



iSimangaliso
Wetland Park



World Heritage Convention Act 1999 (Act. No. 49 of 1999)

Proclamation Number 4477 of 2000
Dated 24 November 2000

Regulations 1193 dated 24 November 2000

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iSimangaliso Wetland Park Integrated Management Plan (2022 – 2031)

Draft

AUTHORISATION

This Integrated Management Plan (2022-2031) for the iSimangaliso Wetland Park is hereby internally accepted and approved.

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CEO

iSimangaliso Wetland Park Authority

Date

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Board chairperson

iSimangaliso Wetland Park Authority

Date

APPROVED BY THE MINISTER OF ENVIRONMENT, FORESTRY AND FISHERIES

This Integrated Management Plan (2022-2031) for the iSimangaliso Wetland Park, is approved in accordance with section 25(1) of Chapter IV of the World Heritage Convention Act, No 49 of 1999, the National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003) and the Public Finance Management Act, 1999 (Act 1 of 1999).

Ms Barbara Creecy

Date

MINISTER'S FOREWORD

It is with great pleasure that I present the Integrated Management Plan (IMP) for the iSimangaliso Wetland Park, South Africa's first World Heritage Site.

The IMP provides the strategic direction to continue the challenging task of balancing the conservation of iSimangaliso's World Heritage values with local economic development. The high levels of rural poverty in South Africa demand that conservation benefits are distributed widely, fairly and sustainably. Since its establishment in 1999, the iSimangaliso Wetland Park Authority has made admirable progress in contributing to economic empowerment and regional development while protecting the outstanding universal value of the iSimangaliso Wetland Park for both South Africans and the world.

The public consultation process for iSimangaliso's IMP 2022-2031 spanned the period between August and November 2020. It included pre-consultation, consultation, and written comments.

With its dual mandate of conservation and development, the iSimangaliso Wetland Park Authority is well placed to implement this. I would like to congratulate the iSimangaliso Wetland Park Authority including the Board Chairman, Mr Buyani Zwane, his Board, the CEO Mr Sibusiso Bukhosini and staff for taking the lead in this initiative on behalf of all South Africans.

Ms Barbara Creecy

CITATION

iSimangaliso Wetland Park Authority, 2020. iSimangaliso Wetland Park Integrated Management Plan (2022 – 2031).

EXECUTIVE SUMMARY

The iSimangaliso Wetland Park is located in an area known as Maputaland, within the uMkhanyakude District Municipality, northern KwaZulu-Natal province, South Africa. The Park occupies an area of approximately 1 314 539 ha comprising a terrestrial (241 574 ha) and marine (1 072 965 ha) component comprising 15 ecosystems and a number of notable and diverse landscapes. The name “iSimangaliso” means miracle and wonder, which aptly describes this unique place.

iSimangaliso was proclaimed a World Heritage site in December 1999 in terms of the World Heritage Convention Act, 1999 (Act 49 of 1999), an Act that was incorporated into South African legislation by way of the National Environmental Management: Protected Areas Act (NEMPAA), 2003 (Act 57 of 2003). One of the requirements of the legislation is that the Park Authority compile an Integrated Management Plan (IMP). This IMP is a 10-year strategic management plan for the period 2022 – 2031. As such, it builds upon the previous 2017 – 2021 IMP and strives to integrate conservation, tourism development and the local economic development and empowerment of historically disadvantaged communities in and adjacent to the iSimangaliso Wetland Park. In order to ensure World Heritage values are not compromised, conservation objectives need to be foremost, with the emphasis on ‘development for conservation’. In this context, economic empowerment, and job creation, through appropriate tourism development, are necessary to achieve conservation goals. The purpose of the IMP is to guide this balance.

There are a number of acts and guidelines which provide for the establishment, protection and management of the Park. In addition, the Park needs to align itself with development plans at various government levels. The objective of the IMP is to provide measures to protect and manage the World Heritage Site in a manner that is consistent with the objectives and principles of the governing Acts. The IMP presented in this document is, therefore, the statutory decision-making framework that the iSimangaliso Authority will use to develop and manage the Park.

As a World Heritage site, iSimangaliso is an area of exceptional and outstanding universal heritage significance. The natural values include outstanding examples of ecological processes, superlative natural phenomena and scenic beauty, and exceptional biodiversity and numbers of threatened species. iSimangaliso also contains four Ramsar sites that are recognised for the ecological functions of wetlands and for their economic, cultural, scientific and recreational value, viz. the St Lucia Lake System, the Turtle Beaches and Coral Reefs, the Kosi Bay Lake System and Lake Sibaya. A significant change from the previous (2017-2021) IMP was the proclamation in May 2019 of the iSimangaliso Marine Protected Area (MPA), which provides for an expanded MPA (Government Notice R. 772 of Notice 42478, 23 May 2019) from approximately 825 00 ha to 1 072 965 ha. In terms of Regulation 11, the iSimangaliso Wetland Park Authority is formally designated as the management authority for the iSimangaliso MPA.

The iSimangaliso Wetland Park’s vision is to create Africa’s greatest conservation-based eco-tourism destination driven by community empowerment. This IMP sets out the strategic direction and drivers for this goal over the next 10 years, 2022-2031. Our conservation strategy continues to be one of the ‘rewilding’ of iSimangaliso, which powerfully links conservation to the development and empowerment of local communities. The **management principles**, as per iSimangaliso’s Corporate Strategy, are:

1. Vision: A renowned World Heritage Park where conservation, sustainable tourism and benefit sharing prevails.
2. Mission: To protect, preserve and present its World Heritage Values for current and future generations whilst benefiting communities living in and adjacent to the Park by facilitating optimal tourism and related development.
3. Values: iSimangaliso subscribes to the Batho Pele Principles and subscribes to the following core values: Integrity, Honesty, Transparency, Accountability, Performance, and Professionalism.

The IMP contains five chapters and three appendices as follows:

❖ **Chapter 1: Introduction**

This chapter explains the purpose, structure and focus of the IMP and gives a brief overview of the listing of iSimangaliso as a World Heritage site and the resultant legal framework governing the iSimangaliso Wetland Park.

❖ **Chapter 2: Overview of iSimangaliso Wetland Park**

This chapter provides a brief situational overview of the iSimangaliso Wetland Park and the surrounding region in terms of biophysical, socio-economic, infrastructural, historical, tourism characteristics and context, and addresses land restitution.

❖ **Chapter 3: Strategic Analysis (2022 – 2031)**

Chapter 3 discusses the conservation, cultural heritage and economic significance of the iSimangaliso Wetland Park. It also presents the various challenges and threats currently facing the iSimangaliso Wetland Park, in particular threats to the natural values, constraints to poverty alleviation and empowerment, and constraints to tourism development.

❖ **Chapter 4: Strategic Plan**

This chapter discusses the strategic plan for the iSimangaliso Wetland Park. This includes the vision, guiding principles, management goals, the planning cycle and reporting requirements. Lastly, the implementation plan for the 2022 – 2031 period is presented.

❖ **Chapter 5: iSimangaliso's Environmental Management Framework (Tools for Integrated Environmental Management)**

This chapter provides a breakdown of iSimangaliso's Environmental Management Framework, particularly the 'Spatial Planning Measures and Controls', 'Policies, Strategies and Plans' and 'General Planning Tools and Controls'. The primary spatial planning measure is the zonation plan. This forms the basis for the activities plan, and the setting of nodal types and carrying capacities for each block, sub-zone, facility and activity. Together, these tools determine the setting of limits and form the basis for the enhancement of iSimangaliso's core values. This chapter also addresses the Park Buffer, a requirement in terms of the World Heritage Convention Act and Protected Areas Act.

The relevant **references** used to source information added to the 2022-2033 IMP are provided in a citation list.

The **Appendices** include:

1. Legal and Institutional Framework
2. Detailed maps
3. A brief history of the iSimangaliso Wetland Park by Gavin Anderson (2020)

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ACRONYMS AND ABBREVIATIONS

ASGISA	Accelerated and Shared Growth Initiative – South Africa
AMSL	Above Mean Sea Level
BBBEE	Broad Based Black Economic Empowerment
BLSMS	Boat Launch Site Monitoring System
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COP	Conservation Operational Plan
DC27	uMkhanyakude District Municipality
DC28	King Cetshwayo District Municipality
DEA	Department of Environmental Affairs (now DEFF)
DEFF	Department of Environment, Forestry and Fisheries (formerly DEA)
DMA	Disaster Management Act
EIA	Environmental Impact Assessment
EKZNW	Ezemvelo KZN Wildlife
EMPr	Environmental Management Programme
EstMP	Estuarine Management Plan
Fm	Formation (geological)
GEAR	Growth, Employment and Redistribution
HWM	High Water Mark
GGP	Gross Geographic Product
I&AP	Interested and Affected Party
IDMP	Integrated Development Management Plan
IDP	Integrated Development Plan
IMP	Integrated Management Plan
IUCN	International Union for the Conservation of Nature and Natural Resources
ka	Thousand years ago (geological)
KZN	KwaZulu-Natal
LAP	Local Area Plan
LUMS	Land Use Management System
Ma	Million years ago (geological)
MPA	Marine Protected Area
MTEF	Medium Term Expenditure Framework
NBF	National Biodiversity Framework
NDP	National Development Plan
NEMA	National Environmental Management Act 107 of 1998
NEMPAA	National Environmental Management Protected Areas Act 57 of 2003
NGO	Non-governmental Organisation
pa	Per annum
PPP	Public Private Partnership
Ramsar Convention	Convention on Wetlands of International Importance Especially as Water Fowl Habitat, 1971
RH	Relative Humidity
RLCC	Regional Land Claims Commission

SAFCOL	South African Forestry Company Limited
SANBI	South African National Biodiversity Institute
SANDF	South African National Defence Force
SASSA	South African Social Security Agency
SDI	Spatial Development Initiative
SEA	Strategic Environmental Assessment
SEED	Social Economic Environmental Development Policy
SEMF	Strategic Environmental Management Framework
SME	Small Medium Enterprise
SST	Sea Surface Temperature
TFCA	Transfrontier Conservation Area
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UKDM	uMkhanyakude District Municipality
UXO	Unexploded Ordnances
WBOT	Ward-based outreach teams
World Heritage Convention	Convention Concerning the Protection of the World Cultural and Natural Heritage

1 INTRODUCTION

1.1 Background

The iSimangaliso Wetland Park is located in an area known as Maputaland, within the uMkhanyakude District Municipality, northern KwaZulu-Natal province, South Africa (refer Map 1 in Appendix 2). The Park occupies an area of approximately 1 314 539 ha¹ comprising a terrestrial component (241 574 ha) and extended marine component (1 072 965 ha) consisting of fifteen ecosystems and a number of notable and diverse landscapes (Map 2). The name “iSimangaliso” means miracle and wonder, which aptly describes this unique place.

iSimangaliso was proclaimed a World Heritage site in December 1999 in terms of the World Heritage Convention Act, 1999 (Act 49 of 1999), an Act that incorporated the World Heritage Convention into South African legislation. It is under this Act that the iSimangaliso Wetland Park Authority has prepared this Integrated Management Plan (IMP). The IMP is also aligned with related legislation, notably relevant provisions of the Marine Living Resources Act, 1998 (Act 18 of 1998), the National Environmental Management: Biodiversity Act (Act 10 of 2004), National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003), National Environmental Management: Integrated Coastal Management Act 2008 (Act 24 of 2008), the Public Finance Management Act, 1999 (Act 1 of 1999) and the Disaster Management Act (Act 57 of 2002), read with the Disaster Management Amendment Act (Act 16 of 2015). Further, in terms of development planning, the IMP also needs to be aligned with the National Development Plan, 2030, the KZN Provincial Growth and Development Strategy, 2035, and the District Municipality Integrated Development Plan.

1.1.1 *Name, Location, Extent and Status of the iSimangaliso Wetland Park*

The iSimangaliso Wetland Park is located in the coastal and adjacent inland areas of north-eastern KwaZulu-Natal. The Park was proclaimed in 1999 as a “natural” site with the following description: “The ongoing fluvial, marine and aeolian processes in the site have produced a variety of landforms, including coral reefs, long sandy beaches, coastal dunes, lake systems, swamps, and extensive reed and papyrus wetlands. The interplay of the park's environmental heterogeneity with major floods and coastal storms and a transitional geographic location between subtropical and tropical Africa has resulted in exceptional species diversity and ongoing speciation. The mosaic of landforms and habitat types creates breath-taking scenic vistas. The site contains critical habitats for a range of species from Africa's marine, wetland and savannah environments.” As a World Heritage site, iSimangaliso is an area of exceptional and outstanding universal heritage significance. The natural values include outstanding examples of ecological processes, superlative natural phenomena and scenic beauty, and exceptional biodiversity and numbers of threatened species². Although listed as a World Heritage site on the basis of its natural values, the World Heritage Convention Act also obliges the iSimangaliso Authority to present, promote and conserve the cultural heritage of the Park.

¹ This figure includes the 14,200 ha of land owned by SiyaQhubeka Forests (Pty) Ltd that have been incorporated into the Park through a Buffer Zone Incorporation Agreement.

² Justification for Inscription: Criterion (vii): Geographically diverse, the iSimangaliso Wetland Park contains superlative scenic vistas along its 201 km coast. Natural phenomena include shifting salinity states linked to wet and dry climatic cycles. Criterion (ix): The ecological linkages between the ecosystems found in the iSimangaliso Wetland Park have been a major attraction for research on the geomorphological and biological processes occurring there. Criterion (x): The fifteen ecosystems provide habitat for a significant diversity of African fauna.

The proclamation of iSimangaliso consolidated 16 parcels of previously fragmented land³ into a single protected area covering approximately 241 574 ha⁴ terrestrial land, and extending approximately 201 km along the KZN coastline from the South African-Mozambique border north of Kosi Bay, to 500 m south of the Cape St Lucia lighthouse, covering approximately one third of KwaZulu-Natal's coastline (refer Maps 1 & 2). In the east, the Park is bordered by the Indian Ocean - the MPA (Park) boundary extends approximately 38 km out to sea in the north to 84.4 km in the south. The western boundary ranges from between 1 to 55 km from the coast, incorporating the Lubombo Mountains in the extreme west, but with a narrower coastal strip north of Sodwana Bay.

A more detailed description of the iSimangaliso Wetland Park is provided in Chapter 2

1.1.2 Purpose of the Integrated Management Plan

The World Heritage Convention Act provides a fundamental commitment to the protection, conservation, preservation and presentation of World Heritage values, with a strong emphasis on local economic development. This balance is appropriate in the South African context in which high levels of poverty necessitate an approach that optimises the economic potential of World Heritage sites without compromising their natural and cultural integrity.

Indeed, in the current context of changing demographics and climate, growing inequalities, diminishing resources and increasing threats to heritage, there is a need to view conservation objectives, including those promoted by the World Heritage Convention, within a broader range of economic, social and environmental values and needs encompassed in the concept of sustainable development. In this regard, State Parties need to establish an appropriate relationship between conservation, sustainability and development so that World Heritage properties can be protected through appropriate activities contributing to the social and economic development and quality of life of communities inside the park and surrounding communities. **However, notably, this balance is not an equal one: in order to ensure World Heritage values are not compromised, conservation objectives need to be foremost, with the emphasis on 'development for conservation'. In this context, economic empowerment and job creation, through appropriate tourism development, are necessary to achieve conservation goals.** The purpose of the IMP is to guide this balance.

This IMP is a 10-year strategic management plan for the period 2022 – 2031. As such, it builds upon the previous 2017 – 2021 IMP and strives to integrate conservation, tourism development and the local economic development and empowerment of historically disadvantaged communities in and adjacent to iSimangaliso. Various sections of this 2022-2031 IMP have been updated and improved upon. In an effort to create a scientifically defensible document, references are provided for all updated work.

³ Cape Vidal State Forest, Dukuduku State Forest, Eastern Shores State Forest, False Bay Park, Makasa State Forest, Maphelane Nature Reserve, Maputaland Marine Reserve, uMkhuze Game Reserve, Nyalazi State Forest, Sodwana Bay National Park, Sodwana State Forest (Ozabeni), St. Lucia Game Reserve, St. Lucia Marine Reserve, St. Lucia Park, Coastal Forest Reserve, Lake Sibaya Freshwater Reserve.

⁴ The area under Park management includes land incorporated through agreement (see Footnote 1, Section 1.1) and areas ceded to the Park that were previously under commercial forestry plantation management.

1.1.3 *Public participation*

The public consultation process for iSimangaliso's IMP 2022-2031 included pre-consultation, consultation, and written comments. Pre-consultation workshops were arranged with stakeholders, local tourism associations, communities living in and around the Park and local municipalities to obtain input into the draft IMP prior to its release for public consultation. The workshops were conducted in either isiZulu or English, depending on the first language of the participants.

Thereafter, the IMP was available for review by the public for 60 days. The invitation for written comments was included in the advertisement for the open days. Four open days were held for members of the public to engage with iSimangaliso staff on the contents of the IMP. The open days were advertised in the various newspapers and via notice to iSimangaliso's database of Interested and Affected Parties (I&AP's). The advertisement provided also explained how and where the public could obtain copies of the document. Comments were received and reviewed and, where appropriate, changes were made to the IMP.

1.2 *Enabling Legal Framework*

The following body of law provides the framework for the establishment, protection and management of the iSimangaliso Wetland Park:

- ❖ World Heritage Convention & Operational Guidelines.
- ❖ World Heritage Convention Act, 1999 (Act 49 of 1999).
- ❖ Marine Living Resources Act, 1998 (Act 18 of 1998).
- ❖ National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003).
- ❖ National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004).
- ❖ Public Finance Management Act, 1999 (Act 1 of 1999).
- ❖ National Environmental Management: Integrated Coastal Management Act 2008 (Act 24 of 2008).

The management of the iSimangaliso Wetland Park is further subject to the National Environmental Management Act, 1998 (Act 107 of 1998), the National Water Act, 1998 (Act 36 of 1998), the National Forests Act, 1998 (Act 84 of 1998), the National Heritage Resources Act, 1999 (Act 25 of 1999), the KwaZulu-Natal Heritage Act, 2008 (Act 4 of 2008), the National Environmental Management: Waste Act, 2008 (Act 59 of 2008) and the National Disaster Management Act, 2002 (Act 57 of 2002), read with the Disaster Management Amendment Act, 2015 (Act 16 of 2015). More information on these Acts and their associated Regulations and Notices is provided in Appendix 1: Legal and institutional framework. In addition, the iSimangaliso Wetland Park Authority takes note of, supports, and, where applicable, aligns its activities with national initiatives such as the National Biodiversity Strategic Action Plan, the National Biodiversity Framework, and the National Protected Area Expansion Strategy. Figure 1 illustrates the enabling legal framework of the IMP and its relationship to relevant national, provincial, regional, and local management and development plans.

1.2.1 *World Heritage Convention and Operational Guidelines*

In order to identify, protect, conserve and present the world's irreplaceable natural and cultural heritage, the member states of UNESCO adopted the World Heritage Convention in 1972. While respecting the sovereignty of individual nations, the Convention recognises that people of all nations have an interest in protecting sites of

global ecological significance. Signatories to the Convention agree to work together to identify and protect the outstanding natural and cultural heritage sites in their countries.

There are currently 1,121 World Heritage-listed sites recognised by the World Heritage Committee as having outstanding universal value, they include 869 cultural, 213 natural and 39 mixed properties in 167 State Parties. Nine of these World Heritage-listed sites are in South Africa, one of which is the iSimangaliso Wetland Park. The Park components are illustrated in Map 3.

The World Heritage Committee, the main body which oversees the Convention, has developed precise criteria for the inscription of properties onto the World Heritage List and for the provision of international assistance under the World Heritage Fund. These are presented in a document entitled “Operational Guidelines for the Implementation of the World Heritage Convention”, which are periodically revised to reflect the decisions of the World Heritage Committee (the latest revision was adopted on 10 July 2019).

1.2.2 *World Heritage Convention Act, 1999 (Act 49 of 1999)*

South Africa signed the World Heritage Convention in 1997 and proceeded to develop national legislation to govern the country’s World Heritage sites. The principles and values of the Convention have been incorporated into South African law through the passing of the World Heritage Convention Act, 1999 (Act 49 of 1999). This ensures that national Government has the legal means to discharge its responsibilities under the Convention, and that these sites, along with their tourism potential, are developed in ways that meet the social and development needs of local residents and citizens.

1.2.3 *National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003)*

As a World Heritage site and protected area, the iSimangaliso Wetland Park is also governed by the National Environmental Management: Protected Areas Act (NEMPAA), 2003 (Act 57 of 2003), which affords additional protection and makes provision for management and management plans in support of what is provided for in the World Heritage Convention Act. Regulations⁵ promulgated under the National Environmental Management: Protected Areas Act also contain provisions regarding Management Plans.

The entire iSimangaliso coastline and offshore area to a maximum distance of 84.4 km offshore was recently (23 May 2019) proclaimed as a Marine Protected Area (MPA) (iSimangaliso) through Government Notice⁶ under the Protected Areas Act, 2003 (Act 57 of 2003), which includes specific protection of the marine environment. The entire coastline and its offshore area up to a maximum depth of almost 2 000 m is thus included as a proclaimed World Heritage site under the World Heritage Convention Act. Regulation 11 of GNR 772 stipulates that the iSimangaliso Wetland Park Authority is formally designated as the management authority for the iSimangaliso Marine Protected Area in terms of section 38(1)(aB) of the Act.

⁵ Government Notice R. 1061 of 28 October 2005: Regulations for the proper administration of special nature reserves, national parks and world heritage sites.

⁶ Government Notice R. 772 of Notice 42478, 23 May 2019: Notice declaring the iSimangaliso Marine Protected Area.

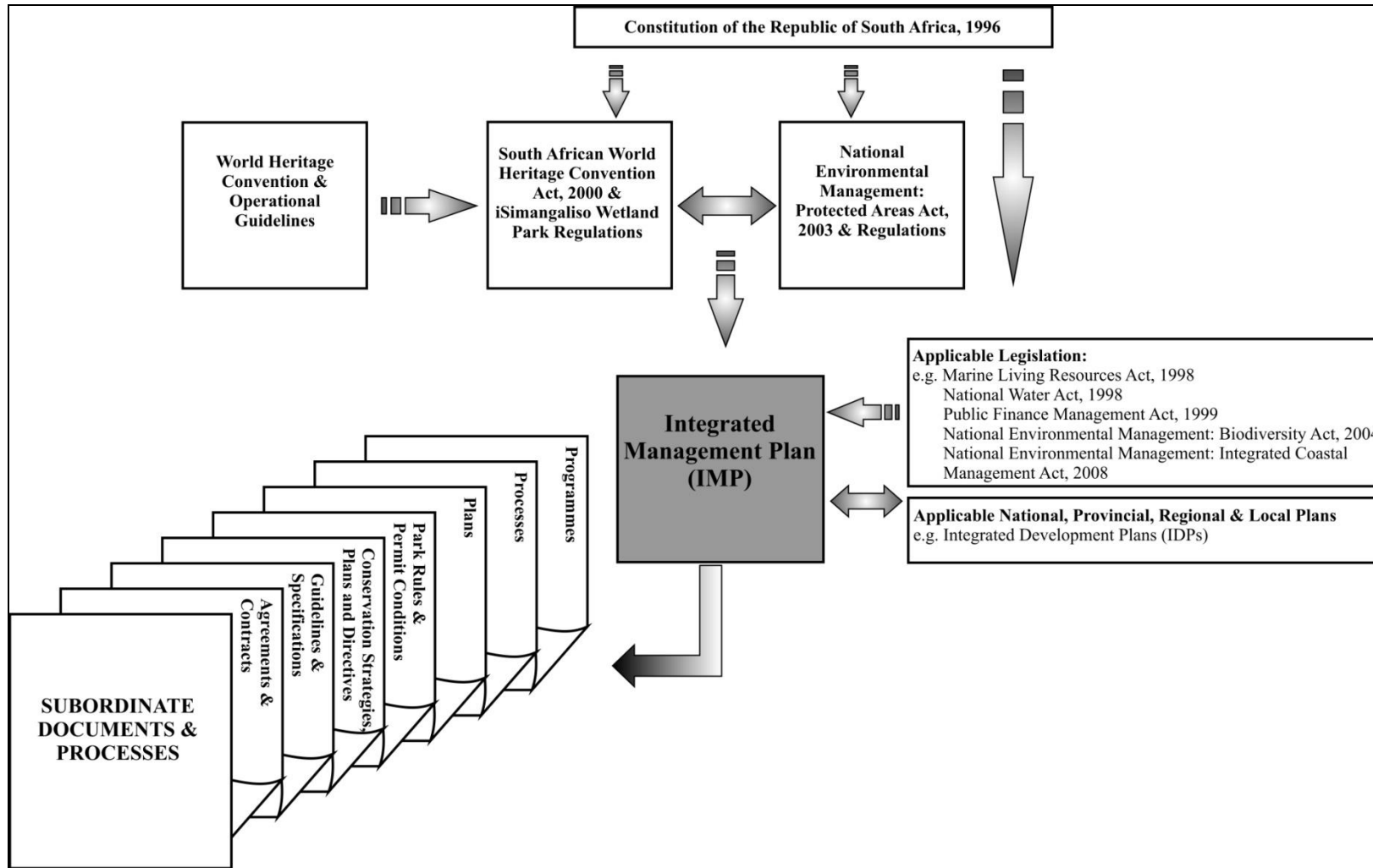


Figure 1 iSimangaliso Wetland Park IMP in the context of its enabling legislation (and other key legislation and plans)

1.2.4 *Marine Living Resources Act, 1998 (Act 18 of 1998)*

The MLRA makes provision for the declaration of MPA's through its mandate for the conservation of the marine ecosystem, the long-term sustainable utilisation of marine living resources and the orderly access to exploitation, utilisation and protection of certain marine living resources; and for these purposes to provide for the exercise of control over marine living resources in a fair and equitable manner to the benefit of all the citizens of South Africa; and to provide for matters connected therewith.

The iSimangaliso MPA³ was extended by the (then) Department of Environmental Affairs (DEA) (now Department of Environment, Forestry & Fisheries (DEFF)) in May 2019, effective 1 August 2019, to include the entire iSimangaliso coastline and its offshore environment from the South Africa-Mozambique border in the north, to Cape St Lucia Lighthouse in the south,, covering an area of 1 072 965 ha and extending up to a maximum distance of 84.4 km offshore and to a maximum depth of almost 2 000 m.

1.2.5 *National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)*

The National Biodiversity Act, 2004 (Act 10 of 2004) provides for the management and conservation of South Africa's biodiversity. This includes the protection of specific ecosystems and species, equitable and sustainable use of indigenous biological resources.

1.2.6 *National Environmental Management: Integrated Coastal Management Act, 2008 (Act 24 of 2008).*

Read with the National Environmental Management: Integrated Coastal Management Amendment Act 36 of 2014, this act seeks to, amongst others, establish a system of integrated coastal and estuarine management in the Republic, including norms, standards and policies in order to promote the conservation of the coastal environment, maintain the natural attributes of coastal landscapes and seascapes, to control dumping at sea, pollution in the coastal zone, and to ensure that development and the use of natural resources within the coastal zone is socially and economically justifiable and ecologically sustainable and to prevent inappropriate development and other adverse effects on the coastal environment. The National Estuarine Management Protocol (2013), which provides guidance for the management of estuaries and sets out the procedures and requirements for Estuarine Management Plans is promulgated under ICMA. In addition, ICMA prescribes the development of Coastal Management Programmes at least once every five years as a tool to ensure co-operative and integrated management of the coastal zone. The recently published provincial KZN Coastal Management Programme: 2019-2023 provides the policy directive to achieve this mandate.

1.2.7 *Public Finance Management Act, 1999 (Act 1 of 1999)*

As an organ of State, the iSimangaliso Wetland Park Authority is subject to the Public Finance Management Act, 1999 (Act 1 of 1999) and Regulations issued in terms of the Act, including Regulations that deal with certain commercial activities (e.g. public private partnerships).

1.2.8 *National Disaster Management Act (DMA), 2002 (Act 57 of 2002)*

The Disaster Management Act 57 of 2002 intends to provide for an integrated and co-ordinated disaster management policy that focuses on preventing or reducing the risk of disasters, mitigating the severity of disasters, emergency preparedness, rapid and effective response to disasters and post-disaster recovery. The Act allows for the establishment of national, provincial and municipal disaster management centres.

Amendments to the Act were issued in 2015 in the form of the Disaster Management Amendment Act, 2015 (Act 16 of 2015), effective from 1 May 2016. Among the most relevant additions from this act is the provision of measures to reduce the risk of disaster through adaptation to climate change and the development of early warning mechanisms. The DM Amendment Act further calls for disaster management plans to include disaster risk assessments and the mapping of risks, areas and communities that are vulnerable to disasters. These disasters may be natural disasters or pandemics. Additional information on this Act is provided in Appendix 1.

1.2.9 National Tourism Sector Strategy (NTSS), 2016-2026

The NTSS focuses on inclusive growth based on domestic and international tourist market growth and expenditure increases and was published in 2011 as a ten-year Strategy, with targets from 2010 to 2020, but was reviewed in 2016 to determine what adjustments were required to accommodate changing market trends and lessons learned from the implementation process.. The NTSS links marketing plans to broader development imperatives, including addressing barriers to growth and the building of a transformed and inclusive tourism economy. This growth will be inclusive, responsible, and sustainable and be underpinned by an awareness of the imperative of the wise use of scarce resources. The Strategy identifies priority actions for implementation in the short, medium, and long term via Pillars, Strategic Objectives and Prioritised Actions. The key Pillars are:

1. Effective Marketing
2. Facilitate Ease of Access
3. The Visitor Experience
4. Destination Management
5. Broad Based Benefits

<i>Other legislation relevant to the iSimangaliso Wetland Park is discussed in Appendix 1</i>
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1.2.10 Alignment with Development Plans

While the Park cannot compromise on conservation, the IMP needs to be aligned with various enabling development planning initiatives at the different spheres of government, in particular to address poverty, unemployment and inequality viz.:

1. The **National Development Plan**, 2030 provides a long-term aim to eliminate poverty and reduce inequality by 2030 through drawing on the energies of its people, growing an inclusive economy, building capabilities, enhancing the capacity of the state, and promoting leadership and partnerships throughout society. iSimangaliso strives to achieve this mandate through its various community and Public Private Partnerships initiatives (refer Chapter 3.3.2 and Table 4).
2. The KZN **Provincial Growth and Development Strategy**, 2035 (2016) outlines the primary growth and development strategy for KwaZulu-Natal to 2030. It sets a long term (20 year +) vision and sets out the strategic goals and objectives for the Province. The strategy similarly aims to alleviate poverty, inequality and unemployment, whilst recognising the importance of human and natural resources in creating a safe, healthy and sustainable living environment.

3. At a local level the **Integrated Development Plans** (IDP's) for the uMkhanyakude (2018/2019) and King Cetshwayo ((2018/19-2021/22) District Municipalities have relevance.
4. Land use should also align with the **Spatial Planning and Land Use Management Act** (Act 16 of 2013) (SPLUMA, which provides a framework for spatial planning and land use management in South Africa.

1.3 The iSimangaliso Wetland Park Authority

The Regulations proclaiming the iSimangaliso Wetland Park World Heritage Site also established the iSimangaliso Wetland Park Authority to manage the site through a Board and executive staff component. The iSimangaliso Authority reports to the National Minister of Environment, Forestry and Fisheries. The Authority's management structure is illustrated in Figure 2.

The World Heritage Convention Act, 1999 (Act 49 of 1999) outlines the operating requirements for a World Heritage Site and is a guiding document. As such, the Board is responsible for policy formulation and the formal direction of the Executive. The Executive Staff Component, headed by a Chief Executive Officer (CEO), is responsible for the operations of the iSimangaliso Authority, including relationships with other organisations such as Ezemvelo KZN Wildlife (EKZNW), the KZN Tourism Authority and local government. Further, the Act makes provision for the Authority to prescribe rules in connection with the World Heritage Site under its jurisdiction regarding such matters as the Minister may determine.

Co-operative Governance Agreements

The rights and duties of the iSimangaliso Authority, EKZNW and the KZN Tourism Authority with respect to the management and development of the iSimangaliso Wetland Park are regulated through legislation and have been further elaborated through a management agreement signed in August 2001 by these parties. The iSimangaliso Wetland Park Authority is the nationally appointed Management Authority, in terms of the Protected Areas Act, and is statutorily authorised to manage the Park and make conservation and management decisions thereto. EKZNW derives its authority and responsibility through its agreement with the iSimangaliso Authority and operates as the day to day conservation manager. The agreement specifies that the parties will co-operate in meeting Park management objectives. The rights and duties of the parties to the agreement provide, among others, for the following **responsibilities**:

The iSimangaliso Authority shall:

- ❖ Develop measures for the environmental and cultural protection of the iSimangaliso Wetland Park and ensure that the values of the World Heritage Convention are given effect. This includes oversight of conservation management in the Park.
- ❖ Promote, manage, and facilitate tourism and related development in connection with the iSimangaliso Wetland Park.
- ❖ Facilitate programmes that encourage job creation.
- ❖ Establish and implement the IMP.

Ezemvelo KZN Wildlife shall be responsible for:

- ❖ Day to day operational conservation management of the iSimangaliso Wetland Park, including implementation of iSimangaliso policy, policing and law enforcement activities, and assisting the iSimangaliso Authority in compliance monitoring of concessionaires with contractual and statutory obligations.
- ❖ Implementation of a Conservation Operational Plan, and regulatory enforcement related to conservation within the iSimangaliso Wetland Park.

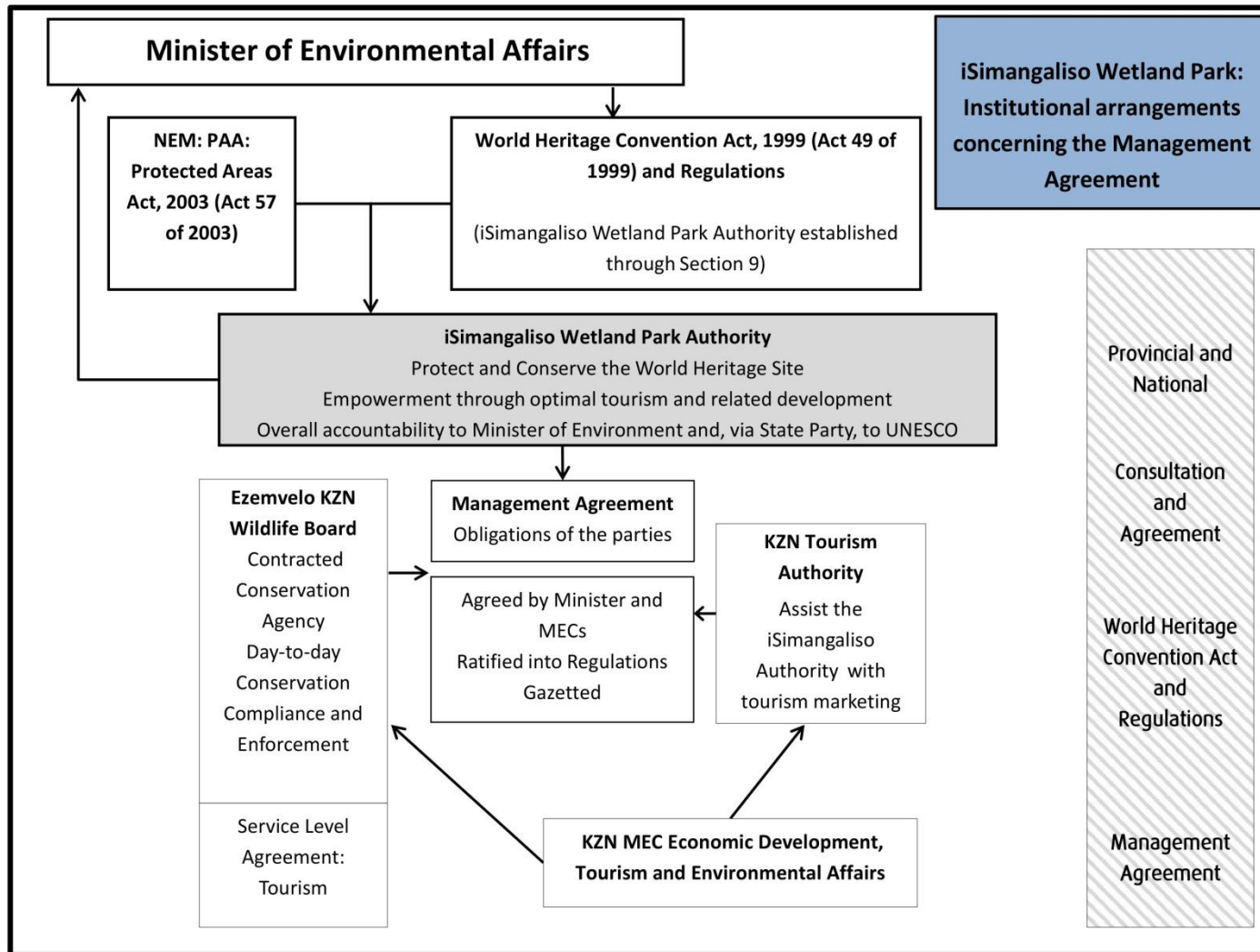
The iSimangaliso Authority also has a mandate to enter into co-operative governance agreements with a range of institutions across all spheres of government, including local government, to fulfil its core functions.

In terms of **local government**, the iSimangaliso Wetland Park falls within the uMkhanyakude District Municipality (DC27), with the southern extremity including a small northern section of the King Cetshwayo District Municipality (DC28). Its neighbours four of the five local municipalities within the uMkhanyakude District Municipality, namely, uMhlabuyalingana, Jozini, The Big Five Hlabisa and Mtubatuba and one local municipality within the King Cetshwayo District Municipality (DC28), namely, uMfolozi. Over 740,000 people reside in the municipalities that border the Park, with approximately 2,000 people living in the Park, excluding Park staff members. Salient information is provided in Table 1.

Table 1 Details of iSimangaliso

Name	iSimangaliso Wetland Park
Date of World Heritage Site proclamation	1999
Location	KwaZulu-Natal
Extent	Terrestrial: 241 574 ha Marine: 1 072 965 ha
District Municipalities	❖ Umkhanyakude District Municipality ❖ King Cetshwayo District Municipality
Neighbouring Local Municipalities	❖ Mtubatuba Local Municipality ❖ Big 5 Hlabisa Local Municipality ❖ Jozini Local Municipality ❖ uMhlabuyalingana Local Municipality ❖ uMfolozi Local Municipality
International Status, Agreements and Obligations	❖ UNESCO World Heritage Convention ❖ Ramsar Convention

Figure 2 iSimangaliso Wetland Park Management Structure



1.4 The iSimangaliso Integrated Management Plan (2022 – 2031)

The objective of the IMP is to provide measures to protect and manage the World Heritage Site in a manner that is consistent with the objectives and principles of the governing Acts. The IMP presented in this document is, therefore, the statutory decision-making framework that the iSimangaliso Authority will use to develop and manage the Park. This IMP is valid for the next 10 years and has been developed and adapted from a review of the 2017 – 2021 IMP. While the most stringent requirement was adopted for the previous IMP, relevant to the five-year period 2017-2021, considering management structures are already in place, and that this IMP builds on the work of the previous IMP, the Park Authority has proposed a 10-year plan moving forward, i.e. relevant to the period 2022 - 2031. The WHCA requires an IMP to cover at least a five-year period or “such longer period as the Minister may determine but where new opportunities or threats arise, or in the case of changed circumstances, an integrated management plan may be reviewed and amended as and when necessary by an Authority, and submitted to the Minister for approval in accordance with section 25(4)”. Thus, should changing circumstances or new opportunities or threats arise, it may be deemed necessary to revise or amend the IMP and the WHCA makes allowance for this.

1.4.1 The IMP Process

The final draft of the IMP is the product of a formal process, including public review, and precedes its final adoption by the Minister. The iSimangaliso Wetland Park Authority is obliged to review and revise the IMP at a minimum of every five years or in accordance with changing circumstances (see above). Annual reviews and planning cycles are considered in the revision of the IMP.

1.4.2 Focus of the 2022 – 2031 IMP

The iSimangaliso Wetland Park's vision is to create Africa's greatest conservation-based tourism destination driven by community empowerment. This IMP sets out the strategic direction and drivers for this goal over the next 10 years, 2022-2031. Our conservation strategy continues to be one of the 'rewilding' of iSimangaliso, which powerfully links conservation to the development and empowerment of local communities. The **management principles**, as per iSimangaliso's Corporate Strategy, are provided below

:

1. VISION

A renowned World Heritage Park where conservation, sustainable tourism and benefit sharing prevails.

2. MISSION

iSimangaliso's mission is to protect, preserve and present its World Heritage Values for current and future generations whilst benefiting communities living in and adjacent to the Park by facilitating optimal tourism and related development.

3. VALUES

iSimangaliso subscribes to the Batho Pele Principles. In addition, it subscribes to the following **core values**:

- ♦ Integrity
- ♦ Honesty
- ♦ Transparency
- ♦ Accountability
- ♦ Performance
- ♦ Professionalism

The Authority's development and empowerment priority is to deliver tourism developments linked to land claimant co-management agreements that create jobs, stimulate economic growth and generate revenue that will contribute towards community empowerment. South Africa's tightening fiscal environment, exacerbated by the global covid-19 pandemic and resultant global economic slowdown, means that this will be challenging. Nonetheless, the economic climate does present opportunities for tourism growth. With the weakening Rand, South Africa is an attractive destination for international visitors, while South Africans look for local holiday destinations, as travel abroad becomes more expensive.

A number of licenses for tourism activities will be reserved for local community service providers for the lifetime of this IMP. Infrastructure to support continued tourism growth in and around iSimangaliso is an essential part of the strategy for the next 10 years. Alongside this, iSimangaliso will continue to implement other programmes that deliver benefits and contribute toward community empowerment.

To this end, iSimangaliso will build on the foundation that has been laid, expanding the reach of existing programmes: sharing of commercial revenue paid to land claim Trusts, equity partnerships in tourism development, enterprise development for local entrepreneurs, job creation through land care and infrastructure, School Awards and Environmental Education programmes providing free access to the Park to young learners, a bursary programme for local students to pursue conservation and tourism-related subjects at tertiary level and training programmes for infrastructure, art, craft and tourism.

Ecosystem restoration is central to the rewilding strategy of the Authority and underpins the development and empowerment agenda. An important focus of this work is the ongoing restoration and monitoring of the Lake St Lucia estuarine system. iSimangaliso embarked on one of the largest wetland restoration projects in South Africa: after 50 years of artificial partial separation and diversion from the Lake St Lucia system, the uMfolozi River was re-connected to the estuary in July 2012 in order to restore its source of fresh water and to re-establish the dynamic natural processes governing the opening and closing of the estuary mouth refer Chapter 3.3.1.10. Another area of rewilding guided by the previous IMP was the restoration of ecological processes, ecosystems and landscapes in order to make them more resilient to threats such as climate change and invasion by alien species – this is to be continued during the lifetime of this IMP.

There is also a human element to iSimangaliso's rewilding strategy. British environmental writer and activist, George Monbiot in his book *Feral* (2013), makes a case for the rewilding of human life so that people 'have access to a richer and wilder life of adventure'. For iSimangaliso, restoration and rewilding of the ecosystems means that communities can sustainably participate in the economic and social benefits from the Park. The ecological resilience of the Park will thus go hand-in-hand with more resilient livelihoods for people dependent on it.

When elephants were returned to the Park in 2001, then South African President, Nelson Mandela, shaped iSimangaliso's vision and practice, when he described their return as a "form of restitution...with spiritual dimensions...in a Park that captured a holistic approach to conservation and development."

On-going consultation and dialogue with our co-management partners and other community stakeholders is vitally important. Guided by this IMP, the Authority will implement strategies enabling stakeholders to participate meaningfully in the Park's rewilding and will continue to prioritise the maintenance of effective relationships with iSimangaliso's neighbours. Experience shows that the time and effort put into creating and maintaining clear channels of communication is an essential investment in conservation. Indeed, achieving the rewilding vision and strategy set out in this IMP for this unique World Heritage Site depends upon it.

1.4.3 Structure of the IMP

The IMP contains five chapters and three appendices as follows:

- ❖ **Chapter 1: Introduction**
This chapter explains the purpose, structure and focus of the IMP and gives a brief overview of the listing of iSimangaliso as a World Heritage site and the resultant legal framework governing the iSimangaliso Wetland Park.
- ❖ **Chapter 2: Overview of iSimangaliso Wetland Park**
This chapter provides a brief situational overview of the iSimangaliso Wetland Park and the surrounding region in terms of biophysical, socio-economic, infrastructural, historical, tourism characteristics and context, and addresses land restitution
- ❖ **Chapter 3: Strategic Analysis (2022 – 2031)**
Chapter 3 discusses the conservation, cultural heritage and economic significance of the iSimangaliso Wetland Park. It also presents the various challenges and threats currently facing the iSimangaliso Wetland Park.
- ❖ **Chapter 4: Strategic Plan**
This chapter discusses the strategic plan for the iSimangaliso Wetland Park. This includes the vision, guiding principles, management goals, the planning cycle and reporting requirements. Lastly, the implementation plan for the 2022 – 2031 period is presented.
- ❖ **Chapter 5: iSimangaliso's Environmental Management Framework (Tools for Integrated Environmental Management)**
This chapter provides a breakdown of iSimangaliso's Environmental Management Framework, particularly the 'Spatial Planning Measures and Controls', 'Policies, Strategies and Plans' and 'General Planning Tools and Controls'.

The relevant **references** used to source information added to the 2022-2033 IMP are provided in a citation list.

The **Appendices** include:

1. Legal and Institutional Framework
2. Detailed maps
3. A brief history of the iSimangaliso Wetland Park by Gavin Anderson (2020)

2. OVERVIEW OF THE iSIMANGALISO WETLAND PARK

This chapter provides a summary overview of the iSimangaliso Wetland Park. iSimangaliso covers coastal forests, Lake St Lucia, Maphelane, Cape Vidal and the Eastern shores of St Lucia, Charters Creek and the Western shores of St Lucia, St Lucia's False Bay, Lake Sibaya, Sodwana Bay, uMkhuze and Kosi Bay, collectively known as the 10 Jewels of iSimangaliso

(<https://isimangaliso.com/http://southafrica.co.za/isimangaliso-wetland-park-accommodation.html>).

2.1 Biophysical Environment

2.1.1 Climate

iSimangaliso falls within the humid subtropical climatic zone of Africa (Köppen classification Cwa), with the warm Agulhas Current offshore having a moderating influence. Summers are hot and humid, while winters are mild, with intermittent cold spells associated with the passage of cold fronts. About 75% of the rainfall along the coastal margin occurs during the spring to autumn months of October to April, with this percentage increasing to 85% inland (i.e. winters are drier inland). Most summer rainfall occurs in the form of convective thunderstorms or is associated with low pressure troughs, often linked to the eastward passage of coastal lows or cold fronts to the south. At times cumulo nimbus cells, formed offshore over the warm Agulhas Current, move over land during early evening, resulting in coastal rainfall (Hunter, 1988). Episodic floods are occasionally caused by cut-off lows and tropical cyclones or tropical depressions moving southwards from Mozambique after crossing or moving down the Mozambique Channel. The most significant recent event to impact the area was Tropical Cyclone Domoina over 28 January to 1 February 1984, during which the uMfolozi River, which flows into the sea at Maphelane, recorded the highest flood volume in South African history (van Bladeren, 1992).

Rainfall is, generally temporally and spatially highly variable in a pattern typical of subtropical regions. The most notable feature of the rainfall in the Park area is the steeply declining gradient from the east to the west: Mean annual precipitation for the Maputoland Coastal Plain varies from > 1 200 mm per annum (pa) along the coastal margin to approximately 500 mm pa along the Lubombo range. The close proximity of the warm Agulhas Current to the coast, especially offshore of Cape Vidal to Cape St Lucia, facilitates precipitation along the coastal strip. Additionally, there is a declining rainfall gradient from St Lucia (>1 200 mm in places) to Kosi Bay (980 mm) (Hunter, 1988). Similarly, there is a declining gradient in relative humidity (RH) from the coast to inland areas (e.g. Mkhuze). RH is high in summer, and for much of the year it exceeds 90%, although winters are dry, particularly at inland locations. Evaporation rates are high, especially during the drier winter and early spring periods; there is similarly a gradient from the coast (1 300 mm pa) to inland (1 660 mm pa).

Winds blow predominantly from the north to north-north-east (NNE) and south to south-west (refer Fig. 3b), in approximately equal proportions, associated with the South-West Indian Ocean Anticyclone and passage of coastal lows and cold fronts, respectively. There are seasonal variations, with NNE winds more dominant during summer and south-west and north-west winds more prevalent during winter. There is a diurnal onshore sea-breeze effect, especially in summer. Nocturnal offshore landbreezes, draining from inland from the north to west during winter, can cause low temperatures overnight and early morning.

Climate change is addressed in Chapter 3.3.1.15.

2.1.2 Oceanographic Features

The most important large-scale oceanographic feature affecting the coastal environment is the south-flowing Agulhas Current, the strongest western boundary current in the world. Sea surface temperatures (SST) range from 28°C in summer to 23°C in winter (Lutjeharms, 2006). Bathymetry and coastal alignment plays an important role in current flow and wave refraction and a bathymetric map of the offshore area encompassing the iSimangaliso Marine Protected Area (MPA) is presented in Map 4. Bathymetry indicates the seabed topography below the sea surface. The contours on the bathymetry map indicate lines of equal depth of the seafloor; thus a steep slope is indicated by closely spaced contours, conversely widely dispersed contours indicate a gentle gradient. Figure 3a is included to provide the bathymetry context of the park MPA area relative to the entire KZN coastline and a diagram illustrating oceanographic features typical within the iSimangaliso MPA is superimposed on a bathymetric map in Fig. 3b.

The Maputaland coastline is aligned NNE-SSW and is fairly straight, apart from a series of small aeolianite (rock formed from sediments deposited by wind) or beachrock headlands and coastal platforms, which give rise to gentle log-spiral shaped sandy bays to their north; this is in response to predominant the south-south-easterly swells and longshore drift. The continental shelf (area of seabed near land where water depth is relatively shallow compared with the open ocean further offshore) is narrow, on average only 3 km wide, with the shelf break (seabed where there is an increased slope gradient toward the deep ocean bottom) between -45 and -70 m, characterised by submarine canyons (Ramsay, 1994), which extend to about 500 m depth (Map 4). Inshore on the shelf there are a number of patch coral reefs, mainly from Leadsman Shoal in the south to Kosi Reef in the north (Fig. 3b, Map 4). These are the southern-most coral reefs on the African continent. The continental slope is particularly narrow off Cape Vidal and Cape St Lucia, south of which is the coastal offset of the KZN Bight, where the shelf widens (Fig. 3a). These bathymetric features influence current flow.

The Agulhas Current is understood to form off the southern Mozambique/northern KZN coast from the confluence of waters following complex paths down the Mozambique Channel and south of Madagascar. The current transports warm, oligotrophic (low nutrient, high oxygen) water southwards from the tropics and is believed to be fully constituted south of Ponto d'Ouro (Lutjeharms, 2006). The current is approximately 70 - 100 km wide (Guastella, 2014) and flows along the shelf edge. Current speeds are stronger south of Sodwana, where the current gains momentum, particularly between Cape Vidal and Cape St Lucia, where the shelf is narrowest (Figs 3a & b, Map 4). The current flows close to the coast here and current speeds up to 1.5 m/s have been measured (Schumann, 1988), although higher speeds are possible. In the warm central core waters of the Agulhas Current speeds up to 2 m/s are attained (Guastella, 2014).

On the shelf north of Sodwana Bay inshore near-surface (2 m) currents have been found to be wind responsive (Reaugh, 2006), thus inshore current reversals (i.e. northward currents) are possible during south-westerly winds, although this response is limited to the surface layer. Northward current flow was recorded 27% of the time by Morris (2009) off Sodwana Bay, mostly driven by wind forcing, and to a lesser extent by offshore cyclonic eddies travelling south or westwards from the Indian Ocean. Although not as prominent a driving force as wind induced reversals, these cyclonic eddies can cause currents to reverse inshore, or intensify reversals already taking place (Morris, 2009). Cool water events, related mainly to shelf edge upwelling of colder water from depth, have been recorded off Sodwana Bay (Celliers & Schleyer, 2002). This upwelling appears to be more frequent (and stronger) during the summer months, although it occurs throughout the year; however, the cooler water is

not always transported inshore (Morris, 2009). Cooler water from depth can also move up the canyons, but the effects are short-lived and minor (Morris, 2009).

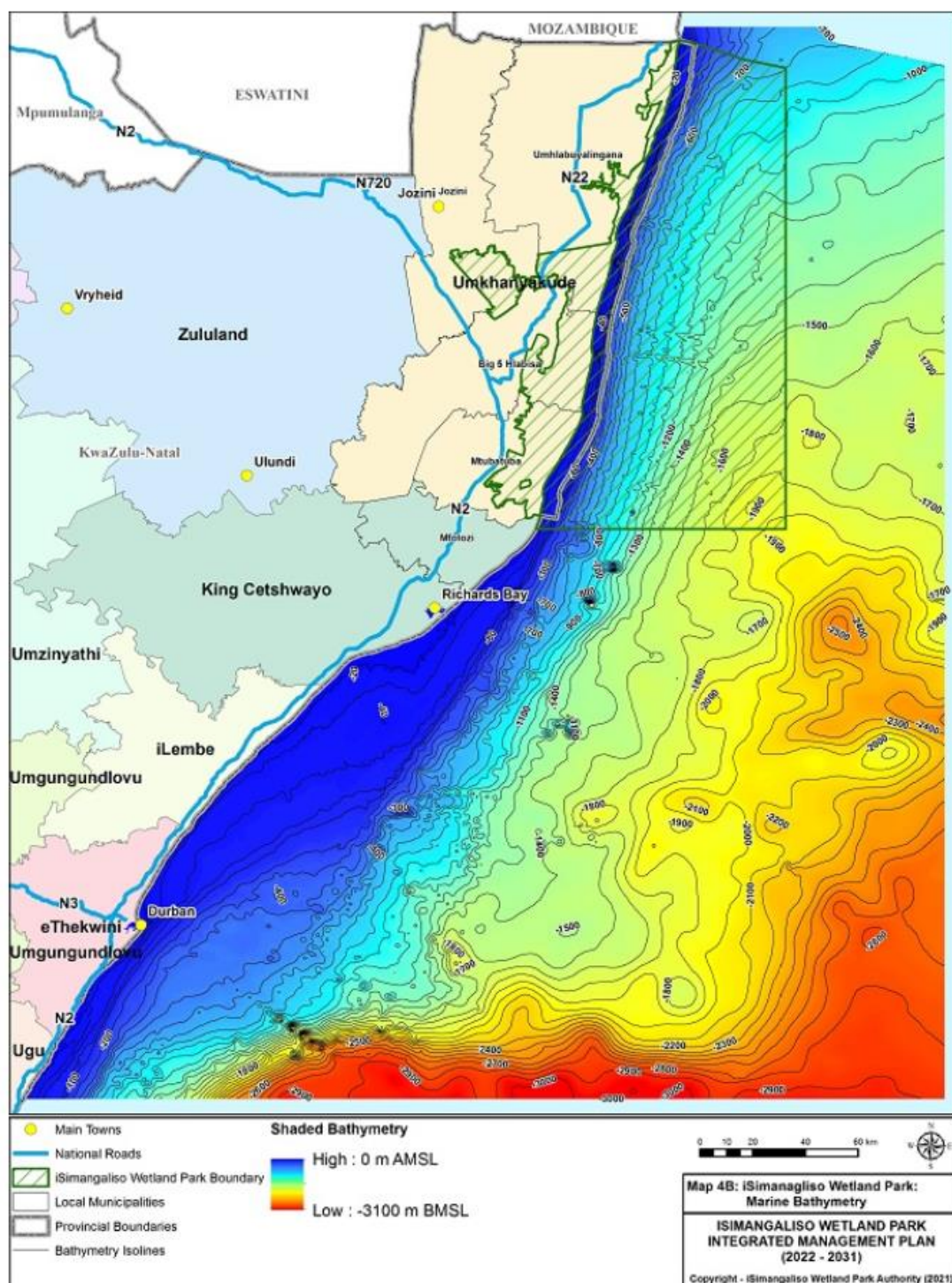


Figure 3a: Bathymetry of the KZN coast (data acknowledged from EKZNW).

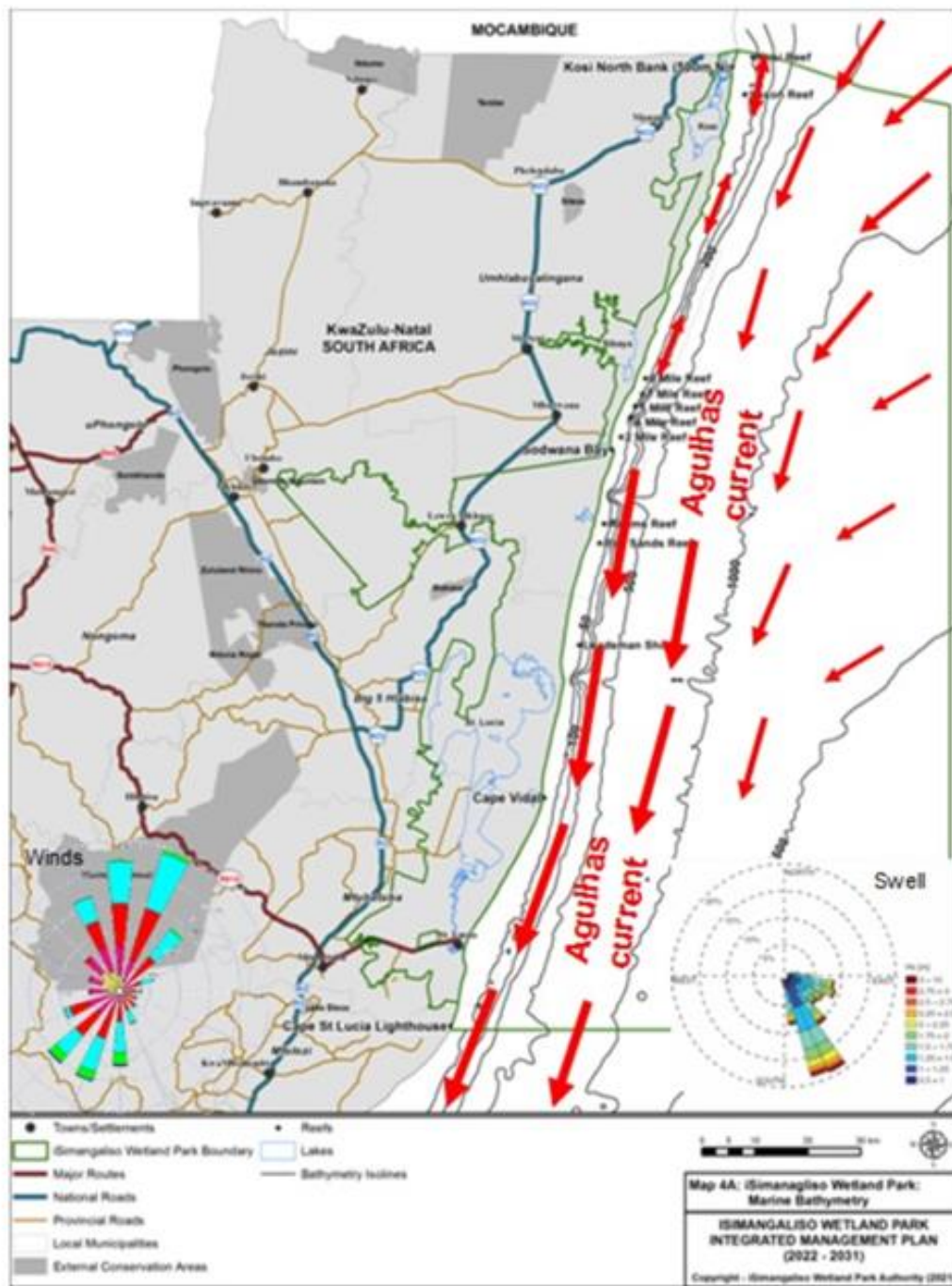


Figure 3b: Schematic diagram superimposed on bathymetry to illustrate key oceanographic features in the iSimangaliso MPA. Bathymetry contours are at -50 m, -100 m, -200 m, -500 m, -1 000 m and -1 500m. Red arrows indicate mean surface current flow; the bolder the arrow, the stronger the current. Note bi-directional arrows inshore north of Sodwana illustrate the variability in surface flow in response to longshore winds. The swell rose diagram at bottom right is representative of open ocean swells as measured off Richards Bay over the period 1997-2009 by the CSIR. A wind rose, representative from a 5-year record (2013-2017) at Richards Bay airport is shown on the bottom left. Note that swells and winds are shown as direction from.

Wave data from Richards Bay (Transnet, CSIR), some 70 km south of St Lucia (refer Figs 3a and b), indicates that the coast is impacted mostly by long period swells from the SSE (approximately 42% of the year) and south-east to ESE (each sector making up 20%), which means that combined, 82% of the year the swells are from the SSE to ESE sector. Swells from this direction are generally associated with the eastward passage of cold fronts to the south and occasionally cut-off low pressure systems and dissipating tropical cyclones or storms. Note that these measurements are for open ocean swells, measured approximately 1.4 km from shore where the water depth is 22 m; locally, wave refraction will play a part in dissipating and turning the swells in a more easterly direction in shallower water near the coast. Subtle changes in swell direction can have varied coastal response (i.e. erosion and deposition). Easterly to north-easterly swells are recorded approximately 10% of the time, usually associated with offshore high-pressure systems which force north-easterly (onshore) winds, which generate short period swells. However, dissipating tropical cyclones can also generate longer period swells from this direction, with swells turning ESE to south-east as these systems dissipate to the south (Guastella & Smith, 2018). Seasonally, during summer a higher proportion of swells are from the east to ESE. It is possible that the predominant propagation direction proportion from the SSE to ESE will decrease and conversely the proportion of ESE to north-east swells will increase as one moves northward up the Maputaland coast towards Mozambique, as the influence of cold fronts is progressively diminished and easterly trade winds have more influence. Results obtained from Viola, et al., (2015) for a study based on modelled wave data off Maputo appear to support this theory, with coastal swells from the ESE predominating.

A feature of the coast is the considerable net northward, longshore transport of sediment (shore-parallel sand-stream), which, together with cross-shelf sand movements, exerts a major influence on intertidal habitats, including the intensive and extensive sand-inundation of rocky shores. The northward longshore drift is a response to the predominant SSE swells and can attain speeds as high as 1 m/s (2 knots) (Mitchell et al., 2005); however this is not always the case, as prolonged north-easterly winds can impose a north-easterly to easterly swell direction, causing a reversal in the longshore drift and a phenomenon called beach rotation (in this case SSE swells cause erosion in the bays and deposition to the north, whereas the reverse is true during easterly component swells, resulting in deposition in the bays and erosion to the north). There is a synoptic scale (i.e. over a few days, associated with passing weather systems) variability in the swells and winds, superimposed on a seasonal variability, which results in dynamic changes in sediment movement along the coast. Added to this is the effect of tides; the tidal range in the area is of the order of 1.5 – 2.3 m.

2.1.3 Geology

The geology underlying the Park consists of Jurassic Period (201 – 145 Ma⁷) lavas, followed by sediments of the Cretaceous (145 – 65 Ma), Tertiary (65 – 2.5 Ma) and Quaternary Periods (2.5 Ma – Present) covering the Makhatini Flats of the Zululand Coastal Plan. Map 5 provides a geological map of the Park area and Map 6 shows the parent rock types. In the Park area the Karoo Supergroup is represented by the Lubombo Group lavas (DuToit, 1954). These rocks were subsequently tectonically deformed into the Lubombo Monocline which dips to the west. This process has resulted in the north south Lubombo Mountains in the west of the Park. The Gondwana supercontinent was assembled approximately 500 Ma and began to break-up circa 184 Ma as vast out-pourings of lava (Hastie et al., 2014) and was complete by 133 Ma (Mueller and Jokat, 2019). This process gave rise to the present African continental margin and was the base on which the post-breakup Cretaceous rocks were originally deposited.

⁷ “Ma” in geological terminology refers to Million years ago; similarly “ka” refers to thousand years ago

During the Cretaceous Period (145 – 65 Ma) which followed the Gondwana breakup, a series of sea level rises (marine transgressions) are attributed to climate and tectonic activity. Indications are that the Cretaceous Sea reached inland at least to the base of the Lubombo Mountains. Isolated transverse faulted valleys were filled with early Cretaceous marine sediments (Tankard et al., 1982; Botha, 2018). Subsequent to the Cretaceous Period, sea level has generally dropped, reaching possibly its lowest level during the Last Glacial Maximum at 17 ka. Since then the sea level has risen 125 m.

The Zululand Coastal plain forms part of a larger coastal plain along the eastern part of Africa extending as far as Somalia (Watkeys, et. al., 1993). The Park is predominantly underlain by sediments of the Zululand and Maputuland Groups (Table 1).

The **Zululand Group** (130 – 66 Ma) (Table 2a, Map 5) comprises rocks of the Cretaceous Period and is divided into three parts namely, Makatini, Mzinene and St Lucia Formations.

1. The *Makatini Formation* (Fm⁸), composed of marine conglomerates, sandstones and siltstones, outcrops along the base of the Lubombo Mountain range.
2. This is overlain by the *Mzinene Fm*, composed of marine siltstones and shelly concretionary horizons. As with the Makatini Fm it outcrops along the base of the Lubombo Mountain range, but also east of the Makatini Fm extending as far south as Hluhluwe.
3. The *St Lucia Fm* is generally poorly exposed, but best seen around the False Bay area. It is composed of marine siltstones and shelly horizons. The rocks of the Zululand Group are fossiliferous (refer following chapter).

Coverage of the coastal plain is dominated by sediments of the **Maputuland Group** (Table 2a, Map 5), reflecting the last circa 13 Ma years of earth's geological history. Rocks of the Maputuland Group are currently found distributed along the coastal margin and extending offshore. Littoral marine sediments and dune ridges indicate the falling sea levels (regression) after a Mid-Miocene eustatic sea level highstand (Porat and Botha, 2008; Botha, 2018). Since then, numerous small marine transgressions/regressions have eroded older sequences while depositing newer stacked sequences of dunes, palaeo-estuary infills and wetland deposits (Botha, 2018).

1. The oldest formations are the *Uloa* consisting of calcified beach gravels and tidal sandstone channels with oysters, and the *Umkwelane* comprising "Berea-Type" "Red Sand" (Botha, 2018).
2. This is followed by the *Port Durnford Fm*, which is periodically exposed at the coast (Cooper, 1998), consisting of marine clays, sand and mammalian fossils.
3. Overlying the Port Durnford Fm is the *Kosi Bay Fm* comprising weathered dunes and iron-rich palaeosols with coastal plain and coastal barrier deposits. Discontinuous lignite beds are found near the base of this formation (Botha, 2018).
4. The *Kwambonambi Fm* is comprised of coastal parabolic dunes, interdune wetland peat and diatomite. Beachrock outcrops along the KZN coastal are assigned to the *Isipingo Fm*.
5. As the youngest part of the Maputuland Group, the *Sibayi Fm* is formed from stacked parabolic dune units, coastal barrier dune cordon, beach ridges around lakes/estuaries, beach washover fan and estuarine infill deposits (Botha, 2018).

⁸ Fm in geological terminology refers to Formation (rock unit)

Table 2a List of geological units and their associated fossils, compiled from (Du Toit, 1954; Watkeys, et al., 1993; Groenewald, 2012; Kennedy, et al., 2015; Botha, 2018).

Group	Subgroup/ Formation	Fauna Fossils	Flora Fossils
Maputuland (6ka- 57ka) (Porat & Botha, 2008)	Sibayi Fm	Marine molluscs	Plant fragments
	Kwambonambi Fm	Coastal parabolic dunes, interdune wetland peat and diatomite	
	Isipingo Fm	Marine molluscs, rare mammalian teeth	
	Kosi Bay Fm	Marine molluscs	Plant root bases
	Port Durnford Fm	Terrestrial vertebrate fossils such as hippopotamus, antelope, rhinoceros, buffalo and elephant. Fragments of reptiles i.e. turtles and crocodiles. Foraminifera, marine fish vertebrates and invertebrates including bivalves, gastropods, crustaceans	Lignite, plant fragments
	Uloa	Bivalves, particularly <i>Aequipecten uloa</i> which forms the ~5 m thick "Pecten Bed", gastropods, echinoids, coral, coralline algae, polyzoa, foraminifera, teeth of the extinct shark <i>Carcharodon megladon</i>	
Zululand (78ka – 127ka) (Smith et al., 2018)	St Lucia	Bivalves (e.g. clams) (~12 species), gastropods (snails) (~9 species), annelids (worms) (1 specie), cephalopods (ammonites) (~36 species), echinoids (sea urchins) (~4 species), Coral (1 specie), ostracods (~62 species), reptile bone fragments	Bored fossil logs, plant fragments
	Mzinene	Bivalves, gastropods, annelids, cephalopods, echinoids, coral, ostracods	Bored fossil logs
	Makatini	Marine invertebrates include a bivalve known as naval shipworm (<i>Teredinidae</i> Family)	Bored Fossil logs, plant fragments.

2.1.4 Palaeontology

The Park contains extensive Cretaceous deposits with rich marine fossil beds. Rocks underlying the Park were mainly deposited in marine, coastal and estuarine environments, hence a predominance of fossils are associated with these palaeo-environments. Table 2a above lists the geological units and their associated fossil assemblages, whilst a palaeo-sensitivity map is provided in Map 7.

Important geological sites include:

- The Western Shores of Lake St Lucia, which are rich in well-preserved marine fossils including giant ammonites.
- More than 100 species of marine fauna are contained in the limestones exposed at Lister's Point and Hell's Gate on the Nhlozi Peninsula. Of particular importance are the fossilised coral forms that are preserved in their growth positions.
- A narrow band of fossil beds around the Nibela peninsula.
- Bhangazi berm between Lake Bhangazi and the Mfabeni Swamp.

2.1.5 Geomorphology

Geomorphology is the study of earth processes, which create landforms, which in turn combine to form landscapes (Tooth and Viles, 2014). The landscapes in the Park are considered unique in terms of variety, origin and exceptional natural beauty. Nowhere else in South Africa, and in few places elsewhere in the world, can such diverse elements be found in such close proximity.

Three major contiguous geomorphic units are present within the iSimangaliso Wetland Park, viz:

- ❖ **The Lubombo Mountains**, formed by resistant Jozini rhyolites, which are one of the outstanding geomorphic features in the extreme west of the Park.
- ❖ **The coastal plain**, consisting of the gently undulating terrain at the base of the Lubombo mountains, sandy ridges, river-related systems and associated lakes and pans interspersed with relict dune cordons,
- ❖ **The coast** and its associated marine and estuarine environments and offshore continental shelf.

Nine landforms have been identified for the Maputland area (Botha, 2015). The maps provided in Map 8 (topography) and Map 9 (landform) provide context.

1. The **Lubombo Mountains** form a narrow ridge, reaching up to 650 m AMSL and extending approximately 750 km north-south. The Lubombo Mountain ridge is approximately 16 km at its widest in Maputland, narrowing to approximately 7 km further south. The section of Lubombo mountains within the Park are the less precipitous eastern slopes; highest point within the Park is Khombe Peak (464 m) (KZNNCS, 1998). The Usuthu, Ngwavuma, Phongola and Mkhuze Rivers transect the ridge forming impressive gorges. Differential weathering between the softer marine sediments and the harder volcanic have produced lower elevation foothills to the east (Botha, 2015).
2. **Marine Rocks** are exposed in low cliffs along the western edge of False Bay, around the Nibela Peninsula and Hell's Gate on the Nhlozi Peninsula. Marine fossils, such as ammonites, are well preserved in these outcrops. Exposure is limited due to much of these rocks being covered by younger sediments (Botha, 2015).
3. The **Uloa/Umkwelane Pliocene Shoreline** - consists of fossiliferous marine limestone and weathered dunes. This strandline, forming an approximate 45 m high ridge, is exploited by the Phongola River downstream of Jozini (Botha, 2015).
4. The **Tshongwe-Sihanwane Megaridge** forms an approximate 15 km sand ridge, extending north from the Mkhuze River to the Tembe Elephant Park and from the Phongola River in the west to the Muzi Swamps in the east. This megaridge is the remnant of a coastal dune field landscape. The sand forming the megaridge supports the endemic species of the sand forest (Botha, 2015).
5. **Kwambonambi Formation Parabolic Dunes and Interdune Wetlands** - located to the east of the Megaridge is the complex wetland system of the Muzi channel. Aeolian sand from older dunefields was remobilised during the last glacial maximum as the groundwater table dropped. Subsequent icecap melt resulted in rising of the groundwater table and flooding of interdune areas, forming peat swamps and freshwater lakes (Botha, 2015).
6. **Forested Composite Coastal Barrier Dunes** extend north from Cape St Lucia, formed by a complex history of sand accretion. These dunes are largely stabilised by coastal forests (Botha, 2015) and are amongst the highest in the world.
7. **Polygenetic Coastal Lakes** were formed by cyclic glacioeustatic sea level fluctuations and dune development. Sea levels were lower in the past 2 Ma than current sea level. A marine transgression circa 18 ka gradually inundated the lake embayment's. Barrier dunes and beach spit development subsequently cut off marine influence to the lakes. Current lake levels were achieved within the last 1000 years (Botha, 2015). Lake St Lucia is the biggest coastal lake in the country, with "The Narrows" functioning as an intermittent link to the sea]

8. **Wetland Landscapes** form a topographic contrast between high coastal barrier dunes and low-lying wetlands. The wetland systems are feeders to the lakes. Many of the smaller lakes have limited catchment areas and groundwater base flow is a large contributor (Botha, 2015).
9. **Coastline and Continental Shelf Landforms** are largely controlled by beach/aeolian rock in the intertidal zone, prevailing winds, longshore currents, and the lack of major rivers. The occasional outcrops of beachrock and aeolianite form headlands that create log spiral bays to their north (downdrift side). Sea level changes over time are the primary driver behind the geomorphic features of Maputuland and coastal barrier dunes/ beach rock formations offshore on the continental shelf formed the present-day patch reefs. The continental shelf is also incised by deep, steep sided submarine canyons which form important habitats for species such as Coelacanth (Botha, 2015).

In addition, rivers are a major geomorphological feature; their role is expanded in the geohydrological section.

2.1.6 Soils

Soils in the Park consist of lithic soils in the west at the base of the Lubombo Mountains and ferruginous soils in the east. The lower lying areas have calcimorphic soils in the west and vertisols in the east (refer Map 10). The Park soils consist of Arenosol, Fluvisols, Gleysols, Leptosols, Luvisols, Phaeozems and Vertisols Soil Groups (See Table 2b and Map 10 for details). From Sodwana Bay north to Kosi Bay the dominant soils order is Arenosols. Ozabeni and the Wilderness is most underlain by Arenosols with Gleysols and Vertisols. Mkhuze Game Reserve is underlain by Arenosols, Fluvisols, Leptosols, Luvisols, Phaeozems and Vertisols. Arenosols predominate the soil groups in the St Lucia area followed by Fluvisols, Gleysols, Luvisols and Vertisols.

Table 2b: Soil Group characteristics and agricultural potential (after FAO, 2015).

Code	Soil Class	Soil Group	Hectares	Percent	Description	Agriculture Potential
ARa	Albic	ARENOSOLS	120 846	59.7	Arenosols - sandy-texture soils, low in humus. Lack subsurface clay accumulation. Excessive permeability and low nutrient content.	Serves best as grazing land. Cultivation challenging. Needs irrigation.
ARg	Gleyic	ARENOSOLS	19 316	9.5		
ARh	Haplic	ARENOSOLS	1 122	0.6		
FLe	Eutric	FLUVISOLS	7 593	3.8	Clayey soils deposited by rivers. Alluvium.	Can be used for cultivation but a risk for iron and hydrogen sulphide development over time.
GLe	Eutric	GLEYSOLS	5 627	2.8	Soils formed under waterlogged conditions.	Very wet. Mainly rice.
LPq	Lithic	LEPTOSOLS	6 106	3	Thin soils composed mainly of gravel.	Natural vegetation.

LVf	Ferric	LUVISOLS	6 998	3.5	Mixed sand and clay High nutrient content and good drainage.	Wide range of crops and trees.
PHh	Haplic	PHAEZEMS	336	0.2	Humus rich soils.	Highly arable with many crop options.
VRe		VERTISOLS	32 056	15.8	Vertisols contain at least 30% of its content as clay. Typically found on level or mildly sloping topography. Climates with distinctive wet/dry seasons. High in nutrients.	High clay content makes these soils poorly suited for cultivation.

Between Arenosols and Vertisols 85.6% of the land in iSimangaliso is unsuitable for long term cultivation with the main constraints being low nutrient sandy soils or clay-rich poorly drain soils. Of the remaining soil groups only about 4% is arable (approximately 7 900 ha).

2.1.7 Hydrology and Geohydrology

Hydrology and geohydrology are crucial to understanding the Park's many aquatic habitats. These habitats include major rivers and their floodplains, swamps, coastal lakes and estuaries, and smaller freshwater wetlands and pans which occur throughout the Park. Most of the major hydrological features in the Park are illustrated in Map 11 (Appendix 3).

A number of rivers flow into the Park, many of them draining into Lake St. Lucia. The uMfolozi and uMkhuze Rivers are the largest of these rivers, both of which have a significant portion of their catchments outside of the Park boundaries (Map 12). The smaller rivers and streams entering and within the Park are largely seasonal, being reduced to isolated pools during the dry months. A number of pans and swamps occur throughout the Park (refer Map 13). Some of these are part of river and lake systems, while others form as a result of the perched water table.

There are two types of coastal lake systems in the Park: estuarine-linked lakes (St Lucia, Kosi and Mgobozeleni) and freshwater lakes (Sibaya, Bhangazi North and Bhangazi South). The estuary functional zones, in relation to the terrestrial and marine park areas, are provided in Map 14.

❖ Lake St Lucia

Lake St Lucia is the “flagship” feature of the park – it is the largest estuarine system in South Africa and on the African continent (Begg, 1978). Sediment accumulation from river inflow has produced a shallow lake (average depth <1 m), in contrast to the deeper coastal lakes of the Sibaya and Kosi systems. Fresh water inputs are derived from stream-flow, rainfall and dune seepage and these inputs determine salinities in Lake St Lucia, which are highly variable in response to variations in rainfall and run-off. Evaporative water loss exceeds inputs from direct rainfall, even in years of average or above-average precipitation. Water movement between the St Lucia lake and estuary is restricted by “The Narrows”. There are five rivers providing freshwater inputs to the Lake St Lucia system; these include the uMkhuze (catchment approximately 6 000 km²), Hluhluwe (catchment approximately 1 000 km²), Mzinene (catchment approximately 800 km²), Nyalazi (catchment approximately 7 000 km²) and the uMfolozi River (catchment

approximately 10 000 km²). The uMkhuze River is a major source of freshwater in the north and carries large volumes of mud to the lake. The uMfolozi (one of KZN's largest rivers) enters the sea to the south of St Lucia town at Maphelane. The Dukuduku and Futululu forest areas also play an important catchment role in supplying fresh water to the lake system.

Although artificially separated from Lake St Lucia since 1952 to prevent the inflow of suspended sediment into the main St Lucia system, the link between the uMfolozi River and Lake St Lucia was re-established under a new management approach in 2012 and Lake St Lucia and the uMfolozi River mouth have since been managed as one system. This is described in more detail in Chapter 3.3.1.10.

❖ **Kosi System**

The Kosi System comprises a chain of several distinct lakes (Amanzimnyama, kuNhlange, kuMpungwini and Makhawulani), connected to each other by narrow shallow channels, and then connected to the sea via the Kosi Bay Estuary. The estuary mouth is generally open throughout the year. The drainage system, which sustains the lakes and estuary, is ill-defined because of the numerous pans, swamps and marshes which surround it. There are no large rivers entering the system. The lakes are fed by streams that drain extensive swamp areas in the surrounding catchment and which provide fresh water to the system. There is a salinity gradient from a freshwater state in the south to that of sea water in the estuary (KZNNCS, 1998).

❖ **Mgobozeleni**

Mgobozeleni is the smallest of the three estuarine lake systems and includes the Mgobozeleni and Shazibe lakes, which are connected via a narrow channel which flows through an extensive swamp forest and reed swamp to the sea at Sodwana. The estuary mouth is highly mobile and migrates, depending on rainfall and swell regime.

❖ **Lake Sibaya, Lake Bhangazi North and Lake Bhangazi South**

These freshwater lakes are located in areas of low relief in large depressions on the landward side of the coastal dune barrier. They are fed from relatively small catchments and maintained largely from ground water seepage. The lakes are nutrient poor because of the predominantly sandy, leached nature of their substrates (KZNNCS, 1998). Lake Sibaya is the largest natural freshwater lake in South Africa and is deep (max depth 43 m) with a corresponding low surface area to volume ratio. Lake Sibaya and Bhangazi North have no outlet (Jackson, 1992), whereas Bhangazi South drains southwards into Lake St Lucia (KZNNCS, 1998).

Groundwater

The groundwater aquifer of the Maputoland coastal plain is classified as a coastal aquifer and is considered the largest primary aquifer in South Africa (Meyer et al., 2001). The base of the primary aquifer is formed by the silt- and clay-rich sediments of the Cretaceous period rocks. This terrestrial aquifer is under threat due to the risk posed by seawater intrusion, either by over-exploitation or sea level rise (Ferguson and Gleeson, 2012).

There is a declining gradient in groundwater resources, and the depth thereof, from east to west, as determined by the rainfall and underlying geology. Mean annual run-off varies between 200-500 mm pa in the southern coastal strip, 100-200 mm pa in the northern coastal area and 20-50 mm pa in the western portion (Bailey & Pitman, 2015). Average groundwater resource potential shows that the eastern portion of the Maputoland Coastal Plain has 25 000 – 50 000 m³/km² pa and the western portion 6 000 – 15 000 m³/km² pa (Map 15).

Aquifer recharge is > 100 mm pa in the east to 5 -10 mm pa in the west (Bailey and Pitman, 2015), or varying between 18% and 5% from coast to inland. (Meyer et al., 2001) Average depth to groundwater varies from < 5 m along the coastline to approximately 40 m along the Lubombo range. Generally the hydraulic head of the coastal aquifer is seaward (Meyer et al., 2001).

The two primary porosity aquifers present on the Maputaland coastal plain, which influence the Park's aquatic habitats are:

- ❖ The shallow, unconfined aquifer or perched water table in areas of the Park receiving rainfall in excess of 800 mm pa, and which is present due to the high permeability and infiltration of the KwaMbonambi sand cover of the coastal plain. Due to the high-water table (1 – 6 m) this aquifer is fairly extensively exploited. An example is the Mgobozeleni catchment, which is a groundwater aquifer fed entirely by rainwater (Taylor, et al., 2016).
- ❖ The deeper confined aquifer of the Uloa and Mkwelane Formations which holds a significant amount of groundwater. The Uloa Formation is seen as a promising aquifer in the area but is not present everywhere on the Maputaland Coastal Plain. Little is known about how this aquifer is recharged and it is not greatly utilised.

There is a delicate balance between the ecosystems and the groundwater regime and care must be taken to avoid over- exploitation of the coastal aquifer, as this will negatively affect the ecosystems (Meyer et al., 2001; Grundling, et al., 2014). Regional pollution from agricultural practises (which introduce nutrients) and denser settlements with inadequate sewage disposal pose a risk to aquifers. Wastewater and sewerage effluent from inappropriate systems can pollute the upper aquifer, but is less of a risk to the deeper aquifers (Meyer et al., 2001).

2.1.8 Ecosystems

The fifteen interlinked ecosystems⁹ (Figure 4) found in the iSimangaliso Wetland Park provide habitat for a significant diversity of African biota, including a large number of rare, threatened and/or endemic species. These fifteen ecosystems are not unique in and of themselves, but their combination within a single protected area is certainly unusual globally and unique in the South African context. The ecosystem can be grouped into three broad biomes¹⁰, viz. marine, terrestrial and aquatic.

1. **The marine biome** is characterised by a warm sea and includes dune, rocky shore, rocky reef, coral reef and pelagic ecosystems. Importantly, iSimangaliso houses the southernmost extension of coral reefs in Africa, submarine canyons that host the Coelacanth and long sandy beaches utilised by Loggerhead and Leatherback turtles for nesting. Two distinct marine biogeographic regions are represented in the Park, with an important break at Cape Vidal:
 - ♦ Maputaland Sub-province of the Tropical Indo-West Pacific Province (Cape Vidal Point northwards to Ponta do Oura). Many of the species in this region are not found elsewhere in South Africa.
 - ♦ Natal Sub-province of the Sub-tropical East Coast Province (South of Cape Vidal Point to Cape St Lucia), with many endemic marine species.

⁹ A biological community of interacting organisms and their physical environment.

¹⁰ A large naturally occurring community of flora and fauna occupying a defined habitat.

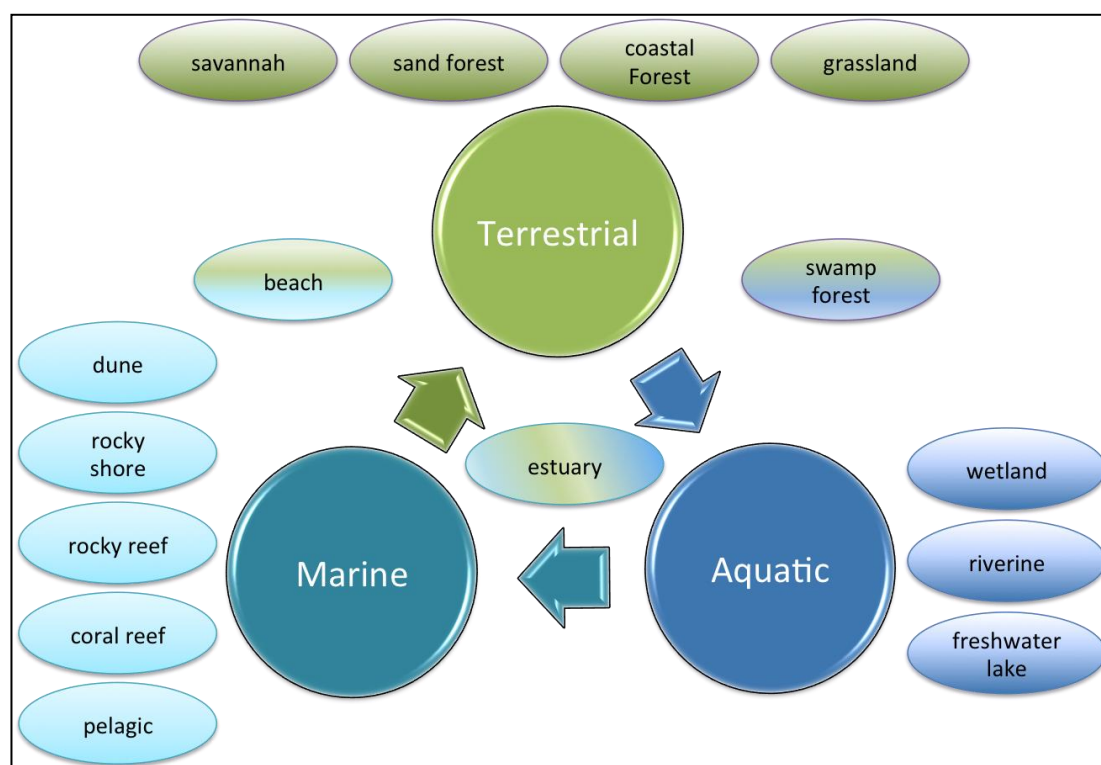


Figure 4 The fifteen interlinking ecosystems of the iSimangaliso Wetland Park

2. **The terrestrial biome** includes savannah, sand forest, coastal forest and grassland ecosystems. On the eastern shores sub-tropical forests and grasslands dominate. On the western shores ancient shoreline terraces and dry savannah woodlands, thickets and sand forests occur on the higher lying ground between the coastal plain and the Lubombo Mountains.
3. **The aquatic biome** includes wetland, riverine, and freshwater lake systems. The freshwater lake systems consist of three lakes (Sibaya, Bhangazi North and Bhangazi South). The uMkhuze River supports swamp forest and the uMfolozi floodplain contains extensive reed and papyrus wetlands.

Three distinct ecosystems, viz. beaches, estuaries and swamp forest, cannot be classed as discrete biomes, but are strongly influenced by the dominant features or processes of two or more biomes. The estuaries (Kosi Bay, Mgobozeleni and Lake St Lucia) are shaped by a combination of terrestrial, freshwater, aquatic and marine processes and communities; while beaches and swamp forests are a product of land-sea and land-water interactions, respectively. The many ecological linkages between these ecosystems have attracted research interest in a number of geomorphological and biological processes.

2.1.9 Vegetation

The Park is located at the southern end of the Maputaland Centre¹¹ of Plant Endemism, part of the Maputaland-Pondoland-Albany biodiversity hotspot. The vegetation types and sub types recognised according to the classification system of Mucina and Rutherford (2006) are listed hereunder. Map 16 provides the biomes and Map 17 the vegetation types.

SAVANNAH BIOME

- ❖ Lowveld Bioregion.
 - Southern Lubombo Bushveld
 - Tembe Sandy Bushveld
 - Western Maputaland Sandy Bushveld
 - Western Maputaland Clay Bushveld
 - Makatini Clay Thicket

INDIAN OCEAN COASTAL BELT

- ❖ Maputaland Coastal Belt
- ❖ Maputaland Wooded Grassland

FORESTS

- ❖ Zonal and Intrazonal Forests.
 - Northern Coastal Forest
 - Sand Forest
- ❖ Azonal Forests.
 - Lowveld Riverine Forest
 - Swamp Forest
 - Mangrove Forest

AZONAL VEGETATION

- ❖ Seashore Vegetation.
 - Subtropical Seashore Vegetation
- ❖ Eastern Strandveld Vegetation.
 - Subtropical Dune Thicket
- ❖ Freshwater Wetlands.
 - Subtropical Freshwater Wetlands
- ❖ Inland Saline Vegetation.
 - Subtropical Salt Pans

The iSimangaliso Wetland Park Rare, Threatened & Endemic Species Project lists 2,185 vascular plants within the Park, representing 736 genera. 46 species are endemic. For many plants, this is the southernmost extent of their distribution range. The area provides the ideal habitat for mangrove swamps and 6 species of mangrove tree have been recorded. The Futululu area in the south is reportedly the best remaining example of coastal

¹¹ The core area of the Maputaland Centre is defined as that part of southern Mozambique and north-eastern KwaZulu-Natal bounded by the Nkomati and Limpopo Rivers in the north, the Indian Ocean in the east, the western foothills of the Lubombo Mountains in the west and the St Lucia Estuary in the south.

lowland forests. There is also a high diversity of marine vegetation: 325 seaweed species have been recorded, representing more than 78% of the total seaweed species for the KwaZulu-Natal coastline.

Alien vegetation includes *Casuarina equisetifolia*, or “beefwood”, in the coastal areas. *Casuarina* is regarded as an effective stabiliser of mobile sediments and was historically planted to maintain access routes across dunes, establish windbreaks and shade, and to alleviate concern over the impact of mobile dunes on water resources (Bundy, 2015). The pine and eucalyptus plantations that occupied the Eastern shores have been removed and replaced with grassland and wetland, whilst restoration of the Western shores is ongoing (refer Chapter 3.3.1.8). Other alien vegetation species typically found in KZN such as *Lantana camara*, *Chromolaena odorata* bugweed, castor oil bush, etc are present in some areas, as well as aquatic species such as water hyacinth *Eichhornia crassipes* and *Pistia stratiotes*. More detailed information is presented under the threats Chapter 3.3.1.12.

2.1.10 Fauna

The animals within iSimangaliso can be divided into six groups:

1. Invertebrates (Terrestrial and Aquatic).
2. Fish.
3. Amphibians.
4. Reptiles.
5. Birds.
6. Mammals.

Species totals provided below are as listed in the iSimangaliso Wetland Park Rare, Threatened & Endemic Species Project and on the iSimangaliso website, <https://isimangaliso.com/useful-information/animals/>. Note that species lists are always being added to, as new species are found. These are updated to the Ramsar Sites Information Service (RIS) lists. Alien faunal species are addressed in the threats Chapter 3.3.1.12.

2.1.10.1 Invertebrates

Terrestrial invertebrates include 282 butterflies, 52 fruit chafer beetles, 38 dragonflies and damselflies, 228 spiders, 5 scorpions and 41 terrestrial molluscs as well as millipedes. There is a high diversity of marine molluscs on the coral reefs, in rock pools and off the shore platforms, with 812 species recorded. Extensive beds of *Pinna bicolor* occur in the bioclastic dune troughs near Sodwana Bay (Ramsay et al., 1996). The coral reefs host 129 hard and soft coral species and 20 species of sponges as well as species typical of inshore and coral reef environments, e.g. sea anemones, hydroids, crustaceans, etc. Coral reefs in South Africa are solely confined to the iSimangaliso Marine Protected Area (northern KwaZulu-Natal).

2.1.10.2 Fish

A total of 55 freshwater fish and 212 estuarine fish are listed within the Park area. The St Lucia and Kosi estuaries are important nursery grounds for juvenile marine fish, prawns and crabs.

The warm, clear offshore marine environment hosts a variety of demersal and pelagic fish species (Guastella, 2002). The highest species diversity of fishes along the South African coast is found within the (then) St Lucia and Maputaland marine reserves (Beckley & Pradevand 1999). Most fish species are of the Indo-Pacific ichthyofauna and are typically West Indian Ocean in character, however, a number of fish species of Atlantic Ocean origin are also present. A total of 992 marine fish species have been recorded offshore of iSimangaliso, of which 399 are reef species. Approximately 16% of fish species are endemic to the area (Smith, 1980). The most

notable fish is the Coelacanth, which is found in the deep marine canyons. Another important species is the Brindle Bass, the largest reef-dwelling fish in the world. On the other end of the scale, the smallest fish species is most likely the Sodwana Bay pygmy seahorse, which was recently (May 2020) discovered off Sodwana Bay. Migratory pelagic gamefish utilising the offshore Agulhas Current are common in summer, including six marlin species. The inshore areas are also occasionally visited by whale sharks during summer and a number of shark species are known to frequent inshore and offshore areas, including aggregations of the Ragged Tooth Shark at certain locations.

2.1.10.3 *Amphibians*

A total of 50 Amphibians are listed within the Park of which two are listed as Red Data species. The Park is the northernmost limit for the distribution of the Natal leaf-folding frog and Pickersill's reed frog.

2.1.10.4 *Reptiles*

162 reptiles have been recorded in the Park, including 53 snake species. iSimangaliso is the only protected area where Gaboon Adders are found and Black Rock is the only known location of the Bouton's snake eyed skink in South Africa. There are 12 species of Testunids, i.e. turtles and tortoises (five marine, four freshwater and three terrestrial species). The northern section of the park provides nesting beaches for loggerhead turtles and the critically endangered leatherback turtles; these are the only turtle nesting beaches in the country. Turtle nesting and hatching takes place at night during the summer months. In addition, green, olive ridley and hawksbill turtles are occasional visitors to subtidal habitats in the Park. iSimangaliso also provides habitat for the southernmost-recorded breeding population of the yellow-bellied hinge terrapin.

The St Lucia estuarine system is home to the second largest breeding population of Nile Crocodile in South Africa, one of the last two remaining viable breeding populations in the country. Crocodiles frequent the rivers, lakes and estuaries, in particular the lower reaches of the uMfolozi, St Lucia Lake and Lake Bhangazi and breed during summer. There are an estimated 1 500 crocodiles of greater than 2 m length in the St Lucia estuarine system alone. Other reptiles include water monitors and 42 species of lizards, skinks, agamas, geckos and chameleons, including the endemic Setaro Dwarf chameleon.

2.1.10.5 *Birds*

A total of 525 terrestrial and water bird species have been recorded in the Park area. There are 47 subspecies of birds that are endemic to the Maputaland region and four South African endemic species. It is one of the principal avifaunal breeding areas in South Africa as 339 bird species (62% of the total list) are known to, or are considered to breed, in the Park. Lake St Lucia is the most important estuary in terms of the numbers and diversity of water birds, which it supports. The estuary is a very important staging area with more than 50% of all water birds in KwaZulu-Natal feeding, roosting and nesting in this estuary. It is the breeding area for several birds, which are rare or have limited distributions in South Africa (iSimangaliso Wetland Park Authority, 2016). Waterfowl include flamingos, pelicans, and waders, along with breeding colonies of pelicans, yellow-billed storks, herons, Caspian terns, spoonbills and red-winged pratincoles, as well as the African fish eagle.

2.1.10.6 *Mammals*

A total of 110 terrestrial and 32 marine mammals are found. iSimangaliso hosts the Big 5 (Elephant, lion, buffalo, leopard, rhinoceros) and has 32% of the Chiroptera (bats); 51% of the Carnivora (flesh eating mammals); 53% of

the Artiodactyla (animals with hooves); and 21% of the Rodentia (rats, mice, porcupines and other rodents) of those that occur in southern Africa. Notable species include:

- ❖ Cetaceans: an abundance of dolphins and migratory whales, in particular the Humpback whale during winter months. The occasional Orca has been observed in recent years off Sodwana.
- ❖ Large herds of hippopotamus are found in the water and on the reed banks of Lake St Lucia and the Kosi Lake system.
- ❖ African elephants and rhino in uMkhuze and the Western Shores of Lake St Lucia.
- ❖ Populations of the endangered African wild dog, hyena and lions in the uMkhuze section of the Park.
- ❖ Populations of African leopard.
- ❖ The endangered Samango monkey
- ❖ Various hoof-footed animals, such as buffalo, giraffe, zebra and other antelope species
- ❖ Tonga squirrels and banded mongoose

2.2 Socio-Economic Environment

The region surrounding iSimangaliso was previously divided into parcels of the former KwaZulu homeland within the former province of Natal, and different legislation, policies and development parameters applied to each. This contributed to distinct socio-economic and demographic patterns which continue to be reflected in the area. Such patterns include:

- ❖ Land in the former Natal is generally held in terms of freehold tenure and is well developed in terms of physical and economic infrastructure.
- ❖ The former KwaZulu is, in contrast, generally poorly developed and falls under a traditional, communal land tenure system (Maps 18 and 19).
- ❖ Approximately 18% of the iSimangaliso Wetland Park (south of the Coastal Forest Reserve, including Mabibi and Rocktail Bay) falls under the Ingonyama Trust (refer Appendix 1, Table 3).

Large differences exist in access to services between urban and rural areas, with the less developed rural areas experiencing far higher backlogs in the provision of infrastructure and services. It is also evident that while there have been interventions to address infrastructure and service backlogs throughout the area of influence of iSimangaliso, it is likely that there have been more interventions surrounding the southern sections of the Park compared to the more rural northern sections.

The iSimangaliso Wetland Park falls mostly within the uMkhanyakude District Municipality, ranked as the second poorest and most deprived municipality in the country, whilst. The southern section borders on the Mfolozi Local Municipality, which forms part of the Uthungulu District Municipality. According to the 2016 Community Survey, the surrounding uMkhanyakude district has a population of 689 090; however if the population of the Mfolozi Local Municipality in the south is included, the total is approximately 833 453. Over 80% of households live below the poverty line and only an estimated 42% of the economically active population is formally employed. Of the population's citizens who are 20 years and older, 57.3% have matric and 3.5% have higher education. HIV prevalence is between 13 and 15%. Much of Umkhanyakude is characterised by remote but densely settled and poorly serviced communities, and in this context, the following development inputs are urgently needed: poverty alleviation, job creation and local economic development; water and sanitation, electricity, health services, roads and public transport, infrastructure and social services. High dependency ratios, HIV/AIDS prevalence, numbers of orphaned children, unemployment and social grant dependency make for highly vulnerable communities. The

social impacts of migrancy remain strong – many households are female-headed or headed by orphaned children.

In addition, the area has a long history of poverty, neglect and dispossession, stemming as far back as the creation of ‘native reserves’ during the colonial period, and later, the establishment of ethnic bantustans, or homelands by the Apartheid Government. These periods were attended by widespread and very significant loss of land and the start of the migrant labour system, through which the absence of men, and their inability to contribute to economic development at home, forced poverty and stagnation upon rural areas.

In efforts to consolidate the homelands of the former Apartheid State, the most recent forced population removals in what was then KwaZulu began in the 1960s, including those of large numbers of farm workers following the abolition of labour tenancy, and persisted up until as recently as 1983. During this period, much land was lost to conservation, military areas, and commercial forestry plantations. Significantly, given the population of KwaZulu-Natal, land allocation has led to small land holdings, and low-income generation from agriculture. The acute land degradation in former homeland areas is partly a legacy of the country’s Apartheid history, which saw the relocation of subsistence farmers to ‘homeland’ areas often characterised by low agricultural potential. The Surplus People Project estimates that in Natal between 1948 and 1982, 745,500 people had been removed from their land. As a result, individuals in many of iSimangaliso’s neighbouring and land claimant communities are able to clearly recall the trauma of these events.

Against this backdrop of disruption and forced migration, the people living in and around iSimangaliso adopt complex livelihood strategies, underpinned by networks of migrant labour wage remittances, state welfare support in the form of pensions, child grants and disability grants, and small-scale agriculture and forestry. Savings groups, kinship networks and communities based on church membership provide avenues through which people access state employment, social security, and possible employment in the mining, agriculture, and tourism sectors, amongst others. State investments in local infrastructure and public health, especially in the form of a comprehensive ARV programme, have made a demonstrable difference to people’s lives.

The predominant land uses within the municipalities surrounding the Park include agriculture and commercial timber plantations, conservation/eco-tourism and settlement. The patchwork of land uses in these surrounding areas reflects the long history of dislocation of Black Africans from their land, afforestation for the timber sector, and land given over to conservation. Densifying settlements in former bantustan land, now under customary authority, can be seen along the edges of the Park (Map 20).

Post-1994 transformation has introduced further changes in the social conditions of rural people in Umkhanyakude, many of which are strongly related to gender. A recent study of the gendered pattern of migration in rural South Africa shows extraordinarily high levels of mobility in a population of adults living in uMkhanyakude. Over half of female out-migrations were to nearby rural areas and women were seen to undertake more local, shorter-term migration than men and to predominate in the rural-rural migration flow.

As a result of their growing participation in the formal economy, women have become increasingly mobile, maintaining social connection to their homes, but living and working elsewhere, with their attendant ability to send remittances home becoming increasingly important. Marriage in Umkhanyakude is also declining, and the custom of women migrating to marry may be changing. South Africa’s marriage rates are uniquely low in the region and probably declining, and the structure and composition of households are changing. Demographic and

Health Surveys for South Africa found that only 34% of women of reproductive age were married in 1998, declining to 28% in 2003. Analysis of the population in this area showed that the proportion of those that had never married increased continuously from 2000 to 2016, with 75% of women never having been married. At the same time, women are participating in the formal labour market in greater numbers than ever before.

Other traditional power relations between men and women are also in flux, as the authority of Chiefs, fathers, and husbands to govern the movement of women, and to enforce traditional gender roles and economic activities declines. In the past, women's roles in childcare and farming reduced the likelihood of migration, as did marriage. However, the migrant labour system of the past is thought to have destabilised gender relations, family structures and customary ideas about marriage, while the presence of older women in rural homesteads combined with the absence of older men and husbands, is now facilitating the mobility and independence of working-age women.

2.2.1 Population

Population data for each of the Local Municipalities neighbouring the Park are provided in Tables 3.1 and 3.2. This is supplied for the most recent National Statistics South Africa Census in 2011 and, where available, an interim Community Survey in 2016. Settlement density around the Park is indicated in Map 21. While there is a high number of settlements around the Park area (compare with Map 20), the highest population densities are mostly around the commercial centres and their immediate surrounds, e.g. Mtubatuba, St Lucia town, Mbazwana, Manguzi. The area is experiencing high population growth rates, which places increasing demands on local infrastructure and services, e.g. the Mgobozeleni area has experienced an exponential population growth rate since the 1960's (Taylor, et al., 2016). Following the end of apartheid in 1994, a large influx of people returned to the area, however many were unemployed, resulting in further societal problems. Added to this is the influx of foreign nationals moving into the area from Mozambique and eSwatini (formerly known as Swaziland). In terms of the local municipalities, Mtubatuba has experienced the highest population growth rate.

In terms of gender ratio (Table 3.3), more women reside in the area than men – this is consistent across all municipalities and is related to a greater proportion of men seeking work elsewhere. Figure 5 provides a breakdown of the gender ratios in the all local municipalities surrounding the Park (i.e. all local municipalities in Umkhanyakude District Municipality and Umfolozi Local Municipality) for 5-year age groups (data from StatsSA Census 2011). The data shows a normal distribution, with high population numbers in the younger age groups and lower population numbers with increased age. From birth up to 19 years old (end of schooling life) the ratio of male:female is approximately the same (in fact there are slightly more males in the 0-4 and 10-14 year age groups), whereas from 20 years onwards there are consistently less males than females – this is related to more males than females venturing away from their households after schooling is completed and once adulthood is reached to seek employment opportunities or study. Those women who remain in the area are less likely to have any formal employment – thus there is a need to provide local employment opportunities for the women. Note also the higher proportion of females than males (almost double) in the older age classes

Table 3.1 2011 Demographic data for neighbouring Local Municipalities¹². Population growth rate is per annum.

Local Municipality	District Municipality	Population	Area (km ²)	Population Density (No. of people/km ²)	Percentage of Population in DC27/DC28	Population Growth Rate (2001 – 2011)
KZ 271: uMhlabuyalingana	DC 27: uMkhanyakude	156 736	3 621	43,29	25,04%	0,9%
KZ 272: Jozini	DC 27: uMkhanyakude	186 502	3 442	54,18	29,80%	0,1%
KZ 273: Big Five/False Bay ¹³	DC 27: uMkhanyakude	35 258	2 487	14,18	5,63%	1,1%
KZN274: Hlabisa	DC 27: uMkhanyakude	71 925	1 564	46,00	11,50%	0,4%
KZ 275: Mtubatuba	DC 27: uMkhanyakude	175 425	1 970	89,05	28,03%	1,8%
KZ 281: uMfolozi	DC 28: King Cetshwayo	122 889	1 396	88,00	13,54%	1,4%

Table 3.2 Comparison of 2011 and 2016 Demographic data for the surrounding uMkhanyakude District and its Local Municipalities¹⁴ and uMfolozi Local Municipality

District and Local Municipality	uMhlabuyalingana	Jozini	Big 5 Hlabisa	Mtubatuba	Total uMkhanyakude	uMfolozi (King Cetshwayo)
2011	156736	186502	107183	175425	625846	122 889
2016	172077	198215	116622	202176	689090	144 363
% growth (2011-2016)	9.8	6.3	8.8	15.2	10.1	17.5
% growth (per annum)	2.0	1.3	1.8	3.0	2.0	3.5

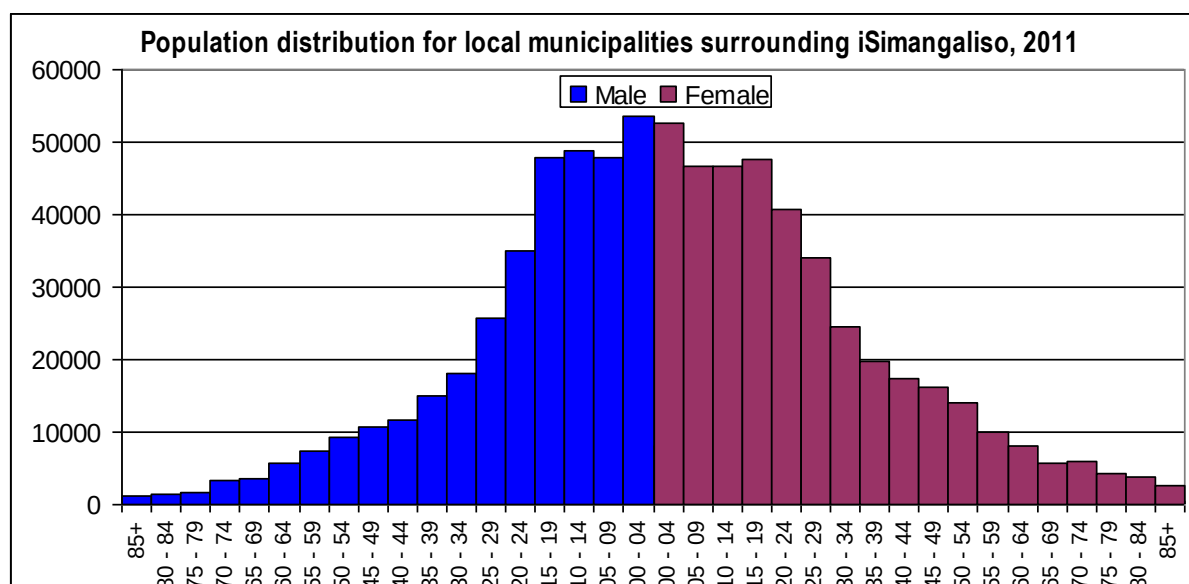
¹² Data are from the 2011 National Census and were accessed from: Census 2011 Municipal Report – KwaZulu-Natal, Statistics South Africa. Pretoria: Statistics South Africa, 2012.

¹³ The Big 5 Hlabisa Local Municipality was established by the amalgamation of The Big 5 False Bay Local Municipality and Hlabisa Local Municipality on 3 August 2016.. The historic information for The Big 5 False Bay Local Municipality and Hlabisa Local Municipality as presented separately in Census 2011 is included here.

¹⁴ Data are from the 2016 Statistics South Africa, Community Survey.

Table 3.3 Comparison of male: female population for local Municipalities bordering the Park (StatsSA 2011 census)

Local Municipality	Male	Female	Total
582 KZN271: Umhlabuyalingana	71 766	84 957	156 726
583 KZN272: Jozini	86 112	100 383	186 495
584 KZN273: The Big 5 + 585 KZN274: Hlabisa	49 440	57 735	107 175
586 KZN275: Mtubatuba	81 312	94 110	175 425
Total uMkhanyakude DM	288 630	337 185	625 821
KZN281: Mfolozi	59 019	63 867	122 889

**Figure 5: Population distribution per 5-year age class and gender for all local municipalities in uMkhanyakude District Municipality and Mfolozi Local Municipality (Data source: StatsSA census, 2011).**

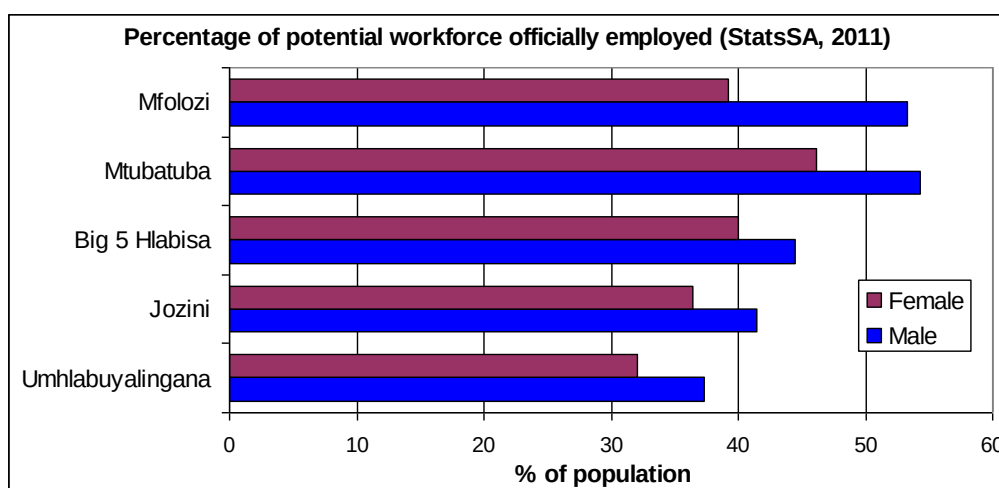
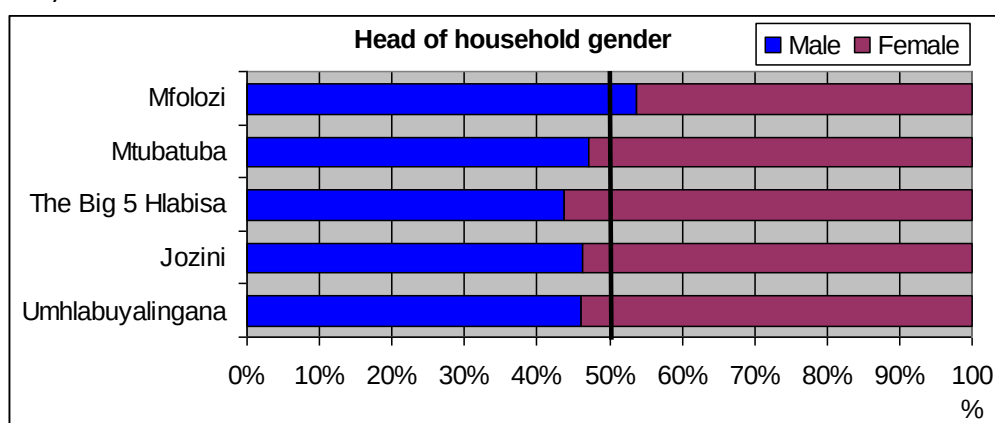
2.2.2 Employment & households

One of the critical challenges identified in the National Development Plan 2030 is the extremely high occurrence of unemployment amongst the youth of South Africa. The information depicted in Table 3.4 below reflects on the occurrence and characteristics of this phenomenon within the district. The age breakdown of the unemployed population in UKDM is similar to the overall figures for KZN. As much as 35.2% of the unemployed population is younger than 25 years of age with a further 34.9% between 25 and 34 years. This implies that more than 70% of the unemployed population is younger than 35 years of age (Integrated Development Plan Review, 4th Generation; 2018/2019).

Table 3.4 Comparison of percentage of population unemployed in KZN and within the uMkhanyakude District Municipality (StatsSA 2011 census).

Age category	15-24	24-34	35-44	45-54	55-64
Overall KwaZulu-Natal	35,3 %	35,7 %	17,0 %	8,8 %	3,2 %
uMkhanyakude District	35,2%	34,9 %	17,0 %	9,4 %	3,5 %

The employment rate (i.e. percentage of the total potential workforce, or population of working age) by gender per local municipality (Figure 6a) shows that more men are employed than women in all municipalities, however a greater number of households in the UKDM are headed by women (Figure 6b), placing additional financial stress on women in the district, as more men seek work elsewhere. In the Mfolozi municipality the opposite trend holds true, whereby more men head up the households, perhaps related to more work opportunities in that district – note the relatively higher employment rate amongst males. However, this must be considered against the backdrop that a large proportion of the population are dependent on this small workforce for income (apart from those on SASSA grants).

**Figure 6a Employment rate per local municipality surrounding the Park (Data source: Statistics SA, 2011 census).****Figure 6b Ratio of households headed per gender for each local municipality surrounding the Park (Data source: Statistics SA, 2011 census).**

However, a disturbing statistic is the number of households headed by the younger generation (Fig. 6c): child-headed households, some as young as 10 years of age, make up 2.7% of head of households; this is predominantly related to the premature mortality of parents from HIV-related illness. This statistic may increase with Covid-19. On the other end of the scale, many households are still headed by the aged, adding to the financial burden on this sector of society.

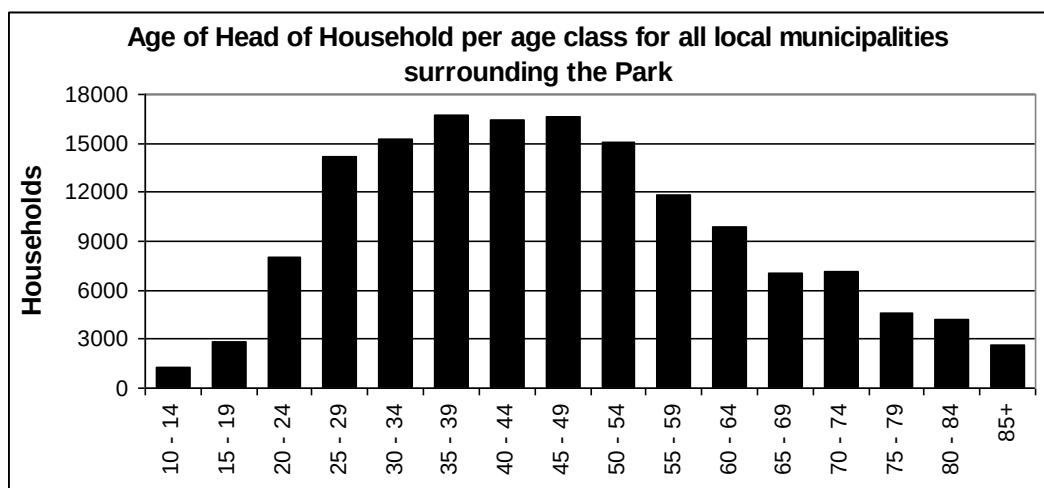


Figure 6c Age of head of households headed per age class for all local municipalities surrounding the Park (Data source: Statistics SA, 2011 census).

2.2.3 Land Use

The predominant land uses within the municipalities surrounding the Park include the following (refer also Chapter 3.3.1.9):

- ❖ Commercial agriculture and timber plantations.
- ❖ Conservation/eco-tourism.
- ❖ Settlement.
- ❖ Subsistence activities (agriculture, harvesting of natural resources).
- ❖ Mining.

2.2.4 Regional Infrastructure and Services

Generally, there is unequal provision of services in urban and rural areas, with less developed rural areas experiencing higher backlogs in the provision of infrastructure and services. This is not unique to the areas surrounding iSimangaliso but is common throughout much of South Africa (a legacy of Apartheid is that former homeland areas are less developed). While the current demand for the provision of infrastructure and services exceeds delivery, there have been improvements in the areas surrounding iSimangaliso.

❖ Education facilities

While there were initial improvements in access to education within the broader uMkhanyakude District Municipality (UKDM) area surrounding iSimangaliso, with the percentage of the population in the >20 year age group reporting 'no schooling' dropping from 46.3% in 2001 to 25.3% in 2011; this trend reversed in 2016 to 32.7%. According to the 2016 StatsSA community survey, 70.4% of the

population within the district between the ages of 5 and 24 are reported to be attending school. Numerous challenges still exist, many of which derive from the legacy of apartheid. Although the distribution of schools correlates with population distribution, the distances to rural schools, teacher pupil ratios, condition of facilities and training of teachers require further attention. Again, this situation is not unique to the communities surrounding the Park but is common to rural and former homeland areas throughout South Africa.

The below graph shows the trend in the percentage of individuals in the age group of 5-24 years that have received schooling in the UKDM, as provided by Census 2011 and CS 2016. The proportionate increase in percent of population educated in uMhlabuyalingana and Mtubatuba is offset by the relative decrease in Jozini and Big 5 Hlabisa. Overall, the number of individuals attending school in UKDM was fairly consistent, with a very marginal increase from 81.0 % in 2011 to 81.1 % in 2016.

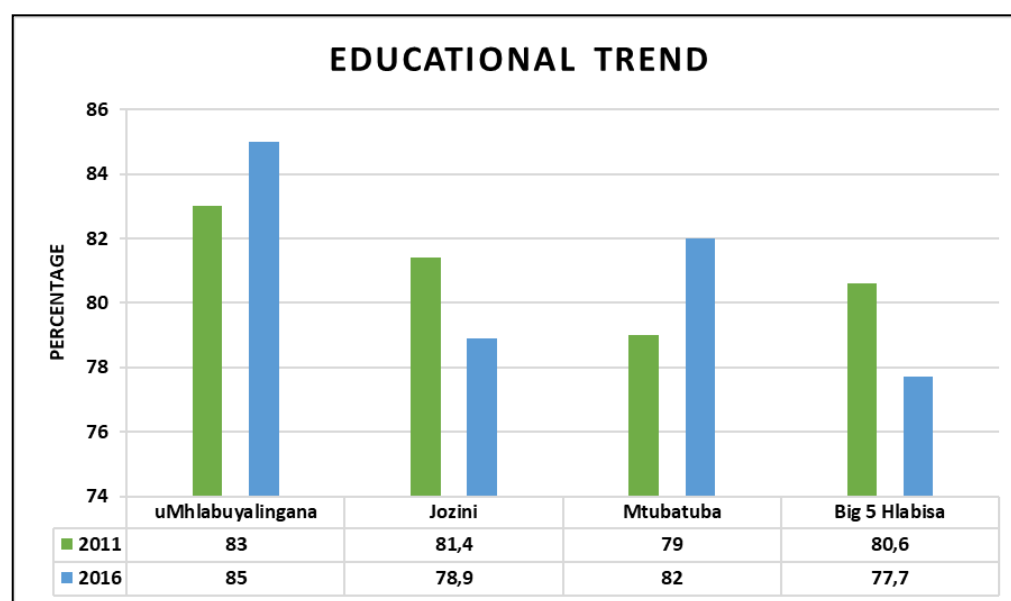


Figure 7a Percentage of population that have received education per local municipality within the uMkhanyakude District Municipality (Data source: KZN community survey, 2016, SASSA).

The results above indicate that out of 17 6663 residents residing in UKDM, an average of 32.7% have no formal education (no schooling). An average of 6.5% of residents has only received primary education and only an average of 3.5% attained a higher educational qualification. A relatively high number of people are receiving a secondary education but are unable to pursue higher level learning due to the poor economic situation in this district.

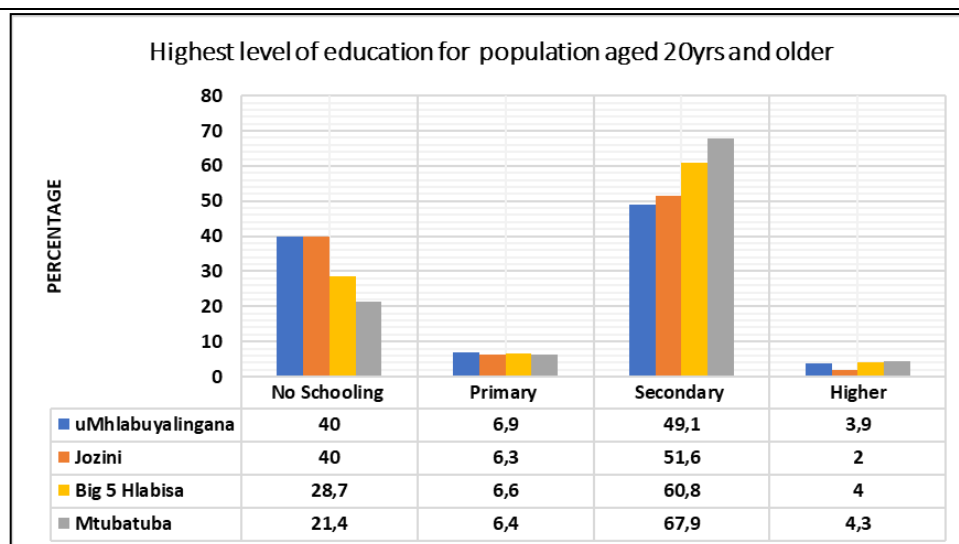


Figure 7b Highest level of education in the uMkhanyakude District Municipality (Data source: KZN community survey, 2016, SASSA).

❖ **Health facilities**

Table 4 provides a breakdown of the number of medical facilities available to residents surrounding the Park. Primary health-care facilities and services are considered a priority.

While there is access to district hospitals, there are no regional, central or other hospitals in the district. The situation in the Mfolozi Local Municipality (to the south of the Park) is similar, albeit that there is no hospital within the municipality, the closest being in Hlabisa, Richards Bay and Empangeni. While the majority of households may have access to health facilities, most facilities are under-resourced and oversubscribed due to large catchment populations. Access is also difficult due to poor roads and the high cost of transport. In addition, healthcare is also hampered by the intermittent and unreliable water and electricity supply in rural areas and a shortage of doctors.

Table 4 Number of healthcare facilities by level per Local Municipality 2016/17 (uMkhanyakude Health District Plan 2018/2019- 2020/2021, King Cetshwayo DM IDP Review, 2018-2022).

Sub-districts	Ward based outreach teams	Clinic	CHC	District Hospital	Regional Hospital	Central/ Tertiary Hospitals	Other Hospitals
Big Five Hlabisa	2	9	0	1	0	0	0
Jozini	6	18	1	2	0	0	0
Mtubatuba	1	12	0	0	0	0	0
Umhlabuyalingana	1	18	0	2	0	0	0
uMfolozi	7	8	0	0	0	0	1
Total	20	65	1	5	0	0	1

There are no regional and tertiary hospitals in the district which means patients requiring specialist services must travel long distances to those services. This leads to long transfer times, due to the distance to be travelled, and means that extra demands are placed on ambulances, increasing the average time to fetch patients requiring transfer. This has led to life-threatening delays for patients requiring emergency transfers. There are 10 School health teams in the district, eight of which are still based in the hospitals. Fourteen ward-based outreach teams (WBOTs) have been deployed in the most deprived parts of the district; however, the district is not yet fully covered by WBOTs. The teams are challenged by a lack of transport, making it difficult to cover their allocated areas (uMkhanyakude Health District Plan 2018/2019-2020/2021).

❖ ***Social Development in the District***

The Department of Health works closely with Department of Social development and Education in the provision of disability grants and old age grants as majority of the community depend highly on these grants for basic survival within this district. It has been identified in the district health plan (2018-2021) that the district needs to improve its participation in Operation Sukuma Sakhe by ensuring that there is a Health worker participating in all the war rooms. Apparent improvements from this collaboration have been seen, particularly at Manguzi Hospital (Umhlabyalingana Local Municipality) where a decrease in deaths from malnutrition and improvement in food-security has been demonstrated. This is in line with Sustainable Development Goals (SDG) 1 & 2: No poverty and zero hunger by 2030. There are 57 Phila Mntwana centres for the early detection and prevention of child malnutrition. Unfortunately, these centers are mainly functioning sub-optimally, due to poor marketing, infrastructure and supervision. Further evaluations of the centres are to be undertaken to ensure that the remaining centers are sustainable. 54% of households are headed by females who are regarded as a vulnerable group. According to the NHI Policy (30 June 2017), women are at a higher risk of HIV and are 1.6 times more likely than males to be HIV positive. The District needs to strengthen women's health services. The District population is predominantly Black Africans (98.4%) as compared to other racial groups. It is deep rural with few economic activities and other social amenities.

❖ ***Energy***

Main towns and settlements are supplied by Eskom while programmes are in place to electrify specific facilities such as rural clinics. While power interruptions remain a difficulty there was an overall improvement in the percentage of households with access to electricity, with 74 938 reporting access to this service. In areas without access to electricity, households use a combination of sources including wood, paraffin, candles, batteries and gas. The use of natural resources for cooking, heating and lighting is of concern due to the growing pressure on these natural resources. As already noted, much of the area is made up of scattered rural homesteads, making service provision more difficult.

❖ ***Water and sanitation***

Water resources are limited and thought to be of insufficient capacity to handle future demand. As there is little piped water in the region, the majority of households lack waterborne sewerage systems. Plans are, however, in place to increase bulk supply with one such example being the planned pipeline from Jozini to Mbazwana.

While access to water and sanitation remains a challenge, improvements are evident with an increase from 42.5% of households in 2001 to 61.8% of households in 2011 reported to have access to piped

water and an increase from 43.2% of households in 2001 to 81.6% of households in 2011 reporting to have access to sanitation. The unplanned, dispersed nature of rural settlement makes the provision of piped water to individual households difficult and expensive, and most households acquire water from communal standpipes.

Access to basic water infrastructure clearly remains one of the key challenges in UKDM. The proportion of households provided with water through regional and local water schemes is only 42% compared to the provincial figure of 72%. About 30% of households are utilising untreated sources of water directly from springs, dams or rivers, a figure significantly higher than the provincial total of 13%. (uMkhanyakude District Municipality IDP 2018-2019).

Sanitation Access Backlogs

The sanitation backlog for the district is 43.5% in 2016 compared to 45% in 2011. This shows a very slow pace in the eradication of sanitation backlogs, which can highly be attributed to the municipality's main focus on water provision. In accordance with the 2016 Community Survey, a total of 65 675 households have below minimum level of service in terms of sanitation access. Only an average of 17% of residents in UKDM have access to a flush toilet.

Table 5 Access to sanitation by households (StatisticsSA Community Survey 2016)

Municipality	Umhlabuyalingana	Jozini	Mtubatuba	Big 5 Hlabisa	Total UKDM
None	17%	20%	14%	6%	15%
Flush toilet (connected to sewerage system)	3%	12%	17%	22%	13%
Flush toilet (with septic tank)	2%	3%	5%	6%	4%
Chemical toilet	10%	15%	11%	21%	14%
Pit toilet with ventilation	40%	18%	16%	36%	26%
Pit toilet without ventilation	22%	27%	26%	8%	22%
Bucket toilet	0%	0%	0%	0%	0%
Other	6%	4%	11%	1%	6%

Only 16.6% of the entire population within the district have got access to water-borne sanitation with 15.2% having no access to any form of sanitation. The municipality is targeting to reduce the sanitation backlogs by 30% through the provision of Ventilated Pit Latrines (VIP) by 2031 (UKDM IDP 4th generation 2018-2019).

❖ **Transport**

The region's road network is poor and, apart from the N2 and R22, roads are poorly maintained. This situation affects the provision of public transport and limits access to smaller towns. The road down to Maphelane from the N2 turnoff is particularly bad and requires a 4X4 to obtain access. Protest action and vandalism of the road by the Sokhulu community has not helped the cause. Rail use is limited to commodities and there are few commercial flights into the area; the closest commercial airport is Richards Bay, a 75 km drive south of St Lucia town. Small airfields for light aircraft are located at Hluhluwe, Mkuze (within the Park), Mbazwana, Monzi (within the Park), St Lucia and a military airport 121 Battalion at Mtubatuba and there are a few landing strips on private reserves/lodges in the area

2.2.5 Economic Opportunities (Tourism and Agriculture)

Tourism and agriculture are the two primary and largest economic sectors in the area.

2.2.5.1 Tourism

The Park provides a variety of products from self-catering camping and cabin facilities to up-market lodge accommodation. For every one bed in the Park there are approximately two beds outside the Park. There are three "high" density nodes in the Park viz., St Lucia, Cape Vidal, and Sodwana. The rest of the Park is zoned for medium to low density development and, in the case of wilderness, no development. There has been a large increase in day-visitor numbers in the last five years. There is, however, a need to redevelop some of the accommodation offered in the Park in order to appeal to a broader market and keep pace with market trends. Tourism is constantly evolving and research by Govender (2013) has shown a shift at iSimangaliso from "mass" tourism (mainly fishermen and beach goers) to ecotourism, where tourists ideally want to pursue more nature-based and education-based activities, adventure tourism and/or sightseeing. There is also an expanding local tourism sector that needs to be catered for, thus local tourism needs to be encouraged. This sector will be the main income-generator in a post-Covid-19 world where it will take some time to restore international tourism. The core mandate of the Park is conservation, thus whilst it strives to develop for tourism, conservation will not be compromised, thus a balanced approach will be taken, with a focus on ecotourism.

The southern section of iSimangaliso alone contributes some 6.8% of KwaZulu-Natal's tourism Gross Domestic Product (GDP) and 0.06% of South Africa's tourism GDP. The Park also supports in excess of 7,000 tourism jobs. Global Insight in its 2011 report asserts that tourism contributed 41% of the GDP of the uMkhanyakude municipal area and records an approximate increase of 4% in the number of bed nights in the municipality's tourism facilities as a whole.

"Overall, in assessing visitor trends from 1999 – 2004, the iSimangaliso Wetland Park, particularly the St Lucia node, was negatively affected by the combined effects of a malaria outbreak in 2000; the world trade centre 9/11 attacks (2001); the Asian SARS virus (2003); the national 4x4 beach driving ban in 2001; the extended drought that South Africa was experiencing during that period; and allegedly higher crime rates in the area (Comins, 2003; Gowans, 2004; South African Tourism, 2007; TKZN, 2004a; TKZN, 2004b)" Govender, (2013). More recently, the Corona (COVID-19) has had a devastating effect on health, tourism and the world economy.

2.2.5.2 Agriculture

Agriculture, both commercial and subsistence, is important in the uMkhanyakude District Municipality in which large numbers of households practice limited homestead-based food production, and commercial agriculture has been identified in the Integrated Development Plan as one of the two main economic sectors.

However, many parts of Umkhanyakude are experiencing the inseparable effects of high HIV prevalence, growing food insecurity, dependence on natural resources, climatic variability and environmental degradation. The convergence of these factors as a driver of the decreasing viability of farming livelihoods is stark, and HIV in particular, has given rise to a category of vulnerable households in which the likelihood of food insecurity has increased. In addition, the Umkhanyakude and Zululand District Municipalities have been highlighted as high-risk areas in terms of their vulnerability to climate change (refer Chapter 3.3.1.15).

The areas in the north of Umkhanyakude and, in particular, the former homeland areas, are characterised by subsistence agricultural activities such as cattle farming, homestead-based food production and small-scale sugarcane and cotton production. Studies undertaken in communities bordering the southern sections of the Park found that agricultural production by households ranges from very small scale production of vegetables and chickens, to the cultivation of larger fields away from the homestead, often in floodplains, for market gardening. The basic “food security crops” that are currently being planted in the rural areas of KwaZulu-Natal for subsistence farming are cabbages, sweet potatoes and dryland, rain-fed maize. Many households keep cattle, goats or sheep. The gendered division of labour means that women typically have responsibility for all agricultural activity and small livestock, while men claim authority over cattle.

In the southern sections of the district municipality, agricultural activities are more commercial in nature including sugarcane, pineapple and timber production. The proximity of commercial forestry and sugar processing facilities has created opportunities for out-grower contracts within these industries, including around the borders of the northern sections of the Park. Involvement in this kind of cultivation has grown considerably in this region over the last 30 years. This has resulted in the dedication of more communal land to these cash crops, with households drawing increasingly on social and kin networks for easily exploitable “casual” labour.

Households keep livestock for economic and non-economic purposes. Cattle are an important feature of various rituals, including communication with ancestors, bride wealth (*ilobolo*), and for ploughing, transport, savings, and social status. Livestock continue to prove a marginal asset for some households in times of economic stress, but there is a substantial shift away from cattle, under the authority of older men, towards smaller livestock, over which older women maintain control.

However, agricultural opportunities in the area are limited by various factors, including, but not limited to:

- ❖ Nutrient poor soils.
- ❖ Land tenure insecurity.
- ❖ Unfavourable rainfall.
- ❖ Lack of water for irrigation.
- ❖ Climate Change
- ❖ Lack of finance for previously disadvantaged farmers.
- ❖ Distances from markets.

In general, economic growth in areas surrounding the Park has not kept pace with population growth, resulting in rising unemployment and a decline in real wages over the last 20 years. Findings from a study undertaken by iSimangaliso as part of a GEF Grant in communities bordering the southern sections of the Park show that households are generally dependent on a combination of government welfare grants and income from family members living and working elsewhere.

2.3 Cultural Heritage

iSimangaliso is rich in cultural heritage. The range of cultural heritage resources includes archaeological and palaeontological sites and artefacts, historical buildings and jetties, graves, fish traps, shipwrecks, landscapes and natural features, as well as more intangible resources such as spiritual places, oral traditions and rituals. Appendix 3 provides an historical account of the area dating back to the early stone age (Anderson, 2020). Relevant extracts of this report are included below.

- ❖ The area along the Eastern Seaboard, especially between Richards Bay and Maputo, is of high archaeological significance (Anderson, 2001).
- ❖ iSimangaliso is the largest protected area of recorded and potential Stone Age and Iron Age sites in South Africa (Anderson, 2001) and has a high density of archaeological material.
 - The Early Stone Age began 1.5 – 2 million years ago, and is represented by Oldowan stone tools, which later (1.5mya to 250 000 ya) are replaced by Acheulian tools (hand-axes, cleavers, and picks). Three sites of an early Stone Age culture (between 500,000 and a million years BC) have been found (Avery, 1980) in the Park.
 - The Middle Stone Age (200 000– 250 000 ya) is characterised by more technologically advanced stone tools and bone implements and is the time of several Homo species living in Southern Africa and the eventual emergence of *Homo sapiens sapiens*. Unfortunately most of the MSA sites are open sites with no stratigraphic deposits. There is evidence of Middle and Late Stone Age occupation postdating the last interglacial period (about 110,000 years ago) (Beaumont, et.al., 1978).
 - The Late Stone Age began 30 000 ya. The stone tools became significantly smaller and show a wider range of specialisation 14 000 ya the ocean was several kilometres eastwards, but the Pleistocene-Holocene transition resulted in sea level rise and a loss of land and animal resources. The beginning of bow and arrow hunting during the Holocene resulted in smaller hunting groups and the division of labour between men as hunters and females as gatherers.
 - The start of the Early Iron Age 1 700 ya saw the arrival of the first African farming communities from the Great Lakes in East Africa, along with a full agricultural and metallurgical socio-economy. They stayed in large villages in excess of 100 people.
 - Approximately 1 000 years ago a new group of Late Iron Age farmers arrived in southern Africa. They also originated from the lake areas of East Africa, but had a different social system. Settlements comprised family households on top of hills. These were the first Nguni-speaking people to enter parts of southern Africa and eventually gave rise to the Zulu, Xhosa, Ndebele, Swati, Hlubi, Phuthi, Bhaca, Lala, Nhangwini, Southern Ndebele, and Xitsonga languages of today.
 - iSimangaliso is rich in artefacts and other remains of Early Iron Age (250 – 1000 AD) and Late Iron Age (1000 - 1840 AD) settlements (Maggs, 1984). These settlements exploited the peat bog iron ore deposits that occur in the vicinity of Lake St Lucia and other wetlands.

- ❖ The Tsonga State was in existence from the 1500s to the 1850s Webster (1986). This state was divided into Portuguese and British territory in a treaty signed in France in 1875, which became the border between South Africa and Mozambique.
- ❖ From the late 18th century there is the arrival of Zulu-speaking people along the southern parts of iSimangaliso, while Zulu-speaking people were in the Mkuze area already. With the Mfecane (1820AD - 1830AD) this area was ruled by King Shaka Zulu, while the Tembe-Tsonga inhabited the north.
- ❖ The area north of the Thukela River was still under Zulu rule up to 1879. The First Anglo-Zulu War resulted in British Forces annexing KwaZulu-Natal. Zululand was divided into 13 territories, or 'kinglets', with kings favourable to the British, or antagonistic to the Zulu Royal house (Dominy 1994). This resulted in several battles, especially when King Cetshwayo was restored in 1883.
 - Chief Somkhele of the Mphukonyoni, supporting King Cetshwayo, fought against Zibhebhu kaMaphita, with the help of John Dunn in August 1883. Chief Somkhele lost the battle and fled to the swamps of Lake St Lucia (Dominy 1994).
 - The battle of eTshaneni on 5 June 1884 in which King Dinizulu (backed by Boer Forces) defeated Chief Zibhebhu of the Mandhlakazi Clan in the precipitous uMkhuze River Gorge. The deaths of large numbers of Zulus on the slopes of eTshaneni resulted in the hill being called Ghost Mountain (Mountain, 1990).
- ❖ Early wildlife conservation:
 - The earliest recorded instance of purposeful wildlife conservation in the region was a traditional wildlife sanctuary created in the mid-19th Century by Inkosi Shangase Manukuza and Induna Hebeni Manzi within the present-day boundaries of the Mkhuze section of the Park.
 - Concerns were raised about the destruction of wildlife in the Zululand area after it was annexed by Britain in 1887, leading to the demarcation of five sanctuary areas in 1895 and ultimately the proclamation of the first official Zululand game reserves by Natal Parliament in 1897 – this pre-dates the Kruger Park (1898), thus making it the oldest game reserve in the country.
- ❖ In 1898 Rev. Feyling built the Norwegian Lutheran Mission at Mission Rocks Outpost; the graves of two missionaries and some of the baking oven still remain.
- ❖ iSimangaliso is significant in that it exhibits many examples of living heritage, which are age-old traditions still being practised today. These include oral histories, cultural traditions, land use and resource management practices, and indigenous knowledge systems. An excellent example of this is the Kosi Bay fish traps, which could date back to at least the 16th Century, when they were first observed by Portuguese sailors (Anderson, pers. comm). The on-going fish trapping in Kosi Bay, a site and activity that are protected as living history, provide some of the best extant working examples of such traps anywhere in the world.
- ❖ Typically, a very high density of archaeological shell middens, mostly comprising black mussel (*Perna perna*) shells are found within a 1 km radius of any rock outcrop along the beach (Anderson, 2001).
- ❖ World War II remnants include the Catalina Jetty at Catalina Bay on Lake St Lucia, which was used as a base for the Royal Air Force (RAF) 262 Squadron between 1943 and 1944 (NCS 1995; Dominy, 1994), to supply air cover for allied shipping in the area. Currently the Catalina Jetty consists of several foundation structures, the jetty itself, and some concrete structures, which are currently under vegetation and not clearly visible (Anderson, 2001). An Early Iron Age village site was also recorded in the vicinity of the jetty (Anderson, 2001). The hiking hut at Mount Tabor, which offers spectacular views of the lakes and coast, and is used by trailists on the Mziki Trail, was built by the RAF as an observation post to provide radar support for the Catalina flying boats.

- ❖ The Joint Imperial-Colonial Zululand Lands Delimitation Commission was started in 1902, and by 1904 Zululand was separated into areas for “White” and “Black” people. This was the basis for the Native Lands Act of 1913. The more famous forced removal in iSimangaliso is that of the people from Lake Bhangazi between 1956 and 1974.
- ❖ Other contemporary sites of historical interest include:
 - Sites which commemorate land claimants’ loss of land and subsequent restitution.
 - Anti-apartheid activist and scholar, David Webster’s research camp at KwaDapha.
 - The establishment of an active military site in a conservation area on the Nhlozi Peninsula.
 - Various shipwreck sites

iSimangaliso has tremendous potential for the development of archaeotourism, as this has the potential to add more value to this region (Anderson, 2001). This aspect will be a key focus for the Authority for the validity period of this IMP. To this end, there is also a need to audit and document all heritage facilities in the Park.

2.4 Land Restitution

Currently, all of iSimangaliso is under land claims from neighbouring communities. Most of the communities displaced from areas in what is now iSimangaliso lodged claims in the 1990s. A total of 14 claims have been lodged with the Commission on Restitution of Land Rights¹⁵ and these claims cover the Park in its entirety¹⁶. The responsibility for settling Land Claims lies with the Commission on Restitution of Land Rights under the Department of Rural Development and Land Reform. Any disputes that arise out of the restitution process are dealt with by the Land Claims Court. Once land claims have been settled, the iSimangaliso Wetland Park Authority enters into co-management agreements with the land claimants as contemplated in Section 42 of the Protected Areas Act.

¹⁵ The framework for settling claims in the iSimangaliso Wetland Park is in line with the National Cabinet decision of 2002 regarding the settlement of restitution claims in protected areas, World Heritage sites and state forests. In summary, this framework makes provision for the following:

- (a) Land within a protected area can be owned by claimants without physical occupation through the transfer of title with registered notarial deed restrictions.
- (b) Continued proclamation of the land for conservation purposes, where the land is used and maintained solely for the purposes of conservation and associated commercial and community activities.
- (c) Continued management of the land as part of the national conservation estate by the responsible State conservation agency according to IUCN principles and the requirements of legislation and approved management plans.
- (d) Land to remain part of an open ecological system and managed as an integrated part of the protected area of which it formed part before restitution.
- (e) Loss of beneficial occupation is compensated through remuneration and provision of a package of benefits from the iSimangaliso Wetland Park that includes revenue sharing, mandatory partner status in tourism developments, access to natural resources, cultural heritage access, education and capacity building, and jobs through land care and infrastructure programmes.
- (f) Sustainable partnerships between claimants and managers of protected areas must be established in a way, which facilitates effective biodiversity conservation of the area, including economic viability. These co-management arrangements should enable parks to be managed effectively and efficiently by the State and remain unencumbered by several joint management committees and unwieldy co-management arrangements.

¹⁶ Initially, the period to lodge claims was from 1994 to 1998. However, in June 2014, the President announced the re-opening of the land claims process, providing opportunity for communities and individuals who had missed the original land claim deadline to lodge their claims, until June 2019. This will further hamper the resolution of land claims over the Park.

The claims and their status are as follows:

1. Bhangazi claim on the Eastern Shores of Lake St Lucia (settled in 1999).
2. Mabaso claim on Ozabeni (settled in 2002).
3. Mbila (Emandleni) claim on Ozabeni (settled in 2002).
4. Sokhulu claim on Maphelane (settled in 2007).
5. Mdletsheni (Mfusi) claim on False Bay (settled in 2007).
6. Makhasa claim on uMkhuze (settled in 2007).
7. Mnqobokazi (Qhubekani) claim on uMkhuze (settled in 2007).
8. Nsinde (Silwane) claim on uMkhuze (settled in 2007).
9. Jobe claim on uMkhuze (settled in 2007).
10. Mbila (Triangle) claim on Sodwana Triangle (not settled).
11. Coastal Forest Reserve claim on the Coastal Forest Reserve (not settled).
12. Dukuduku claim on Dukuduku Forest and surrounding area (not settled).
13. Western Shores claim on the Western Shores of Lake St Lucia (not settled).
14. Ngwenya claim on uMkhuze (not settled).

In general, the settled land claims have led to the establishment of claimant community trusts which allow for various benefit sharing opportunities to be established between iSimangaliso and claimant communities.

3. STRATEGIC ANALYSIS OF THE iSIMANGALISO WETLAND PARK

3.1 Introduction

The iSimangaliso Wetland Park is one of the world's outstanding natural and cultural treasures, exhibiting outstanding universal values for which the Park is world-renowned. It is recognised as a significant asset locally, nationally and internationally. The World Heritage listing of iSimangaliso confirms the international community's recognition of its significance as an outstanding example of the world's natural heritage. At a national level, iSimangaliso is highly valued because of its unique ecological and cultural assets, and the potential of these to generate tourism development and, hence, to contribute to economic growth and prosperity. At the local level, iSimangaliso has recreational, ecological, economic and cultural significance. One of the key management goals of this IMP is to provide policies, programmes and plans to enhance this potential.

This Chapter explores:

- ❖ The significance of iSimangaliso as a natural, cultural and economic asset.
- ❖ The threats and constraints affecting its natural, cultural and economic values.

3.2 Significance of the iSimangaliso Wetland Park

This section examines the 'conservation', 'cultural' and 'economic' assets contributing to iSimangaliso's outstanding universal values. This analysis is important as it provides the justification for protecting the Park (Section 3.2), highlights the need to manage threats (Section 3.3) and determines the planning framework (Section 3.4) and management tools required to achieve this protection (Chapter 5).

3.2.1 Conservation Significance

iSimangaliso attained World Heritage listing under not just one criterion (which is all that is necessary to attain listing) but three of the ten criteria:

- ❖ Criterion vii: to contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance.
- ❖ Criterion ix: to be an outstanding example representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems, and communities of plants and animals.
- ❖ Criterion x: to contain the most important and significant natural habitats for in situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

3.2.1.1 Criterion (vii): Biodiversity and Threatened Species

The many and diverse ecosystems contained in the Park provide important habitats for a large number of species, including rare, threatened and/or endemic taxa. The species lists for iSimangaliso are the lengthiest in the region and population sizes for most of them are viable. Of the over 6,500 plant and animal species known to occur in the Park¹⁷, populations of species of conservation importance include 11 species that are endemic to the Park, 56 species endemic to KwaZulu-Natal, and 108 species endemic to South Africa, while 467 are listed as threatened in South Africa. While studies on a number of these species are ongoing, in the past little was known about the status and viability of populations of the majority of rare, threatened and endemic species in the Park, particularly the lower vertebrate and invertebrate species. Map 22 provides an indication of the status of ecosystems in the park.

Furthermore, the Park is situated on the southernmost extremity of the Mozambique coastal plain and, as a result, hosts numerous species not found elsewhere in South Africa. This adds to the value and importance of this unique area from a South African species conservation perspective. The presence of some of these species north of our borders does not detract from the importance of conserving the South African populations, as very little information is generally available on their conservation status and distribution in other parts of southern and central Africa. iSimangaliso is clearly a critical habitat for a range of species from Africa's marine, wetland and savannah environments.

iSimangaliso contains four Ramsar sites that are recognised for the ecological functions of wetlands and for their economic, cultural, scientific and recreational value (Map 23 in Appendix 3):

- ❖ St Lucia Lake System: Location 27° 37' - 28° 30'S, 32° 22' - 32° 34'E. On the KwaZulu-Natal coast, between the uMfolozi Swamps just south of the uMfolozi River in the south, to the uMkhuze River in the north. The area covered is 155,000 ha. The site was designated on 2 October 1986 (Ramsar Site # 345).
- ❖ Turtle Beaches/Coral Reefs of Tongaland: Location 25° 51' - 28° 08'S, 32° 33' - 32° 51'E. On the coast of KwaZulu-Natal, stretching from just south of Cape Vidal northwards to the border of Mozambique. The area covered is 39,500 ha (being the area of the previous Maputaland MPA). The site was designated on 2 October 1986 (Ramsar Site # 344).
- ❖ Kosi Bay Lake System: Location 27° 01'S, 32° 48'E. On the KwaZulu-Natal coast south of Mozambique on the Maputaland Coastal Plain. The area covered is 10,981 ha. The site was designated on 28 June 1991 (Ramsar Site #527).
- ❖ Lake Sibaya: Location 27°20'S 032° 38'E. On the KwaZulu-Natal coast, north-west of Sodwana Bay. The area covered is 7,750 ha. The site was designated on 28 June 1991 (Ramsar Site # 528).

The remarkable ecological diversity and significance of iSimangaliso is, therefore, unique, not only on the African continent, but also globally. Available information suggests that no other locality on the globe harbours such a

¹⁷ This total is based on the species checklists contained in the 1999 World Heritage Schedules and the latest figures provided for some of the taxa by the iSimangaliso Wetland Park Rare, Threatened & Endemic Species Project, and includes approximately 2,185 vascular plants, 325 seaweeds, 129 corals, 110 terrestrial mammals, 22 marine mammals, 48 freshwater fish, 212 estuarine fish, 991 marine fish, 525 bird, 128 reptiles, 50 amphibians, 282 butterflies, 52 fruit chafer beetles, 38 dragonflies and damselflies, 228 spiders, 5 scorpions, 812 marine molluscs, 41 terrestrial molluscs and 20 sponges.

wide range of wetland types in a single protected area. Of the 32 marine/coastal and inland natural wetland forms recognised by the Ramsar Convention, 23 of these forms occur within the Park.

In addition to the values recognised through its World Heritage listing, iSimangaliso attained its high conservation status primarily because of the following factors:

- ❖ The Park is one of the last remaining natural areas in the world that still contains much of the original plant and animal species in habitats with exceptional diversity, species richness, and variable and unique geological structure, topography/landscapes, climate and rainfall patterns.
- ❖ The Park is located in a transition zone between two biogeographical provinces, and thus protects plant and animal species from both subtropical and tropical Africa.
- ❖ As the Park is the largest protected area in the Maputaland Centre of Endemism¹⁸, it contributes appreciably to the conservation of endemic species, and also to the conservation of a number of taxa occurring at the southernmost extent of their distribution range.
- ❖ The marine ecosystem of the Park, especially its coral reefs and 325 seaweed species, contributes significantly to the rich sub-tidal diversity. In addition, marine canyons off Sodwana Bay provide habitat for Coelacanths (otherwise in South Africa found only offshore of East London, and more recently off Pumula).
- ❖ The Park provides protection for six habitats that are considered to be of global conservation importance. These are:
 1. Marine canyons off Sodwana Bay, which provide habitat for Coelacanths.
 2. The nesting beaches for leatherback and loggerhead turtles.
 3. The woodland and thicket vegetation for black rhino and elephant.
 4. The dry sand forests that have exceptionally high species richness.
 5. The extensive and diverse wetland habitat types.
 6. Coral reefs (the southernmost in southern Africa).

The **landscapes** in the Park are considered unique in terms of variety, origin and exceptional natural beauty. Nowhere else in South Africa, and in few places elsewhere in the world, can such diverse elements be found in such close proximity. The **geographic diversity and superlative aesthetic qualities** of iSimangaliso include:

- ❖ The clear water of the Indian Ocean with its associated long unspoilt sandy beaches, rocky and mixed shores, and rocky and coral reefs.
- ❖ Among the highest and oldest vegetated (forested) coastal sand dune cordon in the world, which runs uninterrupted throughout the entire length of the Park.
- ❖ The expansive estuarine systems of Lake St Lucia, Lake Mgobozeleni and Kosi Bay with their associated mangrove swamps, salt marshes and reed swamps.
- ❖ The coastal plain mosaic of pans, dry secondary grasslands, waterlogged grasslands, swamp forests, freshwater lakes (including Lake Sibaya, the largest natural freshwater lake in South Africa) and thickets.
- ❖ The flood plains and phragmites/papyrus swamps of the uMkhuze, uMfolozi, Nyalazi and Mzinene Rivers, including the uMkhuze and Nyalazi peat lands.
- ❖ The Lubombo Mountain Range and the deep rocky gorge of the uMkhuze River.

¹⁸ The Maputaland Centre of Endemism is also part of the Maputaland-Pondoland-Albany biodiversity hotspot.

- ❖ The woodland savannahs and sand forests of the higher lying ground between the coastal plain and the Lubombo Mountains.
- ❖ Geomorphological features, viz. Ezimbomvini dunes (Eastern Shores), and the east-west developed dune ridge (berm between Lake Bhangazi South and Mfabeni swamp).

The fascinating geomorphic processes by which this wide variety of scenic landscapes were formed subsequent to the fragmentation of the Gondwana supercontinent also contribute to the uniqueness of the region, including ecological processes yielding a variety of charismatic mega-faunal species. Examples are:

- ❖ The continuous shifts in the biodiversity of Lake St Lucia arising from cyclical changes in the salinity state of the lake, which can range from fresh water to hyper-saline conditions in the space of a few years. This is related to rainfall variability, i.e. wet and dry periods, which in turn affects lake levels.
- ❖ The size of Lake St Lucia as one of the largest estuarine systems on the African continent.
- ❖ The occurrence and nesting of Critically Endangered and Endangered Leatherback and Loggerhead turtles. annually
- ❖ Coelacanths in the marine canyons offshore of Sodwana Bay.
- ❖ The abundance of dolphins and the migrating whales and whale sharks close inshore and offshore.
- ❖ The Tewater/Ozabeni Wilderness Area, which is one of the few true wilderness areas in South Africa.
- ❖ Large herds of hippopotamus in the water and on the reed banks of Lake St Lucia.
- ❖ The unspoilt coral reefs that represent the southern-most limit of coral along the African coast
- ❖ Picturesque displays of waterbirds in the lakes and estuaries.
- ❖ The basking and nesting sites of the Nile crocodile.
- ❖ Populations of the endangered African wild dog and lions in the uMkhuze section of the Park.
- ❖ African elephants in uMkhuze and the Western Shores of Lake St Lucia.
- ❖ The geological and palaeontological features of the area include rich Cretaceous deposits with extensive fossil beds and Jurassic period volcanics. Detail is provided in Chapter 2.1.4.7 []

3.2.1.2 *Criterion (ix): Ecological Processes*

The combination of fluvial, marine and aeolian processes initiated in the early Pleistocene in iSimangaliso has resulted in a variety of landforms that persist to the present day (refer Chapter 2.1.5). The transitional geographic location between sub-tropical and tropical Africa and the coastal setting have resulted in exceptional species diversity. Past speciation events in the Maputaland Centre of Endemism are ongoing and contribute another element to the diversity and interplay of evolutionary processes at work in the Park. The absence of any major riverine input into the marine environment north of St Lucia estuary and the oligotrophic nature of Agulhas Current water has resulted in remarkably clear waters, allowing for the development of coral reefs. Episodic major floods and coastal storm events (e.g. Tropical Cyclone Domoina of 1984, March 2007 cut-off low swell) add further complexity to the interplay of this environmental heterogeneity.

3.2.1.3 *Criterion (x): Superlative Natural Phenomena and Scenic Beauty*

iSimangaliso is geographically diverse with superlative scenic vistas along its 200 km coast. From the clear waters of the Indian Ocean, wide undeveloped sandy beaches, forested dune cordon and mosaic of wetlands,

swamp forests, grasslands, forests, lakes and savannah, the iSimangaliso Wetland Park contains exceptional aesthetic qualities. Three natural phenomena are judged as outstanding:

- ❖ The shifting salinity states within Lake St Lucia, which are linked to wet and dry climatic cycles, with the lake responding accordingly with shifts from low to hyper-saline states.
- ❖ The spectacle of large numbers of nesting turtles on the beaches, the abundance of dolphins and the migration of whales and whale sharks offshore.
- ❖ The numbers of waterfowl and large breeding colonies of pelicans, storks, herons and terns.

3.2.2 Cultural Heritage Significance

iSimangaliso is also of cultural and historical significance. The history of the Park is fragmented; the record is partial and much of the written information is colonial in origin. iSimangaliso is rich in cultural heritage, a creation of the long history of the habitation of the land, extending back to the Stone and Iron Age people through to the most recent forced removal of people from the 1950s to the late 1980s. The latter events are within the living memory of people who were alienated from their land and, therefore, the cultural attributes and meaning of certain sites are of great significance to the land claimants. The range of cultural heritage resources are outlined in Chapter 2.3.

3.2.2.1 'Sense of Place'

iSimangaliso is also recognised for its 'sense of place', and is experienced and defended by people and groups of diverse heritage, cultural values and norms. 'Sense of place' is experienced by people in terms of their needs and expectations, and is different for each person.

In 1996, South Africa's first democratic government overturned an application to mine iSimangaliso's mineral-rich dunes in favour of tourism and conservation. Half a million citizens, including Nelson Mandela and Mangosuthu Buthelezi, signed the no-mining petition, and an in-depth Environmental Impact Assessment (EIA) was conducted, part of the scope of which was to explore the 'sense of place' associated with iSimangaliso.

In response to a proposal to mine heavy minerals from the dunes on the Eastern Shores of iSimangaliso, the St Lucia Mining EIA investigation and subsequent hearings and recommendations of the Review Panel appointed by Government, the participation of the public and orchestration of the debate on the future of the area, effectively set the scene for defining what interpretation should be applied when assessing what 'sense of place' should mean for iSimangaliso. The Panel said that the area has a unique and special 'sense of place'. This sense that the area is precious was expressed by a diverse range of groups, from learners to conservationists, to the urban middle class, and to the people who were removed from the land. In the evidence before the Panel, the special natural qualities of iSimangaliso's wilderness, and its healing and calming effect on people were mentioned. This is also perceived and experienced as a spiritual relationship based on the significant social and mystical values emanating from many years of ritual and religious activities that took place on the land.

In terms of the above, the 'sense of place' of the Park holds special and unique values to individuals that experience these values personally and differently from one another.

3.2.3 *Economic Significance*

iSimangaliso is widely regarded as an important economic asset with significant tourism potential.

3.2.3.1 Resource Endowment

The rich resource endowment of iSimangaliso fits particularly well with domestic and foreign visitor preferences as determined by various surveys, including those conducted by SATour, the KwaZulu-Natal Tourism Authority and the iSimangaliso Wetland Park Authority. When matched with the known interests of tourists to South Africa and KZN, the Park's natural and cultural assets strongly indicate the potential of iSimangaliso to become a world-class tourism destination.

The tourist attractions within the Park include:

- ❖ Spectacular dunes, wetlands, plains and bushveld.
- ❖ Miles of fine beaches with clear warm-water seas and the iSimangaliso MPA that includes the southernmost coral reefs in Africa, coelacanths, dolphins, humpback whales, ragged-tooth sharks, endangered turtles and 991 fish species
- ❖ Large inland lakes and estuaries.
- ❖ Populations of the endangered African wild dog and lions in the uMkhuze section of the Park.
- ❖ African elephants in uMkhuze and the Western Shores of Lake St Lucia.
- ❖ Rich birdlife, marine life and more than 2,000 plant species.
- ❖ A favourable year-round climate.
- ❖ A diversity of cultures, languages and customs among the Swazi, Zulu and Thonga people, who have coexisted here for centuries.

The region is already a well-known nature-based destination offering established products, such as Phinda Private Game Reserve and the Hluhluwe-iMfolozi Park. iSimangaliso can, therefore, build on an established regional profile. Simultaneously, the development and branding of the Park will significantly boost the area's attractiveness as a nature-based tourism destination of international repute.

3.2.3.2 Locational Advantages

iSimangaliso is located in a region that is highly accessible by road, rail, air and sea. The N2 corridor provides road and rail links to Durban and Gauteng. Richards Bay acts as a regional entry point via its deep-water port and regular flights to and from Johannesburg. The Lubombo R22 Road, which connects the N2 at Hluhluwe to the Mozambique border at Ponta do Oura, provides tar road access to the formerly inaccessible northern regions of the Park. The road from the SA-Mozambique border at Kosi to Maputo has recently been completed as a tar-surfaced road, which has facilitated a new tourist route between Gauteng and the Mpumalanga lowveld via Mozambique and uMkhanyakude to Durban. This will augment the already well-established route that takes visitors from Johannesburg to Cape Town via the Kruger National Park, Swaziland, Durban and the Garden Route (refer Map 1).

3.2.3.3 *Tourism*

The iSimangaliso Wetland Park has become an increasingly important natural attraction in KwaZulu-Natal's tourism economy. Recent studies show that the international market now comprises approximately 42% of the tourist market for the Park and that the southern section of the Park alone contributes some 6.8% of KZN's tourism Gross Domestic Product (GDP) and 0.6% of SA's tourism GDP (Govender; 2013). These impressive strides can be attributed in no small measure to improvements to day-visitor facilities on the Eastern and Western Shores, St Lucia and uMkhuze sections of the Park and the introduction of game that historically occurred in the Park. The day-visitor improvements include viewing platforms, picnic spots, loop roads and additional ablution facilities. The new facilities offer access for disabled people. Additional game/bird hides will also provide for an improved park experience. While St Lucia, Cape Vidal and Sodwana are old favourites for visitors and attract the largest volumes, visitor numbers to uMkhuze have increased with the introduction of lion and wild dog.

The growth in eco-tourism has also been accompanied by a growth in beach tourism. This "high impact" use has placed pressure on a number of nodes in the Park, in particular, St Lucia, Sodwana Bay, Manzengwenya, and Kosi Bay. This has at times led to user-group conflicts, unanticipated environmental pressure and pressure on existing facilities. Improvements to the Sodwana Bay section of the Park have been planned to address these issues. Similar plans are underway in St Lucia and will follow in the Coastal Forest Reserve and Kosi Bay sections of the Park.

A need has been identified to provide picnic facilities for local communities to recreate, for which facilities (e.g. ablutions, picnic tables, braai areas) can be provided. A suitable site has been identified by the Park Authority on the edge of the Kosi First Lake. This site will be assessed and developed during the implementation phase of this IMP. There is also a need to redevelop accommodation facilities in order to keep pace with market trends and visitor preferences. This is an important initiative to drive the transformation of the tourism sector. Facilities, existing and new, will include local community equity participation. iSimangaliso is seeking to secure grant funding to finance community equity stakes in these facilities.

The impact of the economic recession and COVID-19 virus on visitor numbers and revenues has not been quantified at this stage, but it will have a huge negative impact. The tourism funding strategy must also be reviewed following announcements of budget cuts by national government.

3.3 **Challenges and Threats facing the iSimangaliso Wetland Park**

From Section 3.2 it is evident that iSimangaliso has numerous significant attributes. This section explores some of the challenges facing the Park and threats to its natural values.

3.3.1 ***Threats to the Natural Values of the iSimangaliso Wetland Park***

Despite its conservation significance, iSimangaliso as an entity, and the biodiversity and ecological processes of the region as a whole, including both terrestrial and marine environments, are under threat. The following threats have been identified:

3.3.1.1 *Disruption of Terrestrial and Wetland Processes*

- ❖ The disruption of terrestrial and wetland processes by various forms of land use¹⁹ around the Park and land tenure is a major threat to the natural heritage values of iSimangaliso and, thus, to long-term biodiversity conservation in the Park.
- ❖ In addition, inappropriate land use within the Park, such as illegal developments, has led to the fragmentation of areas that are in a natural or near-natural condition, with the potential to hinder the important free movement and migration of indigenous plants and animals in the short to medium-term, and the flow of genetic material in the longer-term. Such movement is essential for species survival and the conservation of biodiversity in general.
- ❖ Furthermore, the integrity of the Park's terrestrial ecosystems is threatened by ongoing environmental degradation in areas adjacent to the Park.

3.3.1.2 *Fishing Offtake*

- ❖ Fishing takes place in the Park, including small-scale subsistence fishing from Kosi Bay and along the coast towards Mabibi, particularly at Black Rock, and also south of Maphelane.
- ❖ Recreational fishing is permitted in- and off-shore in designated areas as well as in Kosi and Lake St Lucia. Offshore ski-boat and spear fishing is limited to migratory gamefish species. There is generally good compliance by this sector. There are challenges related to the safety of launching craft at St Lucia, which is addressed in Chapter 5.1.3). Competition fishing is popular and is limited to a catch and release basis.
- ❖ There is also recreational and subsistence harvesting of invertebrates (mainly mussels and crayfish) in sections of the northern and southern parts of the Park. Small scale subsistence harvesting of mussels occurs in parts of the Coastal Forest Reserve section of the Park and at Maphelane and the adjoining shoreline. There is a threat of potential overexploitation along the park intertidal zone related to increased population and unemployment.
- ❖ Illegal gillnet fishing takes place in Lake St Lucia, mainly in the Nkunduze/Nibela area and in Kosi Bay. This is particularly challenging to control, with much of it taking place at night.
- ❖ The fish trap fishing at Kosi Bay has escalated to unsustainable levels for many species (Kyle, 2013) due mainly to a population influx after 1994 and the selling of large numbers of fish. Harvesting is beyond that intended for this small scale, sustainable fishing.
- ❖ Whilst the expansion of the iSimangaliso MPA is welcomed, as the designated management authority for this area, this presents a challenge for the Park Authority to enforce the regulations over the expanded offshore areas. There is also a threat from offshore illegal long-liners and gill netters, mostly from the Far East. A shortcoming is that there are insufficient state resources (i.e. Navy or DEFF patrol boats) to support the Park Authority and adequately control the offshore areas.

The continued offtake of these resources from a protected area and World Heritage site needs to be carefully managed to promote the sustainable use of these resources and, in particular, the protection and conservation of species of conservation concern.

¹⁹ For example, forestry plantations, sugar cane lands and mining in the catchments of major rivers entering iSimangaliso.

3.3.1.3 *Poaching*

The bush meat trade is one form of poaching in iSimangaliso, which together with illegal gill netting, is an ongoing conservation management issue dealt with through anti-poaching efforts that include law enforcement and conservation awareness creation. iSimangaliso is experiencing increased levels of rhino poaching. The rhino is a critically endangered species facing extinction and additional measures, such as rhino dehorning, are being implemented alongside anti-poaching activities. Illegal fishing is addressed in Chapter 3.3.1.2 above. Turtle eggs were previously poached prior to the implementation of iSimangaliso's successful turtle monitoring programme in the 1970's. Through community conservation awareness and community involvement in turtle monitoring this was overcome, although it still remains a threat.

3.3.1.4 *Socio-economic Environment*

As discussed in Chapter 2, the uMkhanyakude region as a whole, and the areas neighbouring the Park in particular, include some of the most impoverished communities in South Africa. Many households rely extensively on natural resources from iSimangaliso for survival, for example, harvesting of reeds and fruit, agriculture and fishing. The depletion and degradation of natural resources in communal areas has meant that there is increasing pressure on the resources inside the Park. Locally increasing population numbers and the influx of foreign national from and via Mozambique adds to the stress.

As an example, Coastal Peat Swamp Forests and the uMkhuze Swamp are under threat from various activities, most notably from cultivation, where swamp farming practices enhance food production capacity in the short-term, but do not promote ecological sustainability or food security in the long-term. This trade-off between short and long term livelihood strategies stems from the conditions of poverty that characterise the lives of 80% of the people living in the area. The need to deliver tangible benefits to local communities is thus, not only an economic imperative, but also a conservation imperative. The destruction of the Dukuduku forest near St Lucia, mainly for creating charcoal, is another example.

Furthermore, there is a difference between access to services in urban and rural areas, with the less developed rural areas experiencing far higher backlogs in the provision of infrastructure and services. Overall, however, the area is characterised by the inadequate provision of infrastructure and services, with demand outweighing supply, in particular with respect to: education facilities, health facilities, energy, water and sanitation, transportation, security and recreational facilities.

3.3.1.5 *Municipal Services (Water and Waste Management)*

As with many local government areas throughout South Africa, the provision of municipal services in the uMkhanyakude District Municipality has proven to be a challenge, in particular, the provision of domestic water, waste water treatment services and solid waste handling facilities. This has impacted on the Park and communities surrounding the Park²⁰ and it is unlikely that the situation will change markedly for the duration of this IMP.

²⁰ As is evidenced in the town of St Lucia and neighbouring Dukuduku, where growth and development have not been matched by the provision of essential services.

According to the uMkhanyakude District Municipality 2018/19 IDP, “Both water quality and regularity of flow have deteriorated significantly in recent years, as a result of the non-sustainable land uses and increased abstraction. Infrastructural failures (*sic*) is experienced through continuous botching of borehole pumps, ageing infrastructure, frequent break down of generators supplying power to borehole pumps, frequent pump failures due to high silt content in river abstraction, as well as electricity outages adversely affecting the water supply to the local communities, is a priority, as water supply remains a stumbling block for economic development”.

Currently vandalism is one of the factors that is crippling the infrastructure. Communities break taps in an attempt to ensure there is water running to enable livestock to have access to drinking water. Illegal connections are rife, thereby puncturing efficiency of the lines and resulting not only in massive water losses, but other community members having no access to water.

The District municipality does not have a regional landfill site. Only one municipality (uMhlabuyalingana LM) has a legal/registered landfill site, i.e. Kwa-Ngwanase Landfill site. All but one illegal waste disposal sites have been licenced for closure throughout the District. These sites have been licensed through the DEA Licensing of waste disposal site programme. Mkhuze waste disposal site (Jozini LM) is the only outstanding site. Illegal dumping of refuse and unwanted material is a nationwide problem, also evident here.”

3.3.1.6 *Offshore Prospecting, Mining and Hydrocarbon Extraction*

Inline with Operation Phakisa’s ocean economy goals, various petroleum, oil, gas and other companies such as Sasol, ExxonMobil, Impact Africa and Silver Wave Energy have been granted licenses to undertake seismic surveys and/or prospecting off the east coast of South Africa. This includes the entire offshore area alongside the Park’s coastline. As offshore resource exploitation is not permitted in a Marine Protected Area, exploration is not supported by iSimangaliso. However, the sound associated with offshore surveys, even though the source may be outside the MPA, still poses a threat to marine life, as sound continues to travel through water. Should any extraction licenses be awarded to these offshore prospects, an oil spill would pose a threat to the MPA.

3.3.1.7 *Slow Resolution of Land Claims*

As a consequence of the forced displacement and relocation of people during the apartheid era, several claims for land in iSimangaliso were lodged with the Commission on Restitution of Land Rights. People were removed from large areas of the land under claim, which were used for commercial timber plantations or for military purposes. Agreements settling nine of the fourteen claims on iSimangaliso (including the areas of the Eastern Shores, Cape Vidal, Sodwana State Forest, uMkhuze, Maphelane and False Bay) have been finalised.

However, the slow progress in settling the outstanding land claims on the Park and the re-opening of the deadline for submission of restitution claims²¹ has created uncertainty, and in many cases worsened the relationship between iSimangaliso and the land claimants. Impatience with the slow progress has led to increasing resentment and anger as there are high expectations of delivery of economic benefits from the land. In certain areas, competing land claims have emerged, and with the re-opening of the deadline for submission of claims, it

²¹ Initially, the period to lodge claims was from 1994 to 1998. However, in June 2014, the President announced the re-opening of the land claims process, providing opportunity for communities and individuals who had missed the original land claim deadline to lodge their claims, until June 2019.

is possible that further conflicts will occur. Conflict over control of resources has emerged in some areas, with concerned groups being established to challenge the power of the community-based trusts.

3.3.1.8 *Commercial Forestry in the Buffer Zone (Zone of Influence Zone) and Incorporated Land*

Commercial forestation, comprising alien *Pinus* spp. and *Eucalyptus* spp. has been undertaken in the region since the mid 1950's. Extensive forestry, which includes both licensed and unauthorised plantations in the Buffer Zone, continues to have an impact on the lakes and wetlands. Plantations in proximity to the Park are indicated in Map 24. The threat of commercial forestation to the environmental sustainability of iSimangaliso has been highlighted on many occasions. The major environmental issues include:

- ❖ Due to evapotranspiration, the plantations of pine and eucalyptus trees are significantly reducing fresh water inflows to Lake St Lucia (and other parts of the Park wetland system, in particular, Lake Sibaya and Lake Mgobozeleni) by reducing ground water seepage. A recent hydrological study has shown that eucalyptus trees on the Western Shores have had a significant impact on groundwater levels; lowering the groundwater table between 10 and 16 metres over a period of 13 years within plantations, equating to an average decline of 1 metre per year.
- ❖ The out-grower schemes implemented by commercial timber companies on communal land neighbouring the Park are also having an impact on the water resources in the Park. These small woodlots, which have mushroomed in the past decade, sometimes encroach on the boundary of the Park and have the same environmental consequences as outlined above.

In addition, where commercial pines and eucalyptus trees have been removed from the Eastern Shores and Western Shores²², major rehabilitation challenges remain. These include the need for rehabilitation of the clear-felled pine/eucalyptus areas to grassland, the prevention of woody plant encroachment, the prevention and eradication of invasive alien species and the restoration of landforms where they have been scarred by commercial forestry management tracks and ploughed firebreaks.

On the Western Shores, where commercial plantations managed by Siyaqhubeka Forests are incorporated into the Park²³, the following challenges exist:

- ❖ The stringent fire protection requirements of commercial timber production are inhibiting the application of conservation management burning regimes that are required for the maintenance of biodiversity and ecological processes.
- ❖ Conditions that encourage the rapid invasion of pioneer alien plants are being created by reduced veld burning frequencies.
- ❖ The physical disturbance of soils and natural vegetation arising from commercial forestation.

²² In 1989, a decision was made by Government to phase out the existing 5,000 ha pine plantation in the Eastern Shores State Forest. This was repeated in 2000 when a decision to phase out a further 7,000 ha of pine and eucalyptus plantation on the Western Shores of Lake St Lucia over a five-year period was made. A final agreement to this effect was signed with SAFCOL on 31 March 2007.

²³ 14,200 ha of land owned by SiyaQhubeka Forests (Pty) Ltd that has been incorporated into the Park through a Buffer Zone Incorporation Agreement.

3.3.1.9 *Land Use in the Catchments and the Threat to Water Quality*

iSimangaliso's catchment extends far beyond the boundaries of its protected area. The main forms of land tenure and land use in this catchment are privately-owned commercial farmland and communally-owned subsistence farmland. In the catchments draining into the Park there is evidence of overgrazing from domestic livestock, while subsistence agriculture and settlement densification are causing soil erosion. The expansion of forestation and sugar cane lands in areas of the catchment well beyond the Park's boundaries also has a significant impact on the hydrology of the lakes and wetlands, and their biodiversity.

Certain practices associated with agriculture, mining and settlement, such as the abstraction of water, stream flow reducing activities, the application of inorganic chemicals (mainly various forms of agrochemicals), contaminated surface water runoff and inadequate treatment of sewage and wastewater has resulted in reduced volumes of surface- and groundwater entering the Park, and pollution of these waters has affected water quality and ecosystem functioning (refer also Chapter 3.3.1.5 above).

3.3.1.10 *Restoration of the Lake St Lucia System*

Lake St Lucia's importance has been internationally recognised through its declaration as a Ramsar site in February 1986 and the iSimangaliso Wetland Park's listing as a World Heritage Site in December 1999. It is approximately 36 000 ha in extent.

The uMfolozi floodplain (refer Map 11) was modified in the 1900's for sugarcane farming. This modification comprised *inter alia* the canalisation of the uMfolozi River and the draining and clearing of indigenous wetlands. In the belief that waterborne sediments posed a risk to the lake, the uMfolozi River was partially separated from the Lake St Lucia system in 1952 by artificially breaching the uMfolozi River into the sea near Maphelane (Begg, 1978) and by placing dredge spoil in the mouth of the system to prevent its natural northward migration. This significantly reduced freshwater inflow to Lake St Lucia from the uMfolozi River. These actions also altered the hydrodynamic functioning of the estuary mouth, because, by removing the uMfolozi, the driving force regulating the natural opening and closing of the mouth of the St Lucia estuary was lost. The St Lucia estuary mouth was opened in 1956 (KZNNCS, 1998) and artificially maintained open by dredging operations and a concrete groyne was constructed on the north bank, which stabilised the estuary outlet and prevented it from migrating northwards. This was severely damaged following flooding associated with Cyclone Domoina in 1984, however dredging operations to retain the open mouth were managed by the (then) Natal Parks Board (now EKZNW) until a non-interference policy was subsequently adopted by what became KZNNCS (now EKZNW). The St Lucia estuary was renowned as a juvenile fish and prawn nursery (Wallace & van der Elst, 1975, Whitfield, 1999), but also as a popular light-tackle boat fishing spot, with the famous grunter run during September-October each year.

In 2011/2012, iSimangaliso with Ezemvelo KZN Wildlife launched its publicly consulted management strategy for the Lake St Lucia Estuary: minimum interference, no artificial breaching and the re-establishment of the natural river course. The first action in implementing this new strategy took place in 2012 when a spillway was dug through the dredge spoil to facilitate the flow of the uMfolozi River into the estuary along its natural course.

Scientific investigations undertaken over the past decade, and more recently through an inter-disciplinary study commissioned by iSimangaliso with Global Environment Facility (GEF) funding support, have confirmed that the uMfolozi River plays an important role in driving the mouth dynamics, strongly determining whether the mouth is

open or closed. The amount of water in the uMfolozi River, together with surf action and long-shore sediment movement determine both whether the mouth is open or closed, and its position along the 3 km stretch of coastline between Maphelane and St Lucia.

Dredging operations were a key part of the past management approach to partially separate the uMfolozi catchment from the Lake St Lucia system. The dredgers placed a large volume of sand in the river course of the uMfolozi River. The artificially placed sand 'island' is triangular in shape and covers approximately 900 000 m². Over time the 'island' has become vegetated with a mix of dune scrub and acacia woodland. A mangrove-lined drainage channel marks the site's western and southern boundaries. Land levels vary across the area, with a maximum elevation of approximately 12 m above mean sea level along the north-eastern edge of the site.

The results of the multi-disciplinary studies undertaken to date indicate that the optimal approach to restoring the natural hydrological and ecological functioning of the Lake St Lucia system is to remove as much of the dredge spoil as possible in order to re-establish the remaining portion of the link between the uMfolozi River and Lake St Lucia. The primary objective of the project was to remove as much of the material forming this island as possible down to mean sea level, starting from the north east (Area A), in order to re-establish the link between the uMfolozi River and the Lake St Lucia estuary. For investigative and project planning purposes, the site has been divided into four areas. The positions of these sections are shown in Figure 8a. The restoration work began in 2016 starting with Section A. The plan was to work from Section A away from the sea in a south-westerly direction into Section B, whilst Sections C and D will depend on the availability of funding.

Other restoration actions include the removal of a number of levees constructed on the lower floodplain to prevent uMfolozi water from reaching the St Lucia estuary, and conservation measures to restrict fishing in the mouth of the estuary. Ongoing monitoring by iSimangaliso of the hydrological, physical and ecological functioning of this important estuary system will continue throughout and after the implementation of the work as part of iSimangaliso's adaptive management process.

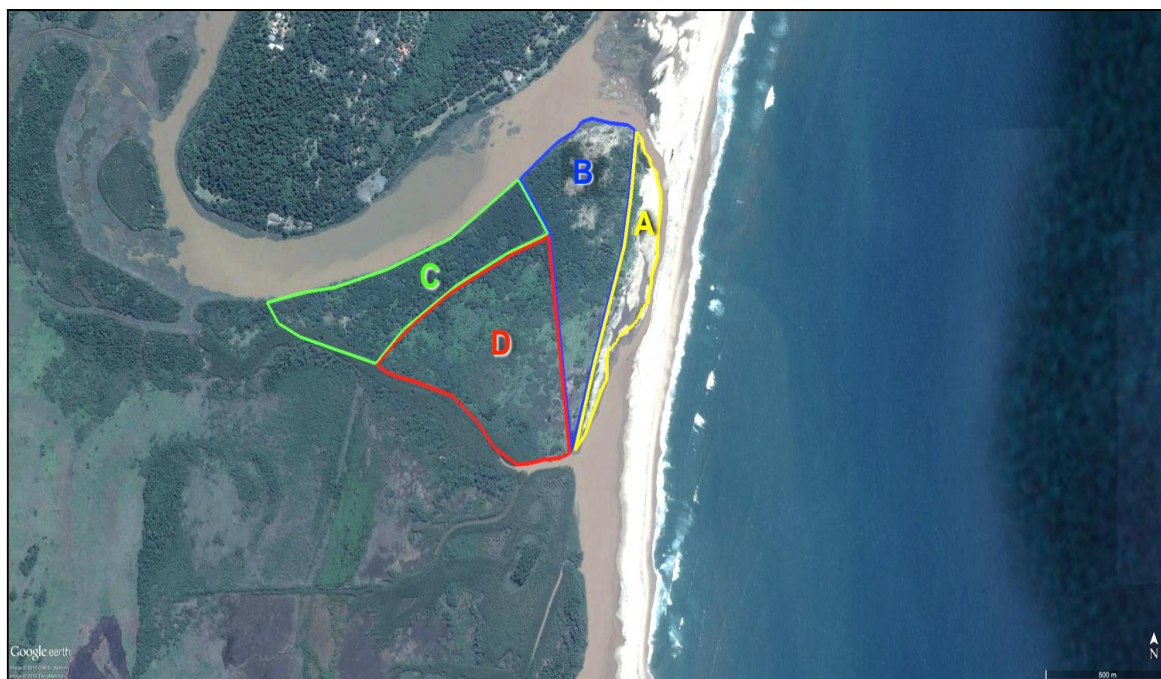


Figure 8a Areas to be removed

The GEF project then commenced at the end of 2016 and major earthworks activities were involved:



Figure 8b Project area of dredge spoil where GEF funding was received to remove 1.5 million m³ to restore and improve connectivity between the uMfolozi river and the Lake St Lucia



Figure 9a Project area before work commenced



Figure 9b Work as of February 2017, when the intended results of connectivity of the uMfolozi and the Lake St Lucia were starting to be realized

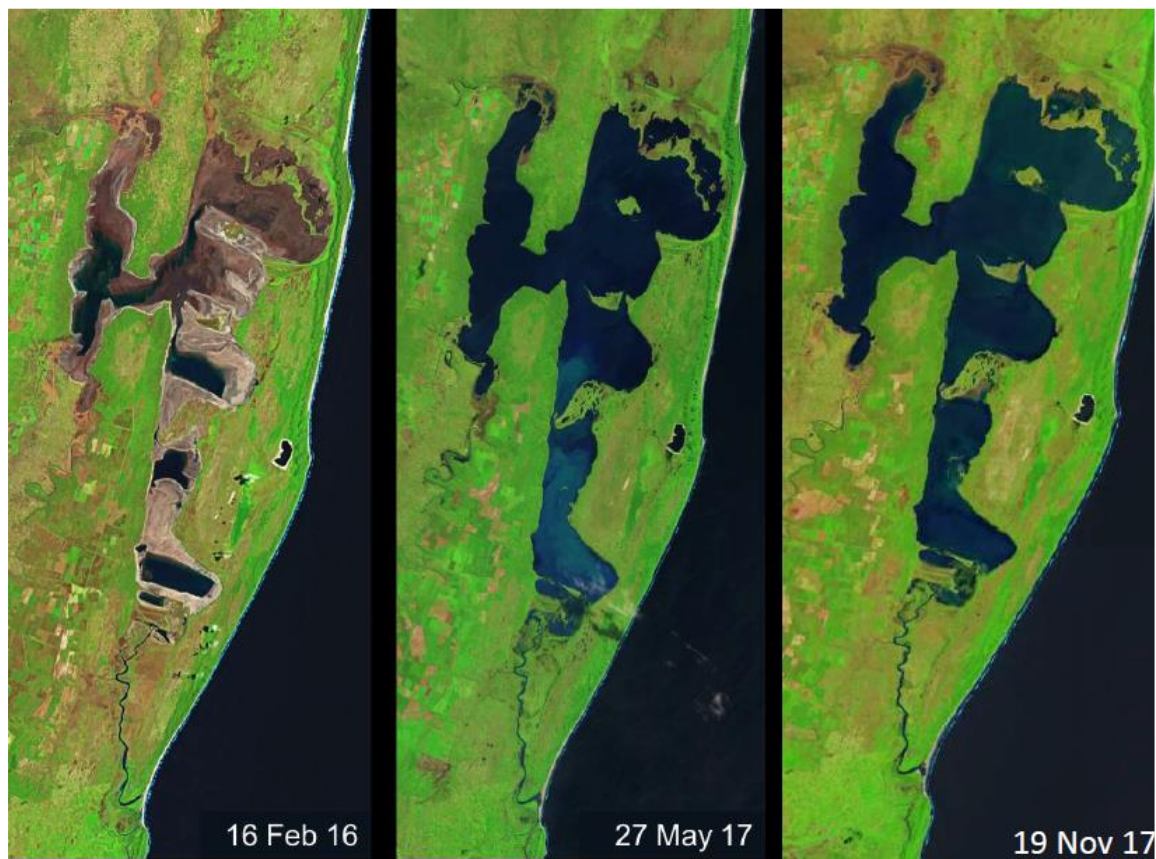


Figure 10 Satellite Images of Lake St Lucia on 16 Feb 2016 (pre GEF project), images of 27 May 2017 towards completion of GEF project and 19 November 2017, after completion of GEF project

Based on the above aerial images the intended objective to ensure sufficient inflow into the Lake St Lucia through restoring the historical natural connectivity between the uMfolozi River as the major contributor of fresh water into the St Lucia Estuary system and the Lake St Lucia has yielded very positive results and met the objective of the GEF project at the time.

3.3.1.11 *Boundary Encroachment and Uncontrolled Development on the Boundary of the Park*

As the Park attracts more tourists, private developments adjacent to the Park are increasing in the form of tourist accommodation such as campsites and small lodges. These are being started by the landowners or occupiers themselves, who live adjacent to or in close proximity to the Park, or by entrepreneurs who get permission to lease stands of Ingonyama Trust land for private residential or commercial (tourism) purposes. This economic opportunity results from a high demand for affordable accommodation for Park visitors and insufficient accommodation available in the Park itself. While it is filling a market niche and attracting more tourists to the Park, there are also negative impacts on the Park arising from the risks of sub-standard environmental management of these developments, either as a result of lack of knowledge or lack of funds, exacerbated by a lack of resources in the form of supporting municipal services (e.g. waste and sewage removal). Furthermore, these developments can have negative visual impacts on the Park, which are difficult to prevent or manage if

developments do not go through a formal authorisation process with public consultation. Illegal developments should ideally be prevented from occurring by conducting routine monitoring.

3.3.1.12 Alien Invasive Species

Flora

Alien invasive plants are a threat to biodiversity in the Park and significant resources are required to control infestations on an ongoing basis. As part of the rehabilitation programme for the areas previously under forestry on the Eastern and Western Shores, much work has been done to clear such species, mostly *Chromolaena odorata*. However, alien vegetation clearing programmes are also implemented throughout the Park due to colonisation from outside the Park via wind and water dispersal. The areas adjacent to watercourses are most vulnerable to infestation, as are the Park's boundaries where alien invasive plant control on neighbouring land can be lacking. Other species of concern are *Lantana camara*, the famine weed (*Parthenium hysterophorus*) in uMkhuze and *Pereskia aculeata* in the Coastal Forest Reserve. Miranda & Adams (2013) list a total of 16 alien plant species found within the Msunduzi River, typifying the species found within the remainder of park.

Land Care and Rehabilitation Programmes have removed 12,000 ha of commercial timber, which has improved ecosystem functioning; rehabilitated 45,000 ha through an alien plant control programme; created new habitats and provided employment for thousands of Park neighbours. As part of the re-development process, considerable investment in tourism and conservation infrastructure has been made. For example, the land care and infrastructure development programmes have employed community-based contractors creating about 54,378 temporary jobs over the last 15 years (audited figures ending in 2013/2014 financial year) with an average of 3,625 temporary jobs created annually.

Alien plants, both terrestrial species such as *Chromolaena odorata*, and aquatic species such as water hyacinth *Eichhornia crassipes* and water lettuce/ water cabbage *Pistia stratiotes* which proliferate due to eutrophication, can cause biological and chemical changes in water bodies of the Park. The status of alien invasive species in and around the St Lucia estuarine system requires urgent attention, rapid action is needed to prevent the future introduction and spread of alien species (Miranda & Adams, 2013).

Fauna

A total of 30 invasive species of fauna are listed from a survey of the Msunduzi River (Miranda & Adams, 2013), which are representative of most alien fauna encountered in the Park. The invasive alien snail *Tarebia granifera* is spreading rapidly through KZN coastal fresh and estuarine waters and is already present within the water bodies of iSimangaliso. It is unknown as yet what the impact of this invasion will be, but eradication of this snail is currently not possible.

The Crown of Thorns Starfish (COTS) *Acanthaster planci*, which preys on hard corals, can decimate coral reefs. COTS were observed at Sodwana in the early 1970's and 1993-1996 (Schleyer, undated, Celliers & Schleyer, 2006) and remain a threat to the vulnerable coral reefs should an outbreak occur, particularly if coincident with coral bleaching.

Marine species can be unintentionally introduced via ship's ballast water or via floating fishing gear and marine debris transported by ocean currents. Worldwide, the spread of alien species in marine ecosystems has increased, with mussels frequently being involved. Invasive mussel species could out-compete the locally found

indigenous black mussel *Perna perna*. The invasive Mediterranean mussel (*Mytilus galloprovincialis*), a medium-sized mussel that was introduced into South African shores in the late 1970s, has spread rapidly and is dominating nearly 2000 kilometers of the South African shoreline from Namibia to East London. This species presents a threat should it migrate northward to iSimangaliso. In addition, the Chilean mussel *Semimytilus algosus*, that was originally introduced to Namibia and first detected on the west coast of South Africa in 2009, is predicted to spread, although be confined to temperate regions (Zeeman, et al., 2020), so may not impact the subtropical east coast. More recently, the Asian green mussel *Perna viridis*, an invasive Indo-Pacific species, has been reported from six South African harbours, including Durban. There is a possible threat of the species becoming established and then spreading onto the open coast and competing with the indigenous *Perna perna* (Micklem, et al., 2016).

3.3.1.13 Unexploded Ordnance

The South African National Defence Force (SANDF) operated a Missile Test Range at its military training area at Hell's Gate on the Nkhosho Peninsula, which was closed during the 1990s. From the test range, missiles were fired into the Wilderness area of the Park across Lake St Lucia. Although there have been various clearance exercises, the Department of Defence has not certified that the impact areas are completely clear of unexploded ordnances or parts thereof. Map 25 in Appendix 3 indicates the various impact areas.

3.3.1.14 Infrastructure Development

With tourism development there will be the development of a variety of infrastructure, ranging from accommodation, to roads, parking areas, gates, electrification infrastructure, water servitudes, sewage disposal (e.g. septic tanks), etc. The development of this infrastructure presents the possibility of cumulative impacts and carrying capacity needs to be carefully considered (refer also Chapter 5.1.9). Sensitive sites must be avoided. In particular, development in the coastal zone and estuarine and riverine functional zones must comply with coastal setback lines and floodlines, respectively. Low light impact is essential for any development along the coast in order to avoid the threat of turtle hatchlings being disoriented i.e. following lights inland rather than moonlight offshore. There is a need to close some roads within the Park so that access to fragile and significant areas can be better controlled and their conservation enhanced. Conversely, the standard of certain roads will need to be improved so that better tourism facilities and better tourist management are provided at the same time as iSimangaliso and its heritage values are protected.

3.3.1.15 Climate Change

The effects of climate change manifesting in more severe weather events increases the risk to ecosystems by exacerbating the effects of other threats described in this chapter. Threats as a result of Climate Change can be manifested by:

- ❖ *Global warming*: Increases in annual-average near-surface temperatures are projected to occur over large parts of South Africa, with the magnitude at the coast being less than in the interior. Heat wave conditions are found to be more likely, with dry spell durations lengthening slightly. Global warming is expected to increase the frequency and intensity of El Nino events (Joubert, 2019). Results from modelling exercises suggest that the effects on water quantity and quality resulting from prolonged periods of drought can have serious consequences for natural ecosystems in the Park, as well as the social environment and tourism industry. Prolonged dry conditions could result in increased wind-blown sand (Cooper, 1998) and more mobile dunes and along with a prediction for stronger winds (Rouault, et

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- al.,2009), could result in increased dune blow-outs, Along with the increased winds, there could be directional shifts, which may further result to changes in dune form and orientation.
- ❖ *Rainfall and extreme weather:* There is less certainty in rainfall projections and long-term variability and oscillations (e.g. linked to El Nino, La Nina) and the limited length of the measured rainfall record add to the challenges. Many model projections show a tendency for wetting in the summer rainfall region (north and east), however, the magnitudes of such changes are highly uncertain (Daron, 2014). There is evidence that extreme weather events in South Africa are increasing and that there are increases in rainfall intensity (DEA, 2019). Severe rainfall events affect natural systems (e.g. erosion) and the human environment (flooding, risk to life and infrastructure damage). Furthermore, due to the severity of these rainfall events, water may be unavailable to the environment because of the severe manner in which it will rain and anticipated rapid surface water runoff.
 - ❖ *Sea-level rise and increased severe marine storms:* Sea-level rise (SLR) off Durban has been measured at 2.7 mm pa by Mather, 2007 and 1.49 mm pa by NOAA (2020) and is projected to increase. This added to the increase in intensity of extreme weather events (see above and refer also 3.3.1.16 below) puts the narrow coastline, which is already dynamic in nature, at risk to erosion. However, shoreline response to SLR is a complex process (Cooper, 1998) and there is uncertainty as to how soft coastlines will respond. (Bird 2000). The most likely scenario is that dune systems will retreat landward, in an equilibrium response to decreases in beach width and sediment volume (Cooper 1998). Rising sea level will also result in a rise in water levels throughout the lake system, which means the lakes will expand in surface area and depth (Mather, et al., 2013). It is also predicted that the mouth of the St Lucia system may migrate inland by between ~26 to ~190 m, depending on the extent of the sea level rise (Mather, et al., 2013).
 - ❖ *Increased sea temperature resulting in coral bleaching:* Rouault et al. (2009) has found a temperature increase averaging 0.2°C per decade between 1985 and 2006 in the Agulhas Current, .Globally, sea temperature has risen by an estimated 1°C over the last century and by 2050 sea surface temperatures are expected to rise by 2°C. Corals die when pushed beyond their normal temperature tolerance, which in the case of Sodwana Bay is 28.8°C (Celliers & Schleyer, 2002). While minimal bleaching was experienced by the iSimangaliso reefs during the mass coral bleaching event of 1998 (associated with El Nino conditions), there were impacts in summer 2000/01 and 2005. This has prompted a long-term coral bleaching monitoring programme for the region under the auspices of SANBI, which includes visual reef monitoring and underwater temperature recorders (UTR's). Sea temperature records off Sodwana Bay date back to 1994, when the first UTR was deployed. By 2040, coral bleaching will be worse than the 1998 event (Schleyer,M., quoted by Joubert, 2019) and corals will be pushed beyond their temperature tolerance threshold. This could mean mortality of corals on the reefs off iSimangaliso, which would have serious implications for the ecosystem as a whole and a ripple effect on the dive and fishing tourism industry.
 - ❖ *Vulnerability to climate-related diseases:* Warmer and more extreme climate may exacerbate diseases and present health risks, leading to increased mortality, e.g. heat stress, increased water-, food-borne and insect-related diseases (refer also Chapter 3.3.1.20), fungi and moulds,

South Africa has developed a National Climate Change Response Strategy for the country (DEA, 2004). This strategy contains priority areas of concern, with the following being of relevance to the iSimangaliso Wetland Park:

- ❖ Supporting national objectives and sustainable development.
- ❖ Adapting to Climate Change.
- ❖ Meeting international obligations.
- ❖ The integration of climate change response in government.
- ❖ Domestic legal obligations.
- ❖ Climate change related education, training, awareness and capacity building.
- ❖ Climate change related research, development and demonstration.

The DEA has since published a National Climate Change Adaptation Strategy (NCCAS) (DEA, 2019), which provides a common vision of climate change adaptation and climate resilience for the country and outlines priority areas for achieving this vision. The following interventions have relevance:

1. Reduce human, economic, environment, physical and ecological infrastructure vulnerability and build adaptive capacity.
2. Develop a risk, early warning, vulnerability and adaptation monitoring system for key climate vulnerable sectors and geographic areas.
3. Develop vulnerability and resilience methodology framework that integrates biophysical and socio-economic aspects of vulnerability and resilience.
4. Facilitate mainstreaming of adaptation responses into sectoral planning and implementation.
5. Promote research application, technology development, transfer and adoption to support planning and implementation.
6. Build the necessary capacity and awareness for climate change response.
7. Establish effective governance and legislative processes to integrate climate change in development planning.
8. Enable substantial flows of climate change adaptation finance from various sources.
9. Develop and implement an M&E system that tracks implementation of adaptation actions and their effectiveness.

To date, the iSimangaliso Wetland Park has implemented various measures in an effort to mitigate the impacts of climate change. These include:

- ❖ The restoration of natural systems in an effort to improve the resilience of the Park (for example, restoration of the Lake St Lucia estuarine system, interconnection of wetlands and dune rehabilitation at Sodwana and St Lucia).
- ❖ The removal of infrastructure situated in vulnerable areas (viz. infrastructure in low lying areas or within the coastal management line).
- ❖ Raising of roads to prevent flooding during times of heavy rain.
- ❖ Supply of water to dry areas during times of drought.
- ❖ A coastal management line (Section 5.2.4) that will guide development.

The Park Authority will continue to implement measures to manage the effects of climate change as outlined above in relation to the country's climate change response and adaptation strategies. Continued monitoring

should form an important part of this measure. To this end, continuous long-term monitoring of meteorological variables, groundwater and stream flow at representative sites should be implemented.

Carbon sequestration is the long-term storage of carbon dioxide or other forms of carbon and to this end, iSimangaliso, with its abundance of grasslands, forests, mangroves and ocean acts as a carbon sink and can therefore mitigate against global warming and climate change. In addition, carbon trading initiatives (refer also Chapter 3.3.1.21) could be considered for income generation while also protecting the biophysical environment, and the use of renewable energy and recycling initiatives are to be encouraged.

3.3.1.16 Climate variability and natural disasters

Drought, floods and marine storms are the biggest natural threats. The effect of dry and wet cycles on the salinity of St Lucia Lake has already been referred to as one of the distinctive features of the lake ecosystem (3.2.1.3) – these cycles are typically linked to ENSO (El Niño Southern Oscillation) as El Niño and La Niña events, although there are longer climatic cycles, e.g. Pacific decadal oscillation, that also have a controlling influence. El Niño's tend to be associated with dry conditions over Southern Africa (Dieppois, et al., 2015). Conversely, wetter than normal periods tend to be associated with La Niña events and normal rainfall with neutral ENSO (El Niño Southern Oscillation) phases, although this does not always hold true, as the 1987 floods occurred during an ENSO event. Droughts are typically broken by high rainfall events, often associated with a switch to La Niña conditions. Tropical cyclones making landfall (usually as tropical depressions) and cut-off lows remain a flood threat and, along with global warming (see above), could become more frequent in the future. High swell events, usually associated with Tropical cyclones, cut-off lows or strong cold fronts, can cause erosion of coastal margins. With this in mind, the Authority should ensure that infrastructure is well sited along the coastline of the Park, to maintain coastal processes and attributes within the Park (Bundy, 2015).

3.3.1.17 Maritime disasters

Accidental oil spills and ship strandings as a result of shipping disasters during their passage along the eastern seaboard of southern Africa, whether related to mechanical or operational failure or storm events (see above), pose a threat to the marine environment, e.g. the Katina P, which ran aground off Maputo in 1992, resulted in oil pollution along the northern section of the park; the Jolly Rubino off Maphelane lighthouse in 2002; the DAR Barges off Cape Vidal in 2008, which were controversially sunk to form artificial reefs. An increase in storm events (see 3.3.1.16 and 3.3.1.17 above) could make the coast more vulnerable to maritime disasters in the future.

3.3.1.18 Mining

No mining is permitted in iSimangaliso, apart from an existing Perlite mine in the Mkhuze section of the Park. However there is a threat of mining around park perimeters, for which suitable buffers (e.g. air and water quality, ambient noise) are necessary. A future extension of Richards Bay Minerals (RBM) northward towards iSimangaliso will present a threat, as does illegal sand mining, which has become a universal problem in KZN (and South Africa).

3.3.1.19 Crime and political instability effects on tourism

Factors affecting tourism numbers include:

- ❖ Crime: South Africa has experienced a huge increase in crime since the end of apartheid, much of it violent crime (rape, murder). This has an extremely negative affect on personal safety and tourism, on which parks such as iSimangaliso rely for foreign income. Foreign tourists may prefer to choose a safer country offering a similar African experience.
- ❖ In order to protect minors from illegal child trafficking, the restriction by SA Home Affairs that children require certain permissions (unabridged birth certificates, letters from parents) in place before travelling to South Africa has further limited tourist numbers (for example, it will be easier to travel to another African country to experience similar wildlife, but with easier access).
- ❖ The at times uncertain political climate and inter-party squabbling and frequent labour strike action are additional negative factors.
- ❖ The recent Moody's downgrading of the country to Junk Status has further affected investor confidence.

3.3.1.20 Biological Threats

Biological threats to the Park and its ecosystems include:

- ❖ *Historical treatment of pests:* Tsetse fly and trypanosomiasis carried by game was identified was a threat to cattle ranching with a resultant slaughter of game outside of the reserves in the late 1800's to early 1900's. The application of the organochloride pesticides DDT (Dichloro-Diphenyl-Trichloroethane) and BHC (Benzene hexachloride) overcame this threat, but the cost to the environment has never really been quantified. DDT is a persistent organic pollutant that is readily adsorbed into soils and sediments and can bio-accumulate and magnify up the food chain, as such it is a risk to humans and ecosystems. The half-life in soils ranges from 2 to 30 years, depending on the receiving environment, however the half life in aquatic environments can be as much as 150 years (NPIC, 2000); this is compounded by the fact that aquatic fauna, especially fish and invertebrates, are more vulnerable to the effects of the poison, thus there may still be lingering effects on the environment from this campaign. According to the Kosi Bay Estuarine Management Plan, 2016, there was a significant problem in the 1970s in relation to levels of DDT, and its derivatives DDE and TDE, in the sediments of Lakes kuMpungwini and Makhawulani, as well as in fish tissues.
- ❖ *Malaria:* The Park is located within a malaria area and special precautions need to be taken to avoid contracting the disease. South Africa is one of the few countries in the world still using DDT, albeit under WHO guidelines, spraying the roofs (and walls) of huts, as a preventative measure against malaria. However, malaria remains a risk to residents and visitors, alike. In addition, the continued and historic use of DDT (see above) remains a threat to ecosystems and residents.
- ❖ *Bilharzia* is present in the fresh waters.
- ❖ *Diseases:* Global pandemics, such as the Corona COVID-19 virus will have a devastating effect globally and locally. The Park is marketed as a tourist attraction and relies on tourism as a source of income. A ripple effect of this pandemic is that prolonged lockdown periods will lead to local people having no source of income and if none of their own subsistence crops are grown, they will struggle to put food on

the table. This may result in increased poaching of resources within the Park. It will take some time to recover from the effects of this pandemic and the possibility of another similar such pandemic in the future should not be ignored.

- ❖ *Alien invasive species* are addressed in Chapter 3.3.1.12,

3.3.1.21 Air Quality and Carbon Budget

Although air quality within the Park itself is generally good, air pollution has no bounds; thus there are sources of air pollution in surrounding areas that can influence air quality in the Park. Sources within the Park may include vehicle emissions, dust (from un-tarred roads) and biomass burning. Sources of air pollution from outside of the Park which may influence air quality within the Park include biomass burning (in particular burning of sugar cane on farms surrounding the Park – this is more problematic during poor dispersion days during winter), burning of waste in the absence of waste services and dust (from un-tarred roads and mines). The impact on the Park will depend on the prevailing weather conditions at the time, i.e. air stability and wind direction relative to source.

Owing to the natural setting of the Park, iSimangaliso has a low carbon economy, i.e. CO₂ emissions are low; however, the carbon footprint can be reduced by promoting green initiatives (e.g. recycling, use of renewable energy).

3.3.2 Constraints to Poverty Alleviation and Empowerment

3.3.2.1 Regional Context

While iSimangaliso is an important economic driver for the region, it is not the economic panacea of common perception. Many people, particularly land claimants and neighbouring communities, have high expectations of the economic opportunities that the Park will generate. Such expectations of a natural asset and of the tourism sector are unrealistic. iSimangaliso is committed to fulfilling its development mandate but cannot singly resolve regional economic issues, including the alleviation of widespread poverty. Multi-level interventions which address the historical under-development of the region are still required.

There have been notable achievements over the years:

- ❖ Land Care, Rehabilitation Programmes and infrastructure development have employed community-based contractors creating about 54,378 temporary jobs over the last 15 years (audited figures ending in 2013/2014 financial year) with an average of 3,625 temporary jobs created annually.
- ❖ Co-management agreements with land claimants define beneficiation packages that include annual revenue payments. Over the past six years R 4,438,751 has been paid to land claimant communities.
- ❖ Land claimant groups are equity partners in three tourism accommodation facilities that provide for equity shareholding of between 20 and 61 percent. Tourism activity licences are reserved for businesses where at least 70% shareholding is community-owned and actively managed. Training programmes in tourism, hospitality and tour-guiding have included local people. These new partners benefit directly from conservation and, in this way, the Park's outstanding heritage values have become tangible.

- ❖ The Craft Programme provides focused support for income generation for local women through capacity building, product development and selling crafts in a range of higher value markets. Beginning in 2000, the programme has supported 24 craft groups.
- ❖ The Rural Enterprise Programme provides sub-grants and technical assistance. Thus far, 178 enterprises have participated in the programme and 71 enterprises have received grants to the value of R 6,350,134.
- ❖ Since 2010, iSimangaliso had supported 67 young people from land claimant and neighbouring communities to study at tertiary institutions in the fields of conservation and tourism.
- ❖ Supplementing the tourism development are successful training programmes developed by the iSimangaliso Authority which has trained and built the capacity of the rural poor in skills such as tour guiding and chef training. Rural entrepreneurs have also been trained to run and manage tourism related businesses (Herrington, 2000; Spenceley, 2001; iSimangaliso, 2009).

Despite these achievements, the region remains poor, and significant additional investment and support is required.

3.3.2.2 *Poor Historical Relationship between Communities and Conservation*

Under the previous government, conservation efforts in the area generally worked to exacerbate the plight of rural residents rather than contribute to economic growth and poverty alleviation. Indeed, large tracts of rural land were given over to the formation of nature reserves managed by conservation and other state agencies that ensured a high level of environmental preservation within the protected areas. Outside the nature reserves, however, land deprivation and systematic underdevelopment caused severe levels of resource degradation and acute poverty among large sections of the population. This co-existence between protected nature reserves on the one hand and degraded human reserves on the other, forms the broad context that characterises underdevelopment in areas surrounding the Park.

Underpinning this situation is the legacy of forced removals. For many people living in the area today, conservation is synonymous with loss of their land and consequent social dislocation. With the loss of land being a bitter living memory for these residents, it is not surprising that there is hostility towards conservation and conservation authorities.

The history of iSimangaliso Park is one of community displacement in the name of conservation, and repeated clashes with authorities over the harvesting of resources (Sunde & Isaacs, 2008). Tensions between impoverished residents and conservation continue to play themselves out and present a significant challenge to iSimangaliso. In this regard, it will be through the delivery of economic benefits, the attaching of values to the aesthetic, cultural, spiritual, social and educational attributes of the Park, and the permitting of sustainable access to natural resources that these tensions will dissipate. In addition, iSimangaliso's efforts to deliver these benefits must be accompanied by service delivery and creation of economic opportunities in the region.

Since the inception of the iSimangaliso Wetland Park, significant resources and effort have been focused on the delivery of social and economic benefits to impoverished neighbouring communities, through various programs. However, unrealistic expectations of delivery and the potential for delivery of benefits poses a key risk for iSimangaliso, as does the difficulty of balancing interests within and between stakeholder groups.

“Within this focus on development, the Authority has also initiated co-management agreements with communities in iSimangaliso whose land claims⁸ have been settled, within the national land claims restitution process. The co-management agreements facilitate benefit sharing and access rights to the Park for these previously disadvantaged communities (Gowans, 1999; iSimangaliso, 2008; Walker, 2003). Through ecotourism opportunities, many land claimant communities are already accruing tangible economic benefits (Gowans, 1999; Groenewald, 2004; Herrington, 2001). A study shows that there had been a shift in attitude among the local communities towards iSimangaliso by 2002, where 94% of respondents positively associated iSimangaliso with revenue and employment. This contrasts with a previous study (Infield (1988) where only four out of 151 (6.04%) individuals thought tourism was beneficial for the community (Picard, 2003).” Govender, 2013.

3.3.2.3 Transformation of the Tourism Sector

Transformation of the economy is a national government objective. iSimangaliso seeks to implement this through, *inter alia*, its tourism development programme. This is achieved through many skills development programmes, such as tourism guiding, enterprise development, bursaries, internships as well as its programme of permitting commercial tourism operations in the Park.

Permissions issued to private parties to operate tourism activities or accommodation in the Park have specific requirements in respect of equity participation, job creation, and skills development. iSimangaliso has partnered with community-owned companies for charter fishing, turtle tours, and boat cruises as well as accommodation facilities. In the current economic climate, tourism is an important economic activity for communities in the region.

The basis for issuing permissions (licenses and public-private partnership agreements) is based on the PPP regulations in the PFMA. The basic principles include:

- ❖ Transfer of risk, specifically business and environmental risk, to the private sector.
- ❖ Maintenance of public access.
- ❖ Value for money to the Park.
- ❖ Predictable revenue stream for the Park in the form of monthly fees.
- ❖ Promotion of transformation (BEE codes).

Commercial opportunities through land incorporations with neighbours are pursued on the same basis.

Following on the developments undertaken as part of the LSDI, the iSimangaliso Authority has further expanded on these developments by transforming the tourism potential of the Park, while also creating economic empowerment opportunities for the surrounding previously disadvantaged communities (iSimangaliso Wetland Park Authority, 2008):

Firstly, there is a need to “protect, conserve and present the cultural and natural heritage of iSimangaliso Wetland Park and give effect to the values of the (World Heritage) Convention in and around the Park” (iSimangaliso Authority, 2009, 22). These efforts include:

- * Successful alien clearing and afforestation programmes have been implemented for the last ten years.
- * A phased long-term programme to re-introduce game to Ozabeni, Eastern and Western Shores of the Park.

- * The iSimangaliso Authority has successfully removed illegal developments in sensitive coastal forest environments.
- * The Authority also supports and funds research efforts and monitoring in the Park to ensure updated data is available for management decisions (iSimangaliso Wetland Park Authority, 2008; Spenceley, 2001).

Secondly, the iSimangaliso Authority must promote the empowerment and development of surrounding historically disadvantaged communities (iSimangaliso Authority, 2009). Initiatives include:

- * Over 50% of the value of contracts for infrastructure in the park has gone to Small Medium and Micro Enterprises (SMMEs) (iSimangaliso Wetland Park Authority, 2008; Spenceley, 2001).
- * A craft programme in 13 communities living adjacent to the Park, which has built capacity amongst local women and linked them to higher value domestic and international markets (Spenceley, 2001; iSimangaliso, 2009).
- * Supplementing the tourism development are successful training programmes.

Lastly, the Authority must market, manage and facilitate optimal tourism and related development in iSimangaliso (iSimangaliso Authority, 2009). This is being achieved by:

- * The tourism infrastructure programme has upgraded and built new public access infrastructure (picnic sites, accommodation facilities and game viewing roads, hides, viewing sites, game fences).
- * The Authority manages all tourism and related activities in the Park through concessions (iSimangaliso, 2009).

3.3.3 Constraints to Tourism Development

Significant strides have been made in the redevelopment of the iSimangaliso Wetland Park. Certain sections of the Park are less developed than others, particularly the northern reaches. There are specific factors associated with tourism development in Parks that give rise to challenges with tourism development. These are set out in Table 6.

Infrastructure deficits in the area also play a role. For example, the lack of local and regional solid waste disposal facilities, inadequate or non-existent water treatment works, a poor communications network, inadequate water supply, lack of basic facilities such as adequate medical support, and insufficient and inadequate signage.

South Africa's unacceptably high crime rate and economic downgrading is also a constraint. Additional tourism constraints are included under the "threats to natural values" section in Chapter 3.3.1., which impact tourism potential.

Table 6 Regular Tourism Investments versus Project Area Public Private Partnerships (PPP)

Number	Regular Tourist Accommodation Investment	Tourist Accommodation PPP in a Protected Area
1	Capital Growth	
	The investor is able to sell the property at a value that generally exceeds the initial investment	There is no capital growth. The facility automatically reverts to the state without compensation for the improvements effected by the investor. At best, the outgoing Private Party may recoup part of the value of any movables taken over by the new operator
2	Collateral for Debt Financing	
	The property can serve as collateral for debt finance, even in the case where the investment is on leasehold property	Collateral for debt financing is limited to the investor's use rights under the agreements, which in financial terms, are very limited. The investor is not able to encumber the Park asset but would have to encumber other assets to secure finance
3	Risk	
	The investor assumes the full operational risk, including the risk of bankruptcy. However, the investor may sell the project at any time to mitigate losses or avert bankruptcy. If further capital has to be injected into the project, it may be recovered through future profits and/or capital appreciation	The investor assumes the full operational risk, including the risk of bankruptcy. The investor has no option but to continue to operate the project irrespective of the losses being incurred and the prospects of recovery. If further capital has to be injected into the project, it may never be recouped since the life of the project is finite and there is no capital appreciation
4	Finance for Land Claimants & Traditional Councils ("Mandatory Partners")	
	The investor is not required to raise or underwrite any mandatory partner's share of the investment	Protected areas are required to create benefits for mandatory partners in the form of equity amongst other things. Since the mandatory partners have little or no capital or assets, the primary investor must underwrite or guarantee the mandatory partner's equity and share of debt finance, resulting in a disproportionate risk vis-à-vis return on investment
5	Capital Expenditure & Operating Costs	
	Capex and operating costs are not impacted by environmental and related factors typical of protected areas	Capex and operational costs are appreciably higher in response to environmental strictures. For example, construction costs are higher because building takes place in remote and/or inaccessible areas; waste must be removed from the Park; specialised plant must be installed to deal with sewage, etc.
6	Target Market	
	The investment project typically has access to a variety of markets (leisure, business, etc.), enabling it to diversify its business risk	The investment project is reliant exclusively on the leisure market, which is notoriously fickle and subject to vagaries beyond the investor's control

To make PPP investments more attractive, iSimangaliso:

- ❖ Includes in its contract terms a payment holiday during the EIA and construction periods.
- ❖ Facilitates access to development finance institutions in accordance with the Memorandum of Understanding it has concluded with these institutions for Park projects.
- ❖ Provides bulk services to site at its cost, where appropriate.
- ❖ Undertakes many skills training programmes so that prospective investors can draw from a pool of skilled hospitality staff.
- ❖ Implements an extensive marketing programme which has improved the Park's profile as well as visitor numbers.
- ❖ Runs an entrepreneurship programme that supports businesses capable of offering upstream and downstream services to tourism facilities.

Lastly, iSimangaliso has recently embarked on a programme to raise grant funding for the community equity share in PPP investments.

3.4 Proposed Interventions

A summary of the conservation significance of and threats to the Park and the corresponding tourism potential and constraints, potential for and constraints to community benefits and the proposed interventions per Management and Development Block is provided in Table 7 and corresponds geographically to Map 27. (The rationale and description of these management and development blocks and sections are explained in Section 5.1.12).

The link between these threats and proposed interventions and the actions listed in the Implementation Plan (Section 4.6 in Chapter 4) are presented in Table 8.

Table 7 The conservation significance of and threats to the iSimangaliso Wetland Park, and the corresponding tourism potential and constraints, potential for and constraints to community benefits, and proposed interventions (per Management and Development Block)

Section	Conservation Significance	Conservation Threats	Tourism Potential	Tourism Constraints	Community Benefits: Potential	Community Benefits: Constraints	Essential & Desirable Interventions
Management and Development Block A: Southern Sections							
Eastern Shores (A1)	❖ High species diversity and exceptionally beautiful and diverse landscapes ❖ Two Ramsar Sites, viz. St Lucia lake & turtle beaches/coral reefs ❖ Partial source of freshwater for Lake St Lucia ❖ Southern limit of South African coral reefs ❖ Important marine biogeographic region & ecosystem with many endemic species ❖ Abundance of hippos and crocodiles ❖ Abundance of aquatic birds & fish nursery ❖ Elephants and Rhinos (Black and White) ❖ High forested dunes	❖ Rocky marine habitats unprotected ❖ Alien flora and fauna invasion ❖ Closure of St Lucia estuary mouth ❖ Catchment degradation ❖ Loss of diversity of wildlife ❖ Effects of climate change ❖ Offshore prospecting and exploitation of resources ❖ Lack of funding for programmes ❖ Service standards need improvement ❖ Fencing ❖ Roads ❖ Poaching ❖ Risk of creating negative visual impacts (e.g. lights, buildings) – lights confuse turtle hatchlings	❖ Spectacular and highly diverse landscapes ❖ Game viewing ❖ Opportunity to establish more game/bird hides ❖ Archaeological & historical significance ❖ Opportunity to offer a wide variety of tourism & recreational activities/ attractions (land, lake & sea-based) ❖ Prime lodge sites ❖ Opportunity to expand day visitor activities to meet growth of St Lucia ❖ Turtle nesting ❖ Hiking & wilderness trails ❖ Kayaking, surfski's, kiteboarding, windsurfing, ❖ Snorkelling ❖ Surfing ❖ Sand boarding ❖ Sporting events (e.g. running, mountain bike) ❖ Blue flag beaches ❖ Webcams (e.g. estuary mouth, hippo & elephant areas, beach) - tourism and monitoring/ research benefits ❖ Opportunity to expand day visitor facilities, e.g. picnic sites and ablutions	❖ Degraded grasslands and alien vegetation destroys the unique 'sense of place' ❖ Lion absent at present ❖ Service standards need improvement ❖ Effects of climate change ❖ Diseases – Faunal and human pandemics ❖ Malaria area ❖ Crime & political climate – concerns about personal safety ❖ Road infrastructure and inadequate signage ❖ Long road to Maphelane in bad condition ❖ No swimming in lakes or rivers (crocodiles, hippos, bilharzia!) ❖ No fishing after sunset ❖ Equitable public access	❖ Access for ritual and cultural purposes ❖ Development of a cultural tourism site ❖ Sustainable natural resource use: iNcema ❖ Mandatory partners in tourism accommodation ❖ Land care contractors and temporary employment ❖ Cultural interpretation and naming of infrastructure ❖ Environmental education & interpretation	❖ Land claim settled but high expectations of delivery from tourism ❖ Communities lack tourism business skills	❖ More game species introduced ❖ Establish game/bird hides ❖ Upgraded tourist roads and tracks ❖ Continue rehabilitation and alien vegetation clearing, esp Casuarina at C Vidal ❖ Support catchment management institutions ❖ Construction of Park furniture, e.g. picnic sites & ablution facilities ❖ Tourism activity concessions awarded ❖ Tourism accommodation sites developed ❖ Training and capacity building of community members so that benefits from tourism development are maximized ❖ Environmental education and interpretation provided ❖ Improve the standard of service delivery & security ❖ Continue fundraising for programmes ❖ Implement applicable Climate Change Response Strategy actions ❖ Community liaison ❖ Anti-poaching measures ❖ Install tourism webcams

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Section	Conservation Significance	Conservation Threats	Tourism Potential	Tourism Constraints	Community Benefits: Potential	Community Benefits: Constraints	Essential & Desirable Interventions
Maphelane Dukuduku Futululu (A3)	❖ Important linkage with the Park system ❖ Role of uMfolozi mouth in maintaining the health of the lake system ❖ Catchment role of Dukuduku and Futululu in supplying fresh water to the lake system ❖ Number of rare plant species and habitats ❖ Futululu best remaining example of coastal lowland forests	❖ Settlement and harvesting fires for charcoal in Dukuduku has destroyed the once pristine Dukuduku forest ❖ Alien flora and fauna invasion ❖ Reduced water quality due to settlements, waste water discharge, etc. ❖ Negative impact of sugar farming and other cultivation on the uMfolozi floodplain (siltation, closure of mouth, artificial separation of uMfolozi from estuary mouth) ❖ Poaching ❖ Uncontrolled development on the Park boundary ❖ Effects of climate change ❖ Offshore prospecting and resource exploitation ❖ Lack of funding for programmes ❖ Service standards need improvement	❖ Unspoilt African scenery along the 'Gateway' to the Park ❖ Mosaic of beautiful landscapes ❖ Opportunity for limited community-based tourism in Dukuduku area ❖ Opportunity for 'eco-boat' trails on the uMzunduzi river ❖ Opportunity for guided trails and camping	❖ Maphelane is not accessible by road from the remainder of the Park ❖ The access road from the N2 is not accessible to non-4x4s, the road has not been maintained and community unrest has led to the road being blocked off in places resulting in inaccessibility ❖ Difficult to construct tourism roads due to forests and swamps ❖ Very little large game animals (no Big 5 species) ❖ Unfenced ❖ Uncontrolled settlement in Dukuduku ❖ Crime & political climate – concerns about personal safety & security ❖ Effects of climate change ❖ Service standards need improvement	❖ Short term revenue sharing with land claimants ❖ Cultural heritage site ❖ Mandatory partners in tourism accommodation ❖ Sustainable resource use ❖ Community guides for trails and meanders	❖ High expectations and low short-term tourism potential (depends on road construction by the Department of Transport) ❖ Community resentment and lack of adherence to Park rules – nobody benefits	❖ Settlement in the Dukuduku forest resolved and formalised to the benefit of the people involved, conservation and tourism ❖ Implementation of the 'mouth solution' as determined in the GEF funded study ❖ Implementation of the Park's Buffer Zone policy ❖ Training and capacity building of community members so that benefits from tourism development are optimised ❖ Continue fundraising for programmes ❖ Improve the standard of service delivery ❖ Community liaison ❖ Implement applicable actions of the Climate Change Response Strategy
Western Shores (A4)	❖ One of the sources of fresh water for Lake St Lucia ❖ Extensive area of fresh water wetland habitat ❖ Important source of grazing for hippo ❖ Crocodiles ❖ Sharing of costs through land incorporation agreement with SiyaQhubeka Forests ❖ Exposed sedimentary	❖ Pine & eucalyptus plantations that affect the quantity of water entering the lake ❖ Alien vegetation ❖ Slow resolution of land claims ❖ Condition of poverty of neighbouring communities leading to dependence on natural resources ❖ Poaching ❖ Effects of climate change	❖ Close proximity to St Lucia town ❖ Game viewing, including elephants and rhinos ❖ Opportunity to establish game/bird hides ❖ High carrying capacity for tourist attractions & facilities ❖ Important complementary role to that of the Eastern Shores ❖ Close to N2 and	❖ Pine and Eucalyptus plantations affecting views, aesthetics ❖ Slow resolution of land claim leads to uncertainty, investment risk & unclear definition of the beneficiary partners ❖ High cost of road construction ❖ State facilities in poor condition ❖ Limited potable water	❖ Economic beneficiation package for land claimants ❖ Mandatory partners in tourism accommodation facilities ❖ Land care contractors and temporary employment ❖ Sustainable natural resource use	❖ Slow resolution of the land claim ❖ High and/or unrealistic expectations of delivery from tourism ❖ Communities lack tourism business skills	❖ Land claim speedily resolved by RLCC ❖ Co-management agreement signed with land claimants to determine the economic benefits and access rights ❖ Further construction of roads ❖ Development and redevelopment of tourism accommodation facilities ❖ Continue fundraising for

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Section	Conservation Significance	Conservation Threats	Tourism Potential	Tourism Constraints	Community Benefits: Potential	Community Benefits: Constraints	Essential & Desirable Interventions
	❖ rock rich in marine fossils ❖ Primary habitat for elephants	❖ Lack of funding for programmes ❖ Service standards need improvement ❖ Alien species ❖ Fencing ❖ Roads	- Hluhluwe iMfolozi Park for bus groups ❖ Private lodges ❖ Boat viewing/fishing trips ❖ Hiking trails ❖ Webcams (e.g.lake views, grazing hippo & elephant areas) - tourism and monitoring/ research benefits ❖ Opportunity to expand day visitor activities & facilities, e.g. picnic sites and ablutions	❖ Limited accommodation ❖ Effects of climate change ❖ Diseases – Faunal and human pandemics ❖ Malaria area ❖ Crime & political climate – concerns about personal safety ❖ No swimming in lakes (crocodiles, hippos, bilharzia!)			- programmes ❖ Improve the standard of service delivery ❖ Implement applicable actions of the Climate Change Response Strategy ❖ Continue implementing the alien invasive eradication programme including removal of pine & eucalyptus plantations ❖ Anti-poaching measures ❖ Install tourism webcams
Nhlozi Peninsula (A5)	❖ Rich marine fossil deposits ❖ Crocodile breeding sites ❖ Priority species present (e.g. black rhino, buffalo and tsessebe)	❖ High risk of creating negative visual impacts (e.g. lights, buildings) ❖ Commercial timber plantations ❖ Alien vegetation ❖ Poaching ❖ Effects of climate change ❖ Lack of funding for programmes ❖ Service standards need improvement ❖ Alien species	❖ Spectacular views ❖ Good game viewing and landscape ❖ Opportunity to establish game/bird hides ❖ Can be stocked with game ❖ Ideal for concessions with the private sector ❖ Existing airstrip ❖ Hiking trail potential ❖ Un-tapped potential ❖ Fossil tours ❖ Webcams (e.g.lake views, crocodile areas) - tourism and monitoring/ research benefits (see Skylinewebcams.com for other WHS)	❖ Slow resolution of land claims ❖ Commercial timber plantations ❖ Strong winds ❖ Limited potable water ❖ Effects of climate change ❖ Lack of accommodation facilities ❖ Diseases – Faunal and human pandemics ❖ Malaria area ❖ Crime & political climate – concerns about personal safety ❖ No swimming in lakes (crocodiles, hippos, bilharzia!) ❖ [	❖ Economic beneficiation package for land claimants ❖ Mandatory partners in tourism accommodation facilities ❖ Land care contractors and temporary employment ❖ Sustainable natural resource use	❖ Slow resolution of the land claim ❖ High and/or unrealistic expectations of delivery from tourism ❖ Communities lack tourism business skills ❖ Insufficient marketing of the area	❖ Land claim speedily resolved by RLCC ❖ Co-management agreement signed with land claimants to determine the economic benefits and access rights ❖ Lodge and traversing rights are concessioned to the private sector ❖ Continue fundraising for programmes ❖ Improve the standard of service delivery ❖ Implement applicable actions of the Climate Change Response Strategy ❖ Continue implementing the alien invasive eradication programme ❖ Anti-poaching measures ❖ Improve marketing and facilities in the area ❖ Install tourism webcams

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Section	Conservation Significance	Conservation Threats	Tourism Potential	Tourism Constraints	Community Benefits: Potential	Community Benefits: Constraints	Essential & Desirable Interventions
False Bay (A6)	❖ Sand forests ❖ Suni antelope ❖ Rich marine fossil beds	❖ Linear shape with long boundary ❖ Lack of land linkages with other existing areas of the Park ❖ Unresolved land claims ❖ Resource use pressure (including poaching) ❖ Effects of climate change ❖ Lack of funding for programmes ❖ Service standards need improvement ❖ Alien species ❖ Poaching	❖ Existing lodges on neighbouring private land ❖ Proximity to the Hluhluwe spine road ❖ Birding opportunities ❖ Opportunity to establish bird hides ❖ Sporting opportunities, including mountain biking ❖ Opportunities for school groups (environmental education and training) ❖ Fossil tours ❖ Hiking trails ❖ Boat viewing/fishing trips ❖ Webcams (e.g. lake views) - tourism and monitoring/ research benefits	❖ Small size ❖ Lack of potable water ❖ Effects of climate change ❖ Service standards need improvement ❖ Diseases – Faunal and human pandemics ❖ Malaria area ❖ Crime & political climate – concerns about personal safety ❖ No swimming in lakes (crocodiles, hippos, bilharzia!)	❖ Economic beneficiation package for land claimants ❖ Mandatory partners in tourism accommodation facilities ❖ Sub-contractors and temporary employment in infrastructure development ❖ Sustainable natural resource use ❖ Percentage of revenue ❖ Environmental education & interpretation	❖ Slow resolution of the land claim ❖ High expectations of delivery from tourism with relatively low potential ❖ Communities lack tourism business skills	❖ Land claim speedily resolved by RLCC ❖ Co-management agreement signed with land claimants to determine the economic benefits and access rights ❖ Environmental Education and Interpretation provided ❖ Train local guides for conducting fossil tours ❖ Continue fundraising for programmes ❖ Improve the standard of service delivery ❖ Implement applicable actions of the Climate Change Response Strategy ❖ Continue implementing the alien invasive eradication programme ❖ Anti-poaching measures ❖ Install tourism webcam

Section	Conservation Significance	Conservation Threats	Tourism Potential	Tourism Constraints	Community Benefits: Potential	Community Benefits: Constraints	Essential & Desirable Interventions
Management Block and Development B: Central Sections							
Sodwana State Forest/Ozabeni Sodwana Bay (B2 & B3)	❖ Unique 'sense of place' ❖ Exceptionally high landscape diversity ❖ Wilderness area ❖ Two Ramsar Sites, viz. Lake Sibaya & turtle beaches/coral reefs ❖ Extensive grassland & wetland habitat ❖ uMkhuze swamp regulates quantity and quality of water into Lake St Lucia ❖ Extensive beaches and forested dunes ❖ Important marine biogeographic region & eco-system with many endemic species ❖ Important wetland habitat ❖ Mgobozeleni estuary is an important nursery area for estuary-dependent marine species and lake system hosts many rare, threatened and endemic plant & animal species	❖ Ineffective natural resource use permitting system exacerbating resource use/drought - cattle ❖ Increased farming in and destruction of the uMkhuze swamps ❖ Uncontrolled development on the Park boundary ❖ Unregulated tourism development on the border of the Park ❖ Risk of creating negative visual impacts (e.g. lights, buildings) – lights confuse turtle hatchlings ❖ Disputes between claimants (Triangle/eMandleni/Mabaso) leads to uncertainty ❖ Spread of alien flora & fauna ❖ Poaching ❖ Effects of climate change ❖ Offshore prospecting and resource exploitation ❖ Lack of funding for programmes ❖ Service standards need improvement ❖ Fencing ❖ Roads	❖ Undiscovered jewel of South Africa??? ❖ Large, beautiful and diverse with unique combination of land and seascapes ❖ Upmarket intimate lodges ❖ Good landscape for game and bird viewing ❖ Wilderness experience ❖ Spectacular diving sites ❖ Ragged-tooth shark diving ❖ Easy access on Hluhluwe spine road and from other areas of the Park ❖ A number of pans known for their diverse and abundant birdlife ❖ Sporting activities/events ❖ Hiking and wilderness trails ❖ Kayaking, surfski's, kiteboarding, windsurfing, ❖ Snorkelling ❖ Surfing ❖ Sand boarding ❖ Development of a tourism node on the boundary of the Park ❖ Webcams (e.g. estuary mouth, beach) - tourism and monitoring/ research benefits ❖ Picnic sites ❖ Blue Flag beaches	❖ Spread of alien plants ❖ Low carrying capacity for tourists (except Sodwana Bay) ❖ No upgraded roads permitted ❖ Wilderness area limits infrastructure development ❖ Limited number and variety of game animals (especially Big 5) stocked at present ❖ Unregulated tourism development on borders of the Park ❖ Poor or no municipal services ❖ Crime & political climate – concerns about personal safety ❖ Effects of climate change ❖ Service standards need improvement ❖ Diseases – Faunal and human pandemics ❖ Malaria area ❖ Equitable public access ❖ No fishing after sunset ❖ Possible unexploded ordnance	❖ Economic beneficiation package for land claimants ❖ Mandatory partners in tourism accommodation facilities ❖ Sub-contractors and temporary employment in infrastructure development ❖ Sustainable natural resource use ❖ Percentage of revenue ❖ Security industry employment opportunities	❖ No co-management agreement with claimants ❖ High/unrealistic expectations of delivery from tourism ❖ Communities lack tourism business skills	❖ Enter into co-management agreement with land claimants ❖ Stock game as per the game reintroduction policy ❖ Place strict controls on the number and type of lodges & activities ❖ Remove cattle from area ❖ Control alien plants ❖ Negotiate with communities regarding the conservation of the uMkhuze swamps ❖ Implementation of the Park's Buffer Zone policy ❖ Regulate tourism concessions ❖ Long term re-development of Sodwana Bay (e.g. improved beach parking facility) ❖ Continue fundraising for programmes ❖ Improve the standard of service delivery ❖ Improve security ❖ Implement applicable actions of the Climate Change Response Strategy ❖ Continue implementing the alien invasive eradication programme ❖ Install tourism webcams ❖ Consider sunset-10pm inshore fishing allowance ❖ Establish picnic sites in appropriate areas and with appropriate facilities

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Section	Conservation Significance	Conservation Threats	Tourism Potential	Tourism Constraints	Community Benefits: Potential	Community Benefits: Constraints	Essential & Desirable Interventions
uMkhuze (B1)	❖ Different habitat from rest of the Park ❖ Water bird breeding at Nsumo Pan/ Mkhuze catchment ❖ Fig forest along Muluze River & associated birds ❖ Black Rhino ❖ Big Five ❖ African Wild Dog	❖ Extensive use of uMkhuze river & floodplain for agriculture ❖ Unresolved land claims ❖ Poor neighbouring communities reliant on natural resources ❖ Poaching ❖ Effects of climate change ❖ Lack of funding for programmes ❖ Service standards need improvement ❖ Alien species ❖ Insufficient staff ❖ Insufficient game stocks	❖ Long established and well-known reserve ❖ Large variety of game including the Big 5 species ❖ Hluhluwe spine road, Muzi crossing and new entrance will improve access ❖ Self-catering tourism facilities ❖ A number of pans known for their diverse and abundant birdlife ❖ Opportunity to establish new game/bird hides ❖ Guided hiking trails with knowledgeable, trained guides ❖ Encourage local tourism by supplying basic budget accommodation (apart from camping) ❖ Encourage increased use of the park by supplying school group environmental education centre & accommodation ❖ Install webcam at Nsumo pan ❖ Opportunity to establish picnic sites and ablution facilities for day visitors	❖ No upmarket lodges for foreign tourists ❖ Poor condition of existing tourism facilities, not being maintained ❖ Effects of climate change ❖ Service standards need improvement ❖ Insufficient trained staff (guided game walks/drives, customer relations) ❖ Staff apathy ❖ No park info (e.g. brochures), poor mapping & poor road signage ❖ Hides closed off/ not being maintained	❖ Economic beneficiation package for land claimants ❖ Mandatory partners in tourism accommodation facilities ❖ Sub-contractors and temporary employment in land care & infrastructure development ❖ Sustainable natural resource use ❖ Percentage of revenue ❖ Environmental education & interpretation	❖ Slow resolution of the land claim ❖ High expectations of delivery from tourism with relatively low potential ❖ Communities lack tourism business skills	❖ Land claims speedily resolved by RLCC ❖ Co-management agreement signed with land claimants to determine the economic benefits and access rights ❖ Promote sustainable land use on neighbouring community land ❖ Environmental education and interpretation provided, expand to school group facilities ❖ Continue fundraising for programmes ❖ Improve the standard of service delivery and increase staff complement ❖ Implement applicable actions of the Climate Change Response Strategy ❖ Continue implementing the alien invasive eradication programme ❖ Repair broken camp infrastructure and buildings ❖ New road signage and maps, info brochures ❖ Train up staff and appoint sufficient staff for game walks & drives ❖ Map board with current game sightings ❖ Establish and maintain picnic sites in appropriate areas with appropriate infrastructure

Section	Conservation Significance	Conservation Threats	Tourism Potential	Tourism Constraints	Community Benefits: Potential	Community Benefits: Constraints	Essential & Desirable Interventions
Management and Development Block C: Northern Sections (Coastal Forest Reserve)							
Kosi Bay Manzengwenya Lake Sibaya (C1, C2 & C3)	❖ Highly diverse environment: terrestrial and marine ❖ High species diversity in dune forest habitat ❖ Largest protected area of swamp forest in South Africa ❖ Important wetland linkages with the Park components in the south ❖ Three Ramsar sites (turtle beaches & coral reefs, Lake Sibaya, Kosi lakes) ❖ Numerous rare, threatened and endemic species ❖ Lake Sibaya is only permanent source of freshwater in area during dry periods and is important link between the Kosi and St Lucia systems ❖ Kosi is best-preserved estuary in South Africa and important nursery area for estuary-dependent marine species ❖ Cultural heritage significance of the traditional fish traps	❖ Lack of support from local communities ❖ Unresolved land claim ❖ Boundary encroachment and uncontrolled development on the boundary of the Park ❖ Increasing pressure on natural resources (e.g. fish, other marine resources, reeds and hardwood) ❖ Extensive subsistence and commercial agriculture in the swamp forests ❖ Commercial and small grower plantations ❖ Crocodile and hippopotamus populations threatened (Lake Sibaya and Kosi) ❖ Abstraction of water from Lake Sibaya for surrounding communities ❖ Effects of climate change ❖ Lack of funding ❖ Negative visual impacts (e.g. lights, buildings) – lights confuse turtle hatchlings ❖ Poaching ❖ Offshore prospecting and resource exploitation ❖ Alien species ❖ Service standards need improvement ❖ Illegal/unregulated local tourist ventures in sensitive areas	❖ High potential for exclusive marine ecotourism activities ❖ Attractive and intimate marine & ecological sites ❖ Land component also offers a number of ecotourism sites ❖ No fencing and people resident in area, which allows for a different type of tourism (limited scope for large game and therefore more freedom to experience area on foot) ❖ Cultural tourism ❖ Fish traps (living history) ❖ Opportunity for limited community-based tourism ❖ Turtle tours ❖ Hiking trails ❖ Cycling trails ❖ Kayaking, surfski's, kiteboarding, windsurfing, ❖ Surfing ❖ Sand boarding ❖ Boating on lakes ❖ "Aquarium" snorkelling in Kosi estuary & inshore ❖ Picnic sites & ablutions ❖ Opportunity for bird hides ❖ Tourist webcams ❖ Opportunity to establish picnic sites and ablution facilities for day visitors	❖ Road access is poor ❖ Difficult to obtain security of tenure ❖ Low carrying capacity for tourists ❖ Lack of support from communities ❖ Unresolved land claim ❖ Difficult to provide tourism facilities with services, e.g. potable water, waste facilities (solid and waste water), etc. ❖ Effects of climate change ❖ Service standards need improvement ❖ Lack of management ❖ Crime & political climate – concerns about personal safety ❖ Diseases – Faunal and human pandemics ❖ Malaria area ❖ There is a need for local budget accommodation (not just camping and exclusive resorts) to cater for middle-income groups. ❖ Equitable public access ❖ No fishing after sunset	❖ Economic beneficiation package for land claimants and residents of the Coastal Forest Reserve ❖ Mandatory partners in tourism accommodation facilities ❖ Sustainable natural resource use ❖ Regulated community-based B&Bs and home stays ❖ Security industry employment opportunities ❖ Re-ignite the Kosi Lakes 4-day guided trail – beneficiation to local community	❖ Unresolved land claim ❖ High expectations of delivery from tourism with relatively low potential ❖ Communities lack tourism business skills	❖ Gain support of communities ❖ Undertake LAPs so that the type of tourism and residential facilities and activities are regulated ❖ Implementation of the Park's Buffer Zone policy ❖ Continue fundraising for programmes ❖ Improve the standard of service delivery ❖ Implement applicable actions of the Climate Change Response Strategy ❖ Continue implementing the alien invasive eradication programme ❖ Establish picnic sites in appropriate areas and with appropriate facilities – e.g. a suitable picnic site has been identified for Kosi First Lake ❖ Anti-poaching measures ❖ Improve security ❖ Install tourism webcams at managed sites ❖ Consider sunset-10pm inshore fishing allowance ❖ Reinstate the Kosi Bay 4-day hiking trail

Neighbouring community land							
Section	Conservation Significance	Conservation Threats	Tourism Potential	Tourism Constraints	Community Benefits: Potential	Community Benefits: Constraints	Essential & Desirable Interventions
Neighbouring community land	❖ Provides corridors between components of the iSimangaliso Wetland Park ❖ uMkhuze swamp acts as a filter for Lake St Lucia ❖ Sand forest is better represented on some communal land than in protected areas ❖ Some game fencing exists ❖ Potential for community conservation areas being incorporated into the Park	❖ Spiralling rural poverty leads to unsustainable land use practices ❖ Negative attitude towards conservation and authorities due to people's loss of land and resources ❖ Uncontrolled developments on the Park boundary ❖ Alien plants and woodlots, and high demand for resources such as fuelwood.	❖ Some prime lodge sites ❖ Growing demand for combining nature and cultural experiences ❖ Growing eco-tourism market seeks facilities that benefit local communities	❖ Communities lack tourism awareness and expertise ❖ Eco-tourists are not attracted to degraded landscapes ❖ Perception of security & safety risks in communal land ❖ Lack of capital and/or investment interest for development of tourism facilities ❖ Crime & political climate – concerns about personal safety ❖ Diseases – Faunal and human pandemics ❖ Malaria area	❖ As for tourism & conservation	❖ As for tourism & conservation	❖ Undertake LAPs with beneficiary communities ❖ Facilitate linkages with relevant government departments for service delivery ❖ Integration of Park planning into municipal IDPs ❖ Implementation of the Park's Buffer Zone policy ❖ Seek international donor funding ❖ Improve security ❖ Extend alien plant removal to surrounding land areas (seed feeder to Park)
Private Land							
Private Land	❖ Important linkage/corridor between the uMkhuze section and other parts of the Park ❖ Large suni population ❖ Rare coastal grasslands on land neighbouring False Bay ❖ More sand forest and palm veld than in protected areas	❖ Wildlife management & tourism objectives may conflict with those of the protected area ❖ Agricultural and peri-urban development ❖ Poaching ❖ Alien vegetation	❖ Flexibility and risk taking of the private sector ❖ Potential synergy between tourism on private land and tourism in protected areas. Big 5 already stocked on some private land	❖ Much private land is too small to offer competitive tourism products ❖ Many private land owners do not have the expertise or desire to develop & manage tourism products ❖ Crime & political climate – concerns	❖ N/A	❖ N/A	❖ Continue discussing prospects of consolidation with private land owners ❖ Encourage private land owners to implement alien vegetation removal and anti-poaching measures

				about personal safety ❖ Diseases – Faunal and human pandemics ❖ Malaria area			
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Table 8 The link between the threats and proposed interventions, and the actions listed in the Implementation Plan

Analysis of significance, challenge & threat	Action/mitigation (Implementation plan)
Significance	
Conservation significance	Strategic driver 1
Cultural heritage significance	Strategic driver 1
Economic significance	Strategic driver 2; Strategic Driver 4
Challenges and threats	
Threats to natural values	
Disruption of terrestrial and wetland processes	Strategic Driver 1
Fishing offtake	Strategic Driver 1
Poaching	Strategic Driver 1
Socio-economic environment	Strategic Driver 2; Strategic Driver 3
Offshore prospecting, mining and hydrocarbon extraction	Strategic Driver 1
Slow resolution of land claims	Strategic Driver 3
Commercial forestation	Strategic Driver 1
Land use in the catchments	Strategic Driver 1
Restoration of the Lake St Lucia system	Strategic Driver 1, Strategic Driver 6

Analysis of significance, challenge & threat	Action/mitigation (Implementation plan)
Boundary encroachment and uncontrolled development on the Park boundary	Strategic Driver 1
Municipal services (water and waste management)	Strategic Driver 1; Strategic Driver 4
Alien invasive species	Strategic Driver 1
Unexploded ordnance	Strategic Driver 1; Strategic Driver 2
Infrastructure development	Strategic Driver 2;
Climate change	Strategic Driver 1; Strategic Driver 5
Constraints to poverty alleviation and empowerment	
Regional context	Strategic Driver 2; Strategic Driver 3
Poor historical relationship between communities and conservation authorities	Strategic Driver 2; Strategic Driver 3; Strategic Driver 5
Transformation of the tourism sector	Strategic Driver 2; Strategic Driver 3
Constraints to tourism development	Strategic Driver 1; Strategic Driver 2

4. POLICY AND STRATEGIC PLANNING FRAMEWORK AND IMPLEMENTATION PLAN

4.1 Introduction

The World Heritage Convention Act and National Environmental Management: Protected Areas Act both require that the IMP contain a co-ordinated policy framework. Closely connected to policy, is strategic planning. Together, they define strategy or direction and provide a deliberate plan of action to guide decisions and achieve desired outcomes.

The policy and strategic planning framework for the Park is determined by legislation²⁴, and in order to ensure that all obligations are met in a consistent and cohesive way, this framework has been structured in the following logical progression:

- ❖ A vision (Section 4.3).
- ❖ A mission (Section 4.4).
- ❖ Management goals (Section 4.5).
- ❖ An implementation plan 2022 – 2031 (Section 4.6) containing:
 - Prioritised interventions.
 - Key strategic drivers.
 - Objectives underpinning each strategic driver.
 - Key actions required to achieve each objective and corresponding timeframes.

There are also a number of subsidiary plans and policies that form part of this framework. These are described in Chapter 5 as they also form part of the suite of Park management tools.

4.2 Planning Cycle and Reporting Requirements

iSimangaliso planning cycle comprises a number of different types of plans, which are required to be reviewed (evaluated) and reported against at various intervals. The 10-year implementation plan contained in this IMP provides the framework for all the planning and implementation on an annual basis. As stated, the preparation of this plan is regulated by the World Heritage Convention Act (WHCA). The World Heritage Convention Act and Public Finance Management Act (PFMA) require a Corporate Strategy/Strategic Plan and an Annual Plan of Operation²⁵ to be developed and submitted to the Minister for approval. The PFMA requires the strategic plan to cover a three-year period and the WHCA requires it to cover a minimum of a five-year period or “such longer period as the Minister may determine but where new opportunities or threats arise, or in the case of changed circumstances, an integrated management plan may be reviewed and amended as and when necessary by an Authority, and submitted to the Minister for approval in accordance with section 25(4)”. The most restrictive requirement was adopted for the previous IMP, relevant to the five-year period 2016-2021, but considering

²⁴ Refer to Chapter 1, Section 1.2 (Enabling Legal Framework) and Figure 2 for a description of the legislation that determines Park policy and planning and how the policy and strategic planning framework, within the ambit of the IMP, fits into the hierarchical structure of the broader legal framework, requiring both vertical integration (i.e. alignment with legislation and policy that has specific bearing to Park management) and horizontal integration (i.e. alignment with national, provincial, regional and local planning outside the Park).

²⁵ The Corporate Strategy meets the Strategic Planning requirements for both the Public Finance Management Act and the World Heritage Convention Act as well as National Treasury frameworks.

management structures are already in place, facilitated by the previous IMP, the Park Authority has proposed a 10-year plan moving forward.

The strategic plan takes into consideration, *inter alia*, prevailing government priorities, the priorities of the Department of Environment, Forestry & Fisheries and iSimangaliso's risk assessment.

The planning timeframes are specified in the PFMA and by the Department of Environment, Forestry & Fisheries (DEFF). Typically, planning for the following year is undertaken in August of each year, together with a review of the current year's performance. The annual performance plan is approved by the Board, reviewed by DEFF and adopted by the Minister. Quarterly progress reports are submitted to DEFF. The annual report, which includes the audited annual financial statements and performance report, is tabled by the Minister of Environment, Forestry and Fisheries to Parliament.

The IMP is implemented via the annual plan of operation and incorporated in the strategic plan/corporate strategy. The annual plan of operation refines the IMP with reference to prevailing circumstances. Furthermore, the implementation of the IMP is subject to the availability of resources, including funding and human capacity.

Periodic reporting to the World Heritage Committee on the state of the World Heritage site is also required and undertaken.

4.3 Vision

iSimangaliso's vision is to create a renowned World Heritage Park where conservation, sustainable tourism and benefit sharing prevails. The Park Authority wishes to make iSimangaliso Africa's greatest conservation-based tourism destination driven by community empowerment.

4.4 Mission

iSimangaliso's mission is to protect, preserve and present the its World Heritage values for current and future generations, in line with the standards laid down by UNESCO and the World Heritage Convention Act, whilst benefitting communities living in and adjacent to the Park by facilitating optimal tourism and related development.

4.5 Values

iSimangaliso subscribes to the Batho Pele Principles, and in addition subscribes to the core values of integrity; honesty; transparency; accountability; performance and professionalism.

4.6 Management Goals

There are four overarching and interdependent management goals for iSimangaliso, which are derived from the World Heritage Convention Act. These are:

1. **Management goal 1:** To protect, conserve, enhance and present the Park's:
 - a. World Heritage values (ecological processes; superlative natural phenomena and scenic beauty; and biodiversity and threatened species); and its

- b. Cultural heritage.
- 2. **Management goal 2:** To promote, manage, oversee, market and facilitate optimal tourism and related development in the Park.
- 3. **Management goal 3:** To promote the empowerment and development of historically disadvantaged communities in and adjacent to the Park.
- 4. **Management goal 4:** To ensure that iSimangaliso's operations are properly funded and cost-effectively managed while maintaining an appropriate system of internal control and reporting of accounting, management, and statutory information.

4.7 Strategic Goals

In addition, iSimangaliso has adopted the following strategic outcome oriented goals (iSimangaliso Corporate Strategy, 2019):

- 1. World Heritage Site Status Maintained: To maintain biodiversity conservation, which includes conserving the Parks' terrestrial, freshwater and marine biodiversity and ecological processes and mitigating the biodiversity threats and challenges facing the Park.
- 2. Park positioned as a tourism destination of choice: To facilitate optimal tourism based development in the Park by upgrading facilities, attracting new investment.
- 3. Improved socio-economic conditions of local communities: To contribute towards the alleviation of poverty and increasing access to development opportunities.
- 4. A capable and diverse institution recognized as an employer of choice: To create and maintain a conducive workplace for skilled and capable workforce.

4.8 Implementation Plan (2022-2031)

In this section, the 10-year implementation plan is defined by identifying strategic drivers, describing the background and strategy guiding implementation, identifying key objectives and actions to support the achievement of the management goals, and setting timeframes over a 10-year period. The 10-year implementation plan has been developed in response to those factors outlined in Chapter 3 that will either enhance or constrain the achievement of the management goals.

The strategic drivers identified are as follows:

- 1. Park operations and conservation management.
- 2. Commercial development (tourism).
- 3. Empowerment and transformation.
- 4. Effective corporate governance.
- 5. Interpretation, presentation and education.
- 6. Research, monitoring and evaluation.

4.8.1 Detailed Implementation Plan

Strategic Driver 1: Park Operations and Conservation Management

Background and strategy

Park operations refers to the management of the Park for biodiversity conservation purposes, which includes day to day conservation management of the Park, compliance (awareness and enforcement), environmental management, Park consolidation and expansion, cultural heritage management, infrastructure development, and the management of natural resource use.

Restoration and rehabilitation

This plan outlines the key actions required to protect the World Heritage values (as described in Chapter 2) and mitigate the biodiversity threats and challenges facing the Park (as discussed in Chapter 3). Ongoing work towards the consolidation and rehabilitation of the Park is a key conservation management objective for the next 10 years. Land care, including the clearing of alien vegetation and rehabilitation of areas and ecological processes are key areas of intervention in the Park. The land care programme will continue to be an important poverty alleviation strategy for the Park, contracting community based SMEs and creating temporary jobs in its alien clearing and rehabilitation work (**refer to Strategic Driver 4: Empowerment and Transformation**). Furthering the work undertaken to rehabilitate the Lake St Lucia system is also an important focus of this 10 year plan, which includes the removal of as much as possible (funding dependent) of the artificially placed dredge-spoil pile in the mouth of the St Lucia estuary. The implementation of the Buffer Zone policy will also continue as a means of affording an additional layer of protection to the Park's biodiversity and will attempt to address incompatible land uses outside the Park (**Refer to Chapter 5 for a description of the Buffer Zone**).

Conservation management

In terms of conservation management, the iSimangaliso Authority is responsible for setting conservation policy, for ensuring the World Heritage values are maintained, for complying with national legislation and for assisting the State in fulfilling international obligations (e.g. the Ramsar Convention). Ezemvelo KZN Wildlife is contracted to iSimangaliso to undertake the day-to-day operational aspect of conservation management within the Park. This includes functions such as law enforcement, management of plant and animal species and populations, management of ecosystems and habitats, fire management, water pollution control, soil erosion control, etc. Implementation and oversight of EKZNW's conservation function are guided by the annual Conservation Operational Plan, which includes the strategies, targets, approach, actions and conservation budgets. (**Refer to Chapter 5 for further description of the Conservation Operational Plan**).

Land incorporation

The purpose of consolidation is to establish a fully open and integrated conservation area. Through the WHCA, the legislative, administrative and regulatory frameworks have been put in place to consolidate sixteen parcels of land, which comprise iSimangaliso. Key infrastructure to support consolidation, such as fencing, has been constructed. The preferred method of land incorporation is through contracts with land owners on a 'willing-incorporator' basis in which the land owners retain title to and manage the land but, the land is subject to the provisions of the IMP, the World Heritage Convention Act and other applicable legislation such as the National Environmental Management: Protected Areas Act. There are a number of key pieces of land that have already been incorporated into the Park (Western Shores), while the incorporation of others remains desirable (e.g. Munyawana and the southern unsettled portion of Nibela Peninsula). The desirability of these areas is not based on size but rather their importance in terms of ecological functioning.

An important conservation initiative is the establishment of a World Heritage site in Mozambique adjacent to the iSimangaliso Wetland Park. This will effectively extend iSimangaliso's World Heritage protection into Mozambique. There are two possible ways in which the site could be listed: (1) as a serial site (adjacent to each other but managed independently); and (2) as an extension of the current World Heritage site.

iSimangaliso will continue to support the establishment of one of South Africa's five Transfrontier Conservation Areas (TFCAs), viz. the Ponto do Oura – Kosi Bay TFCA (Mozambique/South Africa).

Park Infrastructure

During the lifespan of this IMP, annual infrastructure programmes will be implemented. Optimal infrastructure development is the guiding principle and the cost of long-term maintenance is taken into consideration. Infrastructure supports both management activities and tourism development. The location and type of regional and Park infrastructure are based on the zonation plan for the Park (**Refer to Section 5.1.1 and Figure 10**) and are subject to iSimangaliso's environmental management system that includes compliance with environmental authorisation legislation. iSimangaliso will issue infrastructure tenders that provide opportunities to SME contractors and create temporary jobs (**refer to Strategic Driver 4: Empowerment and Transformation**).

Natural Resource Use

iSimangaliso will continue to provide for the sustainable and wise utilisation of natural resources, provided this use does not degrade the Park's World Heritage values. All use of resources, including consumptive and non-consumptive use, is regulated through the IMP, iSimangaliso's policies and other relevant legislation, such as the issuing of recreational and small scale fishing permits issued by DAFF in terms of the Marine Living Resources Act. Aside from the recreational use of the Park, access to resources for subsistence purposes is an important contributor to households' livelihoods. Controlling, monitoring and evaluation of this use are important aspects of managing the sustainable use of living natural resources.

Key Objectives	1. Key Actions	Timeframes
1.1. To manage the iSimangaliso Wetland Park as one open and integrated ecological area.	1.1.1. Incorporation of additional key ecologically important land into the Park by securing appropriate agreements.	2021
	1.1.2. Support the declaration of a serial World Heritage site in Mozambique that will effectively extend iSimangaliso's World Heritage protection into Mozambique.	2016-2021
1.2. To conserve and maintain the Park's terrestrial, freshwater and marine biodiversity, and ecological processes cost-effectively and in line with international and national best practice.	1.2.1. Oversee the implementation of the Conservation Operational Plan and revise annually.	Annually
	1.2.2. Prepare management plans for key species and ecosystems, including unique and sensitive sites, where necessary.	2021
	1.2.3. Implement measures for the conservation and maintenance of iSimangaliso's World Heritage values, including fire and grassland management.	Ongoing

Key Objectives	1. Key Actions	Timeframes
	1.2.4. Manage and monitor consumptive and non-consumptive recreational and community-based natural resource use.	Ongoing
1.3. To rehabilitate degraded areas and restore ecological functioning within the Park and, in so doing, enhance the World Heritage values.	1.3.1. Implement a land care programme, including the management of alien invasive plants in the Park against an annual plan of operation.	2022-2031
	1.3.2. Rehabilitate degraded habitats and ecosystems through a range of measures including fire and grassland management.	2022-2031
	1.3.3. Implement measures to restore the Lake St Lucia system.	2016-2020
1.4. To protect the World Heritage values of the Park and its boundary, and to minimise internal and external negative impacts on the Park (e.g. loss of biodiversity, catchment degradation, loss of/damage to ecological links, and visual impacts as a result of incompatible land use, unsustainable natural resource use, pollution and unauthorised infrastructure).	1.4.1. Implement an effective compliance system which includes both awareness and law enforcement.	2022-2031
	1.4.2. Establish and maintain co-operative relationships with relevant organs of State and stakeholders, where necessary.	2022-2031
	1.4.3. Implement the Buffer Zone (Buffer Zone) Policy, which stipulates compliance with legal requirements and due process for the authorisation and operation of developments in the Buffer Zone.	2022-2031
	1.4.4. Participate in planning in the Buffer Zone, including through the Municipal IDPs.	Ongoing
	1.4.5. Implement the Estuarine Management Plans for the Kosi Bay Estuary, Mgobozeleni and St Lucia systems.	2022-2031
	1.4.6. Take necessary action against unauthorised developments and activities in the Park and curtail future unauthorised use through effective compliance, the application of relevant legislation and the implementation of Local Area Plans, where appropriate.	2022-2031
	1.4.7. Manage authorised infrastructure and activities within the Park through compliance monitoring as part of an environmental management system.	2022-2031
	1.4.8. Support national, provincial and local disaster management planning for the area.	2022-2031
1.5. To protect and conserve the cultural landscape and heritage of the Park.	1.5.1. Refer to actions in Strategic Driver 5: Interpretation, presentation and Education.	
1.6. To develop and maintain suitable infrastructure for conservation management and tourism development within the Park.	1.6.1. Develop the necessary infrastructure to support conservation management, which includes roads, ranger posts, anti-poaching infrastructure, bomas and fences.	2022-2031

Key Objectives	1. Key Actions	Timeframes
	1.6.2. Optimally develop infrastructure (e.g. roads and tracks, hiking trails, jetties and launch sites) to support tourism development and visitor experience, including Park furniture (e.g. hides, picnic sites, viewpoints, boardwalks, canopy walks, etc.).	2022-2031
	1.6.3. Maintain Park infrastructure in a cost-effective manner and, where appropriate, implement a user-pays system to make provision for the maintenance of infrastructure.	2022-2031

Strategic Driver 2: Commercial Development (Tourism)

Background and strategy

iSimangaliso is a key eco-tourism resource for the uMkhanyakude District, the KwaZulu-Natal Province and South Africa. For the duration of this IMP, iSimangaliso will continue to play an important role in regional economic growth initiatives. It will focus on integrating the Park into the broader region, KwaZulu-Natal and South Africa through the establishment of tourism.

Improve and resource day visitor facilities

iSimangaliso's mandate explicitly includes the facilitation of optimal tourism-based development in the Park. It does so by creating an environment that will encourage the private sector to develop and run tourism facilities, operate tourism activities and provide services that support them. iSimangaliso does not normally itself operate tourist amenities, facilities or activities but may provide (or procure the provision of) tourist support services. In fulfilling these obligations, iSimangaliso seeks to reinforce existing business and to create conditions for the emergence of new products and markets in and around the Park. Tourism development takes place within the zonation plan contained within this IMP and attempts to provide for a diverse product mix in an environmentally sustainable manner.

iSimangaliso has put in place a strategy which:

- ❖ Recognises the role of the private sector as the primary provider of capital and expertise in the development and provision of tourism products and services in the Park.
- ❖ Fulfills its obligations in terms of equitable public access.

The first is achieved through public private partnerships (PPPs), which are regulated by the Public Finance Management Act's regulations for PPPs. These regulations include, amongst others, the procurement of private investments and services through an open, fair and competitive bidding process. Equitable public access is facilitated through the Park's pricing strategy on entry fees, Park neighbours' access programme, and availability of recreational and educational facilities and activities.

The empowerment and advancement of historically disadvantaged communities, particularly land claimants and communities living in and around the Park, is a key aspect of iSimangaliso's commercialisation strategy. Transformation of the tourism sector in the Park will be achieved through equity partnerships between the private sector and mandatory community partners, job creation and employment equity practices in tourism facilities and activities, and the procurement of goods and services from local entrepreneurs and small businesses. Over the next 10 years, iSimangaliso will focus on:

- ❖ Facilitating new investment in tourism accommodation facilities where appropriate.
- ❖ Refurbishment and the re-development of existing accommodation facilities, promoting equitable public access.
- ❖ Development of day visitor facilities in the Park, which will support development of overnight facilities outside the Park.
- ❖ Establish tourism activities in the Park.
- ❖ Improve the tourism service standards in the Park.

As part of the transformation of the tourism sector, iSimangaliso will continue to implement a rural enterprise programme aimed at supporting local entrepreneurs and enterprises through training, mentoring, small grants and on-going access to a business hub providing advice and support. (**See Strategic Driver 3: Empowerment and Transformation**).

Key Objectives	Key Actions	Timeframes
2.1 Optimise the Park's revenue generation in an environmentally and commercially sustainable manner that fosters job creation and empowerment.	2.1.1 Diversify tourism product base.	2022-2031
	2.1.2 Improve quality of tourism service in the Park.	2022-2031
2.2 Optimise equity shareholding, job creation and procurement opportunities through commercialisation.	2.2.1 Support the establishment of equity partnerships between private sector operators and mandatory community partners in terms of the co-management agreements.	2018-2021
	2.2.2 Provide support to community based tourism operators through the Rural Enterprise Programme.	2022-2031
	2.2.3 Implement capacity building programmes for mandatory partners participating in tourism investment projects.	2022-2031
2.3 Promote and market the Park and establish it as a prominent tourism destination.	2.3.1 Implementation of annual marketing and PR programme.	2022-2031

Key Objectives	Key Actions	Timeframes
2.4 Promote the regional integration of iSimangaliso's work with South African Tourism and Tourism KwaZulu-Natal.	2.4.1 Create linkages with tourism products and events implemented through other agencies, such as local government and Tourism KwaZulu-Natal.	2022-2031

Strategic Driver 3: Empowerment and Transformation

Background and strategy

Contributing towards the alleviation of poverty is a core function of iSimangaliso and empowerment strategies include ownership, job creation, procurement and training. Empowerment and transformation goals cut across all aspects of the work of iSimangaliso, and are integrated into both Commercial and Park Operations activities **[See Strategic Driver 1: Park Operations and Conservation Management and Strategic Driver2: Commercial Development]**. The beneficiaries of these activities and programmes are the communities in the area, including land claimant groups.

Transformation of the tourism sector

iSimangaliso is currently implementing a range of strategies to support transformation in the tourism sector in the area and is responsible for assisting beneficiary communities to participate meaningfully in the commercial development of the Park. Tenders for tourism accommodation and activities are evaluated according to a range of criteria, including empowerment. There are a number of ways in which empowerment criteria can be fulfilled. These include:

- ❖ Ownership or equity interests for beneficiary communities in the commercial enterprises of the Park.
- ❖ Job creation and training for beneficiary communities.
- ❖ Procurement of goods and services for tourism enterprises from local communities and SMEs.

New tourism activity concessions are also awarded on the basis of empowerment criteria with a percentage of concessions reserved for community owned businesses. Business support to the community based concessions is provided through the Rural Enterprise Programme.

In addition to these measures to support the entrance of beneficiary community groups into the tourism sector, concession holders are also required to demonstrate their commitment to Broad Based Black Economic Empowerment (BBBEE) through implementation of the BBBEE scorecard.

Training and capacity building

Training, capacity building and mentoring activities underpin iSimangaliso's empowerment and transformation programmes. Enhancing skills of beneficiary communities will promote economic activity by improving their access to available jobs, better jobs and higher value markets in the case of entrepreneurs.

Over the past number of years, iSimangaliso has established the following training and capacity building programmes, which will continue to be implemented over the next 10 years:

- ❖ Tourism skills development programme, which includes training in hospitality and guiding.
- ❖ Craft development programme focussing on product development with crafters and facilitation of links to high value markets.
- ❖ Infrastructure and land care SME development programme, which targets community based contractors that undertake alien clearing, land rehabilitation, infrastructure construction and infrastructure maintenance work.
- ❖ Skills based and other relevant training for people employed on infrastructure, and land-and-coast care programmes.
- ❖ Higher Education Access Programme that provides bursaries and academic support to students from local communities studying tourism and conservation-related fields in tertiary education institutions.
- ❖ Rural enterprise programme (**See Strategic Driver 2: Commercial Development**).

Consultation with local communities and land claimants

Part of iSimangaliso's transformation strategy is a consultation programme with communities living in and around the Park, and land claimants. Regular meetings with these communities are held and co-management arrangements are entered into where appropriate. All land claims are settled by the Commission on Restitution of Land Rights, Department of Rural Development and Land Affairs. Once a land claim is settled iSimangaliso will take responsibility for the implementation of co-management agreements. The approach to the settlement of land claims is guided by the National Cabinet Position adopted in 2002 regarding the settlement of restitution claims in protected areas, World Heritage sites and State forests (this position is included in Chapter 2 under footnote 12 in section 2.4).

Key Objectives	Key Actions	Timeframes
3.1 Facilitate the transformation of the tourism sector and support neighbouring communities and land claimants to participate in the commercial development of the Park.	3.1.1 Refer to actions in Strategic Driver 2: Commercial Development 2.	2016 - 2021

Key Objectives	Key Actions	Timeframes
3.2 Implement training and capacity building programmes that lead to improved income generation and transformation.	3.2.1 Implement skills development programmes to assist beneficiary communities to find employment in the tourism sector.	2022-2031
	3.2.2 Implement a rural enterprise programme to support conservation compatible entrepreneurs and enterprises.	2022-2031
	3.2.3 Implement the higher education access programme supporting local students to acquire tertiary qualifications in tourism and conservation-related fields.	2022-2031
3.3 Facilitate access to economic benefits for communities living in and around the Park through the construction and maintenance of infrastructure, and through land care programmes.	3.3.1 Provide opportunities for community based contractors (SMEs) and individuals in rehabilitation work, alien plant clearing, coast-care, construction and maintenance of Park infrastructure.	2022-2031
	3.3.2 Provide training, capacity building and mentoring to community based contractors and workers involved in the programmes in 3.3.1 [See Strategic Driver 1: Park Operations and Conservation Management] .	2022-2031
3.4 Maintain relationships and implement effective consultation processes with communities living in and around the Park and land claimants.	3.4.1 Implement a programme for communication, consultation and awareness with communities living in and around the Park.	2022-2031
	3.4.2 Conduct information dissemination and conservation awareness programmes with communities living in and around the Park, and land claimants [See Strategic Driver 5: Communication, Interpretation and Education] .	Ongoing

Key Objectives	Key Actions	Timeframes
	3.4.3 Develop Local Area Plans with beneficiary communities providing a framework for development within each locality that is founded on relevant legal, social, environmental, institutional, economic and financial parameters [See Strategic Driver 4: Corporate Governance] .	2022-2031
3.5 Provide support to land claimants in the settlement of land claims and the implementation of settlement agreements.	3.5.1 Participate in activities that will support the settlement of outstanding land claims on the Park by the Regional Land Claims Commission.	Ongoing
	3.5.2 Implement land claims settlements and co-management agreements in partnership with the Land Claims Trusts.	Ongoing

Strategic Driver 4: Corporate Governance

Background and strategy

Corporate governance is accorded the highest importance by the iSimangaliso Authority. Its Board and staff are required to conduct themselves with integrity and in the best interests of the organisation.

The iSimangaliso Authority's Board believes that the organisation has substantially complied with the Code of Corporate Practices & Conduct set out in the King Report on Corporate Governance for South Africa 2002 (King II Report), the Protocol on Corporate Governance in the Public Sector 2002 and applicable management guidelines set down by UNESCO, and has begun integrating the more salient recommendations of the 2009 King III Report in its governance systems.

The organisational arrangements and systems in place to promote good corporate governance include non-executive directors on the Board, the use of audit, executive and tender committees, and independent (outsourced) internal audits. Detailed financial policies and procedures make it clear that corporate governance and financial control are the responsibilities of every staff member in the organisation.

Roles and Functions

The CEO is the entity's Accounting Authority. The Board of Directors is responsible for the formulation of policy for the Park and for overseeing its implementation. It is also responsible for the adoption of strategic plans, for monitoring operational performance and management, for approving policy and processes to strengthen the integrity of the Park's risk management and internal controls, and for the appointment of the executive staff. The Board has approved a charter that provides guidance to its directors in discharging their duties and responsibilities. The Board carries out a regular self-evaluation.

Remuneration of the directors is prescribed by Treasury. In the case of the current Board, the majority of non-executive directors have elected to work on a *pro bono* basis. The CEO's salary is determined in accordance with DEA's grading and remuneration policy.

Audit Committee

The audit committee is responsible for overseeing audit functions, internal control and the financial-reporting process. The committee includes a number of independent members who are qualified chartered accountants. The Chief Financial Officer of the Department of Environment, Forestry & Fisheries and the Auditor-General attend meetings of the audit committee as

observers.

Internal Audit

Internal audits provide an independent, objective appraisal of risk-management, governance and internal controls, and identify improvements and corrective actions.

The internal audit function is outsourced. These audits are carried out according to a three-year rolling plan, updated annually, and are based on the risks identified in the risk-management process.

Risk Management

The Board's policy on risk management embraces all significant risks to the iSimangaliso Authority which might undermine its business objectives. In addition to regular reports by the executive, the Board also receives assurance from its internal auditors on risk and internal control.

The Board is of the opinion that appropriate risk-management policies and practices are in place, and that they are complied with. Mechanisms for managing risk include, where appropriate, the transfer of risk to third parties (for example, through public-private partnerships), the maintenance of an appropriate mix of personal insurance and commercial insurance for risks that the organisation retains, internal controls, and business-continuity planning, amongst other things.

Additional information is provided in the Accounting Policies section of the Annual Financial Statements.

Environmental Management

The iSimangaliso Authority and its Board abide by the National Environmental Management Act: Protected Areas Act, and the World Heritage Convention Act, among others. Day to day wildlife and biodiversity management is carried out by Ezemvelo KZN Wildlife in accordance with a management agreement between it and the iSimangaliso Authority, pursuant to the regulations under the World Heritage Convention Act.

The Board believes that its environmental management conforms to international best practice and is adequate to the demands of managing a World Heritage site.

Social Management

The Board has adopted government's broad-based black economic empowerment policies and has implemented a system based on the Department of Trade & Industry's codes and, where appropriate, on the Tourism Charter. Prospective new tourism enterprises in the Park are appraised in terms of a BEE scorecard and are required to include local communities as mandatory equity partners in their operations and preferred service-providers in their procurement plans. The Park also implements community-development programmes as part of its management of social and environmental risk.

Social and Environmental Risk

The Park is situated in an area beset with unemployment and poverty, and people living in and around the Park see it as a direct source of economic benefit as a provider of employment and through the use of its natural resources for income generation and subsistence.

To manage this risk, the iSimangaliso Authority implements special community-development programmes in areas such as craft production, interpretation of culture, tourism training, art, life-skills, HIV/AIDS awareness, and entrepreneurship. It also employs people from neighbouring communities in its construction and land-rehabilitation programmes, and provides alternatives to unsustainable practices with negative ecological impacts.

The iSimangaliso Authority also participates actively in crime-prevention forums in the area. The Park Authority has contracted security service provider that provides day visitor security from Sodwana to St Lucia. Concessionaires within the Park provide their own security at overnight accommodation facilities.

At a macro-level, the iSimangaliso Authority monitors the impact of climate change on the natural resources in the Park, e.g. weather stations, long-term underwater temperature recorder (UTR) at Sodwana Bay, St Lucia Lake salinity levels . It has also raised funds for the improvement of the hydrology of Lake St Lucia.

Health and Safety

The iSimangaliso Authority abides by occupational health and safety laws and regulations. Staff and contractors working in the Park are trained to deal with dangerous game and to use and dispose of toxic chemicals, especially in the Park's alien vegetation-clearing programme. However, it is also important to provide a safe and secure environment for visitors and to protect the integrity of natural, cultural and physical assets and resources, thus a Park Safety and Security Plan is recommended to address all these sectors.

Communication

The Authority engages the public at different levels depending on the issue at hand. The iSimangaliso Authority has a website (www.isimangaliso.com) and publishes regular newsflashes. Public consultations and meetings are held to keep community groups, environmental NGOs, relevant public institutions and private parties informed about the Park, the challenges it faces and its activities. The iSimangaliso Authority also participates in a number of intergovernmental committees and forums. iSimangaliso's neighbouring communities are important stakeholders, especially the beneficiaries of land claims settlements on the iSimangaliso Wetland Park. There is also an equitable access policy that includes pricing strategy on entry fees, the provision of appropriate accommodation types, and recreational facilities and activities such as picnic sites, diving and so on. In addition, iSimangaliso implements special programmes for specific groups (schools, adjacent communities, etc.).

The iSimangaliso Authority recognises its obligation to its national and international stakeholders to protect, conserve and present iSimangaliso's World Heritage values. In this respect, the Authority is committed to engage with stakeholders both proactively and in response to concerns. Also, the iSimangaliso Authority adheres to the participation requirements of various legal processes.

Cooperative governance

iSimangaliso is part of the local government planning framework for the region. To facilitate regional integration, the iSimangaliso Authority participates in municipal planning processes, particularly with regard to Integrated Development Plans. The Park is a relevant authority in its Buffer Zone. The development of regional infrastructure is the responsibility of National, Provincial and Local Government. **(Refer to Figure 7 in Appendix 3 which shows the Park's conceptual plan of sub-regional tourism flows, development and consolidation).**

Key Objectives	Key Actions	Timeframes
4.1 Cultivate an environment that will enable iSimangaliso to attract, develop and retain the best people to deliver its mandate.	4.1.1 Implement measures to become an employer of choice.	2022-2031
4.2 Maintain good financial planning and management.	4.2.1 Ensure sound financial planning and management.	2022-2031

Key Objectives	Key Actions	Timeframes
	4.2.2 Procure funds from government, public sector and donor funders; and generate own revenue.	2022-2031
	4.2.3 Comply with Public Finance Management Act, World Heritage Convention Act, and Codes of Good Practice.	As determined by reporting cycle.
	4.2.4 Ensure unqualified audits.	Annually
4.3 Develop an effective policy framework and planning system for management.	4.3.1 Develop and produce 2022-2031 IMP and required subsidiary plans.	2020-2021
	4.3.2 Review and implement policies, programmes, strategies and rules required for Park management.	Ongoing
	4.3.3 Develop and implement a monitoring and evaluation system.	Ongoing
4.4 Establish relationships with institutions and organs of state to help achieve iSimangaliso's goals.	4.4.1 Participate in the planning processes of district and local municipalities, and provincial and national government departments in order to integrate planning.	Ongoing
4.5 Maintain and implement a communication programme.	4.5.1 Communicate information about the Park through newsletters, newsflashes, website, print and other media in both English and Zulu. (<i>Refer also to action Strategic Driver: Park Operations 1.4.1; Strategic Driver: Commercial Development (Tourism) 2.3.1; Strategic Driver: Empowerment and Transformation 3.4.1 and 3.4.2; Strategic Driver: Park Operations; and Interpretation, Presentation and Education 5.1.1 and 5.2.1).</i>)	Ongoing

*Strategic Driver 5: Interpretation, Presentation and Education***Background and strategy**

The World Heritage Convention Act obliges iSimangaliso to present and interpret the World Heritage site, particularly the attributes for which it was listed and for which it is considered to be of international significance and value. These include interpretation of the ecological processes; superlative natural phenomena and scenic beauty; and biodiversity and threatened species. Strategies to interpret and disseminate information about the World Heritage site include the development of materials (brochures, booklets), web-based interpretation, a smart phone App and signage. iSimangaliso must also present, promote and conserve the cultural heritage of the area. Interpretation of the cultural landscape is an important task, and includes the documenting of significant sites in the Park, for example, sites on the Eastern Shores have been mapped and interpreted by the Bhangazi Land Claimants. This project will be repeated in other areas of the Park. Other cultural heritage projects include the naming of trees and the development of guidelines to conserve cultural sites.

There are approximately half a million people living around the Park, most of whom have never visited the Park or had a positive educational or recreational experience in it. Many people do not know why iSimangaliso is listed as a World Heritage site. For this reason, iSimangaliso offers an environmental education programme for local schools and community groups. The programme brings Park neighbours into the Park free of charge, allowing them to see for themselves why it is so highly valued, and garnering local support for its continued protection.

The Environmental Education Programme has two components:

- ❖ A schools programme.
- ❖ An adult environmental education and awareness programme.

Key Objectives	Key Actions	Timeframes
5.1 Implement an environmental education programme.	5.1.1 Obtain funds for the implementation of an environmental education programme.	2022-2031
	5.1.2 Provide for controlled access for visitors to learn about and appreciate iSimangaliso's World Heritage values.	2022-2031

Key Objectives	Key Actions	Timeframes
5.2 Interpret and present iSimangaliso's World Heritage values to its stakeholders.	5.2.1 Develop a spectrum of interpretive materials for Park users.	2022-2031
5.3 To present and interpret the cultural landscape and heritage of the area.	5.3.1 Run projects to interpret and deepen understanding of the area's cultural landscape and heritage.	2022-2031
	5.6 Provide access to sites of cultural significance for rituals, ceremonies and festivities.	Ongoing
	5.7 Promote archaeotourism - provide a history of the area, documentation with map of sites of cultural/heritage significance	

*Strategic Driver 6: Research, Monitoring and Evaluation***Background and strategy**

The iSimangaliso Authority recognises the role of research in building knowledge about the Park's ecology and conservation management. The facilitation and promotion of research in the Park provides an opportunity for researchers and research institutions to develop specialist research capacity in their respective fields and which are of value to iSimangaliso.

At present, much of the research conducted in the Park is defined by individual researchers and research teams. External research applications are processed through a research committee comprising iSimangaliso and Ezemvelo KZN Wildlife staff members, assisted when necessary by independent specialists. The committee meets four times a year to consider applications, and to balance pure and applied research efforts in support of both understanding and Park management needs. Researchers are required to sign a contract with iSimangaliso against which compliance is monitored.

In addition, Ezemvelo KZN Wildlife monitor a range of biological and physical/chemical parameters at various sites in the Park in order to inform management, e.g. salinity levels in the lake systems, turtle monitoring, game counts, etc. This is an essential aspect of Park management and during this IMP the monitoring system will be reviewed and funding sought for under-resourced monitoring activities, e.g. continuous and long-term weather stations, water level gauges, ground water, soil moisture.

Key Objectives	Key Actions	Timeframes
6.1 To promote research that is innovative and relevant to the management objectives of the Park and contributes towards the body of knowledge broadly related to conservation and world heritage.	6.1.1 Implement a research framework, including monitoring.	2022-2031
	6.1.2 Process research applications in accordance with Park research authorisation procedures.	2022-2031
	6.1.3 Contract specialists to provide research and advice regarding specific management issues when needed.	As necessary
6.2 To implement a monitoring system of key biological and physical-chemical parameters in order to support conservation management.	6.2.1 Review current monitoring system and identify areas requiring improvement and identify new research topics/areas that might have relevance.	2022-2031

4.8.2 Implementation Programme Plan

The table below sets out the budget for the Implementation Plan outlined in this chapter. iSimangaliso receives an allocation for operational costs from the Department of Environment, Forestry & Fisheries.

Table 9 Budget per Programme (with projections)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Programme	2021/22	2022/23	2022/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Corporate Support	R116 425.00	R123 410.50	R130 815.13	R138 664.04	R146 983.88	R155 802.91	R165 151.09	R175 060.15	R185 563.76	R196 697.59
Biodiversity Conservation	R 83 968.00	R 89 006.08	R 94 346.44	R100 007.23	R106 007.67	R112 368.13	R119 110.21	R126 256.83	R133 832.24	R141 862.17
Socio-Economic Development	R 12 233.00	R 12 966.98	R 13 745.00	R 14 569.70	R 15 443.88	R 16 370.51	R 17 352.74	R 18 393.91	R 19 497.54	R 20 667.40
Tourism & Business Development	R 23 024.00	R 24 405.44	R 25 869.77	R 27 421.95	R 29 067.27	R 30 811.31	R 32 659.98	R 34 619.58	R 36 696.76	R 38 898.56
Totals	R235 650.00	R249 789.00	R264 776.34	R280 662.92	R297 502.70	R315 352.86	R334 274.03	R354 330.47	R375 590.30	R398 125.72

It should be noted that additional financial resources will be required for managing the extended MPA (2019).

5. ENVIRONMENTAL MANAGEMENT FRAMEWORK: TOOLS FOR INTEGRATED MANAGEMENT

Chapter 5 presents a set of spatial planning measures (Section 5.1) (such as zonation and nodal development, including permissible activities, carrying capacities, and development and management blocks); and a number of policies, strategies and plans that further guide and support the management of the Park (Section 5.2), and general planning measures and controls (Section 5.3).

5.1 Spatial Planning Measures and Controls

5.1.1 Zonation

The primary spatial planning measure is the zonation plan (Maps 27, 28 and 29 in Appendix 3). This forms the basis for the activities plan, and the setting of nodal types and carrying capacities for each block, sub-zone, facility and activity. Together, these tools determine the setting of limits and form the basis for the enhancement of iSimangaliso's core values.

For management purposes, terrestrial and marine areas in the Park have different zonation. **Terrestrial** zonation (Map 27) covers terrestrial and aquatic (coastal freshwater lakes, rivers and wetland) ecosystems. The **Marine** component is divided into inshore, offshore and estuarine lake sub-components. For purposes of Park zonation, **"Inshore"** is defined in the MPA regulations (DEFF, 2019) (Annexure 1.2) as extending from the high water mark (HWM) seawards to 200 m offshore (refer Map 28) and refers to the area where shore based activities can occur. **"Offshore"** is defined in the MPA regulations (DEFF, 2019) (Annexure 1.1), as extending from 200 m offshore of the HWM to the eastward periphery of the MPA., which in this case is the offshore points B and C as indicated in Map 29 (Figs 1 and 3 of the MPA regulations).

The zonation described above is useful for planning and management, but in ecological terms these zonal distinctions have little meaning due to the connectivity between components.

The zones are:

- ❖ Terrestrial Component.
 - Wilderness.
 - Restricted.
 - Controlled.
 - Commercial forestry
- ❖ Marine Component.
 - Wilderness.
 - Restricted.
 - Controlled.
 - Controlled + restricted fishing: Pelagic linefish with list (offshore) / Controlled Catch and Release Zone (inshore)
- ❖ Estuarine sub-Component. (under Marine)
 - Wilderness.
 - Sanctuary²⁶
 - Restricted.

²⁶ To be resolved further to discussion as to whether to retain "sanctuary" zonation for estuaries only, or align with MPA regulations, which does not include "sanctuary", in which case either "wilderness" or "restricted" or "controlled" with certain conditions may be applied.

- Controlled.

A combined zonation map, including all components is indicated in Map 30 – this is the first time this information has been presented for a holistic impression of all park zonation and should assist in guiding park planning and management. In addition, a proposed zoning document, issued as a supplementary report, provides more detail.

The terrestrial and marine zones are described in detail in Tables 10 to 17. The estuarine sub-component essentially falls under both the terrestrial and marine components as there is an overlap of zones, but is included in the marine component tables and is listed above as a sub-section of the marine component, owing to the fact that Sanctuary zones apply – these are inherited from the Estuary Management Plans (EstMP's), which were compiled about the same time as the previous IMP (2016), for which sanctuary areas still applied, but prior to the new MPA regulations (2019) where offshore sanctuary areas no longer apply. As such, the estuarine sanctuary areas, applicable to St Lucia estuary and areas of the Kosi Lakes and estuary, remain in place according to the accepted EstMP's, until such time as the EstMP's are updated (refer Chapter 5.2.3).

Table 10 Wilderness (Terrestrial)

UNMODIFIED NATURAL ENVIRONMENT. Largely equivalent to IUCN Category 1b Protected Area^{NOTE 1}, but may include areas that are not designated as such, but, nevertheless, have all the attributes and characteristics of true wilderness.

Inherent Attributes/ Characteristics	An area with no permanent human settlement, infrastructure, consumptive activities (except for limited traditional resource harvesting) or motorised access and where the landscape bears negligible visual evidence (even to the 'educated eye') of these having occurred in the recent past, including residual effects such as alien plants and soil erosion. Thus, even to the 'educated eye', the area has an inherent pristine appearance and character, or at least the potential of being restored accordingly in the short- to medium-term using the 'minimum tool' principle. It must also be sufficiently unspoilt and of a large enough size to: - i Maintain ecological processes with an absolute minimum of management intervention. - ii Provide an authentic wilderness experience by being physically, visually and audibly buffered from adjacent areas of human settlement (heightened 'sense of place' and of World Heritage values).
Focal Purpose of Zone ^{NOTE 2}	- i Maintain a scientific benchmark area of biodiversity and ecosystem processes. - ii Provide visitors with a wilderness experience (heightened 'sense of place' and of World Heritage values).
Permissible Uses & Activities ^{NOTE 3}	- i Guided wilderness, special interest/educational activities on foot, horseback, bicycles and non-motorised watercraft (in freshwater lakes) under special permit only. - ii Overnight wilderness camping with very limited temporary facilities (e.g. fly camps operated under the 'leave no trace' principle). - iii Access to spiritual sites by non-mechanised means. - iv Limited traditional subsistence resource harvesting and use using the 'minimum tool' principle under strict regulation and control. - v Highly regulated scientific research and monitoring that cannot be carried out elsewhere in the Park. - vi Special access, assessed on a case by case basis, and requiring permits.

Non-Permissible Uses & Activities	- i Mechanised access other than in exceptional or unavoidable circumstances and emergencies (i.e. the 'minimum tool' principle) and subject to a management plan and approved procedures. - ii Motorised visitor activity. - iii Consumptive resource utilisation except for limited traditional harvesting and use as defined above under 'permissible uses and activities'. - iv Silviculture, agriculture, aquaculture, human settlement, hunting, infrastructure development and mining.
Use Intensity/ Frequency^{NOTE 4}	Law enforcement, management, research, monitoring and visitor use strictly limited to: - i The principles of 'minimum tool' and 'leave no trace' apply. - ii Very low intensity. - iii Very low frequency, the emphasis being on transient use only. - iv Small group sizes. - v Very strict regulation and control over entry.
Development Nodes	- i Only Type I Wilderness Tourism Overnight Nodes (e.g. temporary fly and tented camps), Tourism Day Visitor Nodes (e.g. temporary bird hides) and Park Management Nodes (e.g. temporary law-enforcement camps, research hides) permitted. - ii Park Management Nodes to follow the same principles as for any visitor use of the area.
Development Restrictions	- i Management and tourist roads, other infrastructure (e.g. power lines, water pumps, telephone lines), park signage and buildings (including staff and visitor accommodation) prohibited under all circumstances and without exception. - ii Existing management tracks permitted in exceptional circumstances, with the objective to phase them out over time. - iii Tourist tracks or use of management tracks by tourists prohibited without exception. - iv Fixed campsites prohibited. - v Construction of trails and paths prohibited - use must be made of game trails. - vi No other developments permitted regardless of type, form or need.

NOTES: TABLE 10: Wilderness (Terrestrial)

NOTE 1: IUCN Category Ib protected areas are usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.

NOTE 2: A combination of these purposes will reinforce the branding of the Park as a protected area of integrity and quality.

NOTE 3: The impacts of these permissible uses and activities must be managed so as not to impinge upon the natural dynamics of the system, thereby maintaining the inherent wilderness experience of the area. All permissible activities are subject to parameters set by legislation and the Permissible Activities Framework (including respective permits and permit conditions) [Refer to Section 5.1.8 for more detail].

NOTE 4: Actual density levels, activities and group sizes are specified in the Development Node and Activities Frameworks.

Table 11 Restricted (Terrestrial)

PARTLY MODIFIED NATURAL ENVIRONMENT. Although only partly modified, normally less pristine than a Wilderness area. Also, normally less sensitive to 4x4 vehicle and motorised boat access than a Wilderness area.

Inherent Attributes/ Characteristics	An area that may have some (but limited in extent and impact) tourism and management human settlement, developed infrastructure and/or consumptive activities (e.g. strictly controlled traditional subsistence resource harvesting and use) and some visual evidence (limited in extent and impact but relatively more than that acceptable for Wilderness zones) of their occurrence in the recent past (including residual symptoms such as alien plants and soil erosion). Nevertheless, regardless of whether ongoing or residual, the human-induced modifications to the environment must either pose no significant threats (to cultural resources, ecological processes, biodiversity, landscape quality) or it must be feasible to dispose of them and/or mitigate their negative impacts within a specifiable time frame. Accordingly, to qualify as a restricted zone, the area must have the potential for restoration to a state that the general public and other stakeholders regard, for the most part, as a largely unmodified landscape.
Focal Purpose of Zone	- i Conservation of biodiversity and ecological processes. - ii Provide visitors with high quality game/landscape viewing and a close to nature overnight experience.
Permissible Uses & Activities NOTE 1	- i Hiking. - ii Horse riding. - iii Cycling. - iv Non-motorised water craft (kayaking and canoeing). - v Concession 4x4 trails and game drives. - vi Concession boat tours (sail boats and motorised). - vii Freshwater diving (freshwater lakes). - viii Swimming (in secured areas in freshwater lakes). - ix Motorised and non-motorised special interest/educational activities under special permit only. Overnighting in bush lodges/tented camps and houseboats. - x Regulated 2x4 access to low intensity accommodation and day visitor facilities on designated access corridors. - xi Limited traditional subsistence resource harvesting and use. - xii Scientific research and monitoring. - xiii Law enforcement patrols and reaction. - xiv General management activities and intervention to restore/maintain ecological processes and the unspoilt appearance of the landscape.
Non-Permissible Uses & Activities	- i 2x4 vehicles on gravel/surfaced roads except where existing or designated as an access corridor. - ii 4x4 vehicle trails and boat trips without the acquisition of a special permit, i.e. concession use. - iii Quad bikes and motor cycles except for management purposes. - iv Personal watercraft²⁷ and private sail boats (freshwater lakes). - v Invertebrate harvesting. - vi Fishing (freshwater lakes). - vii Silviculture, aquaculture, agriculture, mining NOTE 2, hunting NOTE 3 - viii No human settlement except for management staff and tourism accommodation facilities in accordance with the Development Node Framework. - ix Recreational, sport and leisure activities that are not associated with an outdoor nature experience. - x Fireworks

²⁷ Personal watercraft means a vessel that uses a motor powering a water jet pump as its primary source of propulsion, and is designed to be operated by a person or persons sitting, standing or kneeling on rather than within the confines of a hull

Use Intensity/ Frequency ^{NOTE 4}	Regulated and controlled use of low intensity and moderate frequency. Limited and permit-regulated unguided/self drive activities (e.g. foot, horseback, canoe, motorised boat, 4x4 vehicle trails/trips).
Development Nodes	Only Low Intensity Tourism Overnight Nodes, Tourism Day Visitor Nodes and Park Management Nodes permitted. Where Medium Intensity Tourism Nodes are permitted, this is only for the duration of the activity.
Development Restrictions	- i Road network to be restricted to low impact, all weather 4x4 tracks and designated 2x4 access corridors. - ii Lodging facilities for visitors and management to be restricted to unobtrusive structures. - iii Accommodation facilities to use low intensity lighting. - iv Utility services to be supplied, generated and disposed on-site using eco-friendly and renewable energy technology. No utility services to be supplied from regional bulk supply networks, unless environmentally suitable and compatible with the focal purpose of this zone. - v Appropriate Park signage. - vi All other types and forms of development, not defined in the Development Node Framework, are prohibited.

NOTES: TABLE 11: Restricted (Terrestrial)

NOTE 1: All permissible activities are subject to the parameters set by legislation and Permissible Activities Framework (including respective permits and permit conditions) [Refer to Section 5.1.8 for more detail].

NOTE 2: Mining is not permitted except for the licensed Perlite Mine in the uMkhuze section of the Park.

NOTE 3: Hunting is not permitted except in the uMkhuze Controlled Hunting Area, which is zoned as restricted and where hunting has been allowed since the late 1980s. Consideration may be given to phasing out this activity in the future.

NOTE 4: Actual density levels, activities and group sizes are specified in the Development Node and Activities Frameworks.

Table 12 Controlled (Terrestrial)

MODIFIED NATURAL ENVIRONMENT. Noticeably less pristine than a Restricted Zone and, thus, normally less sensitive to the development of visitor facilities.

Inherent Attributes/ Characteristics	An area in which the landscape and ecological processes may have been noticeably transformed by past or present development (e.g. human settlement, silviculture, agriculture, alien plant invasion and soil erosion) but in which restoration is possible to: - i A natural setting that appears largely unmodified. - ii A system in which the ecological processes function naturally in many if not all respects. - iii A situation in which, as a result of achieving the above, the area could be regarded as partly modified and, hence, could be upgraded to a Restricted Zone. Proactive and responsive interventions may be required indefinitely for the maintenance of the above.
Focal Purpose of Zone	- i The restoration and maintenance of natural landscapes and ecological processes. - ii Provide nature-based recreational experiences for the full spectrum of potential user groups and market segments.

Permissible Uses & Activities ^{NOTE 1}	- i Hiking. - ii Horse riding. - iii Cycling. - iv Motorised boats (concession and self-drive) - v Non-motorised water craft. - vi 2x4 and 4x4 driving (concession and self-drive). - vii Freshwater diving (coastal freshwater lakes). - viii Swimming (in secured areas in coastal freshwater lakes). - ix Motorised and non-motorised special interest/educational trails, tours and activities under special permit only. - x Overnighting in all types of Park Development Nodes and houseboats. - xi Lake ferry shuttle service. - xii Controlled traditional subsistence resource harvesting and use. - xiii Human settlement in Special Residential Nodes in the Coastal Forest Reserve section of the Park and as defined in Local Area Plans, with limited non-commercial food gardens (for subsistence purposes and using low technology). - xiv Scientific research and monitoring.
Non-Permissible Uses & Activities	- i Quad bikes and motor cycles except for management purposes. - ii Personal watercraft and private sail boats (freshwater lakes). - iii Invertebrate harvesting (freshwater lakes). - iv Recreational and commercial fishing (freshwater lakes). - v Mining, silviculture, hunting, commercial agriculture, and aquaculture. - vi Human settlement, except for Special Residential Nodes and management staff and tourist accommodation facilities, as described above under 'permissible uses and activities'. - vii Supply of water to consumers outside the Park excluding existing and emergency use. - viii Recreational and leisure activities that are not associated with an outdoor nature-based experience. - ix Fireworks
Use Intensity/ Frequency ^{NOTE 2}	Full range of controlled use – very low to high intensities and frequencies but appropriate to the World Heritage status and context. Distinguished from previous zones by entry/access control mainly through the issue of permits (tickets) at entry gates, as opposed to advance application for individual or concession permits. Also distinguished by the potential to allow a significant level of self-drive game viewing experiences, as opposed to the need to confine activities to guided experiences (as in the previous three zones).
Development Nodes	All Development Nodes are permitted, including Medium and High Intensity Tourism Overnight Nodes, Tourism Day Visitor Nodes, Park Management Nodes and Special Residential Nodes.
Development Restrictions	Despite falling within a Controlled Zone, development must be sensitive, maintain a 'sense of place' and be in keeping with the Park's World Heritage values and status. Development must also adhere to all other environmental specifications and guidelines, including avoidance of sensitive sites. Outside of the Medium and High Intensity Development Nodes, the following development is permitted: - i Small, low impact management facilities, bush lodges, hides, permanent campsites, viewpoints, canopy walkways, picnic sites and interpretation displays. - ii Accommodation facilities to use low intensity lighting. - iii Comprehensive but environmentally harmonious informative/directional signage. - iv Upgraded management and tourist roads (i.e. gravel and hard top). - v Regional supply of utility services but overhead/above ground infrastructure in exceptional cases only (e.g. occurs historically, provides an essential service and is too costly to relocate, bury or substitute with alternative technology).

NOTES: TABLE 12: Controlled (Terrestrial)

NOTE 1: All permissible activities are subject to parameters set by legislation and the Permissible Activities Framework (including respective permits and permit conditions) [Refer to Section 5.1.8 for more detail].

NOTE 2: Actual density levels, activities and group sizes are specified in the Development Node and Activities Frameworks.

Table 13 Wilderness (Marine)

UNMODIFIED NATURAL ENVIRONMENT. Largely equivalent to IUCN Category 1b Protected Area^{NOTE 1}, but may include areas that are not designated as such, but, nevertheless, have all the attributes and characteristics of true wilderness. Similar in principle to a Terrestrial Wilderness Zone. An area within the MPA where no fishing may take place, but where ecotourism activities that maintain wilderness characteristics and attributes may take place if authorised by these regulations as contemplated in terms of section 48A(2) of the (Protected Areas) Act, or if authorised in terms of regulation 4(7).

Inherent Attributes/ Characteristics	A marine area having no existing human settlement, infrastructure within it (e.g. buoys, piers, outflow pipes), nor consumptive use of marine resources (e.g. invertebrate harvesting, fishing, etc.), nor activities that cause disturbance to wildlife (e.g. dolphins, birds, crabs) occurring within it, having no adjacent land/sea which has human settlement or infrastructure development, and no access roads/ramps, no parking, no view sites and no picnic areas in the dune cordon alongside it. The adjacent land and seascape bear negligible visual evidence (even to the 'educated eye') of human influence (settlement/infrastructure) in the recent past. Thus, to even the 'educated eye', the area has an inherent pristine appearance and character, or at least the potential of being restored accordingly in the short to medium term with an absolute minimum of intervention. It must also be sufficiently unspoilt and of a large enough size to: - i Maintain ecological processes with an absolute minimum of management intervention. - ii Provide a high quality wilderness experience by being physically, visually and audibly buffered from adjacent areas of human settlement (heightened 'sense of place' and of World Heritage values).
Focal Purpose of Zone^{NOTE 2}	- i Maintain an undisturbed pristine benchmark area of biodiversity and ecosystem processes. - ii Provide visitors with wilderness/spiritual experiences in a marine environment (heightened 'sense of place' and of World Heritage values).
Permissible Uses & Activities^{NOTE 3}	<i>Inshore:</i> - i Walking on beaches and rocks. - ii Swimming and snorkelling. - iii Guided wilderness, special interest, educational trails and activities (non-motorised only, including on foot, horseback, surfing and cycling) under special permit only. - iv Highly regulated scientific research and monitoring that cannot be carried out elsewhere in the Park. - v Special access, assessed on a case-by-case basis, and requiring permits. <i>Offshore:</i> - i Guided wilderness, special interest and educational activities (non-motorised vessels only, including surfing, surf skiing, canoeing/kayaking) under special permit only. - ii Highly-regulated scientific research, monitoring and World Heritage presentation that cannot be carried out elsewhere in the Park. - iii Special access, assessed on a case-by-case basis, and requiring permits. <i>Estuarine Lakes:</i> - i Walking on estuary margins. - ii Guided wilderness, special interest/educational trails and activities (non-motorised, including kayak and canoe) under special permit only. - iii Highly regulated scientific research and monitoring that cannot be carried out elsewhere in the

	Park. iv Special access, assessed on a case-by-case basis, and requiring permits.
Non-Permissible Uses & Activities	<i>Inshore:</i> - i All forms of extractive use, including all types of fishing, harvesting of intertidal or shallow subtidal organisms, and collection of biota and marine products (e.g. shells, driftwood, rocks, sand). - ii Fossicking^{NOTE 4}. - iii Beach driving - iv Launching of motorised vessels except for management purposes. - v Litter or leave any waste including fishing gear, hooks, bait packaging and fishing line. - vi No person or vessel may be in possession of or have on board SCUBA diving gear and a speargun <i>Offshore:</i> - i Scuba diving except for highly regulated research, monitoring and World Heritage presentation. - ii Kite and wind-surfing. - iii Parasailing from boats or use of personal watercraft. - iv All forms of extractive use, including all types of fishing, and collection of biota and marine products (e.g. shells, driftwood, rocks, sand). - v Use of motorised vessels other than management and research/monitoring and vessels at sea within the Park limit offshore which have the right of passage, but may not be in possession of any marine life or parts thereof, and may not stop for any reason, other than a declared^{NOTE 6} emergency (e.g. sinking). - vi Disturbing of whale shark (<i>Rhincodon typus</i>). - vii Litter or leave any waste including fishing gear, hooks, bait packaging and fishing line. - viii No person or vessel may be in possession of or have on board SCUBA diving gear and a speargun <i>Estuarine Lakes</i> - i All forms of extractive use, including fishing, harvesting of intertidal or shallow subtidal organisms, and collection of biota and marine products (e.g. shells, driftwood, rocks and sand). - ii Launching and use of motorised vessels except for essential management and research/monitoring. - iii Kite and wind-surfing. - iv Sailboats. - v Parasailing from boats or use of personal watercraft. - vi Fossicking^{NOTE 4}. - vii Litter or leave any waste including fishing gear, hooks, bait packaging and fishing line.
Use Intensity/ Frequency^{NOTE 5}	Law enforcement, management activities and visitor use strictly limited to: - i The principles of 'minimum tool' and 'leave no trace' apply. - ii Very low intensity. - iii Very low frequency, the emphasis being on transient use only. - iv Very small group sizes. - v Very strict regulation and control over entry.
Development Nodes	No development or infrastructural facilities (e.g. buoys, beacons) permitted.
Development Restrictions	All types and forms of development prohibited, regardless of circumstances and needs.

NOTES: TABLE 13: Wilderness (Marine)

- NOTE 1:** IUCN Category Ib protected areas are usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.
- NOTE 2:** A combination of these purposes will reinforce the branding of the Park as a protected area of integrity and quality.
- NOTE 3:** The impacts of these permissible uses and activities must be managed so as not to impinge upon the natural dynamics of the system thereby maintaining the inherent wilderness experience of the area. All permissible activities are subject to the parameters set by legislation and Permissible Activities Framework (including respective permits and permit conditions) [Refer to Section 5.1.8 for more detail]. Ecotourism activities that maintain wilderness characteristics and attributes may take place if authorised by the regulations as contemplated in terms of section 48A(2) of the Act (NEM: Protected Areas Act of 2003), or if authorised in terms of regulation 4(7).
- NOTE 4:** Fossicking is the activity undertaken by persons, who while walking, actively explore the marine life of the intertidal zone (shore and rock pools) without removing biota in the process.
- NOTE 5:** A declared emergency means that the appropriate radio communication is had.
- NOTE 6:** Actual density levels, activities and group sizes are specified in the Development Node and Activities Frameworks.

Table 14 Restricted (Marine)

PARTLY MODIFIED NATURAL ENVIRONMENT. Although only partly modified, normally less pristine and less sensitive than Wilderness areas. Similar in principle to a Terrestrial Restricted Zone. An area within the MPA where no fishing may take place, but where any other activity in terms of section 48A(1) of the (Protected Areas) Act may take place if authorised in terms of these regulations as contemplated in terms of section 48A(2) of the (Protected Areas) Act, or if authorised in terms of regulation 4(7).

Inherent Attributes/ Characteristics	A marine area that may have some (but limited in extent and impact) adjacent current human settlement, developed infrastructure (e.g. buoys, piers) and/or consumptive activities, (e.g. fishing), management interventions and some visual evidence (limited in extent and impact but relatively more than that acceptable for Sanctuary zones) of their occurrence in the recent past. Nevertheless, regardless of whether current or residual, the human-induced modifications to the environment must either pose no significant threats (to ecological processes, biodiversity and landscape quality) or it is feasible to dispose of or remove them and/or mitigate their negative impacts over time. Accordingly, the area must have the potential for restoration to a state that the general public regards, for the most part, as largely unmodified and/or near-pristine. This may require proactive and responsive management interventions indefinitely for the maintenance of the above.
Focal Purpose of Zone	- i Conservation of biodiversity and ecological processes. - ii Where applicable, the restoration and maintenance of natural landscapes and ecological processes. Provide visitors with a high quality nature-based outdoor experience in a marine environment.
Permissible Uses & Activities ^{NOTE 1}	<i>Inshore restricted (no-take)²⁸:</i> - i Walking on beaches and rocks and fossicking (non-extractive). - ii Horse riding. - iii Cycling. - iv Swimming, snorkelling, surfing, surf-skiing, kite and wind surfing and kayaking. - v Concession, research, and monitoring and management beach driving only.

²⁸ No-take means no extractive use.

	- vi Boat launching at recognised boat-launching sites (concession, research and monitoring and management only). - vii Special interest/educational activities within parameters of other permissible and non-permissible uses and activities. - viii Permitted scientific research and monitoring.
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Permissible Uses & Activities NOTE 1	<i>Offshore restricted (no-take)</i>²⁹: - i Scuba diving. - ii Snorkelling. - iii Kayaking and, surf-skiing. - iv Use of motorised vessels. - v Special interest/educational activities within the parameters of other permissible and non-permissible uses and activities. - vi Artificial substrates including artificial reefs. - vii Permitted scientific research and monitoring. <i>Estuarine Lakes:</i> - i Walking on estuary margins. - ii Boats and canoes operating under concessions or licenses only. - iii Highly regulated scientific research and monitoring that cannot be carried out elsewhere in the Park. - iv Swimming (in secured areas). - v Special access, assessed on a case-by-case basis, and requiring permits.
Non-Permissible Uses & Activities	<i>Inshore restricted (no-take)</i>³⁰: - i Beach driving except under recreational and educational use permits for concession operators, and authorised management and research, and monitoring vehicles. - ii All forms of extractive use, including all types of fishing, harvesting of intertidal or shallow sub-tidal organisms, and collection of biota and marine products (e.g. shells, driftwood, rocks, sand). - iii Collection of marine aquarium fish, invertebrates and plants except for educational or scientific purposes, and under special permit. - iv Collection of organic (e.g. driftwood, shells) and inorganic (e.g. rocks, sand) materials except for educational or scientific purposes and under special permit. - v Commercial fishing. - vi Launching from non-recognised sites except under special permit. - vii Litter or leave any waste including fishing gear, hooks, bait packaging and fishing line. - viii No person or vessel may be in possession of or have on board SCUBA diving gear and a speargun <i>Offshore restricted (no-take):</i> - i All forms of extractive use, including all types of fishing, and collection of biota and marine products (e.g. shells, driftwood, rocks and sand). - ii Fishing for, or being in possession of, bottom fish. - iii Chumming or feeding of fish (including sharks). - iv Personal watercraft except for fishing and under special permit. - v Parasailing from boats. - vi Collection of marine aquarium fish, invertebrates and plants except for educational or scientific purposes and under special permit. - vii Use of fish aggregating devices (FADs), anchored or drifting. - viii Disturbing of whale shark (<i>Rhincodon typus</i>). - ix Litter or leave any waste including fishing gear, hooks, bait packaging and fishing line. - x No person or vessel may be in possession of or have on board SCUBA diving gear and a speargun. <i>Estuarine Lakes:</i> - i All forms of extractive use, including all types of fishing, harvesting of intertidal or shallow subtidal organisms, and collection of biota and marine products (e.g. shells, driftwood, rocks and

²⁹ No-take means no extractive use.

³⁰ No-take means no extractive use.

	sand). - ii Fossicking. - iii Driving on estuary margins except for essential management activities and scientific research and monitoring under special permit. - iv All motorised vessels without the acquisition of a special permit, i.e. concession use only. - v Parasailing from boats, use of personal watercrafts and wind-surfing. - vi Litter or leave any waste including fishing gear, hooks, bait packaging and fishing line.
Use Intensity/ Frequency ^{NOTE 3}	Regulated and controlled use of low and moderate intensity with entry/access restricted to and controlled at entrance gates or other demarcated points of entry.
Development Nodes	Only Low and Medium (temporary) Intensity Tourism Day Visitor Nodes and Park Management Nodes permitted.
Development Restrictions	Only very low key, unobtrusive and low impact development permitted from base of dunes to the low water mark. No development of any type or form permitted from low water mark to outer limit of Marine Reserve, regardless of circumstances or needs. Development from base-of-dune to dune-crest and inland must conform to restrictions laid down for the adjacent Development Node or Terrestrial Zone which, in most instances, will be a Terrestrial Restricted or Controlled Zone and setback lines.

NOTES: TABLE 14: Restricted (Marine)

NOTE 1: All permissible activities are subject to parameters set by legislation and the Permissible Activities Framework (including respective permits and permit conditions) [Refer to Section 5.1.8 for more detail].

NOTE 2: Measures to make fishing more sustainable may be introduced.

NOTE 3: Actual density levels, activities and group sizes are specified in the Development Node and Activities Frameworks.

Table 15 Controlled (Marine)

MODIFIED NATURAL ENVIRONMENT. Noticeably less pristine than a Restricted Zone and, thus, normally less sensitive to the development of visitor facilities. Similar in principle to a Terrestrial Controlled Zone. A Controlled Zone means an area within the MPA where limited fishing or any other activity in terms of section 48A(1) of the Act may take place if authorised in terms of these regulations as contemplated in terms of section 48A(2) of the Act or if authorised in terms of regulation 4(7).	
Inherent Attributes/ Characteristics	A marine area in which the seascape, ecosystems and habitats, and ecological processes may have been noticeably transformed by past or present developments (piers, buoys) or human activities (fishing, estuary mouth manipulation) within the area or in the terrestrial area immediately adjacent to it, but with significant interventions over time it could be restored to: - i A natural setting that appears to the general public as largely unmodified. - ii A system in which the ecological processes function naturally. - iii A situation in which, as a combination of achieving the above, the area could be regarded as partly modified and, hence, could be upgraded to a Restricted Zone. Proactive and responsive management interventions may be required indefinitely for the maintenance of the above.
Focal Purpose of Zone	- i Where applicable, the restoration and maintenance of natural landscapes and ecological processes. - ii Provide an affordable, comfortable, informative, safe, enjoyable and sustainable outdoor recreational experience in a relatively-unspoilt marine environment.
Permissible Uses & Activities ^{NOTE 1}	<i>Inshore</i> - i Walking on beaches and rocks and fossicking. - ii Swimming, snorkelling, surfing, surf-skiing, kite and wind surfing and kayaking.

	- iii Horse riding. - iv Cycling. - v Concession, research and monitoring, and management beach driving only. - vi Recreational and subsistence rock and surf angling with permit. Fishing after sunset and before sunrise by special permit only. - vii Sharks and rays may be caught from the shore, but must be returned unharmed to the water from where they were caught. - viii Boat launching (self and concession) at recognised boat-launching sites. - ix Special interest/educational activities within parameters of other permissible and non-permissible uses and activities. - x Controlled subsistence invertebrate harvesting of intertidal organisms and rock and surf linefishing in designated areas. - xi Restricted small scale invertebrate harvesting, for any person in possession of a recreational fishing permit, in designated areas, i.e. Cape Vidal, St Lucia and Lighthouse Controlled Zones south of Cape Vidal. - xii Research and monitoring with a scientific permit. <i>Offshore.</i> - i Scuba diving. - ii Snorkelling. - iii Kayaking, surf-skiing, kite and wind-surfing, and parasailing from boat. - iv Use of motorised vessels. - v Recreational fishing (pelagic only) to permit holders between sunrise and sunset only. - vi Spear fishing to permit holders for pelagic fish between sunrise and sunset only. - vii Special interest/educational activities within the parameters of other permissible and non-permissible uses and activities. - viii Establishment of artificial substrates including artificial reefs. - ix Research and monitoring with a scientific permit. <i>Estuarine Lakes:</i> - i Walking on estuary margins and fossicking. - i Boat launching (self and concession) at recognised boat-launching sites. - ii Use of motorised vessels (self and concession). - iii Recreational and small scale shore and boat-based angling (sunrise to sunset only). - iv Kayaking and canoeing - v Special interest/educational activities within parameters of other permissible and non-permissible uses and activities. - vi Controlled and permitted small scale invertebrate harvesting in designated areas. - vii Research and monitoring with a scientific permit.
Non-Permissible Uses & Activities	<i>Inshore.</i> - i Vehicles on the beach except for boat launching purposes at recognised launch sites, and concession beach driving and authorised management and research and monitoring vehicles. - ii Launching from non-recognised sites except under special permit. - iii Harvesting of intertidal organisms other than small scale invertebrate harvesting or under special permit. - iv Collection of marine aquarium fish, invertebrates and plants except for educational or scientific purposes and under special permit. - v Collection of broodstock for undertaking aquaculture, except with a permit from the management authority. - vi Collection of organic (drift wood, shells) and inorganic (e.g. rocks, sand) materials except for educational or scientific purposes and under special permit. - vii Commercial fishing. - viii Fishing between sunset and sunrise, unless by special permission. - ix No person may participate in or arrange any fishing competition without a permit from the managing authority

	- x No person may litter or leave any waste including fishing gear, hooks, bait packaging and fishing line within the MPA. - xi No person or vessel may be in possession of or have on board SCUBA diving gear and a speargun. - xii Fireworks <i>Offshore.</i> - i Fishing for, or being in possession of, bottom fish³¹, sharks and rays. - ii Chumming or feeding of fish (including sharks). - iii Personal watercraft. - iv Collection of marine aquarium fish except for educational or scientific purposes and under special permit. - v Collection of broodstock for undertaking aquaculture, except with a permit from the management authority. - vi Use of fish aggregating devices (FADs), anchored or drifting. - vii Commercial fishing. - viii Fishing between sunset and sunrise. - ix Disturbing whale shark - x No person may litter or leave any waste including fishing gear, hooks, bait packaging and fishing line within the MPA. - xi No person or vessel may be in possession of or have on board SCUBA diving gear and a speargun <i>Estuarine Lakes:</i> - i Vehicles on the beach barrier except for boat launching purposes at recognised launch sites, concession beach driving and authorised management and research and monitoring. - ii Launching from non-recognised sites (except under special permit). - iii Personal watercraft., windsurfing, kiteboarding (crocodiles, hippos) - iv Harvesting of intertidal organisms other than subsistence small scale invertebrate harvesting or under special permit. - v Collection of marine aquarium fish, invertebrates and plants except for educational or scientific purposes and under special permit. - vi Collection of broodstock for undertaking aquaculture, except with a permit from the management authority. - vii Collection of organic (drift wood, shells, etc) and inorganic (e.g. rocks and sand) materials except for educational or scientific purposes and under special permit. - viii Commercial fishing. - ix No person may litter or leave any waste including fishing gear, hooks, bait packaging and fishing line within the MPA. - x No person or vessel may be in possession of or have on board SCUBA diving gear and a speargun. - xi Fireworks
Use Intensity/ Frequency	Regulated and controlled use of moderate intensity and relatively high frequency, with entry/access restricted to and controlled at entrance gates or other demarcated points of entry.

³¹ There are a number of reasons why the Authority has decided to prohibit all bottom fishing in the Park. Firstly, the then Minister of Environmental Affairs and Tourism declared South Africa's line fishery to be in a state of emergency in 2000 (Government Gazette, 29 December 2000 No. 21949, Notice 4727 of 2000). In the Southern African marine line fish status reports, a number of populations of commercial and recreational marine fish, including bottom fish species, were considered over exploited and/or collapsed, and in need of population recovery. There is also an extensive body of scientific literature that motivates for protection of reef fish in the iSimangaliso Wetland Park and the Natal Bioregion. Specifically, bottom fish are often highly resident, a key feature that makes these species vulnerable to overexploitation. Finally, the area south of Cape Vidal falls in the Natal Bioregion, which up until now has not received adequate protection consistent with the other bioregions in South Africa.

Development Nodes	Only Tourism Day Visitor Nodes and Park Management Nodes permitted.
Development Restrictions	Only very low key, unobtrusive and low impact development permitted from base of dunes to the low water mark. No development of any type or form permitted from the low water mark to the outer limit of the Park boundary regardless of circumstances or needs. Development from base-of-dune to dune-crest and inland must conform to restrictions laid down for the adjacent Development Node or Terrestrial Zone which, in most instances, will be a Terrestrial Controlled Zone.

NOTES: TABLE 15: Controlled (Marine)

NOTE 1: All permissible activities are subject to parameters set by legislation and the Permissible Activities Framework (including respective permits and permit conditions) [Refer to Section 5.1.8 for more detail].

Table 16 Controlled (Marine) + restricted fishing

MODIFIED NATURAL ENVIRONMENT. Similar in principle to a Controlled Zone, but with certain fishing restrictions. There are two categories, depending on whether fishing activities take place inshore or offshore: 1. Controlled Catch and Release Zone (inshore): A Controlled Zone within the MPA where only catch and release rock and surf linefishing may occur, 2. Pelagic linefish with list (offshore): A Controlled Zone within the MPA where only pelagic linefishing may occur, as detailed in the fish list attached to the MPA regulations as Annexure 2.	
Inherent Attributes/ Characteristics	A marine area in which the seascape, ecosystems and habitats, and ecological processes may have been noticeably transformed by past or present developments (piers, buoys) or human activities (fishing, estuary mouth manipulation) within the area or in the terrestrial area immediately adjacent to it, but with significant interventions over time it could be restored to: - iv A natural setting that appears to the general public as largely unmodified. - v A system in which the ecological processes function naturally. - vi A situation in which, as a combination of achieving the above, the area could be regarded as partly modified and, hence, could be upgraded to a Restricted Zone. Proactive and responsive management interventions may be required indefinitely for the maintenance of the above.
Focal Purpose of Zone	- iii Where applicable, the restoration and maintenance of natural landscapes and ecological processes. - iv Provide an affordable, comfortable, informative, safe, enjoyable and sustainable outdoor recreational experience in a relatively-unspoilt marine environment.
Permissible Uses & Activities NOTE 1	<i>Inshore (i.e. catch & release)</i> - xiii Walking on beaches and rocks and fossicking. - xiv Swimming, snorkelling, surfing, surf-skiing, kite and wind surfing and kayaking. - xv Horse riding. - xvi Cycling. - xvii Concession, research and monitoring, and management beach driving only. - xviii Recreational rock and surf angling on a catch and release basis only with a fishing permit and using barbless hooks. Fishing after sunset and before sunrise by special permit only. - xix All fish, sharks and rays caught must be carefully handled and released alive and unharmed back into the water from which it was caught. - xx Boat launching (self and concession) at recognised boat-launching sites. - xxi Special interest/educational activities within parameters of other permissible and non-permissible uses and activities. - xxii Controlled subsistence invertebrate harvesting in designated areas. - xxiii Research and monitoring with a scientific permit.

	<i>Offshore (i.e. pelagic fishing).</i> - x Scuba diving. - xi Snorkelling. - xii Kayaking, surf-skiing, kite and wind-surfing, and parasailing from boat. - xiii Use of motorised vessels. - xiv Recreational fishing (pelagic only, as per list in Annexure 2 of MPA regulations) with fishing permit between sunrise and sunset only. - xv Spear fishing with permit, for pelagic fish between sunrise and sunset only. - xvi Special interest/educational activities within the parameters of other permissible and non-permissible uses and activities. - xvii Establishment of artificial substrates including artificial reefs. - xviii Research and monitoring with a scientific permit.
Non-Permissible Uses & Activities	<i>Inshore. (i.e. catch & release)</i> - xiii Vehicles on the beach except for boat launching purposes at recognised launch sites, and concession beach driving and authorised management and research and monitoring vehicles. - xiv Launching from non-recognised sites except under special permit. - xv No fishing between sunset and sunrise - xvi Harvesting of intertidal organisms or bait - xvii Collection of marine aquarium fish, invertebrates and plants except for educational or scientific purposes and under special permit. - xviii Collection of broodstock for undertaking aquaculture, except with a permit from the management authority. - xix Collection of organic (driftwood, shells) and inorganic (e.g. rocks, sand) materials except for educational or scientific purposes and under special permit. - xx Commercial fishing. - xxi Spearfishing. - xxii Litter or leave any waste including fishing gear, hooks, bait packaging and fishing line. - xxiii No person or vessel may be in possession of or have on board SCUBA diving gear and a speargun. - xxiv Fireworks <i>Offshore (i.e. pelagic fishing).</i> - xii No fishing between sunset and sunrise. - xiii Fishing for, or being in possession of, bottom fish³². - xiv Chumming or feeding of fish (including sharks). - xv Personal watercraft. - xvi Collection of marine aquarium fish except for educational or scientific purposes and under special permit. - xvii Collection of broodstock for undertaking aquaculture, except with a permit from the management authority. - xviii Use of fish aggregating devices (FADs), anchored or drifting. - xix Commercial fishing. - xx Litter or leave any waste including fishing gear, hooks, bait packaging and fishing line. - xxi No person or vessel may be in possession of or have on board SCUBA diving gear and a

³² There are a number of reasons why the Authority has decided to prohibit all bottom fishing in the Park. Firstly, the then Minister of Environmental Affairs and Tourism declared South Africa's line fishery to be in a state of emergency in 2000 (Government Gazette, 29 December 2000 No. 21949, Notice 4727 of 2000). In the Southern African marine line fish status reports, a number of populations of commercial and recreational marine fish, including bottom fish species, were considered over exploited and/or collapsed, and in need of population recovery. There is also an extensive body of scientific literature that motivates for protection of reef fish in the iSimangaliso Wetland Park and the Natal Bioregion. Specifically, bottom fish are often highly resident, a key feature that makes these species vulnerable to overexploitation. Finally, the area south of Cape Vidal falls in the Natal Bioregion, which up until now has not received adequate protection consistent with the other bioregions in South Africa.

	speargun.
Use Intensity/ Frequency	Regulated and controlled use of moderate intensity and relatively high frequency, with entry/access restricted to and controlled at entrance gates or other demarcated points of entry.
Development Nodes	Only Tourism Day Visitor Nodes and Park Management Nodes permitted.
Development Restrictions	Only very low key, unobtrusive and low impact development permitted from base of dunes to the low water mark. No development of any type or form permitted from the low water mark to the outer limit of the Park boundary regardless of circumstances or needs. Development from base-of-dune to dune-crest and inland must conform to restrictions laid down for the adjacent Development Node or Terrestrial Zone which, in most instances, will be a Terrestrial Controlled Zone or setback line.

NOTES: TABLE 16: Controlled (Marine) + restricted fishing

NOTE 1: All permissible activities are subject to parameters set by legislation and the Permissible Activities Framework (including respective permits and permit conditions) [Refer to Section 5.1.8 for more detail].

Table 17 Sanctuary (Estuarine)³³

Note that the existing wilderness, restricted and controlled zones as outlined under the marine section Tables 11 - 13 include estuarine lakes, except that the St Lucia estuary and Kosi Lake and estuary have additional Sanctuary zones as defined in their respective Estuary Management Plans (refer also Chapter 5.2.3 and relevant mapping of sanctuary zones).

UNMODIFIED NATURAL ENVIRONMENT. Designated Sanctuary to enable the protection of specific attributes of value.

Inherent Attributes/ Characteristics	The primary purpose of a Sanctuary Zone is the protection of a particular species, community, habitat type or ecosystem, also to be used for benchmarking purposes. Inherent attributes/characteristics are also similar to those of a Wilderness area but the area under consideration does not qualify for true wilderness status due to: - i Some visual evidence (limited in extent yet discernible to even the general public) of human activities in the recent past, for example, ship wrecks). - ii It being too small in size to maintain ecological processes without some ongoing management intervention. - iii It not being large enough to be physically, visually and/or audibly buffered from adjacent areas to provide an authentic wilderness experience.
Focal Purpose of Zone^{NOTE 1}	- i Maintain a scientific benchmark area of biodiversity and ecosystem processes. - ii Provide visitors with nature/spiritual/educational experiences in a marine environment (heightened 'sense of place' and of World Heritage values).
Permissible Uses & Activities^{NOTE 2}	- i Walking on estuary margins. - ii Guided wilderness, special interest/educational trails and activities (non-motorised, including kayak and canoe) under special permit only. - iii Highly regulated scientific research and monitoring that cannot be carried out elsewhere in the Park. - iv Special access, assessed on a case-by-case basis, and requiring permits.
Non-Permissible Uses & Activities	i All forms of extractive use, including all types of fishing ^{NOTE 3}, harvesting of intertidal or shallow subtidal organisms, and collection of biota and marine products (e.g. shells, driftwood, rocks and sand) (except for research purposes).

³³ To be resolved further to discussion as to whether to retain "sanctuary" zonation for estuaries only, or align with MPA regulations, which does not include "sanctuary", in which case either "wilderness" or "restricted" or "controlled" with certain conditions may be applied.

	- ii Fossicking. - iii Driving on margins except for scientific research and monitoring under special permit. - iv Launching of motorised boats except management and scientific research and monitoring vessels. - v Parasailing from boats or use of personal watercraft. - vi Kite and wind-surfing. - vii Diving.
Use Intensity/ Frequency ^{NOTE 5}	Law enforcement, management, research, monitoring and visitor use strictly limited to: - i Very low intensity. - ii Very low frequency, the emphasis being on transient use only. - iii Small group sizes. - iv Special events. - v Very strict regulation and control over entry.
Development Nodes	No Development Nodes permitted.
Development Restrictions	All types and forms of development prohibited, regardless of circumstances and needs.

NOTES: TABLE 17: Sanctuary (Estuarine)

NOTE 1: A combination of these purposes will reinforce the branding of the Park as a protected area of integrity and quality.

NOTE 2: All permissible activities are subject to the parameters set by legislation and Permissible Activities Framework (including respective permits and permit conditions) [Refer to Section 5.1.8 for more detail].

NOTE 3: This includes catch and release.

NOTE 4: A declared emergency means that the appropriate radio communication is had.

NOTE 5: Actual density levels, activities and group sizes are specified in the Development Node and Activities Frameworks.

5.1.2 iSimangaliso Marine Protected Area (MPA)

The former Department of Environmental Affairs (DEA), now Department of Environment Forestry & Fisheries (DEFF), extended the MPA in the iSimangaliso Wetland Park on 23 May 2019, effective 1 August 2019 (Government Notice No. 757 of Government Gazette 42478). Regulations for the management of the iSimangaliso MPA are outlined in R. 788 of Government Gazette 42479 in terms of the National Environmental Management Protected Areas Act, 2003 (Act No. 57 of 2003). The previously applied Declaration of Areas as Marine Protected Areas in Government Gazette 219487, Notice No. 1429 of 29 December 2000 was withdrawn and repealed. In this piece of legislation, the previous Maputaland and St Lucia MPAs had extended from the high water mark seawards to 3 n.mi, covering an area of 384 and 441 km², respectively. The iSimangaliso MPA now includes a south-westward extension of the existing St Lucia MPA to the Cape St Lucia Lighthouse (approximately 12.5 km long and an area of approximately 69.4 km²) and an offshore extension from 200 m offshore of the high water mark seawards to approximately 20 n.mi (37 km) offshore of the SA-Mozambique border in the north, to 45 n.mi (84 km) offshore of Cape St Lucia in the south, an area of 10 730 km² (1 072 965 ha) (refer Maps 28 and 29). The inshore MPA zones extend from the high water mark seawards to 200 m offshore.

5.1.3 Boat Launch Sites and Controls

In terms of Regulation 7 of the Management of Public Launch Sites in the Coastal Zone (GN 497 of 27 June 2014), “a management authority (in this case the iSimangaliso Wetland Park Authority) in its Integrated Management Plan shall identify public launch sites within a protected area including those sites which share common boundaries with a terrestrial protected area. The provisions of sub-regulations (2)(a), (b), (c) and (d) shall *mutatis mutandis* apply to a management authority”, viz. may have a launch site operational plan to:

- (a) determine a maximum daily, monthly or annual limit for the number of vehicles used to launch a vessel or vessels from each public launch site;
- (b) determine the type or class of vessel which may be launched from a particular public launch site;
- (c) impose any prohibitions or conditions relating to the use or management of a public launch site in general or, for any specific launch site; or
- (d) regulate any other activity relating to the management of a public launch site.

While there is, as yet, no official launch site operational plan, the information contained in Table 18 defines the boundaries, use and usage limitations of the sites within the iSimangaliso Wetland Park which have been identified and listed as boat-launching sites. Map 31 shows the location of the launch sites. Although the public launch sites have historically been well managed and regulated by EKZNW, the measures are not formalised into individual Environmental Management Programmes (EMPr's) nor Emergency Response Plans (ERP's). Although the protected area requirements do not prescribe it, EMPr's are to be developed by the Park Authority for each launch site to align them with the South African Regulations (Regulation 7 of the Regulations in terms of section 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and ICMA (2008): Management of Public Launch Sites in the Coastal Zone, GNR. 497, 27 June 2014), which were developed in order to ensure adequate safety and management of launch sites. A generic template is available for the EMPr's and ERP's and completing these will ensure that basic safety features are in place and that the sites are professionally managed.

Launch site registers are mandatory at every launch site and iSimangaliso voluntarily submits launch records and fish catch data (where applicable) to the Boat Launch Site Monitoring System (BLSMS) for long-term statistical record keeping. The BLSMS database can be utilised for management purposes (Mann, et al., 2015).

Use of the St Lucia beach launch site is under review, as the exposed beach launch is not a safe launch, whereas the Maphelane launch site, some 3.5 km south of the St Lucia north onramp, is an easier launch. There is no convenient road access from St Lucia to the Maphelane launch site; the road to Maphelane is only accessible to 4x4 vehicles, is a long tip round and is in bad condition. When the Umfolozi and St Lucia estuary mouths are closed, the Maphelane launch area can be accessed along the beach and is a safer option. Should the St Lucia estuary open up, then launches can revert to the St Lucia Ski-boat Club slipway.

In addition, there are a number of slipways utilised for launching motorised vessels on inland lakes (where such activity is permitted). This includes slipways for concession use/pleasure cruises. Fishing activity in inland waters (where permitted) is termed light tackle boat angling.

5.1.4 Motorised Vessels

All vessels entering or traversing the Park must comply with the requirements as stipulated in the MPA regulations and must comply with any launch site rules set by the Park Authority. In addition, all motorised vessels must comply with the Merchant Shipping (National Small Vessel Safety) Regulations, 2007. On inland waters, the regulations prescribe that a vessel may only enter the water from those areas or places permitted by the regulating authority; to this end, there are a number of slipways for motorised vessel access to inland lakes (in permitted areas only). A motorised vessel entering or traversing the Park with fishing gear on board must have a Global Positioning System (GPS) Mapping Device with an active trail operational on the vessel, prior to entering and while traversing iSimangaliso and such GPS data may not be deleted from this device for 7 calendar days after passing through the Park. A vessel required by law to have a Vessel Monitoring System must, when entering iSimangaliso with fishing gear on board, ensure that the Vessel Monitoring system is active. According to the MPA Regulations, no personal watercraft (jetskis) are permitted in the offshore MPA.

Table 18 Existing and proposed offshore boat launch sites and controls (valid as at 2020). Sites are listed from south to north (refer Map 31).

Boat Launch Site Title	Position and Extent	Use	Usage Limitation
Maphelane Self and Concession	Maphelane onramp to 500 m north of the Maphelane onramp	Public and concession use	Maximum of 40 vehicles for launching purposes per day, including concessions and St Lucia operators, who may traverse the sandbar from Imgwe beach at St Lucia to Maphelane for a safer launch.
St Lucia Temporary Beach Self and Concession	From the St Lucia northern access ramp area southwards towards the Umfolozi to a maximum distance of 200 m The safest launch area should be demarcated on a daily basis	Public and concession use	Maximum of 40 vehicles for launching purposes per day, including concession operators. This launch site may only be used during periods when it is dangerous to launch from the St Lucia Ski Boat Club Slipway or when St Lucia estuary mouth is closed.
St Lucia Estuary Self and Concession	Launching from this launch site is restricted to the St Lucia Ski Boat Club Slipway only.	Public and concession use	Maximum of 40 vehicles for launching purposes per day, including concession operators. Note that the total number of launches for both St Lucia (beach & estuary) sites combined is 40.
Cape Vidal Self and Concession	Cape Vidal Point Bay to Cape Vidal onramp provided that only a demarcated area of 200 m between these two points can be used at any one time	Public and concession use	Maximum of 40 vehicles for launching, beaching or servicing a vessel per day
Sodwana Bay Self and	Jesser Point to Mgobozeleni Mouth provided that only a	Public and concession use	Maximum of 100 vehicles for launching purposes per day

Boat Launch Site Title	Position and Extent	Use	Usage Limitation
Concession	demarcated area of 200 m between these two points can be used at any one time		including concession operators. An additional 10 recreational vehicles at any one time for use as service vehicles for the diving and charter fishing ³⁴ operations at Sodwana Bay
Nine-Mile Reef Concession	Nine Mile Point to 800 m north provided that only a demarcated area of 50 m between these two points can be used at any one time	Proposed: Concession only	Maximum of two vehicles for launching, beaching or servicing a concession vessel per day
*Mabibi Concession	Hulley Point to 800 m north provided that only a demarcated area of 50 m between these two points can be used at any one time	Concession only	Maximum of one vehicle for launching, beaching or servicing a concession vessel per day
*Island Rock Concession	Island Rock southern inshore ledge to Manzengwenya Ledge provided that only a demarcated area of 50 m between these two points can be used at any one time	Concession only	Maximum of six vehicles for launching, beaching or servicing a concession vessel per day
Lala Nek Concession	Lala Nek Point to 800 m north of Lala Nek onramp provided that only a demarcated area of 50 m between these two points can be used at any one time	Proposed: Concession only	Maximum of one vehicle for launching, beaching or servicing a concession vessel at any one time
Rocktail Bay Concession	Rocktail Bay Point to 800 m north provided that only a demarcated area of 50 m between these two points can be used at any one time	Proposed: Concession only	Maximum of one vehicle for launching, beaching or servicing a concession vessel per day
Bhanga Nek Concession	Botelier Point to 800 m north: provided that only a demarcated area of 50 m between these two points can be used at any one time	Proposed: Concession only	Maximum of six vehicles for launching, beaching or servicing a concession vessel per day

³⁴ The term charter fishing means “fishing from a vessel carrying a passenger or passengers for hire that are engaged in recreational fishing”.

5.1.5 Beach Parking and Controls

Vehicle use on beaches is regulated by the Control of Use of Vehicles in the Coastal Area GNR496 (27 June 2014). Table 19 sets out the current operating requirements. Private vehicles may only access the beach for the purposes of launching craft at designated launch sites, apart from the overflow beach parking area at Sodwana Bay. The Authority is in the process of upgrading and expanding the beach parking behind the dune at Sodwana Bay, the intention being to obviate the necessity to park on the beach during peak periods when the current parking area doesn't have the capacity to cope with demand. Security will need to form part of this upgrade.

Table 19 Beach driving controls (valid as at 2020, subject to change). Areas are listed from south to north.

Name of Concession Use Area	Physical Boundaries	Use	Maximum Permissible Vehicle Numbers at any one time
St Lucia CUA	St Lucia on ramp to 100m south of First Rocks, access being from designated St Lucia beach onramp	Concession operation only. No self-driving activity	2 limited concession use vehicles
Cape Vidal North CUA	Cape Vidal onramp to Leven Point, access being from the Cape Vidal beach onramp	Concession operation only. No self-driving activity	2 Turtle concession use vehicles
Sodwana Bay CUA	Adlams Reef to Nine Mile onramp, access being from the designated Sodwana and Nine Mile beach onramps	Concession operation only. No self-driving activity	3 limited concession use vehicles and 3 Turtle concession use vehicles
Sodwana Bay Parking Area	Demarcated area from Sodwana Bay Beach onramp to 2 km north of Jesser Point; access is only permitted by existing beach onramp	For overflow parking in peak season during daylight hours, only under strict conditions/permit	200 vehicles
Nine Mile – Rocktail Bay CUA	9 Mile to south of Black Rock, access being from designated beach onramps at Nine Mile, Mabibi, Lalanek, Manzengwenya and Rocktail Bay	Concession operation only. No self-driving activity	2 Turtle concession use vehicles

NOTE: In the event of changes to the regulations governing the use of vehicles in the coastal zone, for example, a lessening of current restrictions, iSimangaliso will review its restrictions related to permissible and non-permissible activities in all zones, to give equivalent force to the above restrictions that rely significantly on the prohibition of vehicles in the coastal zone.

5.1.6 *iSimangaliso Fish List*

This is a list of game and bait fish species that MAY be caught in the iSimangaliso Wetland Park subject to the Park zonation and Park permitting requirements (certain species of fish may require special permit in addition to the recreational permits issued by DEFF). Family names are given, as all species in these families may be caught.

Pelagic gamefish species

Scombridae – Tunas, mackerels, wahoo
Carangidae – kingfish, garrick, yellowtail, queenfish
Pomatomidae – Shad/elf
Coryphaenidae – Dorado/dolphin fish
Rachycentridae – Prodigal son/Cobia
Istiophoridae – Sailfish and marlin (catch and release only)
Sphyrnaeidae – Barracudas

Pelagic baitfish species (includes carangids and scombrids as indicated above)

Atherinidae – silversides
Belonidae – garfish
Chirocentridae – wolf herring/slimy
Clupeidae – red-eyes, sardines
Engraulidae – anchovies, glass-noses/bonies
Exocoetidae - flyingfishes
Hemiramphidae – halfbeaks
Scomberesocidae – sauries

Pelagic cartilaginous fish (sharks and rays) from the families Charcharindae, Isuridae, Sphymidae, Alopiidae and Odontaspidae may not be caught when fishing offshore, and only caught on a catch and release basis in the inshore zone. Fish gantries and hanging of fish are not permitted.

5.1.7 *Sensitive Areas/Sites*

There are a number of sites of special sensitivity, value and interest within the Park that require special protection, for example, Black Rock, Island Rock, certain reefs, various cultural sites, the Park's estuaries, and habitats that support rare, threatened or endemic species. These will be declared **sensitive areas or sites** irrespective of the zone in which they occur and may receive additional zonation affording increased protection. Alternatively, site-specific management plans will be prepared for the protection and management thereof. In the case of marine inshore and offshore areas, these areas have been zoned in the MPA regulations (Government Notices 772 and 788 of 2019) as "wilderness" and "restricted", the conditions of which are described in Chapter 5.1.1.

5.1.8 *Development Node Framework*

Development nodes are a subset of the Park zonation plan that cluster activities and/or facilities. Nodes are intrinsically attractive locations, with a range of natural, cultural, and/or aesthetic attributes and recreational and/or educational opportunities. Three strategies were considered in the development of nodes, namely, the development of peripheral nodes, i.e. high intensity nodes on the periphery of the protected area; consolidation of existing nodes, and the creation of new development nodes. The categories of development nodes considered appropriate for iSimangaliso include:

- ❖ Category A: Tourism Overnight Nodes.
- ❖ Category B: Tourism Day Visitor Nodes.
- ❖ Category C: Park Management Nodes.
- ❖ Category D: Special Residential Nodes³⁵.
- ❖ Category E: Access Corridors and Nodes.

Based on the above, the following tourism nodes have been identified³⁶:

5.1.9 *Visitor Carrying Capacity*

Carrying capacity relates to the maximum number of visitors that can make use of the Park without significantly degrading the environment or detracting from the Park's World Heritage values and visitor experience. The challenge is to achieve a balance between the need to stimulate economic growth by optimising visitor numbers and economic yields to the Park, and safeguarding the Park's World Heritage values. To this end, the Park must develop strategies to mitigate negative impacts from increasing visitor numbers and, also, to manage for infrequent large scale events, such as New Year's Day.

In iSimangaliso, visitor carrying capacity is closely linked to zonation and is determined through a number of interdependent variables, competing objectives, assumptions and value judgements. In addition, strategies to mitigate negative impacts of increasing visitor numbers need to be given prominence (particularly in the marine

³⁵ There is no table for Category D: Special Residential Nodes. These nodes cater for resident communities within the Coastal Forest Reserve section of the Park. Planning criteria and development controls will be formulated with these resident communities during the process to develop Local Area Plans (LAPs). These LAPs will become subsidiary documents to this IMP and are described in more detail in Section 5.2.5.

³⁶ Refer ancillary documentation: Proposed access connectors for development nodes

and estuarine environments) by discouraging demand for extractive use and encouraging non-extractive opportunities/activities.

Carrying capacities have been set for overnight visitors. Table 26 presents the proposed bed numbers per section of the Park. Maximum tourism bed numbers and visitor numbers have also been set per development node and are presented in Tables 20 to 25. However, the final bed numbers per development are subject to zonation (Section 5.1.1 and Map 27 in Appendix 3) and environmental authorisation based on mandatory Environmental Impact Assessments (EIAs).

The specifications (such as intensity and nature of infrastructure/services) for each category of node and the division within each category for the zones identified in Section 5.1.1 are also provided in Tables 20 – 25.

Table 20 Category A – Tourism Overnight Nodes (Terrestrial)

TYPE	ZONE	INTENSITY	MAXIMUM TOURISM BEDS PER FACILITY	INFRASTRUCTURE			SERVICES		ACCESS			AUXILIARY INFRASTRUCTURE	EXAMPLES
				TEMP	SEMI PERM	PERM	ON-SITE	EXTERNAL	TRAIL	VEHICLE			
										4x4	2x4		
I	Wilderness	Very low	≤10	•			•		• game trails			None	Temporary Fly camp Tented camp
II	Restricted	Low	≤ 50		•	•	•	• under exceptional circumstances only		•	•	Swimming pool Boat launching facilities	Bush lodge Tented camp Education facility
III ²⁹	Restricted	Medium	≤ 200	•	•		•		•	•	•	None	Events accommodation
IV	Controlled	Very low	≤ 10	•	•		•		•	•	•	None	Trails camp
V	Controlled	Low	≤ 50	•	•	•	•	•	•	•	•	Swimming pool Boat launching facilities	Bush lodge Trails camp Tented camp Campsite Education facility
VI	Controlled	Medium	≤ 200	•	•	•	•	•	•	•	•	Swimming pool Boat launching facilities Sporting facilities Landscaped gardens	Bush resort Boutique hotel Campsite Education facility
VII	Controlled	High I	200 to 500	•	•	•	•	•	•	•	•	Swimming pool Boat launching facilities Sporting facilities Landscaped gardens Commercial (shops, restaurants, etc.)	Resort Campsite Education facility
VIII	Controlled	High II	≤ 500	•	•	•	•	•	•	•	•	Swimming pool Boat launching facilities Sporting facilities. Landscaped gardens Commercial (shops, restaurants, etc.)	Resort Campsite

²⁹ For limited periods of time, i.e. for the duration of the event.

Table 21 Category B – Tourism Day–Visitor Nodes (Terrestrial)

TYPE	ZONE	INTENSITY	MAXIMUM VISITOR NUMBERS PER DAY	INFRASTRUCTURE			SERVICES		ACCESS			EXAMPLES
				TEMP	SEMI PERM	PERM	ON-SITE	EXTERNAL	TRAIL	VEHICLE		
										4x4	2x4	
I	Restricted	Low	≤ 50	•	•	•	•	• under exceptional circumstances only	•	•	•	Events Hides Picnic site View site Formalised parking areas & ablution facilities
II ³⁰	Restricted	Medium	≤ 200	•	•		•		•	•	•	Event site (including parking & ablution facilities)
III	Controlled	Low	≤ 50	•	•	•	•	•	•	•	•	Events Hide Picnic site View site Boardwalks & elevated walkway Formalised parking areas & ablution facilities
IV	Controlled	Medium	≤ 200	•	•	•	•	•	•	•	•	Events Hide Picnic site View site Boardwalks & elevated walkway Interpretation centre Conference centre Formalised parking & ablution facilities
V	Controlled	High I	200 – 500	•	•	•	•	•	•	•	•	Events Hide Picnic site View site Boardwalks & elevated walkway Interpretation centres Commercial (e.g. shops, restaurants) Sport facilities Formalised parking & ablution facilities

³⁰ For limited periods of time, i.e. for the duration of the event.

TYPE	ZONE	INTENSITY	MAXIMUM VISITOR NUMBERS PER DAY	INFRASTRUCTURE			SERVICES		ACCESS			EXAMPLES
				TEMP	SEMI PERM	PERM	ON-SITE	EXTERNAL	TRAIL	VEHICLE		
										4x4	2x4	
V132	Controlled	High II	> 500	•	•		•	•	•	•	•	Events (including parking & ablution facilities Special holidays (e.g. New Year's Day)

³² This node type pertains to sites such as St Lucia, Cape Vidal and Sodwana which have historically been associated with periods of high intensity use during school holiday periods and public holidays, most notably New Year's Day.

Table 22 Category B – Tourism Day–Visitor Nodes (Marine Inshore)³³

TYPE	ZONE	INTENSITY	MAXIMUM VISITOR NUMBERS PER DAY	INFRASTRUCTURE			SERVICES	ACCESS					EXAMPLES
				TEMP	SEMI PERM	PERM	ON-SITE	ON FOOT	VEHICLE			BOAT	
									4x4 (beach)	4x4 (inland)	2x4 (inland)		
I	Restricted	Low	≤ 50	•	•		•	•	• Concession	•	•	• Concession	Boat launching Beach day visiting Events
II ³⁴	Restricted	Medium	≤ 200 ³⁷	•			• Temporary	•	• Concession	•	•	• Concession	Events
III	Controlled	Medium	≤ 200	•	•	•	?	•	• Concession	•	•	•	Beach day visiting Boat launching Events
IV	Controlled	High I	≤ 1 500	•	•	•	?	•	•	•	•	•	Beach day visiting Boat launching Events
V	Controlled	High II	≤ 3000	•	•	•	?	•	•	•	•	•	Beach day visiting Boat launching Events
VI ³⁸	Controlled	High III	> 3000	•	•	•	• Temporary	•	•	•	•		Special holidays (e.g. New Year's Day)

NOTE: In the event of changes to the regulations governing the use of vehicles in the coastal zone, for example, a lessening of current restrictions, iSimangaliso will review its restrictions related to permissible and non-permissible activities in all zones, to give equivalent force to the above restrictions that rely significantly on the prohibition of vehicles in the coastal zone.

³³ Marine nodes in Restricted and Controlled Zones are serviced by adjoining Terrestrial Nodes (e.g. parking and ablution facilities).

³⁴ For limited periods of time, i.e. for the duration of the event.

³⁷ Except special days at Kosi Mouth and Bhanga Nek.

³⁸ This node type pertains to sites such as St Lucia and Sodwana which have historically been associated with periods of high intensity use on public holidays, most notably New Year's Day.

Table 23 Category C – Park Management Nodes (Terrestrial)

TYPE	ZONE	INTENSITY	STAFF NUMBERS PER FACILITY PER NIGHT	FUNCTIONS	INFRASTRUCTURE			SERVICES		EXAMPLES OF ACCOMMODATION FACILITIES	OTHER INFRASTRUCTURE
					TEMP	SEMI- PERM	PERM	ON-SITE	EXTERNAL		
I	Wilderness	Very low	≤ 12	Management Research and f	•			•		Scout camps Research camps	Hides
II	Restricted	Very low	≤ 12	Management Research and monitoring	•	•		•		Scout camps Research camps	Hides
III	Restricted	Low	≤ 50	Management Research and monitoring	•	•		•	•	Field ranger huts Research camps Staff houses	Hides Bomas Research facilities
IV	Controlled	Low	≤ 50	Management Research and monitoring Administration Technical Accommodation	•	•	•	•	•	Scout camps Research camps Staff houses	Hides Bomas Research facilities Offices Stores Workshops Control gates Staff recreational facilities
V	Controlled	Medium	≤ 200	Management Research and monitoring Administration Technical Accommodation	•	•	•	•	•	Staff houses	Research facilities Hides Bomas Offices Stores Workshops Control gates Staff recreational facilities

Table 24 Category E – Access Corridors and Nodes (Terrestrial)

TYPE	ZONE	MOTORISED ACCESS & ENTRANCE GATES		TYPE OF ROAD INFRASTRUCTURE				LANDING STRIPS/ HELIPADS		LAKE INFRASTRUCTURE (SLIPWAYS & JETTIES)		INFRASTRUCTURE PERMANENCY		
		TOURISM	MANAGEMENT	INFORMAL MANAGEMENT TRACK	FORMALISED TRACK	GRAVEL ROAD	SURFACED ROAD	HELICOPTER	FIXED WING	TOURISM	MANAGEMENT	TEMP	SEMI-PERM	PERM
I	Wilderness		•	•				• emergency only				•		
II	Restricted	•	•	•	•	•	• designated access corridor	• emergency & management only	•	•	•	•	•	•
III	Controlled	•	•	•	•	•	•	• emergency & management only	•	•	•	•	•	•

Table 25 Category E – Access Corridors and Nodes (Marine Inshore)

TYPE	ZONE	TYPE OF ACCESS		BEACH DRIVING ³⁹			BOAT LAUNCHING SITES				BEACH ON -AND OFF- RAMPS TEMP
		NON-MOTORISED	MOTORISED	CONCESSION	RESEARCH & MONITORING	MANAGEMENT	SELF	CONCESSION	RESEARCH & MONITORING	MANAGEMENT	
I	Wilderness	•	• emergencies only			• emergencies only		• not fixed & non-motorised only	• not fixed	• not fixed & essential management & emergencies	
II	Sanctuary (Estuarine Lakes only)	•	• emergencies only		•	•		• not fixed & non-motorised only	• not fixed	• not fixed & essential management & emergencies	
III	Restricted	•	• vehicle or vessel	•	•	•		•	•	•	•
IV	Controlled	•	• vehicle or vessel	•	•	•	•	•	•	•	•

NOTE: In the event of changes to the regulations governing the use of vehicles in the coastal zone, for example, a lessening of current restrictions, iSimangaliso will review its restrictions related to permissible and non-permissible activities in all zones, to give equivalent force to the above restrictions that rely significantly on the prohibition of vehicles in the coastal zone.

³⁹ Recreational/self-driving is prohibited by law.

Table 26 Existing and proposed bed numbers per section of the Park⁴⁰

Code	Section ⁴¹	Existing			Proposed	
		Beds capacity	Camping capacity	Total capacity	Capacity (2017-21 IMP)	Capacity (2022-31 IMP)
A3	Maphelane	50	240	290	400	290
A2	St Lucia town	2 000	672	2 000	2 000	2 000
A1	Eastern Shores	178	336	514	1 100	600
A4	Western Shores	20	0	20	1 675	464
A6	False Bay	14	228	242	400	242
B2	Ozabeni	0	0	0	200	208
B3	Sodwana Bay	246	1 826	2 072	1 500	2 072
B1	Mkhuze	92	210	302	860	400
C2	Coastal Forest Reserve	84	0	84	1 400	400
C3	Lake Sibaya	0	0	0	?	116
C1	Kosi Bay	91	200	291	?	400
Total		2 775	3 712	6 487	9 535	7 192

Table 26 provides a breakdown of the existing and proposed accommodation carrying capacity per management section of the Park (refer Map 26), comparing the previous IMP (2017-2021) and the current IMP (2022-2031). Note that Kosi Bay and Lake Sibaya were presumably included in the Coastal Forest Reserve in the previous IMP, therefore the listed 1 400 carrying capacity most likely refers to all three areas. Note also that the number of tourist beds in St Lucia is an estimate – this will require a dedicated study. The maximum number of day visitors per day visitor node has been set, but the overall carrying capacities for each section of the Park are a work in progress. This will occur gradually in parallel with the implementation of the Park's phased infrastructure development and various rehabilitation programmes. As demand rises in response to new opportunities, it is possible to control visitor numbers by restricting the number of vehicles allowed through entrance gates⁴² and the number of concessions and user permits issued.

Whilst there has been a focus on high-end foreign tourism, the local tourism market also needs to be catered for, thus a balance needs to be met. Another challenge for Park management is to manage for infrequent large-scale events, such as the tens of thousands of visitors, mainly residents of local communities, who visit the Park on Public Holidays, specifically New Year's Day and predominantly at the high use nodes of Sodwana, St Lucia and Kosi Bay. These sections are currently zoned as Controlled and the nodes are classed as High III.

5.1.10 Permissible Activities Framework

The Park can support a broad range of tourism activities. **The activities are strongly linked to zonation and associated typologies, and development nodes and carrying capacities.** Tables 27 and 28 present proposed activities for the Park, and the permissible terrestrial (including lakes and rivers) and marine activities in the various zones. These tables contain a quick reference guide to the permissible activities per zone as given in Tables 10 to 17, and which qualify each activity in keeping with a particular zone's inherent

⁴⁰ These figures relate only to those facilities within the Park and excludes people living in the Park (staff and local communities). There are a number of facilities outside the Park boundaries that are not provided here; on average for every one bed in the Park there are approximately two beds outside the Park.

⁴¹ Refer to Map 26, which illustrates the various sections into which the Park has been divided.

⁴² For example, there is a daily limit of 120 vehicles that are allowed through the Eastern Shores Gate.

attributes/characteristics and focal purpose. Part of the Activities Framework is the identification of environmental issues and impacts associated with the various permissible activities, which then determine the operational parameters for each activity, complementary to the parameters set by legislation. While the same activity may be allowed in more than one zone, the restrictions pertaining to that activity will differ according to the zone in which it is permitted. The list of permissible activities may be revised from time to time.

Table 27 Permissible terrestrial tourism activities per zone (subject to respective permits and permit conditions)

TERRESTRIAL ACTIVITIES		ZONATION		
		Wilderness	Restricted	Controlled
Land Activities	Hiking trails (day & overnight)	✓	✓	✓
	Horse trails (day & overnight)	✓	✓	✓
	Cycling	✓	✓	✓
	4x4 trails & game drives (day & overnight)		✓	✓
	2x4 game drives			✓
	Specialist interest/educational trails and tours (e.g. fauna, flora, ecological, cultural, geological, palaeontological, game capture etc.)	✓ non-motorised	✓	✓
	Events (e.g. extreme/survival, team building, sporting, promotional, ceremonial etc.)	✓ non-motorised	✓	✓
Lake and River Activities	Kayaking and canoeing	✓	✓ Concession/ license only	✓
	Motorised boating		✓ Concession/ license only	✓
	Sailboat		✓ Concession/ license only	✓
	Houseboats		✓ Concession/ license only	✓
	Ferry shuttle service		✓ Concession/ license only	✓
	Fishing			✓
	Freshwater diving		✓	✓
	Swimming (in secured areas)		✓	✓
	Specialist interest/educational trails and tours (e.g. fauna, flora, ecological, cultural, geological, palaeontological, limnological ⁴³ , game capture)	✓ non-motorised	✓	✓
	Events (e.g. extreme/survival, team building, sporting, promotional, ceremonial)	✓ non-motorised	✓	✓

⁴³ Limnology is the study of inland waters (running and standing waters, both fresh and saline), including their biological, physical, chemical, geological and hydrological aspects.

Table 28 Permissible marine and estuarine tourism activities per zone (subject to respective permits and permit conditions)

ACTIVITIES		Wilderness	Sanctuary ⁴⁴ (Applicable to estuaries only)	Restricted	Controlled
Inshore Activities	Walking on beach and rocks	✓ beach only	✓ shoreline only	✓	✓
	Fossicking			✓	✓
	Swimming	✓	✓ safe areas only	✓	✓
	Snorkelling	✓	✓	✓	✓
	Surfing	✓	✓	✓	✓
	Recreational rock and surf angling				✓
	Recreational spearfishing (pelagic species)			✓	✓
	Invertebrate harvesting			✓	✓
	Subsistence harvesting			Approved areas only	✓
	Cycling	✓	✓	✓	✓
	Horse trails	✓	✓	✓	✓
	Beach driving			✓	✓
	Boat launching (with use of vehicle)			✓	✓
	Specialist interest/educational trails and tours (e.g. fauna, flora, ecological, cultural)	✓ non-motorised	✓ non-motorised	✓	✓
	Events (e.g. extreme/survival, team building, sporting, promotional, ceremonial)	✓ non-motorised	✓ non-motorised	✓	✓
Offshore Activities	Motorised boating	Management only *	Management only *	✓	✓
	Recreational fishing (pelagic species only)			✓	✓
	Recreational spearfishing (pelagic game species only)			✓	✓
	Scuba diving			✓	✓
	Snorkelling	✓	✓	✓	✓
	Surfing and surf skiing	✓	✓	✓	✓
	Kite and wind surfing			✓	✓
	Parasailing from boat				✓
	Kayaking	✓	✓	✓	✓

⁴⁴ Sanctuary to be resolved whether to be retained or use “restricted” with sub-zones

	Personal watercraft			✓ fishing only	✓
	Special interest/educational trails and tours (non-extractive, e.g. whale/dolphin, shark, dive trails etc.)	✓ non-motorised	✓ non-motorised	✓	✓
	Events (e.g. extreme/survival, team building, sporting, promotional, ceremonial etc.)	✓ non-motorised	✓ non-motorised	✓	✓

* Only vessels at sea within the 3 nautical mile limit offshore which have the right of passage, but may not be in possession of any fish or parts thereof, and may not stop for any reason, other than a declared emergency (e.g. sinking).

Permissible aerial activities in the Park are subject to the provisions of the National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003) and associated Regulations⁴⁵. No person shall significantly alter or change the 'sense of place' or any environmental, cultural or spiritual value and, as stipulated in NEMPAA, no person may fly over any part of iSimangaliso below an altitude of 2 500 feet above the highest point of the reserve, or 4,100 feet AMSL⁴⁶ without prior written permission from the iSimangaliso Authority or unless in the case of an emergency. Aerial tourism activities in the Park are limited to the use of light aircraft, subject to zonation on the ground. Use of helicopters other than for emergencies or for management purposes is prohibited. Infrastructure associated with aerial activities (landing strips and helicopter pads) is presented in Table 22: Category E – Access Corridors and Nodes (Terrestrial). The use of drones, other than for officially commissioned aerial survey purposes, is prohibited.

5.1.11 Non-Permissible Activities

There are various categories of non-permissible activities in the Park, including those activities that are **not** permitted:

- ❖ Under any circumstances (e.g. bottom fishing).
- ❖ Drones, except for research and management purposes.
- ❖ In certain zones (e.g. no recreational or subsistence fishing in Wilderness and Restricted zones).
- ❖ Outside of designated areas within zones (e.g. boat launching only at a recognised site and within a particular area).
- ❖ In sensitive areas or sites regardless of the zone (e.g. specific reefs).
- ❖ Under certain conditions (e.g. when mouth is closed or in times of drought).
- ❖ Outside certain periods (e.g. fishing seasons).
- ❖ By users other than those falling within particular user groups (e.g. small scale fishers).
- ❖ Those prohibited by legislation.

This is except for “any activity carried out lawfully in terms of any agreement which exists when this section takes effect that may continue until the date of termination of such agreement, provided that the agreement may not be extended or varied so as to expire after the original intended expiry date without the consent of the Minister” (Section 50(4) of the National Environmental Management: Protected Areas Act, 2003).

⁴⁵ Government Notice R. 1061 of 28 October 2005: Regulations for the proper administration of special nature reserves, national parks and world heritage sites.

⁴⁶ Aeronautical Information Circular (AIC) 20.18 dated 06.10.27 and NEMPAA, .

Non-permissible activities for the different zones are listed in Tables 10 to 17. The list of non-permissible activities may be amended at the discretion of the Authority as described in the Permissible Activities Framework above.

5.1.12 *Development and Management Blocks*

To facilitate prioritising and phasing of development, and devising logistical management support, the various terrestrial and marine areas consolidated in the Park have been grouped into three management and development blocks, within which fall numerous sections (refer Map 26 in Appendix 3). The rationale behind these blocks and sections is based on an optimal combination of the following criteria:

- ❖ Ease of access by boat or vehicle.
- ❖ Conservation and management imperatives.
- ❖ Community facilitation.
- ❖ Geographic location.
- ❖ Tourism considerations.

On the basis of these criteria, the three development and management blocks and their component sections are:

- ❖ **Block A (St Lucia South)** includes the Eastern Shores, Western Shores, False Bay Park, Maphelane, the Dukuduku, Futululu, and Nyalazi State Forests, part of the iSimangaliso Marine Protected Area, the Nkunduzi, Nibela and Dukuduku communities, and private land between Hluhluwe village and False Bay. The northern boundary of this block is the Mzinene River and the northern shore of Lake St Lucia, including the Nibela Peninsula.
- ❖ **Block B (St Lucia North)** includes Sodwana Bay Park, Sodwana State Forest (Ozabeni), part of the iSimangaliso Marine Protected Area, uMkhuze Game Reserve, private land north of the Mzinene River (including Phinda), communal land between private land and Ozabeni, Mabaso, and the communal land adjoining the western and northern boundaries of uMkhuze Game Reserve.
- ❖ **Block C (Coastal Forest Reserve)** which extends from several kilometres north of Sodwana Bay to the Mozambique border, including Lake Sibaya, Manzengwenya, Kosi Bay and part of the iSimangaliso Marine Protected Area, including the communities of Mabibi, KwaDapha and eNkovukeni.

Included in Blocks A, B and C are parcels of land outside of iSimangaliso which can be described as part of, or important to, the short-, medium- and long-term vision of the Park.

5.1.13 *Buffer Zone (Zone of Influence)*

In order to maintain the World Heritage values and status of the iSimangaliso Wetland Park, and meet obligations in terms of the World Heritage Convention Act and the Protected Areas Act, the iSimangaliso Wetland Park Authority has an obligation to optimise responsible development that will meaningfully uplift communities and provide sustainable employment to people living in the greater area of influence of iSimangaliso, while also conserving the ecological and cultural integrity of iSimangaliso. To achieve this within the parameters of international best practice, iSimangaliso has delineated a Buffer Zone⁴⁷ (including terrestrial, aquatic and marine environments) to protect iSimangaliso from external threats. A specialist buffer zone investigational report has been updated and is issued as a supplementary report, along with detailed mapping.

⁴⁷ Also referred to as a Zone of Influence.

The delineation of the Buffer Zone was undertaken in accordance with the provisions of iSimangaliso's approved Buffer Zone (Zone of Influence) policy. This approved policy is a working document and may be updated as new information becomes available; this document has been updated and revised as Revision 2. The Buffer Zone is in accordance with the South African Department of Environment, Forestry and Fisheries' Policy and Strategy on Buffer Zones. In a study undertaken by GCS Water and Environmental Consultants (November 2015)⁴⁸, the impact of current and proposed developments on the water resources supporting the iSimangaliso World Heritage Site have been assessed, with particular reference to lake ground- and surface-water capture zones.

For practical purposes, iSimangaliso has defined four sub-zones for the Park Buffer Zone for the terrestrial and aquatic environments.

- ❖ **Sub-Zone 1 relates to a 10 m wide strip of land, 5 m either side of the Park boundary**, in which no land-use is permitted (save for necessary access points and management roads).
- ❖ **Sub-Zone 2 indicates the 10 km buffer zone** set by the Environmental Impact Assessment (EIA) Regulations, within which certain activities require environmental authorisation following a minimum of a Basic Assessment process.
- ❖ **Sub-Zone 3** takes into account three physio-geographical factors that directly impact on the Park:
 - o Sub-Zone 3A defines the important vegetation biomes in the general area of the Park.
 - o Sub-Zone 3B takes into account the surface runoff directly feeding into the lakes. This does not account for rivers or groundwater flow.
 - o Sub-Zone 3C is a viewshed model generated from the highest points in the Park. Its purpose is to consider the aesthetic views around the Park.
- ❖ **Sub-Zone 4 relates to rivers (including their catchments) that enter iSimangaliso.** Recognising the strategic and environmental importance of rivers, the Park Authority needs to exercise its influence upstream of where rivers enter the Park, as far as their sources. This area of influence is defined as a strip 32 m in width extending away from the bank on either side of the river. The Park Authority will exercise its influence within this area within the provisions of the Reserve, once the Reserve for each river has been determined by the Department of Water Affairs.

A combination of these Sub-Zones (excluding river catchments) was used to guide delineation of the **combined Park Buffer Zone**. From a conservation perspective the whole of the Maputland Coastal Plain can be included into the buffer zone but from a functional perspective this approach is not practical. The final Park Buffer boundary was defined using existing features such as roads, where possible, while incorporating as much of the conservation and aesthetic areas as possible (Map 32). It is within this area in which iSimangaliso will exercise its rights and responsibilities in the spirit of co-operative governance.

The iSimangaliso **Marine** Protected Area (MPA) has its own zones, which are described in Chapters 5.1.1 and 5.1.2. Within the inshore zones, the Wilderness Zone essentially has a buffer north and south of it in the form of Controlled catch and release zones, which in turn have Controlled zones north and south of them (Map 28). Restricted zones are alternated with Controlled zones, with the latter essentially fulfilling the role of a buffer. The inshore zones extend from the HWM seawards to 200 m offshore. The offshore zones extend from 200 offshore of the HWM to the eastward periphery of the MPA (Map 29); however there is no prescribed buffer zone eastward beyond this point, nor north and south of the MPA.

⁴⁸ GCS Water and Environmental Consultants, 2015. Determining the impact of current and proposed development on the water resources supporting the iSimangaliso Wetland Park (World Heritage Site).

For all activities within the Buffer Zone, the iSimangaliso Authority is the responsible authority and will exercise its responsibilities within the ambit of available human and financial resources. For any development to be supported within the delineated buffer zone, the permissible land use schemes as per SPLUMA, and relevant development application processes must be adhered to.

5.2 Policies, Strategies and Plans

A number of policies, plans and strategies are key to effectively manage the Park and, as such, serve as management tools. These also form part of the policy and strategic planning framework outlined in Chapter 4.

5.2.1 Conservation Operational Plan (COP)

The Conservation Operational Plan (COP) is a statutory requirement and is a subsidiary document to the Integrated Management Plan. The COP is an annual plan of operation prepared by Ezemvelo KZN Wildlife (EKZNW) that takes its direction from the implementation plan in the IMP and flows from Strategic Driver 2 'Park operations and conservation management' [**See Chapter 4: Policy and strategic planning framework and implementation plan**]. The key objectives and actions outlined for this strategic driver provide the high level direction for intervention. This plan is monitored on an on-going basis, with quarterly reporting by Ezemvelo KZN Wildlife to the iSimangaliso Authority.

5.2.2 Species Management Plans

Various management plans exist for different species within the Park, for example, an Elephant Management Plan, a Rhino Management Plan, a Coelacanth Management Plan, etc. These plans provide guidelines for the management of the particular species taking cognisance of any guidelines provided by the Department of Environment, Forestry & Fisheries and National Norms and Standards. The management plans are updated, if necessary, to reflect changes in the understanding of the management requirements for a certain species.

5.2.3 Estuarine Management Plans

iSimangaliso's Estuary Management Plans (EstMP) have been broadly formulated in compliance with Section 34 of the National Environmental Management: Integrated Coastal Management Act (Act No 24 of 2008) (ICM Act), read with the National Estuarine Management Protocol 2013 (the Protocol), as well as the World Heritage Convention Act (Act No 49 of 1999) (WHC Act), and other relevant material and practical experience relevant to the uniqueness of each estuary.

The EstMPs are subsidiary plans to the IMP. Like the IMP, the EstMPs are high level plans implemented through the annual plan of operation, which takes into account prevailing conditions such as availability of financial and human resources.

5.2.3.1 Lake St Lucia Estuary Management Plan

The St Lucia Lake system consists of South Lake, North Lake and False Bay which lie to the north of a channel, generally referred to as the Narrows, which links the system to the sea when the mouth is open. The lake and

estuarine system covers an area of approximately 36,000 ha, although the Estuarine Functional Zone (EFZ) is about 65,000 ha.

The main threats to the ecological health and integrity of the St Lucia Lake estuary are:

- ❖ The limited water inflows from the uMfolozi River due to its partial separation from the estuary consequent on human manipulation to mitigate damage from upstream agricultural practices.
- ❖ Direct abstraction from tributary rivers and indirect abstraction of groundwater feeds associated with plantations such as *Eucalyptus* spp., which affect the freshwater volumes reaching the estuary and, thus, the system's water balance.
- ❖ Water quality in tributary rivers.
- ❖ Occurrence of alien plant species around the system, for example, the tree *Casuarina equisetifolia* alters dune dynamics and may affect estuary mouth behaviour.
- ❖ Occurrence of alien fauna such as the snail, *Tarebia granifera*.
- ❖ Climate change, specifically changes in rainfall, El Nino, La Nina, sea level rise and temperature changes.

The activities to be implemented under this EstMP fall mainly into the IMP's Park Operations & Conservation Management (1), and Research (6) strategic drivers. The following key actions have been prioritised:

- ❖ Review and refinement of the zonation of the Lake St Lucia estuarine system in order to better protect sensitive habitats and species, particularly estuarine-dependent biota – align with MPA regulations.
- ❖ Manage and monitor consumptive and non-consumptive recreational and community based natural resource use of the estuarine resources.
- ❖ Implement an effective compliance system, which includes both awareness and law enforcement.
- ❖ Implementation of the policy of minimum interference in the estuarine system to facilitate as much natural functioning as possible, limiting artificial breaching and then only for ecological reasons.
- ❖ Implementation of restoration measures such as the removal of artificially placed dredge spoil and levees.
- ❖ Supporting DAFF in the implementation of the small scale fisheries policy through regulation of catches by, *inter alia*, the issuing of permits.
- ❖ Support DWS in the completion of the reserve determination study for St Lucia Estuary and relevant catchments.
- ❖ Support DWS' initiative to manage catchment water use.
- ❖ Implement the Buffer Zone (Zone of Influence) Policy.
- ❖ Review of the current monitoring programme, identify areas needing strengthening, including selected physico-chemical variables, indicators that reveal the presence of contaminants, exploitation of living resources and the status of estuarine plants and animals.

In addition, the following measures should be implemented:

- ❖ Review the functioning of the Umfolozi-St Lucia estuary reconnection, especially estuary mouth and sandbar dynamics.
- ❖ The new EstMP needs to align itself with the MPA, i.e. sanctuary zones may need to get revised to restricted or wilderness zones, remove inapplicable information, e.g. offshore zones, and consider adding "no-wake" zones.

5.2.3.2 Mgobozeleni Estuary Management Plan

The Mgobozeleni Estuary comprises two interconnected water bodies, Mgobozeleni in the south and Shazibe in the north, and a broad channel leading to the tidal inlet or estuary mouth that exits to the sea at Sodwana Bay.

The main threats that may affect the ecological health and integrity of the Mgobozeleni Estuary are:

- ❖ Artificial breaching and mouth manipulation – historically, the Mgobozeleni Estuary has been subject to high levels of artificial breaching to protect beach access and in response to concerns that the northward position of the mouth would lead to erosion of the coastal dunes and loss of dune forest (Begg, 1978). More recently, the reasons for artificial breaching have been ecological, in order to protect a small stand of mangrove saplings that have been reported to have established near the mouth (Taylor, pers. comm., cited in EstMP).
- ❖ Direct surface water abstraction and indirect abstraction of the major groundwater feeds affecting the freshwater volumes reaching the estuary, e.g. *Eucalyptus* spp. plantations affecting ground water recharge required to maintain the water balance of the system.
- ❖ Water quality - the water quality has reportedly declined markedly as a result of contaminated groundwater inputs (Bate, pers. comm., cited in EstMP).
- ❖ Several alien plant species occur around the system and *Casuarina equisetifolia* alters dune dynamics with the potential to influence estuary mouth dynamics.
- ❖ Animal alien invasive species also occur, such as the freshwater snail, *Tarebia granifera*.
- ❖ Climate change specifically changes in rainfall, El Nino, La Nina, sea level rise and temperature changes.

The activities to be implemented under this EstMP fall mainly into the IMP's Park Operations & Conservation Management (1), and Research (6) strategic drivers. The following key actions have been prioritised:

- ❖ Review and refinement of the zonation of the Mgobozeleni estuarine system in order to better protect sensitive habitats and species, particularly estuarine-dependent biota – align with MPA regulations.
- ❖ Manage and monitor consumptive and non-consumptive recreational and community based natural resource use of the estuarine resources.
- ❖ Implement an effective compliance system, which includes both awareness and law enforcement.
- ❖ Implement the policy of minimum interference in the estuarine system, allowing it to function as naturally as possible, with breaching only permitted for ecological reasons.
- ❖ Manage catchment water use in accordance with the outcomes of the ecological reserve study for the Mgobozeleni System.
- ❖ Implement the Buffer Zone (Zone of Influence Zone) Policy.
- ❖ Review of the current monitoring programme, identify areas needing strengthening, including selected physico-chemical variables, indicators that reveal the presence of contaminants, and the status of estuarine plants and animals.

In addition, the following measures should be implemented:

- ❖ Monitor mouth migration and erosion potential (under certain swell conditions and rainfall dependent, the mouth migrates northwards, eroding the north bank); manage if required.
- ❖ The *C. equisetifolia* trees, historically planted on the south bank of the lower reaches to stabilize sand movement (Begg, 1978), will be removed as a component of the current upgrade and restoration project to this tourism node.
- ❖ Update the EstMP to align zoning with the MPA and removal of inapplicable information (e.g. boating and no-wake zones, offshore zonation, etc).

5.2.3.3 Kosi Bay Estuary Management Plan

The estuary comprises four interconnected water bodies (Makhawulani, kuMpungwini, kuNhlange and aManzimnyama) in the south and kuZilonde in the north, with a broad channel leading to the tidal inlet or estuary mouth. The main threats that may affect the ecological health and integrity of the Kosi Bay Estuary are:

- ❖ Over-exploitation of the natural resources, particularly significant declines in estuarine fish populations due to fish trapping and recreational fishing, and harvesting of invertebrates, mangrove trees and a variety of plants.
- ❖ Direct surface water abstraction and indirect abstraction of the major groundwater feeds affecting the freshwater volumes reaching the estuary, e.g. *Eucalyptus* spp. plantations affect the ground water recharge required to maintain the water balance of the system. Changes in water volumes through the system may result in a loss of connectivity between the lakes (particularly kuNhlange).
- ❖ Water quality. DDT remains a potential threat still present in the system.
- ❖ Habitat loss – loss of threatened swamp forest for unsustainable small scale agriculture.
- ❖ Several alien plant species occur around the system and are associated with the water bodies. *Casuarina equisetifolia* alters dune dynamics with the potential to influence estuary mouth dynamics.
- ❖ Animal alien invasive species also occur, such as the snail, *Tarebia granifera*.
- ❖ Climate change specifically changes in rainfall, El Nino, La Nina, sea level rise and temperature changes affecting species invasions and distributions.

The activities to be implemented under this EstMP fall mainly into the IMP's Park Operations & Conservation Management (1), and Research (6) strategic drivers. The following key actions have been prioritised to conserve, manage and enhance sustainable economic and social use without compromising the ecological integrity and functioning of the estuarine ecosystems:

- ❖ Review and refinement of the zonation of the Kosi Bay estuarine lake system – align with MPA regulations.
- ❖ Implement the Buffer Zone (Zone of Influence) Policy.
- ❖ Manage and monitor consumptive and non-consumptive recreational and community based natural resource use of the estuarine resources.
- ❖ Implement an effective compliance system, which includes both awareness and law enforcement
- ❖ Supporting DAFF in the implementation of the small scale fisheries policy through regulation of catches by, *inter alia*, the issuing of permits.
- ❖ Manage catchment water use in accordance with the outcome of the ecological reserve study for the Kosi Bay Estuary.
- ❖ Review of the current monitoring programme, identify areas needing strengthening, including selected physico-chemical variables, indicators that reveal the presence of contaminants, and the status of estuarine plants and animals.

In addition, the following measures should be implemented:

- ❖ Update the EstMP to align zoning with the MPA and removal of inapplicable information (e.g. offshore zonation, breaching, etc), update info on fishing exploitation (Kyle references), lake names (geographical context).
- ❖ Seed bank re-establishment needs to be controlled where *Casuarinas* were removed from the vicinity of the mouth.

- ❖ A need has been identified to provide a picnic spot in the Kosi area for local communities to recreate, for which facilities (e.g. ablutions, picnic tables, braai areas) can be provided. A suitable site has been identified by the Park Authority on the edge of the First Lake. This site will be assessed and developed during the implementation phase of this IMP.

5.2.4 Coastal Management Line

A coastal management line (previously known as a coastal set-back line) is a line determined in accordance with section 25 of the National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) (ICMA) in order to demarcate an area within which development will be prohibited or controlled in order to achieve the objects of the Act or coastal management objectives.

The iSimangaliso Wetland Park has an exceptionally beautiful coastline that includes soft beaches, rocky shores and near-coast freshwater lake systems. Some of these areas also support a range of recreational and tourism activities. Coastal management focuses on the maintenance of the natural “elasticity” or disturbance regime of the dune system, as well as maintaining prevailing productivity levels.

To this end, iSimangaliso commissioned a dune management plan (Bundy 2015) and scientific study to determine a coastal management line for the Park. The assessment of the coastal cordon adopted a regional approach that examined the coastline holistically along its entire length. This was undertaken according to the following criteria:

- ❖ Types of dune systems and the processes driving them (such as wind, waves and sand availability).
- ❖ Stabilisation or mobilisation areas over the short-, medium- and long-term as envelopes of mobility.
- ❖ Areas where changes are occurring and the identification of the drivers of this change.
- ❖ Development areas where more detailed investigation around the setback line should occur. These sites included: Bhanga Nek, Black Rock, Lala Nek, Rocktails Bay, Mabibi, Sodwana Bay, Cape Vidal, Perrier’s Rocks and Maphelane.

The coastal management line is shown in Map 33 (in Appendix 2). Any proposed developments that potentially infringe this coastal management line will be subjected to the necessary investigations and authorisations as required by relevant legislation. Certain areas are vulnerable to coastal erosion, particularly mixed substrate coastal areas (i.e. rock and sand), areas around headlands and estuaries, thus great care must be taken in siting of coastal infrastructure, and both sea-level rise and prevailing winds need careful consideration.

5.2.5 Local Area Plans (LAPs)

Local Area Plans (LAPs) provide the framework for sustainable local economic development within each locality for specific areas within the Park. Where possible, the LAPs are linked to the surrounding local municipal Integrated Development Plans in order to align development plans between the Park and local government. The purpose of LAPs is to:

- ❖ Provide an acceptable level of protection to the environment and World Heritage values.

- ❖ Provide the basis for co-management between iSimangaliso and land claimants and/or local communities residing⁴⁹ in the Park.
- ❖ Provide the technical basis for the implementation of land claim settlements and other area-specific SEED programmes.
- ❖ Enable the tendering of commercial opportunities (both facilities and activities).
- ❖ Serve as the basis for the evaluation of unsolicited bids.
- ❖ Enable the costing of infrastructure development.

The LAPs will include the following:

- ❖ Delineate local development zones and nodes, including residential, tourism, social infrastructure (including schools, retail outlets, health, civic), physical infrastructure (roads, fences, bridges, etc.), and service and cultural areas.
- ❖ Define carrying capacities within zones.
- ❖ Define access routes and circulation.
- ❖ Identify and assess current tourism facilities and activities, and identify future tourism development opportunities.
- ❖ Consideration of 'sense of place' (aesthetics, design and building materials).
- ❖ Determine key environmental (social and biophysical) controls, including carrying capacities.
- ❖ Identify sensitive conservation (natural and cultural) sites.

5.2.6 Transformation and Empowerment Strategy

The transformation and empowerment strategy underpins iSimangaliso's management goals for the alleviation of regional poverty and the empowerment of historically-disadvantaged communities. The programmes implemented through this strategy are financed from a combination of internal and external sources, with core administrative and operating costs funded from the main Park budget. The beneficiaries of the programmes of the iSimangaliso Authority include the land claimant groups, communities living inside the Park and communities living adjacent to the Park.

The transformation and empowerment strategy provides an overview of iSimangaliso's beneficiation programmes, including those concerned with economic transformation and job creation, community-based natural resource use, capacity building, training and equitable access. It also includes the strategies for participation in planning, such as Local Area Plans, and decision-making, such as co-management agreements; and environmental education and awareness programmes. iSimangaliso also implements the iSimangaliso People and Parks Programme⁵⁰, which focuses on co-management, community public private partnerships, land reform, conservation, and strengthening and expansion of the Protected areas network.

⁴⁹ These specific areas within the Park are found within the Coastal Forest Reserve section of the Park, where there are resident communities for example, at KwaDapha, Malangeni, eNkovukeni and Mabibi.

⁵⁰ The People and Parks Programme was initiated by the iSimangaliso Authority and the University of KwaZulu-Natal, with GTZ and the IUCN in 2003, on the eve of the World Parks Congress at iSimangaliso's Cape Vidal. Since then, the Department of Environmental Affairs has hosted a National People and Parks Programme, which includes annual congresses attended by land claimants and communities neighboring protected areas.

5.2.7 *Land Claims Framework in the iSimangaliso Wetland Park*

The framework for settling claims in iSimangaliso is founded on the National Cabinet decision in 2002 regarding the settlement of restitution claims in protected areas, World Heritage sites and State forests. Claimants are awarded title, but no physical occupation is permitted, and title deeds are registered with restrictions on use. Compensation for loss of the use of land is provided for, and development and planning grants are awarded.

This framework makes provision for the following:

- ❖ Land within a protected area can be owned by claimants without physical occupation through the transfer of title with registered notarial deed restrictions.
- ❖ Continued proclamation of the land for conservation purposes, where the land is used and maintained solely for the purposes of conservation, and associated commercial and community activities.
- ❖ Continued management of the land as part of the national conservation estate by the responsible state conservation agency according to IUCN principles, and the requirements of legislation and approved management plans.
- ❖ Land is to remain part of an open ecological system and managed as an integrated part of the protected area of which it formed a part before restitution.
- ❖ Loss of beneficial occupation is compensated for through the payment of a household solatium⁵¹, development and planning grants; and benefits from the iSimangaliso Wetland Park including revenue sharing, mandatory partner status in tourism developments, access to natural resources, cultural heritage access, education, capacity building, and jobs through land care and infrastructure programmes.
- ❖ Sustainable partnerships between claimants and managers of protected areas must be established in a way which facilitates effective biodiversity conservation of the area, including economic viability. These co-management arrangements should in no way detract from the State's ability to manage the Park.

Land claims are settled by the Regional Land Claims Commission. After a claim is settled, the iSimangaliso Wetland Park Authority and the land claimants enter into a co-management agreement which provides a framework for their relationship. For each settled claim, a benefit package is developed which includes economic, training and job opportunities, equity partnerships in tourism facilities, rights of access, use of natural resources and the establishment of an education trust to educate land claimant youth. The benefits accruing to new land owners through co-management agreements include those associated with the natural resource base as well as those which derive from tourism, infrastructure and local economic development.

Figure 11 provides a schematic representation of the co-management framework for the iSimangaliso Wetland Park, categorising benefits and the nature of involvement in co-management according to asset ownership, asset governance and secondary enterprises:

- ❖ *Asset Ownership* refers to formal ownership or equity interests by land claimants in the productive assets of iSimangaliso. This includes equity partnerships in commercial enterprises and revenue sharing, and access to and the use of natural resources.

⁵¹ Compensation for non-pecuniary (non-financial) loss, awarded for hardship or pain and suffering, suffered as a result of dispossession.

- ❖ *Asset Governance* outlines the involvement of target communities in the core activities of iSimangaliso, including the co-management of the Park and its associated commercial enterprises. It involves the establishment of co-management structures, representation on the Board of the Authority, capacity building initiatives to facilitate the entry of land claimants into formal tourism and conservation management jobs, and mandatory partner status for contracting and job opportunities.
- ❖ *Secondary Enterprise* refers to linkages between the economic activities of the Park and suppliers of goods and services from the target community. It also includes benefits from local economic development programmes such as craft.

The delivery and implementation of the benefit package is co-managed by the Land Claims Trusts and iSimangaliso. The State retains custodianship of the Park and manages it in terms of the World Heritage Convention Act and the National Environmental Management: Protected Areas Act. Co-management committees are established to oversee the planning and implementation of the beneficiation package. Furthermore, land claimants are represented on the iSimangaliso Wetland Park Authority Board.

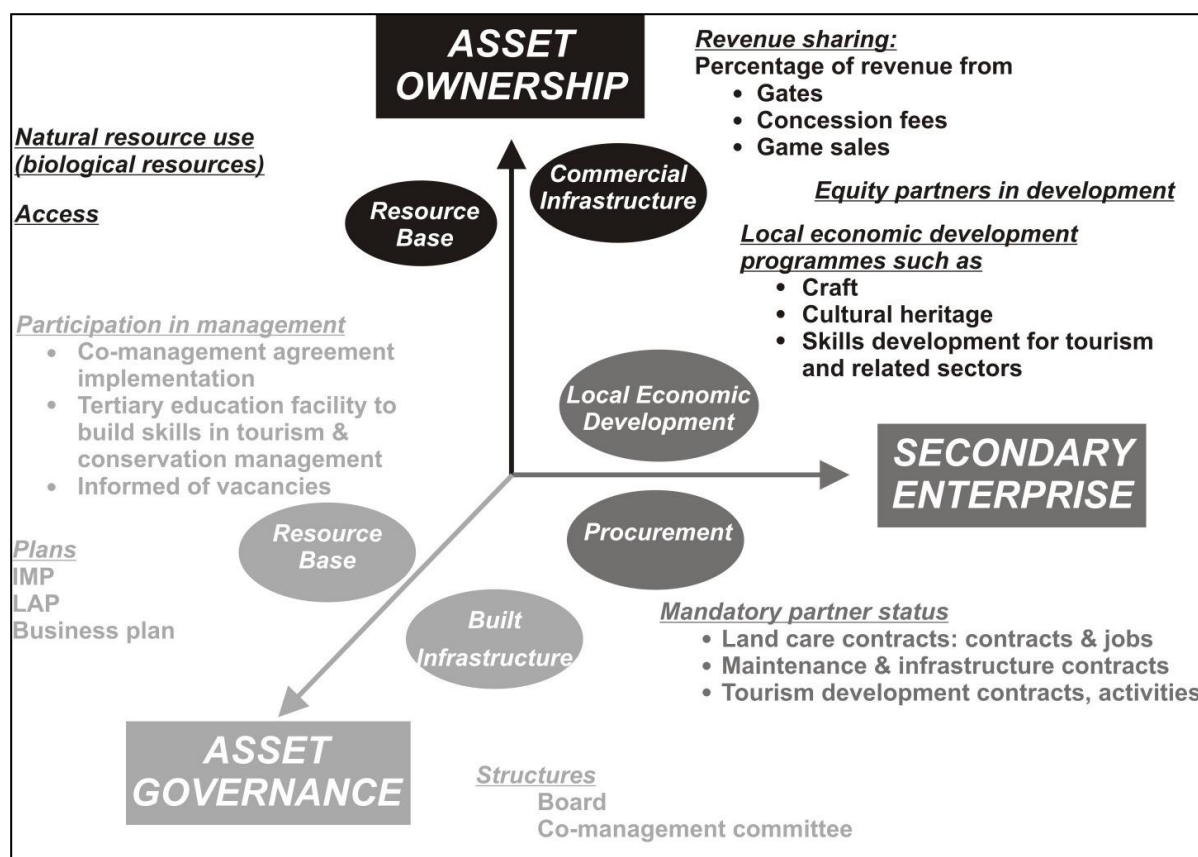


Figure 11 iSimangaliso Wetland Park's co-management framework

5.2.8 *Tourism Concessioning Policy*

Income from tourism has grown 78 times more since the establishment of the Park Authority, albeit off a small base. It is an important source of funding for iSimangaliso's operations. For every R 1 of its annual operating allocation from government (MTEF), iSimangaliso generates R 0.63 in commercial revenue. The principles underpinning the policy include (a) improving service delivery to Park users; (b) upgrading selected accommodation facilities to appeal to a broader and more diverse market and keep pace with trends; (c) providing activities and facilities for tour groups and niche groups such as birders; (d) maintaining appropriate levels of public access.

Revenue sources include access fees, PPP fees from accommodation providers, licence fees from tourism activities, events, and filming among others. PPPs and licences are issued via public tender. In circumstances in which licenses are not available, operators may procure daily permits to operate and/or host events in the Park. Fees are also generated through land incorporation arrangements.

Tender processes follow the principles set out in the PPP Regulations issued under the PFMA. Daily permits and permits for events, filming and the like are issued on a first-come-first-serve basis. In all cases, applications are assessed against the provisions of the IMP, in particular, zonation, and for possible impacts on the environment and/or World Heritage values. Environmental and World Heritage considerations cannot be compromised in favour of commercialisation.

Commercial rights are issued in such a manner that risk is passed to the private party/operator. The Park's income stream is predictable and as far as possible risk free. iSimangaliso's value for money proposition is met in respect of the particular application; and BEE, and more particularly local community participation are optimised.

5.2.9 *Land Incorporation Policy*

iSimangaliso has developed a working policy to exercise its legislated powers to acquire land, albeit that all acquisitions are voluntary and entail the agreement of all parties. This policy targets land that:

- ❖ Enhances the ability of iSimangaliso to discharge its duties in terms of the World Heritage Convention Act, the IMP and other frameworks applicable to the Park.
- ❖ Is of high conservation value and/or high historical or cultural value.
- ❖ Increases the security of the core Park and World Heritage assets and values.
- ❖ Enhances the financial viability of the Park.

If agreed to by the land owner, iSimangaliso may incorporate private, state or communal land into the Park. In such cases, satisfactory contractual agreement would need to be reached between iSimangaliso and the landowner, including provisions relating to:

- ❖ Game ownership, liability and management.
- ❖ Conservation management.
- ❖ Infrastructure development and maintenance.
- ❖ Tourism development, traversing rights and marketing.
- ❖ Security.
- ❖ Intellectual property rights.

- ❖ Duration.
- ❖ Rights of first refusal for iSimangaliso upon termination of individual agreements.
- ❖ Indemnification of iSimangaliso.

5.2.10 Research, Monitoring and Evaluation

The iSimangaliso Authority recognises the important role that research plays in providing a scientific basis for Park management. At present, much of the research conducted in the Park is defined by the interests of individual researchers and research teams. External research applications are processed by a research committee composed of iSimangaliso and Ezemvelo KZN Wildlife staff members. Independent specialists are consulted as necessary. In addition, Ezemvelo KZN Wildlife monitors a range of biological and physical/chemical parameters across the Park in order to inform management, for example, salinity levels in the lake systems, turtle monitoring and game counts. This is an essential aspect of Park management and during the period covered by this IMP the monitoring system will be reviewed and funding sought for under-resourced monitoring activities. In order to assist in addressing climate change, long-term continuous baseline monitoring of physical parameters such as climate, ground water and stream flow at representative sites within the Park should be implemented.

There is a need for a central database that contains a repository of all historic and up-to-date information on all park-related documentation, research and monitoring so that this information can be readily accessed for project-related work.

5.2.11 Public Participation Strategy

iSimangaliso's public participation strategy is based on informing and consulting stakeholders via a structured process, both proactively and responsively, and using a number of recognised and appropriate communication tools in a manner that is cost effective. In addition to the various organs of state, including national, provincial and local government mentioned in the preceding chapters and listed in **Appendix 1: Legal and Institutional Framework**, there are numerous other stakeholder groups that have a relationship with the Authority through their association with the Park. Table 29 categorises these groups of stakeholders and outlines the methods available to consult, communicate and facilitate participation in the iSimangaliso Wetland Park. Methods used will be fit for purpose and subject to available human and financial resources.

Table 29 Categories of groups of stakeholders and methods available to consult, communicate and facilitate participation in the iSimangaliso Wetland Park

Category	Stakeholder	Method of Communication/Consultation	Method of Participation
Local Community (People living within 100 km of the Park who may have limited access to communication technology)	Trusts/Traditional Authorities/Land Claimants/Local Interest Groups (drama, craft, sport)/Church Leaders/Youth/Rural educators & schools/Neighbours	❖ Meetings with leadership ❖ Park Forums ❖ Ongoing area specific meetings, workshops and information sessions ❖ Issue specific information sessions, consultation workshops, public meetings or open days, e.g. IMP ❖ Newspaper adverts for tenders, jobs, programme opportunities, consultation for EIAs, IMP, etc ❖ Environmental ❖ Soccer, netball and cultural events ❖ Mobile phone messaging ❖ Hand delivered or faxed letters ❖ Emails (where access to technology possible) ❖ Social media platforms (where access to technology is possible) ❖ Posters in key social infrastructure positions ❖ Cheque hand-over events ❖ Mobile workshops (land claimants, Traditional Authorities, Local Government councillors)	❖ Board representatives e.g. Traditional Authority, Land claimants ❖ Infrastructure Project Liaison Committees ❖ Economic participation including: ○ Community based contractors ○ Local services providers e.g. caterers ○ Jobs (temporary and permanent) ○ Equity shareholding in tourism facilities ○ Tourism activity licenses ○ Participation in skills development and enterprise support programmes ○ Art & craft development ❖ Sustainable natural resource use ❖ Wilderness Trails (building champions amongst school learners, youth, opinion leaders in community and government) ❖ Training and capacity building: ○ Leadership development ○ Co-management

Category	Stakeholder	Method of Communication/Consultation	Method of Participation
		❖ Ongoing regular meetings with land claimants, TAs and local government councillors ❖ Media coverage (especially print, radio and television) ❖ Attend openings, launches and development events	○ Bursary programme ❖ Participate in sporting events e.g. St Lucia half marathon ❖ Recreational access ❖ Provide comments on Park IMP, EIAs, etc
Local Community (People living within 100 km of the Park who may have greater access to communication technology)	Urban educators and schools/Town Residents/Farmers	❖ Park Forums ❖ Issue specific information sessions, consultation workshops, public meetings or open days, e.g. IMP ❖ Newspaper adverts for tenders, jobs, programme opportunities, consultation for EIAs, IMP, etc ❖ Hand delivered or faxed letters ❖ Emails (where access to technology possible) ❖ Website ❖ Newsflash ❖ Mobile phone messaging ❖ Email communiqué ❖ Social media platforms (where access to technology is possible) ❖ Media coverage (especially print, on-line, radio and television)	❖ School awards ❖ Discounted self-drive trips into the Park for schools ❖ Organised hosted trips into the Park ❖ Wilderness Trails for land claimants (building champions amongst school learners, youth, opinion leaders in community and government) ❖ Participate in sporting events e.g. St Lucia half marathon ❖ Recreational access ❖ Provide comments on Park IMP, EIAs, etc

Category	Stakeholder	Method of Communication/Consultation	Method of Participation
Government	National: Environment Forestry and Fisheries, (DEFF); Science & Technology; Water and Sanitation; Agriculture,; Arts and Culture; Tourism Provincial: Co-operative Governance; Department of Economic Development, Tourism and Environmental Affairs; Agriculture and Environment; Education; Human Settlements Local: District and Local Municipalities	❖ Working groups hosted by DEA ❖ Issue specific information sessions, consultation workshops, public meetings or open days, e.g. IMP ❖ Meetings ❖ Newspaper adverts for jobs, programme opportunities, consultation for EIAs, IMP, etc ❖ Emails (where access to technology possible) ❖ Website ❖ Newsflash ❖ Social media platforms (where access to technology is possible) ❖ Media coverage (especially print, on-line, radio and television) ❖ Attend openings, launches and development events	❖ Public entity oversight (DEA): ○ Board Representation ○ Budgets, planning, reporting ○ Parliamentary oversight ○ Approval of gazetted plans by Minister ○ Site visits ❖ Alignment with Provincial and National planning and other processes, e.g. participation in the LAAC. ❖ Local Government IDP and IMP alignment ❖ Provide comments on Park IMP, EIAs, etc ❖ Collaborate with agencies like TKZN when marketing or promoting the area
International	IUCN/UNESCO/World Bank/GEF/Ramsar Convention	❖ Meetings and workshops ❖ Website ❖ Newsflash ❖ Social media platforms (where access to technology is possible) ❖ Produce publications ❖ Media (especially on-line)	❖ Reporting as per requirements of International Conventions ❖ Participation in international workshops, meetings and conferences ❖ Site visits ❖ Provide comments on Park IMP, etc

Category	Stakeholder	Method of Communication/Consultation	Method of Participation
Corporate	Existing & Potential Funders/Investor Community	❖ Meetings ❖ Emails (where access to technology possible) ❖ Website ❖ Newsflash ❖ Social media platforms (where access to technology is possible) ❖ Newspaper adverts for tenders, consultation for EIAs, IMP, etc ❖ Media coverage (especially print, on-line, radio and television) ❖ Targeted interaction with potential investors and funders ❖ Attend openings, launches and development events	❖ Board representatives ❖ Economic participation ❖ Investment in commercial activities ❖ Invest in social, conservation and environmental programmes through providing funding and technical expertise ❖ Provide comments on Park IMP, etc
Interest Groups	Environmental/Arts & Culture/NGOs Universities/Academics/Researchers Organised user groups, e.g. recreational fishing	❖ Meetings, including issue & interest group specific ❖ Specialist input ❖ Emails ❖ Website ❖ Newsflash ❖ Social media platforms (where access to technology is possible)	❖ Board representatives ❖ Undertake research ❖ Mobile workshops and site visits ❖ Attend conferences and seminars to present work on Park ❖ Recreational access ❖ Provide comments on Park IMP, EIAs, etc ❖ Participate in sporting events e.g. St Lucia half marathon

Category	Stakeholder	Method of Communication/Consultation	Method of Participation
		❖ Media coverage (especially print, radio and television) ❖ Attend openings, launches and development events	
Tourism Industry	Industry - SA Express/Tour Operators/Travel Agents Product Owners/Concessionaires (in & around the Park) SA Tourism/KZN Tourism District Tourism Officers/Information Centres	❖ Meetings ❖ Emails ❖ Website ❖ Newsflash ❖ Mobile phone messaging ❖ Social media platforms (where access to technology is possible) ❖ Newspaper adverts for tenders, consultation for EIAs, IMP, etc ❖ Media coverage (especially print, radio and television) ❖ Attend openings, launches and development events ❖ Trade shows and other marketing ❖ Provide information on iSimangaliso, e.g. use of brand, content	❖ Trade shows ❖ Industry visits ❖ Economic participation ❖ Tourism facility concessions ❖ Tourism activity concessions/licenses ❖ Entry permits for day visits ❖ Nature based events e.g. bird counts and birding day ❖ Information seminar series for iSimangaliso licensed tourism holders and concessionaires ❖ Tourism guiding accreditation for iSimangaliso guides ❖ Provide comments on Park IMP, EIAs, etc ❖ Participate in sporting events e.g. St Lucia half marathon
Park Visitors	Locals, tourists, user groups (divers, fishermen, etc)	❖ Emails (where access to technology possible) ❖ Website ❖ Newsflash	❖ Recreational access ❖ Sustainable natural resource use e.g. recreational fishing ❖ Participate in sporting events e.g. St Lucia half

Category	Stakeholder	Method of Communication/Consultation	Method of Participation
		❖ Mobile phone messaging ❖ Social media platforms (where access to technology is possible) ❖ Adverts ❖ Media coverage (especially print, radio and television) ❖ Signage and interpretive material	- marathon ❖ Provide comments on Park IMP, EIAs, etc.
General Public	Local/National/International General public Potential tourists & visitors	❖ Emails (where access to technology possible) ❖ Website ❖ Newsflash ❖ Social media platforms (where access to technology is possible) ❖ Adverts ❖ Media coverage (especially print, radio and television) ❖ Signage and interpretive material	❖ Board representatives ❖ Recreational access ❖ Provide comments on Park IMP, EIAs, etc

5.2.12 *Bio-prospecting Policy*

Bio-prospecting is authorised by the Minister and requires a permit from iSimangaliso. All bio-prospecting applications are reviewed on a case-by-case basis, taking into consideration legal, environmental and economic factors, including whether the Park is the only source of the genetic material world-wide, the material is of global importance and the source is not threatened or damaged by the process. In considering applications for bio-prospecting, the iSimangaliso Authority is guided by Chapter 6 of the National Environmental Management: Biodiversity Act 10, 2004, and the Bioprospecting, Access and Benefit Sharing (BABS) Regulations and takes cognisance of the importance of benefit sharing for local communities as detailed in the Act.

5.3 **General Planning Tools and Controls**

Proper management of development and activities within the Park can only be achieved through appropriate planning tools and effective controls. The key tools and controls used for Park management are presented below, many of which have their basis in legislation.

5.3.1 *Environmental Authorisations*

Environmental assessments are an important tool for managing environmental impacts. For certain activities, the National Environmental Management Act requires that environmental authorisation is obtained from the competent authority⁵² and the authorisation process and listed activities requiring such authorisation are contained in the EIA Regulations⁵³. Depending on the activity, either a Basic Assessment or Scoping and/or full Environmental Impact Assessment (which is more in-depth than a Basic Assessment) is required.

Where such authorisation is not legally required for activities within the Park, the iSimangaliso Authority may require the application of various environmental management tools and certain steps of the EIA process, the minimum of which is the preparation of an Environmental Management Programme (EMPr) (**See Section 5.3.3 - Environmental Management Programmes**). As the management authority in terms of the National Environmental Management: Protected Areas Act, the iSimangaliso Authority may also impose conditions in addition to (but consistent with) conditions set by other authorities and legislation. Where the Authority is the proponent of an unlisted activity, it conducts an internal scoping, obtains expert opinion as required, and liaises with interested and affected parties where necessary.

5.3.2 *Other Types of Assessments and Authorisation Requirements*

Certain activities may require other authorisations such as those affecting heritage, marine and water resources, and protected species. As for environmental authorisation, the legally prescribed authorisation process will need

⁵² For development inside the Park, the National Department of Environment, Forestry and Fisheries (DEFF) is the competent authority from whom environmental authorisation must be sought.

⁵³ Environmental Impact Assessment Regulations, 4 December 2014 (Government Notice R. 982 National Environmental Management Act (107/1998): Environmental Impact Assessment Regulations, 2014; Government Notice R. 983 Listing Notice 1: List of activities and competent authorities identified in terms of sections 24 (2) and 24D; Government Notice R. 984 Listing Notice 2: List of activities and competent authorities identified in terms of sections 24 (2) and 24D; Government Notice R. 985 Listing Notice 3: List of activities and competent authorities identified in terms of sections 24 (2) and 24D).

to be followed and the conditions of authorisation complied with (**See Appendix 2: Legal and Institutional Framework for other applicable legislation**).

5.3.3 *Environmental Management Programmes (EMPrs)*

iSimangaliso is responsible for the formulation and implementation of Environmental Management Programmes that are required for relevant activities within the Park. The development of an EMPr usually follows the assessment of environmental impacts anticipated during construction (where relevant), operation, decommissioning (where relevant) and maintenance of tourism, management, and residential/subsistence-related infrastructure and activities.

The Park has developed an overarching EMPr, which is a key management tool to provide effective environmental management measures for activities (e.g. new infrastructure, maintenance of existing infrastructure or activities) in the Park. The aim of the EMPr is to ensure that all activities are conducted in accordance with the policies and management practices of the iSimangaliso Wetland Park Authority and the principles of NEMA. This EMPr prescribes the conditions for all site specific EMPr's within the Park and addresses environmental mitigation measures common to activities within the Park. An EMPr must be designed specifically as a tool that achieves, improves and systematically controls environmental performance levels. A crucial part of an EMPr is monitoring, evaluation and audits. The EMPr, or relevant parts thereof, will form part of the contract between iSimangaliso and contractors, concessionaires and/or residents. iSimangaliso will monitor compliance with environmental performance according to the requirements of the EMPr. Where responsible for Park infrastructure, activities and maintenance, iSimangaliso will prepare and implement its own EMPrs for environmental management.

5.3.4 *Park Rules and the Permit System*

The National Environmental Management: Protected Areas Act and Regulations⁵⁴ provides the framework for the Park's rules and permit system. A number of activities are either prohibited or require prior written consent from the iSimangaliso Authority (in the form of a licence, permit or receipt). In addition, the Authority sets the operational parameters (rules and conditions) related to a particular activity, depending on zonation and other planning tools, and these rules and conditions become a contractual part of consent. Periodically, these rules and conditions may be revised subject to approval by iSimangaliso. Rules arising from various other pieces of legislation (e.g. Marine Living Resources Act and National Environmental Management Act) also apply and are incorporated into the Park's rules and conditions.

There are numerous types of permits, each of which contain the rules and conditions relevant to the activity for which the permit is issued. The different permits include:

- ❖ General entrance permits obtained at the entrance gates (which may allow for access to the beach and allow certain marine activities and/or game drives, other terrestrial activities and use of public facilities, e.g. picnic sites, view sites, hides and boardwalks. These permits are subject to the general Park rules).
- ❖ Special access permits (e.g. those required for access into Wilderness and Sanctuary zones).

⁵⁴ No. R. 1061 of 28 October 2005: Regulations for the Proper Administration of Special Nature Reserves, National Parks and World Heritage Sites.

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- ❖ Special operating or concession permits that are based on a contract between the concessionaire and the Authority, and which are subject to a number of operational conditions (e.g. accommodation facilities, guided trails, boat tours, etc.).
 - ❖ Resource use permits (e.g. fishing licences, harvesting of *incema* grass, etc.).
 - ❖ Permits to undertake activities as described in the regulations for the proper administration of world heritage sites (please refer to the legislation properly, I just wrote off top of my head)
 - ❖ Other permits (e.g. permits for scientific research, special events etc.).

Existing rights within the Park will be upheld in terms of Section 50(4) of the National Environmental Management: Protected Areas Act which states that *“any activity carried out lawfully in terms of any agreement which exists when this section takes effect may continue until the date of termination of such agreement, provided that the agreement may not be extended or varied so as to expire after the original intended expiry date without the consent of the Minister”*.

At present, the Park Rules exist as a series of separate internal rules and are fragmented. While most of the rules are incorporated into this IMP, for ease of reference, these need to be consolidated into a single Park Rules document, which can be updated as and when rules are changed. A simplified form thereof needs to be made available to park users.

5.3.5 Tourism Codes of Conduct and Accreditation

In order to maintain and improve the quality of tourism services in the Park and ensure that environmental standards are met, particularly given the Park's World Heritage status, concessionaires will be required to obtain mandatory tourism accreditation from recognised bodies and to develop specific codes of conduct for themselves, their staff and their patrons. The Authority may also introduce its own mandatory tourism accreditation programmes. To ensure that service levels and standards are achieved, the Authority will undertake monitoring thereof. This can be formulated into a responsible tourism programme in order to manage responsible nature based tourism in the park while promoting conservation, public enjoyment, capacity and income generation.

5.3.6 Site Development Guidelines and Specifications

A suite of site planning, design, implementation and management guidelines indicating current best practice and legislative requirements have been prepared for development of sites. These documents are not definitive and will be progressively reviewed and revised as the phased development of the Park unfolds.

5.3.7 Theming and Branding Guidelines

iSimangaliso's branding reflects the core values of the Park and 'sense of place' (harmonisation of physical development with the natural and cultural landscapes). These guidelines apply to the use of the Park name and logo by iSimangaliso and third parties and to infrastructure in relation to signage, street furniture and building guidelines.

The use of the name, other than as a geographic description in a sentence, is regulated by the iSimangaliso Authority. Permission to use the name, logo and brand in any other context must be obtained beforehand in writing from the iSimangaliso Authority.

5.3.8 *Financial Controls*

To ensure cost-effective management of the Park, a number of financial controls are in place within the framework provided by the Public Finance Management Act and World Heritage Convention Act.

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APPENDIX 1: LEGAL AND INSTITUTIONAL FRAMEWORK

1 Introduction

This chapter provides a broad background to the legal and institutional framework, which governs and administers the iSimangaliso Wetland Park and its surrounds. There is a focus on key elements and, therefore, the information provided should not be regarded as a definitive treatise⁵⁵. The chapter is structured as follows:

- ❖ International agreements (Section 1.2).
- ❖ South African legislation, statutory bodies and policy (Section 1.3).
- ❖ Other institutions and stakeholders relevant to the iSimangaliso Wetland Park (Section 1.4).

2 International Agreements

There are a number of international agreements that are relevant to the iSimangaliso Wetland Park (**Table 1**). Two of the more important agreements to which South Africa is signatory and that have direct implications for the development and management of the iSimangaliso Wetland Park are the Convention Concerning the Protection of the World Cultural and Natural Heritage, 1972 (World Heritage Convention) and the Convention on Wetlands of International Importance Especially as Waterfowl Habitat, 1971 (RAMSAR).

As signatory to the World Heritage Convention, the South African Government is obliged to do the utmost to ensure “*the identification, protection, conservation and transmission to future generations of the cultural and natural heritage*” of the iSimangaliso Wetland Park. The World Heritage Convention Act was enacted for this purpose. The Convention and the related South African Act are discussed in more detail in **Chapter 1 (Section 1.2: Enabling legal framework)**.

⁵⁵ One of the ongoing duties of the iSimangaliso Wetland Park Authority is to seek to simplify the legal regime applicable to the iSimangaliso Wetland Park and to have the Park governed by the fewest number of regulatory instruments; provided that the applicable regulatory instruments are of the highest possible legal standing. However, it is recognised that, given the complexity of the legal environment, this is a significant undertaking, which requires significant resources and substantial co-operative governance, and which will take time to achieve.

Table 1 Key international agreements that have a direct bearing on the management of the iSimangaliso Wetland Park

Common name of Convention	Full name of Convention and relevance to the iSimangaliso Wetland Park	Convention objectives
World Heritage Convention	Convention Concerning the Protection of the World Cultural and Natural Heritage (1972) The iSimangaliso Wetland Park is a listed World Heritage Site in terms of this Convention	To establish an effective system of collective identification, protection, and preservation of cultural and natural heritage around the world considered to be of outstanding universal value to humanity; to provide both emergency and long-term protection for monuments, groups of buildings, and sites with historical, aesthetic, archaeological, scientific, ethnological, or anthropological value, as well as outstanding physical, biological, and geological formations, habitats of threatened species of animals and plants, and areas with scientific, conservation, or aesthetic value
Ramsar	Convention on Wetlands of International Importance especially as Waterfowl Habitat (1971) There are four RAMSAR sites located within the iSimangaliso Wetland Park	The conservation and wise use of all wetlands through local, regional and national action and international co-operation, as a contribution towards achieving sustainable development throughout the world
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973) There are numerous endangered plant and animal species in the iSimangaliso Wetland Park	To ensure, through international co-operation, that the international trade in species of wild fauna and flora does not threaten survival in the wild of the species concerned, and to protect endangered species from over-exploitation by means of a system of import-export permits issued by a management authority under the advice of a scientific authority
Bonn Convention	Convention on the Conservation of Migratory Species of Wild Animals (1979) There are several migratory species of wild animals in the iSimangaliso Wetland Park	To conserve those species of wild animals that migrate across or outside national boundaries by developing and implementing co-operative agreements, prohibiting the taking of endangered species, conserving habitat, and controlling other adverse factors

Common name of Convention	Full name of Convention and relevance to the iSimangaliso Wetland Park	Convention objectives
UNCLOS	UN Convention on the Law of the Sea (1982) The entire eastern boundary of the iSimangaliso Wetland Park is sea	To establish a comprehensive legal order to promote peaceful uses of the oceans and seas, the equitable and efficient utilisation of their resources, and the study and protection and preservation of the marine environment, as well as to facilitate international navigation; to integrate and balance the right to exploit natural resources with the duty to manage and conserve such resources and to protect and preserve the marine environment; and to provide a comprehensive legal framework for the protection and preservation of the marine environment to be complemented and developed by further legal rules at the global or regional level and national measures
Basel Convention	Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal (1989)	To protect human health and the environment from the adverse effects of hazardous and other wastes; to reduce the transboundary movement of hazardous wastes to a minimum, consistent with their environmentally sound management; to dispose of these wastes as close as possible to where they are generated; and to minimise both their quantity and their hazardousness
Convention on Biological Diversity	Convention on Biological Diversity (1992)	The conservation of biological diversity; the sustainable use of its components; and the fair and equitable sharing of benefits arising out of the utilisation of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies (taking into account all rights over those resources and to technologies), as well as appropriate funding
Cartagena Protocol	Cartagena Protocol on Biosafety (2000)	

3 South African Legislation, Statutory Bodies and Policy

There is numerous legislation that governs the management of the iSimangaliso Wetland Park. **Tables 2 and 3** list and highlight important aspects of this legislation in relation to environmental and institutional management, respectively. Where changes in legislation occur, the iSimangaliso Wetland Park Authority will align itself with new requirements to ensure compliance.

Some Acts in **Table 2**, such as the World Heritage Convention Act, Marine Living Resources Act and National Environmental Management: Protected Areas Act, are discussed in more detail in **Chapter 1 (Section 1.2: Enabling legal framework)**.

The main Acts discussed in this chapter include:

- ❖ World Heritage Convention Act, 1999 (Act 49 of 1999).
- ❖ National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA).
- ❖ National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003).
- ❖ National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004).
- ❖ National Heritage Resources Act, 1999 (Act 25 of 1999).
- ❖ KwaZulu-Natal Heritage Act, 2008 (Act 4 of 2008).
- ❖ National Forests Act, 1998 (Act 84 of 1998).
- ❖ National Water Act, 1998 (Act 36 of 1998).
- ❖ Marine Living Resources Act, 1998 (Act 18 of 1998).
- ❖ Seashore Act, 1935 (Act 21 of 1935).
- ❖ Maritime Zone Act, 1994 (Act 15 of 1994).
- ❖ National Environmental Management: Integrated Coastal Management Act, 2008 (Act 24 of 2008).
- ❖ National Environmental Management: Waste Act, 2008 (Act of 59 2008).

Table 2 Legislation that governs how the iSimangaliso Wetland Park is managed

Act	Objectives, important aspects, associated notices and regulations, and statutory bodies
World Heritage Convention Act, 1999 (Act 49 of 1999)	Objectives: To provide for: ❖ The incorporation of the World Heritage Convention into South African law ❖ The enforcement and implementation of the World Heritage Convention in South Africa ❖ The recognition and establishment of World Heritage Sites ❖ The establishment of Authorities and the granting of additional powers to existing organs of state ❖ The powers and duties of such Authorities, especially those safeguarding the integrity of World Heritage Sites; where appropriate, the establishment of Boards and Executive Staff Components of the Authorities ❖ Integrated management plans over World Heritage sites ❖ Land matters in relation to World Heritage sites ❖ Financial, auditing and reporting controls over the Authorities Relevance to the iSimangaliso Wetland Park: ❖ The iSimangaliso Wetland Park is proclaimed under this Act and is, therefore, subject to the provisions of this Act and its Regulations Notices and Regulations: ❖ Regulations in Connection with the Greater St Lucia Wetland Park (GN. R 1193 in GG 21779 of 24 November 2000) ❖ Establishment of the Greater St Lucia Wetland Park and Authority (GN No. 4477 of 24 November 2000) Responsible Organs of State: ❖ The iSimangaliso Wetland Park Authority is the management authority established under this Act to manage the iSimangaliso Wetland Park ❖ Department of Environment, Forestry & Fisheries
National Environmental Management Act, 1998 (Act 107 of 1998)	Amendment Acts: ❖ National Environmental Management Act 56 of 2002 ❖ National Environmental Management Act 46 of 2003 ❖ National Environmental Management Amendment Act 8 of 2004 ❖ National Environmental Laws Amendment Act 44 of 2008 ❖ National Environmental Management Amendment Act 62 of 2008 ❖ National Environmental Laws Amendment Act 14 of 2009 ❖ GN 731 in GG 35665 of September 2012

Act	Objectives, important aspects, associated notices and regulations, and statutory bodies
	❖ National Environmental Management Laws Second Amendment Act 30 of 2013 ❖ GN 152 in GG 37401 of 28 February 2014 Objectives: ❖ To provide for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of state Relevance to the iSimangaliso Wetland Park: ❖ Although it is framework legislation for environmental protection in South Africa in general, the Act and its Regulations also have application in the iSimangaliso Wetland Park ❖ Some of the key principles include sustainable development, the 'Polluter-pays' Principle, Co-operative governance in environmental management and the equitable distribution of natural resources ❖ Driving in the coastal zone and the launching of boats in the iSimangaliso Wetland Park are regulated under NEMA Regulations ❖ Any activity that is proposed for the iSimangaliso Wetland Park and which is listed in the NEMA EIA Regulations, requires environmental authorisation ❖ Certain activities that fall outside the Park require environmental authorisation prior to their commencement because they fall within the buffer area (defined as the area extending 10 km from the proclaimed boundary of a World Heritage site). This is in addition to any activities triggered by a development in its own right Notices and Regulations relevant to the iSimangaliso Wetland Park: ❖ The Control of Vehicles in the Coastal Zone Regulations (GN No. 1399 of 21 December 2001) ❖ Environmental Impact Assessment Regulations, 2014 (GN R982 in GG 38282 of 4 December 2014) ❖ Listing Notice 1 (GN R983 in GG 38282 of 4 December 2014) ❖ Listing Notice 2 (GN R984 in GG 38282 of 4 December 2014) ❖ Listing Notice 3 (GN R985 in GG 38282 of 4 December 2014) ❖ National Exemption Regulations, 2014 (GN 994 in GG 38303 of 8 December 2014) ❖ Regulations relating to the procedure to be followed when oral requests are made in terms of section 30A (GN R310 in GG 38684 of 10 April 2015) Responsible Organs of State: ❖ Department of Environment, Forestry & Fisheries
National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003)	Amendment Acts: ❖ National Environmental Management: Protected Areas Amendment Act 31 of 2004 ❖ National Environmental Laws Amendment Act 14 of 2009 ❖ National Environmental Management: Protected Areas Amendment Act 15 of 2009

Act	Objectives, important aspects, associated notices and regulations, and statutory bodies
	❖ National Environmental Management: Protected Areas Amendment Act 21 of 2014 Objectives: To provide for: ❖ The protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes ❖ The establishment of a national register of all national, provincial and local protected areas; for the management of those areas in accordance with national norms and standards ❖ Intergovernmental co-operation and public consultation in matters concerning protected areas ❖ To authorise the declaration of marine protected areas ❖ To provide for the management of marine protected areas Relevance to the iSimangaliso Wetland Park: ❖ Defines categories of protected areas that include World Heritage sites ❖ Chapters 1 and 2 (Sections 1 to 16) apply to World Heritage sites as declared through the World Heritage Convention Act – other provisions apply by express or necessary implication ❖ Written permission is required for a person to enter or reside in a nature reserve or World Heritage site ❖ Protected areas declaration (Chapter 3) and Management (Chapter 4) Notices and Regulations: ❖ Regulations for the Proper Administration of Special Nature Reserves, National Parks and World Heritage sites (GN R1061 in GG 28181 of 28 October 2005 and amended by GN 622 in GG 37904 of 15 August 2014). ❖ Regulations on the Proper Administration of Nature Reserves, 2012 (GN R99 in GG 35021 of 8 February 2012) Responsible Organs of State: ❖ Department of Environment, Forestry & Fisheries
National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)	Amendment Acts: ❖ National Environmental Laws Amendment Act 14 of 2009 ❖ National Environmental Laws Amendment Act 14 of 2013 Objectives: To provide for: ❖ The management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act, 1998 ❖ The protection of species and ecosystems that warrant national protection ❖ The sustainable use of indigenous biological resources; the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources

Act	Objectives, important aspects, associated notices and regulations, and statutory bodies
	❖ The establishment and functions of a South African National Biodiversity Institute Relevance to the iSimangaliso Wetland Park: ❖ Provides classifications and processes for the sustainable management of biodiversity Notices and Regulations: ❖ Publication of Lists of Critically Endangered, Endangered, Vulnerable and Protected Species (GN R151 in GG 29657 of 23 February 2007 and amended by GN R1187 in GG 30568 of 14 December 2007) ❖ Threatened or Protected Species Regulations (GN No. R152 in GG 29657 of 23 February 2007 and amended by GN R69 in GG 30703 of 28 January 2008; GN R209 & 210 in GG 31962 of 27 February 2009; GN 210 in GG 31962 of 27 February 2009 ; GN R576 in GG 34453 of 11 July 2011; GN R614 in GG 35565 of 2 August 2012; and GN R324 in GG 37596 of 29 April 2014) ❖ Norms and Standards for Biodiversity Management Plans for Species (GN in GG 31968 of 2 March 2009) ❖ Alien and Invasive Species Regulations, 2014 (GN R598 in GG 37885 of 1 August 2014) ❖ Alien and Invasive Species List, 2014 (GN 599 in GG 37886 of 1 August 2014) ❖ National List of Ecosystems that are Threatened and in Need of Protection (GN 1002 in GG 34809 of 9 December 2012) ❖ Norms and Standards for Biodiversity Management Plans for Ecosystems (GN 83 in GG 37302 of 7 February 2014) ❖ National Norms and Standards for the Management of Elephants in South Africa (GN 251 in GG 30833 of 29 February 2008) Responsible Organs of State: ❖ Department of Environment, Forestry & Fisheries ❖ South African National Biodiversity Institute
National Heritage Resources Act, 1999 (Act 25 of 1999)	Objectives: To introduce an integrated and interactive system for the management of national heritage resources; to promote good government at all levels, and empower civil society to nurture and conserve their heritage resources so that they may be bequeathed to future generations; to lay down general principles for governing heritage resources management throughout the country; to introduce an integrated system for the identification, assessment and management of the heritage resources of South Africa; to establish the South African Heritage Resources Agency together with its Council to co-ordinate and promote the management of heritage resources at national level; to set norms and maintain essential national standards for the management of heritage resources in the country and to protect heritage resources of national significance; to control the export of nationally significant heritage objects and the import into the country of cultural property illegally exported from foreign countries; to enable the provinces to establish heritage authorities which must adopt powers to protect and manage certain categories of heritage resources; to provide for the protection and management of conservation-worthy places and areas by local authorities; and to provide for matters connected therewith

Act	Objectives, important aspects, associated notices and regulations, and statutory bodies
	Relevance to the iSimangaliso Wetland Park: ❖ The South African Heritage Resources Agency (SAHRA) is the responsible authority for heritage resources situated in those portions of iSimangaliso that are below the high water mark of the sea Responsible Organ of State: ❖ South African Heritage Resources Agency
KwaZulu-Natal Heritage Act, 2008 (Act 4 of 2008)	Objectives: To provide for: ❖ The conservation, protection and administration of both the physical and the living or intangible heritage resources of the Province of KwaZulu-Natal; to establish a statutory Council to administer heritage conservation in the Province; to determine the objects, powers, duties and functions of the Council; to determine the manner in which the Council is to be managed, governed, staffed and financed; to establish Metro and District Heritage Forums to assist the Council in facilitating and ensuring the involvement of local communities in the administration and conservation of heritage in the Province; and to provide for matters connected therewith Relevance to the iSimangaliso Wetland Park: ❖ Maintenance, repair and management of historically, culturally and architecturally important sites and structures, and development requirements ❖ Permitting for research, extraction or destruction of cultural resources ❖ Provide for the establishment of educational, training, interpretive and tourism-related projects Responsible Organs of State: ❖ Amafa aKwaZulu-Natali
National Forests Act, 1998 (Act 84 of 1998)	Purposes: ❖ Promote the sustainable management and development of forests for the benefit of all ❖ Create the conditions necessary to restructure forestry in State forests ❖ Provide special measures for the protection of certain forests and trees ❖ Promote the sustainable use of forests for environmental, economic, educational, recreational, cultural, health and spiritual purposes ❖ Promote community forestry ❖ Promote greater participation in all aspects of forestry Relevance to the iSimangaliso Wetland Park: ❖ Conservation of State forests and protected species Responsible Organs of State: ❖ Department of Agriculture, Forestry and Fisheries

Act	Objectives, important aspects, associated notices and regulations, and statutory bodies
National Water Act, 1998 (Act 36 of 1998)	Amendment Acts: ❖ National Water Amendment Act 45 of 1999 ❖ National Water Amendment Act 27 of 2014 Purpose: The purpose of this Act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways which take into account amongst other factors: ❖ Meeting the basic human needs of present and future generations ❖ Promoting equitable access to water ❖ Redressing the results of past racial and gender discrimination ❖ Promoting the efficient, sustainable and beneficial use of water in the public interest ❖ Facilitating social and economic development ❖ Providing for growing demand for water use ❖ Protecting aquatic and associated ecosystems, and their biological diversity ❖ Reducing and preventing pollution, and degradation of water resources ❖ Meeting international obligations ❖ Promoting dam safety and managing floods and droughts, and for achieving this purpose, to establish suitable institutions and to ensure that they have appropriate community, racial and gender representation Relevance to the iSimangaliso Wetland Park: ❖ Sustainable protection, use, development and conservation of water resources – including aquatic ecosystems ❖ Defines 11 water uses and provides licensing procedures ❖ Provides for the establishment of catchment management agencies and water user associations for the regulation and protection of water resources by affected parties Notices and Regulations: ❖ Revision of General Authorisation in terms of Section 39 of the National Water Act 36 of 1998, Water Uses Section 21 (a) and (b) (GN in GG 26187 of 26 March 2004). ❖ General authorisation in terms of Section 39 of the National Water Act, 1998 in terms of Section 21 (c) and (i) for the purpose of Rehabilitating a Wetland for Conservation Purposes – Water Uses 21 (c) and (i) (GN 1198 in GG 32805 of 18 December 2009) ❖ Replacement of General Authorisation in terms of Section 39 of the National Water Act, 1998 – Water Uses Section 21 (c) and (i) (GN 1199 in GG 32805 of 18 December 2009)

Act	Objectives, important aspects, associated notices and regulations, and statutory bodies
	❖ Revision of General Authorisations in terms of Section 39 of the National Water Act, 1998 – Water Uses Section 21 (e), (f) and (h), (g) and (j) (GN 665 in GG 36820 of 6 September 2013) ❖ Responsible Organs of State: ❖ Department of Water and Sanitation
Marine Living Resources Act, 1998 (Act 18 of 1998)	Amendment Acts: ❖ Marine Living Resources Amendment Act 5 of 2014 Objectives: To provide for: ❖ The conservation of the marine ecosystem ❖ The long-term sustainable utilisation of marine living resources ❖ The orderly access to exploitation, utilisation and protection of certain marine living resources ❖ The exercise of control over marine living resources in a fair and equitable manner to the benefit of all the citizens of South Africa Relevance to the iSimangaliso Wetland Park: ❖ Conservation of the Marine ecosystem and sustainable utilization of the resources ❖ Protection of every species of sea animal (excluding seals or birds) through prohibition on catching, disturbance or possession – <i>specific mention is made of the coelacanth in line with its CITES I listing</i> ❖ Fair and equitable resource allocation with the granting of commercial, recreational and subsistence fishing rights - <i>Minister may establish zones for exclusive use of subsistence fishers and declare a community to be a fishing community or person to be a subsistence fisher</i>⁵⁶ Notices and Regulations: ❖ Declaration of Areas as Marine Protected Areas (GN No. R 1429 of 29 December 2000), viz. the St Lucia and Maputaland MPAs⁵⁷ ❖ Coelacanths Government Gazette No. 21948 (29 December 2000, No. R 1428)

⁵⁶ The proclamation of the St Lucia and Maputaland Marine Protected Areas (MPAs) effectively prevents fishing and other forms of human disturbance to all living resources, except when these are specifically sanctioned by the Minister (or by delegated authority) in the interests of managing the MPA. These MPAs are zoned to create sanctuary areas and restricted and controlled areas, in order to meet the biodiversity conservation and natural resource management objectives of the Wetland Park. Certain kinds of pelagic fishing are allowed in the restricted areas, but no bottom fishing is allowed in any parts of the MPA. Diving, whether by scuba or submersible craft, within the two MPAs is also controlled by permit. The primary reason for this greater level of control is the protection of the coral reefs, which are sensitive even to diver damage. Following adoption of the IMP and its zonation, including marine zonation, the boundaries, zonation and controls of the MPAs under the Marine Living Resources Act, 1998 will be amended.

⁵⁷ Which are in the process of being re-gazetted as an extended iSimangaliso Marine Protected Area.

Act	Objectives, important aspects, associated notices and regulations, and statutory bodies
	Responsible Organs of State: ❖ Department of Environment, Forestry & Fisheries ❖ Department of Agriculture, Forestry and Fisheries
Maritime Zone Act, 1994(Act 15 of 1994)	Important aspects: ❖ Defines territorial waters and South African jurisdiction over these waters as per UNCLOS
National Environmental Management: Integrated Coastal Management Act, 2008 (Act 24 of 2008)	Amendment Acts: ❖ National Environmental Management: Integrated Coastal Management Amendment Act 36 of 2014 Objectives: ❖ To determine the coastal zone of the Republic ❖ To provide for the co-ordinated and integrated management of the coastal zone by all spheres of government in accordance with the principles of co-operative governance ❖ To preserve, protect, extend and enhance the status of coastal public property as being held in trust by the State on behalf of all South Africans, including future generations ❖ To secure equitable access to the opportunities and benefits of coastal public property ❖ To give effect to the Republic's obligations in terms of international law regarding coastal management and the marine environment ❖ To establish a system of integrated coastal and estuarine management in the Republic, including norms, standards and policies in order to promote the conservation of the coastal environment and maintain natural attributes of coastal landscapes and seascapes ❖ To ensure that development and the use of natural resources within the coastal zone are socially and economically justifiable and ecologically sustainable ❖ To control dumping at the sea, pollution in the coastal zone, inappropriate development of the coastal environment and other adverse effects on the coastal environment. Relevance to the iSimangaliso Wetland Park: ❖ ISimangaliso includes approximately 9% of South Africa's coastline Notices and Regulations: ❖ National Estuarine Management Protocol (GN 341 in GG 36432 of 10 May 2013) ❖ Control of Use of Vehicles in the Coastal Area (GN R496 in GG 37761 of 27 June 2014) ❖ Public Launch Site Regulations (GN R497 in GG 37761 of 27 June of 2014) Responsible Organs of State: ❖ Department of Environment, Forestry & Fisheries

Act	Objectives, important aspects, associated notices and regulations, and statutory bodies
National Environmental Management: Waste Act, 2008 (Act of 59 2008)	Amendment Acts: ❖ National Environmental Laws Amendment Act 14 of 2013 ❖ National Environmental Management: Waste Amendment Act 26 of 2014 ❖ National Environmental Laws Amendment Act 25 of 2014 Objectives: ❖ To reform the law regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation, and for securing ecologically sustainable development ❖ To provide for institutional arrangements and planning matters ❖ To provide for national norms and standards for regulating the management of waste by all spheres of government and to provide for specific waste management measures ❖ To provide for the licensing and control of waste management activities ❖ To provide for the remediation of contaminated land ❖ To provide for the national waste information system ❖ To provide for compliance and enforcement Relevance to the iSimangaliso Wetland Park: ❖ Listed waste activities in the iSimangaliso Wetland Park require authorisation ❖ Management of waste generated by the Park Notices and Regulations: ❖ National Domestic Waste Collection Standards (GN 21 in GG 33935 of 21 January of 2011) ❖ National Waste Information Regulations, 2012 (GN R625 in GG 35583 of 13 August 2012) ❖ Waste Classification and Management Regulations, 2013 (GN R634 in GG 36784 of 23 August 2013) ❖ National Norms and Standards for the Assessment of Waste for Landfill Disposal (GN R635 in GG 36784 of 23 August 2013) ❖ National Norms and Standards for Disposal of Waste to Landfill (GN R636 in GG 36784 of 23 August 2013) ❖ List of waste management activities that have, or are likely to have a detrimental effect on the environment (GN 921 in GG 37083 of 29 November 2013 amended by GN 332 in GG 37604 of 2 May 2014 and GN R633 in GG 39020 of 24 July 2015) ❖ National Norms and Standards for the Storage of Waste, 2013 (GN 926 in GG 37088 of 29 November 2013) Responsible Organs of State: ❖ Department of Environment, Forestry & Fisheries

Other Acts that relate to the actual functioning of the iSimangaliso Wetland Park Authority and governance include:

- ❖ Constitution of the Republic of South Africa Act, 1996
- ❖ Local Government: Municipal Structures Act, 1998 (Act 117 of 1998)
- ❖ Local Government: Municipal Systems Act, 2000 (Act 32 of 2000)
- ❖ Local Government: Municipal Finance Management Act, 2003 (Act 54 of 2003)
- ❖ Public Finance Management Act, 1999 (Act 1 of 1999)
- ❖ KwaZulu-Natal Ingonyama Trust Amendment Act, 1994 (Act 3 of 1994)
- ❖ Restitution of Land Rights Act, 1994 (Act 22 of 1994) Intergovernmental Relations Framework Act, 2005 (Act 13 of 2005)

Relevant information is provided in **Table 3**.

Legislation, as influenced by public perception, may lead to internal policy development within the iSimangaliso Wetland Park Authority. In addition, policy development by various external environmental stakeholders may lead to a review of the legislative provisions. Some of the key policies that influence the iSimangaliso Wetland Park and its surrounds include:

- ❖ Integrated Environmental Management Guideline Series. DEAT, 1992.
- ❖ General Environmental Policy in terms of the Environment Conservation Act, published in GN 449 of 9 May 1994.
- ❖ White Paper on Environmental Management, 1997.
- ❖ The White Paper for Sustainable Coastal Development in South Africa, 2000.
- ❖ National Development Plan 2030, 2012 (NDP).

There are many such policies and it is not the intention of this IMP to list all the policies, regulations and other legal precepts with which the iSimangaliso Wetland Park Authority must comply. What is important, therefore, is that the iSimangaliso Wetland Park Authority compiles and maintains a comprehensive register of all legal documents that apply to its activities.

Table 3 **Legislation that impacts on institutional arrangements associated with the iSimangaliso Wetland Park Authority**

Act	Objectives and/or important aspects
Constitution of the Republic of South Africa, 1996	❖ Supreme law of the country ❖ s24 environmental right ❖ s195 public administration ❖ Co-operative governance
Local Government: Municipal Structures Act, 1998 (Act 117 of 1998)	❖ Divides South Africa into various local government structures (metropolitan or district and local municipalities), and assigns them powers and functions ❖ The iSimangaliso Wetland Park falls within the Mtubatuba Local Municipality which is under the jurisdiction of the Umkhanyakude District Municipality. The Mtubatuba Local Municipality is responsible for municipal services such as potable water supply and sanitation.
Local Government: Municipal Systems Act, 2000 (Act 32 of 2000)	❖ Requires the preparation of a long-term Integrated Development Plan (IDP) with a three- to five-year budgeted implementation plan for all services and functions within the area of each local government structure. The IDP is reviewed annually
Local Government: Municipal Finance Management Act, 2003 (Act 54 of 2003)	❖ Provides the procedures and guidance for sound municipal financial management
Public Finance Management Act, 1999 (Act 1 of 1999)	❖ The iSimangaliso Wetland Park Authority is subject to the same internal and external conditions, controls and requirements for good public finance administration as other organs of state or public bodies
KwaZulu-Natal Ingonyama Trust Act, 1994 as amended (Act 3 of 1994)	❖ Approximately 18% of the iSimangaliso Wetland Park (south of the Coastal Forest Reserve, including Mabibi and Rocktail Bay) falls under the Ingonyama Trust ❖ Establishes a Board to administer the affairs of the Trust (encumber, pledge, lease, alienate or otherwise dispose of trust land with traditional authority approval) ❖ Board policy to issue only leases for commercial developments based on 2 to 3 year tenure security followed by a 35 year (option to renew) registered bondable lease
Restitution of Land Rights Act, 1994 as amended (Act 22 of 1994) Restitution of Land Rights Amendment Act, 2014 (Act 15 of 2014)	❖ Address rights in land in respect of those persons dispossessed through discriminatory laws ❖ Establish the Land Restitution Commission and appointment of Regional Claims Commissioners
Intergovernmental Relations Framework Act, 2005 (Act 13 of 2005)	❖ Highlights mechanisms to facilitate cooperative governance

4 Other Relevant Institutions and Stakeholder Groups

In addition to the various statutory bodies (organs of State) mentioned above, there are numerous other relevant institutions and stakeholders that have a relationship with the iSimangaliso Wetland Park Authority:

- ❖ Residents and neighbours.
- ❖ Traditional Councils.
- ❖ User groups (for example, traditional healers, crafters, recreation and sport bodies, and tourists).
- ❖ Organised business and business operators, particularly those who rely on the iSimangaliso Wetland Park for revenue.
- ❖ Academic institutions (for example, universities, technikons, research bodies, schools and learners).
- ❖ Development trusts.
- ❖ Non-Governmental Organisations (NGOs).
- ❖ International conservation bodies.
- ❖ Community-Based Organisations.
- ❖ Service providers (for example, roads, health, education, water and sanitation, communication and electricity).

APPENDIX 2: MAPS

- Map 1: Locality map of the iSimangaliso Wetland Park and regional context**
- Map 2: Local context**
- Map 3: Park Components**
- Map 4: Bathymetry offshore of iSimangaliso Wetland Park, encompassing the MPA**
- Map 5: Geology**
- Map 6: Parent rock types**
- Map 7: Palaeontology**
- Map 8: Topography**
- Map 9: Landforms**
- Map 10: Soils**
- Map 11: Hydrology**
- Map 12: Surface water catchments**
- Map 13: Wetlands**
- Map 14: Estuarine Functional Zones**
- Map 15: Groundwater**
- Map 16: Vegetation biomes**
- Map 17: Vegetation type**
- Map 18: Traditional councils**
- Map 19: Communities**
- Map 20: Settlements**
- Map 21: Settlement density**
- Map 22: Ecosystem status**
- Map 23: Ramsar Wetlands**
- Map 24: Plantations**
- Map 25: SANDF map showing impact areas of the Hell's Gate Training Area Missile Test Range in which Unexploded Ordnances (UXOs) or parts thereof may be present**
- Map 26: iSimangaliso Wetland Park: Management and Development Blocks, and Sections**
- Map 27: iSimangaliso Wetland Park Zonation (Terrestrial)**
- Map 28: iSimangaliso Wetland Park Zonation (Marine Inshore)**
- Map 29: iSimangaliso Wetland Park Zonation (Marine Offshore)**
- Map 30: Combined iSimangaliso Wetland Park Zonation**
- Map 31: Launch sites operating within the iSimangaliso Wetland Park**
- Map 32: Combined iSimangaliso Wetland Park Buffer Zone.**
- Map 33: iSimangaliso Wetland Park Coastal Management Line.**

Map Data Sources

Map 01 – Locality

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Roads – KZN Dept. of Transport (2017)
Main Towns – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2019)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 02 – Local Context

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 03 – Park Components

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Former Conservation Elements – EKZN Wildlife (2018)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 04A & 04B - Bathymetry

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Bathymetry – EKZN Wildlife (2008)

Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 05 - Geology

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Generalised Geology - Map compiled from (SACS, 1980; Botha, 2018)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 06 – Parent Rock

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Parent Soil – SOTER (2018)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 07 – Palaeontology

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Base geology compiled from (SACS, 1980; Botha, 2018).
Palaeo-sensitivity modified after Groenewald (2012).
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 08 – Shaded Topography

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)

Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Shaded Topography – iSimangaliso Wetland Park Authority (2020) based on NGI 5m contours
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 09 - Landform

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
General Land Form – SOTER (2018)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 10 - Soils

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Soil Types – SOTOR (2018)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 11 - Hydrology

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)

River, Pan, Marsh, Dam – NGI 1:50 000 data
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 12 – Surface Drainage

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Catchment data – DWA (1985)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 13 - Wetlands

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
National Wetlands – SANBI (2019)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 14 – Estuaries

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Estuaries – SANBI (2018)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 15 – Average Groundwater Resource Potential

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)

Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Groundwater Resource Potential – WRC (2012)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 16 – Vegetation Biomes

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Vegetation Biomes – EKZN Wildlife (2018)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 17 A & B – Vegetation & Vegetation Legend

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Vegetation – EKZN Wildlife (2018)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 18 – Traditional Councils

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Traditional Councils – COGTA (2010)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)

Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 19 - Communities

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)

Major Routes – KZN Dept. of Transport (2017)

Roads – KZN Dept. of Transport (2017)

Towns/Settlements – Municipal Demarcation Board (2016)

External Conservation Area – EKZN Wildlife (2018)

Coastal Markers – iSimangaliso Wetland Park Authority (2020)

Reefs – iSimangaliso Wetland Park Authority (2020)

Lakes – iSimangaliso Wetland Park Authority (2020)

iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)

Traditional Councils – COGTA (2010)

Settlements – Mtubatuba Local Municipality & iSimangaliso Wetland Park Authority (2020)

Country & Provincial Boundaries – Municipal Demarcation Board (2016)

Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 20 - Homesteads

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)

Major Routes – KZN Dept. of Transport (2017)

Roads – KZN Dept. of Transport (2017)

Towns/Settlements – Municipal Demarcation Board (2016)

External Conservation Area – EKZN Wildlife (2018)

Coastal Markers – iSimangaliso Wetland Park Authority (2020)

Reefs – iSimangaliso Wetland Park Authority (2020)

Lakes – iSimangaliso Wetland Park Authority (2020)

iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)

Traditional Councils – COGTA (2010)

Homesteads – ESKOM (2015)

Country & Provincial Boundaries – Municipal Demarcation Board (2016)

Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 21 – Settlement Density

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)

Major Routes – KZN Dept. of Transport (2017)

Roads – KZN Dept. of Transport (2017)

Towns/Settlements – Municipal Demarcation Board (2016)

External Conservation Area – EKZN Wildlife (2018)

Coastal Markers – iSimangaliso Wetland Park Authority (2020)

Reefs – iSimangaliso Wetland Park Authority (2020)

Lakes – iSimangaliso Wetland Park Authority (2020)

iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)

Settlement Density – iSimangaliso Wetland Park Authority (2020)

Country & Provincial Boundaries – Municipal Demarcation Board (2016)

Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 22 - Ecosystems

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)

Major Routes – KZN Dept. of Transport (2017)

Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Ecosystems – SANBI (2011)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 23 - RAMSAR

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
RAMSAR Sites – ramsar.org (2020)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 24 - Plantations

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Plantations – Dept of the Environment, Forestry and Fisheries (2018)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 25 – Missile Target Sites

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Missile Target Sites – SANDF (?)

Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 26 – Management Blocks

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Existing Zone of Influence - iSimangaliso Wetland Park Authority (2020)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 27 – Terrestrial Zoning

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Terrestrial Zoning - iSimangaliso Wetland Park Authority (2020)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 28 – Marine In-shore Zoning

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Marine In-shore Zoning - Department of Environmental Affairs, NEM Act 57/2003 (2019)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 29 – Marine Off-shore Zoning

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)

Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Marine Off-shore Zoning - Department of Environmental Affairs, NEM Act 57/2003 (2019)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 30 – Combined Zoning

Data Sources:

Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Terrestrial Zoning - iSimangaliso Wetland Park Authority (2020)
Marine In-shore Zoning - Department of Environmental Affairs, NEM Act 57/2003 (2019)
Marine Off-shore Zoning - Department of Environmental Affairs, NEM Act 57/2003 (2019)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 31 – Launch Sites

Data Sources:

Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Marine Off-shore Zoning - Department of Environmental Affairs, NEM Act 57/2003 (2019)
Launch Sites - iSimangaliso Wetland Park Authority (2020)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 32 – Final Buffer Area

Data Sources:

Political Boundaries – Municipal Demarcation Board (2016)
Major Routes – KZN Dept. of Transport (2017)
Roads – KZN Dept. of Transport (2017)
Towns/Settlements – Municipal Demarcation Board (2016)
External Conservation Area – EKZN Wildlife (2018)
Coastal Markers – iSimangaliso Wetland Park Authority (2020)
Reefs – iSimangaliso Wetland Park Authority (2020)
Lakes – iSimangaliso Wetland Park Authority (2020)
iSimangaliso Wetland Park Boundary – iSimangaliso Wetland Park Authority (2020)
Current Buffer – iSimangaliso Wetland Park Authority (2020)
Country & Provincial Boundaries – Municipal Demarcation Board (2016)
Indian Ocean – iSimangaliso Wetland Park Authority (2020)

Map 33 – Coastal Management Line

Data Sources:

Map sourced from previous IMP

APPENDIX 3: A brief history of the iSimangaliso Wetland Park by Gavin Anderson (2020)

EARLY STONE AGE (ESA)

The ESA in southern Africa is difficult to date as there are very few closed sites where the tools occur in stratified layers. The Early Stone Age begins 1.5 – 2 million years ago and is represented by the Oldowan tradition. Oldowan refers to the first stone tools that were made by hominid species: *Paranthropus robustus* and/or *Homo habilis* and *Homo ergaster*. Oldowan tools, named after Oldovai Gorge, Tanzania, consist of basic cores, such as choppers and unmodified flakes. This is replaced by Acheulian tools that occur from 1.5mya to 250 000 years ago. This period is noted for hand-axes, cleavers, and picks. The late Acheulian has larger and slightly modified flakes, but this might be the transition to the Middle Stone Age. The ESA covers a long period of prehistory with few changes in the types of artefacts.

MIDDLE STONE AGE (MSA)

The MSA was a dramatic shift in stone tool technology 200 000– 250 000 years ago. The first MSA flakes were large and 'bulky', but then became more formalised and technologically advanced. Spears points and small barbs (or segments) and a wider range of tools were made. The MSA included making stone tools using pressure flaking and the heat treatment of rock before knapping. There is the emergence of engraving on ochre and eggshell, shell bead necklaces and the use of a wide range of bone implements. Hunting implies working in groups and new social behaviours' distinct from the ESA. There are four main stages in the MSA of southern Africa. Unfortunately most of the MSA sites are open sites with no stratigraphic deposits. The MSA is also the time of several *Homo species* living in Southern Africa and the eventual emergence of *Homo sapiens sapiens* who buried their dead

LATE STONE AGE (LSA)

The LSA begins 30 000 years ago in southern Africa. *Homo sapiens sapiens* have been the only *Homo species* in sub-Saharan Africa for about 150 000 years. LSA people use symbolism in the form of rock art, geometric designs on various mediums, etc. The most significant change is in the type of tools that are produced and the wider range of raw materials used. The stone tools tend to be significantly smaller and show a wider range of specialisation. The tools tend to be made from fine grained volcanic glass, quartz, quartzite and rhyolite.

Most LSA sites are scatters of artefacts on the surface. However, as one heads into the mountainous areas of Mkuze, shelters in the mountains are present that have stratified deposits.

14 000 years ago the ocean was several kilometres eastwards. People still hunted in larger groups and the now extinct *Pelorovis antiquus* (Giant Cape Buffalo) was favoured. The Pleistocene- Holocene transition resulted in sea levels rising and a loss of land and animal resources. It is during the Holocene that evidence for the first bow hunting occurs. The beginning of bow and arrow hunting resulted in smaller hunting groups and the division of labour between men as hunters and females as gatherers.

EARLY IRON AGE (EIA)

1 700 years ago the first African farming communities arrived along the eastern seaboard. These farmers had a direct environmental and social impact on the landscape and Stone Age sites disappear from the record. The farmers originated from the Great Lakes in East Africa and arrived with a full agricultural and metallurgical socio-economy. The people farmed sorghum, millet, legumes and squashes, herded cattle and goats, kept

chickens and dogs, and made iron implements. They stayed in large villages in excess of 100 people and thus required open areas for the villages.

LATE IRON AGE (LIA)

Approximately 1000 years ago a new group of Iron Age farmers arrived in southern Africa. They originated from the lake areas of East Africa but arrived with a very different social system. Settlements moved to family households on top of hills. The pottery decorations between the EIA and LIA changed abruptly. Since language and pottery decorations are linked, this suggests that the new farmers spoke a very different language. These were the first Nguni-speaking people to enter parts of southern Africa and eventually gave rise to the Zulu, Xhosa, Ndebele, Swati, Hlubi, Phuthi, Bhaca, Lala, Nhlangwini, Southern Ndebele, and Xitsonga languages of today.

Excavations in the RBM Mining Lease, 40 km south of iSimangaliso, have recorded the entire LIA sequence. From about 1500AD the eastern seaboard is inhabited by the Xitsonga-speaking people. Their pottery designs, with the characteristic shell-impressed linear patterns, are found from Richards Bay to Kosi Bay. These people were recorded as being Tembe-Tsonga in the south and Nyaka-Tsonga north of the Ubombo Mountains by early Portuguese sailors who traded at Delagoa Bay (Webster 1986). At this time maize was introduced to southern Africa by these sailors from the mid 1500s. Maize required a new type of grinding stone to deal with the harder kernel than the sorghum and millet. This led to a design referred to as 'bird bath' grinding stones. Tembe-Tsonga pottery has been dated to c. 1500AD to 1750AD in the Richards Bay area; however the tradition of shell-impressed decorations was still being recorded in the Maputo area up to 1960s. The Portuguese sailors noted the Kosi Bay fish traps in their journals and that the Tsonga people were traders and middlemen. Webster (1986) notes that the Tsonga State was in existence from the 1500s to the 1850s. This state was divided into Portuguese and British territory in a treaty signed in France in 1875, and this became the border between South Africa and Mozambique.

From the late 18th century there is the arrival of Zulu-speaking people along the southern parts of iSimangaliso, while Zulu-speaking people were in the Mkuze area already. With the Mfecane (1820AD - 1830AD) this area was ruled by King Shaka Zulu, and people moved around the landscape as political allegiances changed. The eastern seaboard was more influenced by Zulu culture and artefacts in the southern half of the Park. Shell-impressed pottery disappears from the archaeological sites and is replaced by Zulu pottery. It is during this time that the current communities settled in to the southern part of iSimangaliso, while those in the north probably have a longer history with the land. These communities are: Sokhulu, Mpukonyoni, Mdletsheni, Makhasa, Nibela, Mnqobokazi, Jobe, Nsinde, Ngwenya, Mabaso, Mbila, and the Tembe

COLONIAL PERIOD

The killing of King Shaka Zulu (1829 AD) was a turning point for the social landscape in KZN. It is at this time where European Colonials made an impact within the province. The British begin at Port Natal (Durban) while the Voortrekkers have already made their way into the province via the Drakensberg passes. Five political powers were now in play in iSimangaliso: Tembe-Tsonga, Zulu, British, Portuguese and the Boer Republics.

The area north of the Thukela River was still under Zulu rule up to 1879. The First Anglo-Zulu War resulted in British Forces annexing KwaZulu. Magisterial outposts were placed in strategic areas such as eShowe, Hluhluwe, St Lucia and Ingwavuma, while Pongola to Vryheid was part of the Boer Republic. There were no colonial owned farms in this area yet. Sir G. Wolsley divided Zululand into 13 territories, or 'kinglets', with kings

favourable to the British, or antagonistic to the Zulu Royal house (Dominy 1994). This resulted in several battles, especially when King Cetshwayo was restored in 1883 and there was another civil war in Zululand. Chief Somkhele of the Mphukonyoni, supporting King Cetshwayo, fought against Zibhebhu kaMaphita, with the help of John Dunn in August 1883. Chief Somkhele lost the battle and fled to the swamps of Lake St Lucia (Dominy 1994). Another famous battle is the Battle of eTshaneni (5 June 1884) in which King Dinizulu (backed by Boer Forces) defeated Chief Zibhebhu of the Mandhlakazi Clan in the uMkhuze River Gorge, near Ghost Mountain.

The Natal Parliament declared St. Lucia a game reserve in 1897. In 1898 Rev. Feyling built the Norwegian Lutheran Mission at Mission Rocks Outpost. This was closed in the 1950s when the area was given to the Dept. of Forestry. The graves of two missionaries and some of the baking oven still remain.

At the onset of World War II, a Squadron 262 of Royal Air Force Catalina operated from St Lucia, hence the name Catalina Jetty. They were used for undertaking submarine patrols in the Mozambique Channel. Mt. Tabor has the remains of a blockhouse. On 25 June 1943 a Catalina crashed on take-off and eight of the nine crew were killed. By October 1944 the water in the Lake had dropped too low for the Catalinas to operate (Dominy 1994). In 2001, the water levels had dropped again and revealed an Early Iron Age village on the shores of the Lake. Lake St Lucia has had several droughts over the years.

The Joint Imperial-Colonial Zululand Lands Delimitation Commission was started in 1902, and by 1904 Zululand was separated into areas for “White” and “Black” people. This was the basis for the Native Lands Act of 1913. The more famous forced removal in iSimangaliso is that of the people from Lake Bhangazi between 1956 and 1974. The last person, Lokothiswayo Mbuyazi, and his extended family were suddenly and forcibly removed and literally dumped outside the park (Skelcher 2003).

A more recent heritage site is that of David Webster's research camp at kwaDapha.

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