took up their posts again. After a while the Zulus skirted wide round the post and withdrew by way of the drift. They had fought a most exhausting

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action and exceeded the king's orders by entering Natal. With this in mind, can one agree that the defence of Rorke's Drift really saved Natal, heroic deed though it was?

The British lost 17 dead, who were buried just south of the post, and the Zulus some 400 or 500. Recent research has revealed three Zulu mass graves which have now been suitably marked. When Chelmsford's force arrived, the house was broken down and the material used to build a loopholed fortification some three metres high which incorporated the commissariat store. Shortly after, a start was made on the building of Fort Melvill an extensive system of fortifications overlooking the drift and the pont moorings. It was occupied until the end of the war. When the Swedish missionaries returned to the site they demolished the fort near the store room and built a house very similar to the original, but it is not known if it stands on the same spot. In 1882 a church was built next to the commissariat store which disappeared. With the development of gardens and mission buildings all signs of the battle became lost.