



**O.R TAMBO DISTRICT MUNICIPALITY
BIODIVERSITY SECTOR PLAN**

Draft Biodiversity Sector Plan

Version – 01

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Earth Free Environmental Consulting

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EXECUTIVE SUMMARY

The OR Tambo District Municipality (ORTDM) has identified the need for a Biodiversity Sector Plan (BSP), as provided for in the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEM: BA).

The Situational Analysis Phase (Phase 2 of the project) allowed for the identification of high priority biodiversity assets within the District, building on the 2019 Eastern Cape Biodiversity Conservation Plan (2019 ECBCP) (Eastern Cape Department: Economic Development, Environmental Affairs and Tourism, 2020), including the CBAs, vulnerable and endangered ecosystems, and the system of protected areas. The BSP forms part of a hierarchy of biodiversity strategies and plans and is intended to feed into multi-sectoral planning and assessment processes such as Environmental Management Frameworks (Department of Environment, Forestry and Fisheries, n.d.), Spatial Development Frameworks (SDFs), Integrated Development Plans (IDPs), Strategic Environmental Assessments (SEAs), and Environmental Impact Assessments (EIAs).

The BSP project is divided into phases. This Draft BSP Report forms part of Phase 3. The phases are:

- Phase 1 - Inception Phase, which culminated in a Final Inception Report;
- Phase 2 - Situational Analysis, Biodiversity Profile & CBA Mapping, which culminated in a Final Situational Analysis Report; and
- Phase 3 -: BSP Reporting, which will culminate in the Final BSP report.

The BSP describes the linkage between biodiversity protection and management in the District and progress towards the Sustainable Development Goals (SDGs). In addition, and given the current focus on climate action in light of COP26, the BSP outlines how biodiversity management and protection in the District contributes to both climate adaptation and mitigation.

The vision of the BSP is:

ORTDM effectively identifies and monitors high value biodiversity assets and manages, protects and preserves high value biodiversity assets and ecosystem services within the District in a proactive, legally defensible and responsive manner.

A set of 10 BSP Outcomes are proposed as follows:

- Outcome 1: Expanding the Network of Protected Areas to Protect High Value Ecological Infrastructure;

- Outcome 2: Limiting Threats and Transformation in High Priority Biodiversity Areas;
- Outcome 3: Identification of Priority Areas for Ecological Restoration and Landscape Rehabilitation;
- Outcome 4: Addressing Potential Planning Conflict Areas;
- Outcome 5: Establishing and Maintaining Biodiversity Offset Areas;
- Outcome 6: Improving Biodiversity Compliance, Monitoring and Enforcement;
- Outcome 7: Establishing and strengthening networks to strengthen biodiversity management and conservation;
- Outcome 8: Training, Capacity Building, and Environmental Advocacy;
- Outcome 9: Improving the knowledge base to support biodiversity conservation and management; and
- Outcome 10: Mainstreaming Biodiversity Norms and Standards.

A set of priority intervention projects is listed per BSP Outcome in Section 6.

The effective management and protection of the biodiversity assets within the District will enhance resilience to the effects of climate change, protect species of conservation concern, and maintain the quality of life and provision of valuable ecosystem services for communities. Without an effective means to enforce and monitor biodiversity, the network of CBAs, ESAs, protected areas, biodiversity corridors and open spaces could be undermined. The BSP allows for a robust, legally defensible tool to support biodiversity protection and management in the District, achieving the vision of the BSP to protect and enhance biodiversity and respond positively to the challenges of climate change.

The ORTDM BSP would need to be taken to Council to be formally adopted and mainstreamed.

The preparation, coordination and monitoring of the BSP are led by ORTDM. However, the implementation of the BSP requires coordination with multiple biodiversity partners through intergovernmental and sectoral coordination structures. It is recommended that a District Biodiversity Forum be established to monitor the implementation of the BSP.

This BSP is intended to guide officials within ORTDM and, understanding that the legislative and policy framework for management and protection of biodiversity is dynamic, the BSP remains a dynamic document, to be updated based on the further review at least every 5 years.

ACRONYMS AND ABBREVIATIONS

ACDI	African Climate and Development Initiative
ARC	Agricultural Research Council
BMP	Biodiversity Management Plan
BSP	Biodiversity Sector Plan
CARA	Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)
CBA	Critical Biodiversity Area
CBD	Convention on Biological Diversity
CCA	Community Conservation Area
CDC	Coega Development Corporation
CME	Compliance monitoring and enforcement
CMP	Coastal Management Programme Conservation Management Plan
COP	Conference of the Parties
CR	Critically Endangered
DAFF	Department of Agriculture, Forestry and Fisheries (now the Department of Agriculture and Rural Development)
DEAT	Department of Environmental Affairs and Tourism (now Department of Forestry, Fisheries and Environment)
DEDEAT	Department of Economic Development, Environmental Affairs and Tourism
DFFE	Department of Forestry, Fisheries and Environment
DMR	Department of Mineral Resources
DRDLR	Department of Rural Development and Land Reform
DTI	Department of Trade and Industry
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EbA	Ecosystem-based adaptation

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ECBCP	Eastern Cape Biodiversity Conservation Plan
ECBSAP	Eastern Cape Biodiversity Strategy and Action Plan
ECPAES	Eastern Cape Protected Area Expansion Strategy
ECPTA	Eastern Cape Parks and Tourism Authority
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EMI	Environmental Management Inspector
EMP	Environmental Management Plan/ Programme
EMZ	Environmental Management Zone
EN	Endangered
EPWP	Expanded Public Works Programme
ESA	Ecological Support Area
EWT	Endangered Wildlife Trust
GHG	greenhouse gas
GIS	Geographic Information System
ha	hectares
IBA	Important Bird Area
IDP	Integrated Development Plan
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Area
KSD	King Sabata Dalindyebo
KPI	Key Performance Indicator
LED	Local Economic Development
LM	Local Municipality
LT	Least Threatened
LULCC	Land Use and Land Cover Change
MDB	Municipal Demarcation Board

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N2WCTH	N2 Wild Coast Toll Highway
NBA	National Biodiversity Assessment
NBF	National Biodiversity Framework
NBSAP	National Biodiversity Strategy and Action Plan
NDC	Nationally Determined Contributions
NDP	National Development Plan
NECER	National Environment Compliance and Enforcement Report
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEM: BA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NEM: PAA	National Environmental Management: Protected Areas Act, 2003 (Act No. 53 of 2003)
NFEPA	National Freshwater Ecosystem Priority Area
NGI	National Geo-spatial Information
NGO	Non-governmental organization
NNR/ A	No Natural Areas Remaining
NPA	National Prosecuting Authority
NPAES	National Protected Area Expansion Strategy
NPO	Non-profit organization
NSSD	National Strategy for Sustainable Development and Action Plan
NWA	National Water Act, 1998 (Act No. 36 of 1998)
OECM	Other effective area-based conservation measures
ONA	Other Natural Areas
ORTDM	OR Tambo District Municipality
PAES	Protected Area Expansion Strategy
PDP	Provincial Development Plan
PES	Present Ecological State
PGDP	Provincial Growth and Development Plan
PSC	Project Steering Committee

PSDP	Provincial Spatial Development Plan
PSJ	Port St Johns
SAEON	South African Environmental Observation Network
SANBI	South African National Biodiversity Institute
SANLC	South African National Land Cover
SANParks	South African National Parks
SANRAL	South African National Roads Limited
SAPS	South African Police Services
SCP	Systematic Conservation Plan
SDBIP	Service Delivery & Budget Implementation Plan
SDF	Spatial Development Framework
SDG	Sustainable Development Goal
SEA	Strategic Environmental Assessment
SEZ	Special Economic Zone
SFP	Singisi Forests Products
SMME	Small, Medium and Micro Enterprises
SP-TF	Special Tourism Focus
SPLUMA	Spatial Planning and Land Use Management Act, 2013 (Act No. 6 of 2013)
TOPS	Threatened or Protected Species
TOR	Terms of Reference
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
VU	Vulnerable
WEF	Wind Energy Facility
WESSA	Wildlife and Environment Society of South Africa
WWF	World Wildlife Fund

CONTENTS PAGE

1 INTRODUCTION 11

1.1 PHASING OF PROJECT 12

2 INTRODUCTION 12

2.1 LINKING BIODIVERSITY PROTECTION AND MANAGEMENT WITH SUSTAINABLE DEVELOPMENT GOALS 13

2.2 LINKING BIODIVERSITY PROTECTION AND MANAGEMENT AND CLIMATE ACTION 17

2.2.1 *Climate change adaptation* 18

2.2.2 *Climate Change Mitigation* 19

3 OBJECTIVES 19

3.1 VISION 20

3.2 OUTCOMES OF BSP 20

Outcome 1: Expanding the Network of Protected Areas to Protect High Value Ecological Infrastructure 21

Outcome 2: Limiting Threats and Transformation in High Priority Biodiversity Areas 25

Outcome 3: Identification of Priority Areas for Ecological Restoration and Landscape Rehabilitation 26

Outcome 4: Addressing Potential Planning Conflict Areas 29

Outcome 5: Establishing and Maintaining Biodiversity Offset Areas 30

Outcome 6: Improving Biodiversity Compliance, Monitoring and Enforcement 32

Outcome 7: Establishing and strengthening networks to strengthen biodiversity management and conservation 34

Outcome 8: Training, Capacity Building, and Environmental Advocacy 35

Outcome 9: Improving the knowledge base to support biodiversity conservation and management 37

Outcome 10: Mainstreaming Biodiversity Norms and Standards 38

4 BIODIVERSITY LAND MANAGEMENT GUIDELINES 40

5 IMPLEMENTATION MONITORING, REVIEW AND AMENDMENTS 42

6 PRIORITY INTERVENTION PROJECTS AND IMPLEMENTATION PLAN 44

7 REVIEW AND UPDATE OF BSP 54

8 CONCLUSIONS 55

9 REFERENCES 56

LIST OF FIGURES

Figure 1: 17 Sustainable Development Goals (United Nations Development Programme, 2021) 13

Figure 2: Clustering of the SDGs showing reliance on biosphere goals (Illustration Azote for Stockholm Resilience Centre, Stockholm University) 14

Figure 3: Aquatic CBA Categories as per 2019 ECBCP (Eastern Cape Department: Economic Development, Environmental Affairs and Tourism, 2020) 14

Figure 4: CBA1 features in the District (Eastern Cape Department: Economic Development, Environmental Affairs and Tourism, 2020) 16

Figure 5: 10 BSP Outcomes 21

Figure 6: Important vulture colonies and 10 km (Bearded Vulture) & 50km (Cape Vulture) buffers (Eastern Cape Department: Economic Development, Environmental Affairs and Tourism, 2020) 29

LIST OF TABLES

Table 1: Prioritisation Guide for OECMs (Ngubeni, et al., 2017)	23
Table 2: Contribution of N2WCTH biodiversity offset areas to the protection of Threatened Ecosystems in the District	31
Table 3: 2019 ECBCP CBA Map Category Management Objectives (Eastern Cape Department: Economic Development, Environmental Affairs and Tourism, 2020)	40

LIST OF APPENDICES

APPENDIX A: LIST OF MAPS

LIST OF MAPS

Map 1: Refinement of the 2019 ECBCP CBA Layers	
Map 2: Refinement of the 2019 ECBCP CBA Layers- Ingquza Hill LM	
Map 3: Refinement of the 2019 ECBCP CBA Layers- Port St Johns LM	
Map 4: Refinement of the 2019 ECBCP CBA Layers- Nyandeni LM	
Map 5: Refinement of the 2019 ECBCP CBA Layers- Mhlontlo LM	
Map 6: Refinement of the 2019 ECBCP CBA Layers- KSD LM	
Map 7: CBA 1 Transformation in ORTDM	
Map 8: CBA 1 Transformation in Ngquza Hill LM	
Map 9: CBA 1 Transformation in PSJ LM	
Map 10: CBA 1 Transformation in Nyandeni LM	
Map 11: CBA 1 Transformation in Mhlontlo LM	
Map 12: CBA 1 Transformation in KSD LM	
Map 13: Ecological Degradation Hotspots	
Map 14: Comparison of Gully Erosion in 2011 vs Eroded Lands Land Cover (2020) in Mhlontlo Local Municipality	

1 INTRODUCTION

The OR Tambo District Municipality (ORTDM) has identified the need for a Biodiversity Sector Plan (BSP), as provided for in the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEM: BA). In addition to climate change and a multitude of other growing anthropogenic threats to biodiversity, the COVID pandemic has had significant consequences for biodiversity conservation, including financing for environmental projects and the viability and focus of conservation agencies and non-governmental organisations (NGOs). More than ever, biodiversity interventions in the District need to be targeted to achieve the highest gains with optimal use of resources.

The BSP provides for the mapping of biodiversity priorities areas with accompanying interventions and land-use guidelines, to inform land-use planning, environmental assessment and authorisations, and natural resource management by a range of sectors whose policies and decisions impact biodiversity. Several legislative tools were introduced under NEM: BA relating to the conservation and management of biodiversity, including the declaration of "bioregions" and the publication of bioregional plans (SANBI, n.d.). The ORTDM BSP was compiled in line with the guidelines for the development of bioregional plans published on 16 March 2009 (DEAT, 2009). Importantly, the focus of a bioregional plan is on biodiversity priorities; it is not regarded as a multi-sectoral planning or assessment tool (SANBI, 2017).

A BSP is a plan that is considered in essence the same as a bioregional plan that has not been through a full consultation process with municipalities and has not yet been published in the Gazette (SANBI, n.d.). The BSP is thus a precursor to a bioregional plan, which would be published in terms of NEM: BA and used to align Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs).

The BSP allows for the identification and protection of high priority biodiversity assets within the District, which include the Critical Biodiversity Areas (CBAs), vulnerable and endangered ecosystems, and the system of protected areas. The BSP forms part of a hierarchy of biodiversity strategies and plans and is intended to feed into multi-sectoral planning and assessment processes such as Environmental Management Frameworks (EMFs), SDFs, IDPs, Strategic Environmental Assessments (SEAs), and Environmental Impact Assessments (EIAs) (Department of Environment, Forestry and Fisheries, n.d.).

BSPs allow for the determination of the biodiversity conservation status of land which is under application for development or land-use change, to inform sustainable development. The land-use guidelines are provided to inform compatible and appropriate land uses and land management types based on the biodiversity status of the land. Importantly, protected Areas and areas identified as critical for biodiversity or ecosystem maintenance, by the BSP, must be appropriately buffered from development and land-use change impacts.

The BSP includes refinement of the 2019 Eastern Cape Biodiversity Conservation Plan (ECBCP) CBAs (Eastern Cape Department: Economic Development, Environmental Affairs and Tourism, 2020). These are defined as natural or near-natural features, habitats or landscapes that include terrestrial, aquatic and marine areas that are considered critical for (i) meeting national and provincial biodiversity targets and thresholds (ii) safeguarding areas required to ensure the persistence and functioning of species and ecosystems, including the delivery of ecosystem services; and/or (iii) conserving important locations for biodiversity features or rare species (Ezemvelo KZN Wildlife, 2015). Conservation of CBAs is crucial, in that if these areas are not maintained

in a natural or near-natural state, biodiversity conservation targets cannot be met (Ezemvelo KZN Wildlife, 2015).

In addition, Ecological Support Areas (ESAs) are identified and mapped. These areas are defined as functional, but not necessarily entirely natural, and include areas that are required to ensure the persistence and maintenance of biodiversity patterns and ecological processes within the CBAs (Ezemvelo KZN Wildlife, 2015).

BSPs also must take cognisance of ecosystem services, which are direct and indirect benefits derived from the natural environment (ecological infrastructure), and include production services, such as food and oxygen, regulatory services, such as flood attenuation and pollination, spiritual and knowledge services and space services, such as settlement areas and farmland (Ezemvelo KZN Wildlife, 2015).

Biodiversity protection and management are linked to climate resilience, which refers to the capacity of social, economic and environmental systems to cope with hazardous events, trends or disturbances associated with climate change, "responding or reorganizing in ways that maintain their essential function, identity and structure, while also maintaining the capacity for adaptation, learning and transformation" (IPCC 2014).

The BSP must also consider the National Threatened Ecosystems as provided for in the NEM: BA. These areas represent threatened and protected ecosystems categorised according to one of four categories (Critically Endangered, Endangered, Vulnerable and Protected Ecosystems). In line with NEM: BA, both Critically Endangered and Endangered Ecosystems must be considered as part of CBAs (Ezemvelo KZN Wildlife, 2015).

The CBA maps have legal status in terms of the EIA Regulations published in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). Listing Notice 3 of the EIA Regulations specifies geographic areas that trigger environmental authorisation processes, including CBAs identified in a bioregional plan or a spatial biodiversity plan (SANBI, n.d.).

1.1 PHASING OF PROJECT

The BSP project is divided into phases. This Situational Analysis Report forms part of Phase 2. The phases are:

- Phase 1 - Inception Phase, which culminated in a Final Inception Report;
- Phase 2 - Situational Analysis, Biodiversity Profile & CBA Mapping, which will culminate in a Final Situational Analysis Report; and
- Phase 3 -: BSP Reporting, which will culminate in the Final BSP report.

2 INTRODUCTION

The natural landscape in the District has been classified in the recently gazetted Eastern Cape Biodiversity Conservation Plan (2019 ECBCP) (Eastern Cape Department: Economic Development, Environmental Affairs and Tourism, 2020), which included detailed mapping of CBAs, ESAs, Other Natural Areas and No Natural Remaining. This information was synthesized into a map of CBAs and ESAs for the Eastern Cape Province. See Maps 1 to 6 in Appendix A.

In the Final OR Tambo BSP Situational Analysis Report (August 2021), the 2019 ECBCP CBA layers were refined which inform the series of biodiversity-compatible land uses and biodiversity protection and management interventions in this BSP. These refined CBA areas represent the highest biodiversity value sites that remain in good condition and contribute to ecosystem goods and services in the District and should be protected in spatial planning and decision-making.

2.1 Linking Biodiversity Protection and Management with Sustainable Development Goals

In 2015, the United Nations adopted the Sustainable Development Goals (SDGs) (Figure 1), also known as the Global Goals, as a global commitment to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity. The COVID-19 pandemic has had devastating impacts globally on the ability of participating nation-states to achieve these SDGs, with a reported reversal in progress worldwide on the SDGs, as reported in “Sustainable Development Report: The Decade of Action for the SDGs” (Sachs, Kroll, Lafortune, Fuller, & Woelm, 2021). Healthy ecosystems are recognised to underpin the 17 SDGs, by preventing climate catastrophe and mass extinction.

South Africa is ranked 107 out of 165 countries and has seen a decline nationally in progress towards achieving Goal 1 (No Poverty) and Goal 4 (Quality Education). There has been improvement towards achieving Goal 5 (Gender Equality), and positive progress in Goal 3 (Good Health and Wellbeing), Goal 6 (Clean Water and Sanitation), Goal 7 (Affordable and Clean Energy), Goal 9 (Industry, Innovation and Infrastructure), Goal 11 (Sustainable Cities and Communities).



Figure 1: 17 Sustainable Development Goals (United Nations Development Programme, 2021)

As shown in Figure 2, there is recognition that the biosphere component of the SDGs supports the remaining goals. There are extensive wetland systems and watercourses in the District supporting aquatic ecosystems and providing a range of ecosystem goods and services. The 2019 ECBCP identified a set of aquatic CBA 1 and 2 areas (Figure 3). The meandering river systems culminate at the coast, connecting the land and sea resources. Wetlands provide a range of ecosystem services. Given that wetlands sequester some of the largest carbon

stores globally, protection of wetland systems is key to mitigating climate change and limiting the global temperature increase below 2 °C.

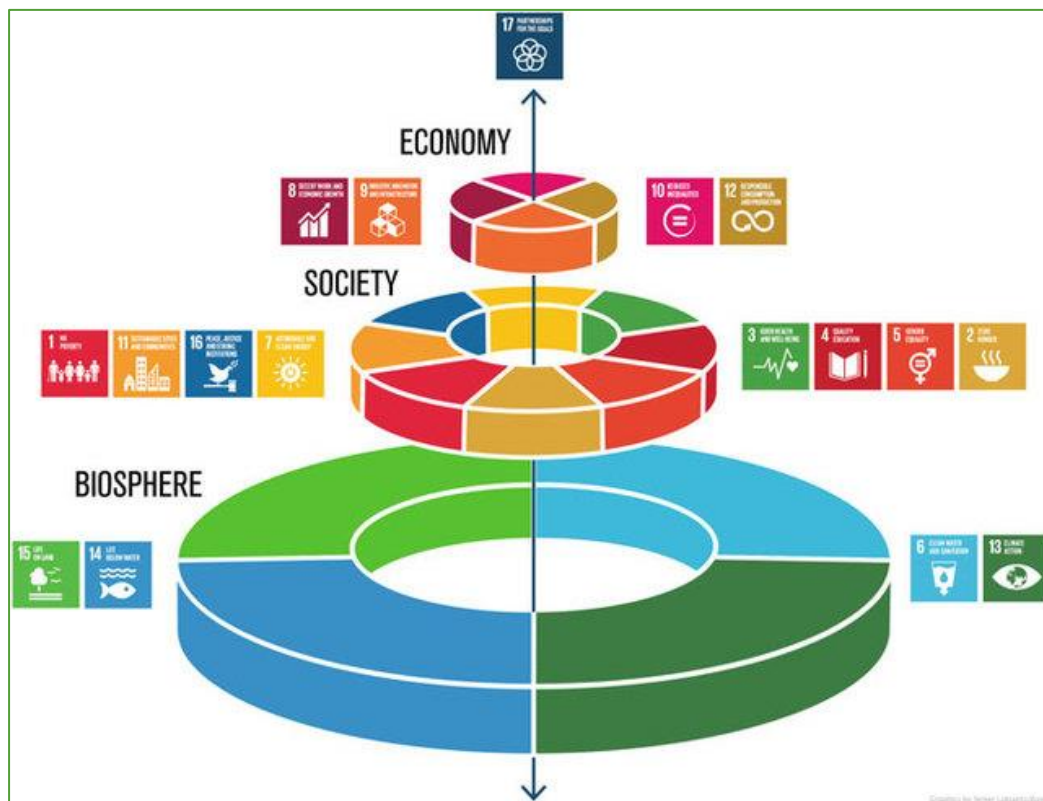


Figure 2: Clustering of the SDGs showing reliance on biosphere goals (Illustration Azote for Stockholm Resilience Centre, Stockholm University)



 <p>Aquatic CBA1</p>	 <p>Aquatic CBA2</p>
<ul style="list-style-type: none"> • Main stem rivers of high irreplaceability plus a 32 m buffer (fish sanctuaries and free flowing /flagship rivers) • Umzimvubu Wetland Complex, Karst/Limestone wetlands, additional oxbow wetlands, dune and dune bypass wetlands • Estuaries with a National Biodiversity Assessment (2011) ranking field "core = 1" plus Regionally important estuaries 	<ul style="list-style-type: none"> • Main stem river lines plus 32 m buffer - fish corridors and other selected catchments (wetland clusters) to achieve connectivity, best design sites • All remaining wetlands • CBA 1 estuary buffer 100 m • Estuaries that are regionally important or are linked to CBA 1 rivers, or are associated with Protected Areas


Figure 3: Aquatic CBA Categories as per 2019 ECBCP (Eastern Cape Department: Economic Development, Environmental Affairs and Tourism, 2020)

SDG 6: Clean Water and Sanitation

Safeguarding wetland systems in the District through the aquatic CBAs ensures protection of important ecosystem services, such as the removal of contaminants and pollutants from surface water and sediment trapping that preserve the quality of water.

The focus of this BSP is on the terrestrial CBAs and ESAs identified in the 2019 ECBCP and refined within the scope of this project. The main inland biomes in the District are the grassland and savanna biomes, with a coastal belt along the coastal areas. Under climate change scenarios, the savanna biome is anticipated to expand into the grassland biome.

The terrestrial CBA 1 areas in the 2019 ECBCP, the highest priority biodiversity features in the District, are indicated in Figure 4.

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- Note that within the scope of the ORTDM BSP, the terrestrial CBA 1 areas were refined based on the 2018 SANLC and the 2019 ArcGIS online world imagery to create a new dataset, the refined CBA 1 layer: (2019ECBCP_Terrestrial_CBA_ORTDM_Refinement_16_03_2021.shp).

CBA 2 sites in the 2019 ECBCP, the second-highest priority biodiversity features in the District include:

- All other forests;
- Best Design Sites (selection frequency < 80%) - Planning Units selected to meet targets for: (1) vegetation types, (2) species points, (3) expert areas; and
- Selected cliffs buffered by 100 m.

ESA 1 sites in the 2019 ECBCP include:

- CBA1 forest patch 500 m buffer;
- Cliff buffers 500 m;
- Other sites required to complete the ecological corridor network;
- Best Design Corridor Sites - Planning units selected to meet 60% targets for vegetation types;
- Nodes used for corridor network analysis;
- Climate change refugia;
- Coastal functional zone; and

- Climate change resilience.

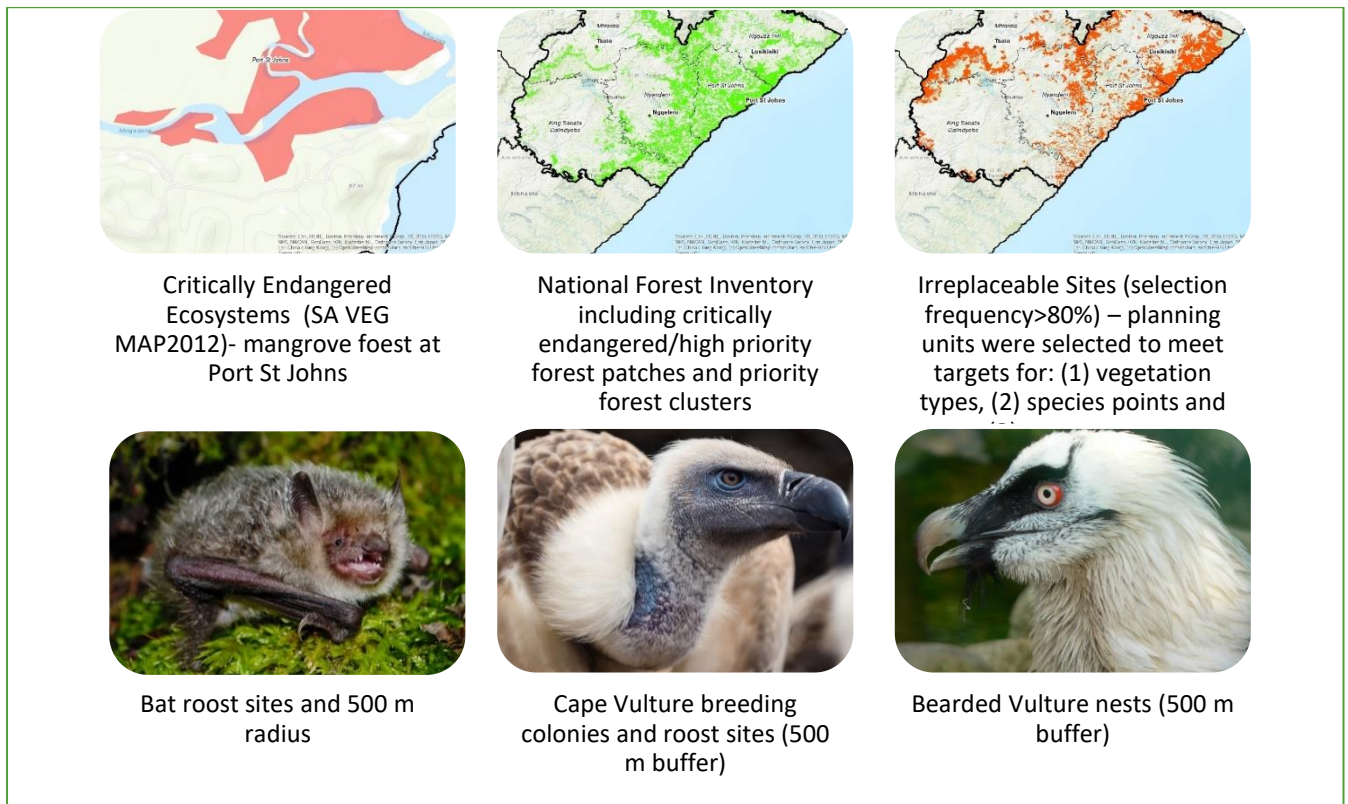


Figure 4: CBA1 features in the District (Eastern Cape Department: Economic Development, Environmental Affairs and Tourism, 2020)

ESA 2 sites in the 2019 ECBCP include areas here there is no natural habitat remaining that would have been designated as a CBA 1, CBA 2 or ESA1, it is designated as an ESA 2.

ONA indicates Other Natural Areas in the 2019 ECBCP, which are all remaining natural areas not included in the above CBA or ESA categories.

NNA denotes areas that are considered to have been irreversibly modified or impacted and which do not contribute to maintaining biodiversity or ecological processes. These include settlement areas, croplands, mining areas, forestry plantations, derived from the Eastern Cape 2017 Integrated Land Cover Map.

SDG 11: Sustainable Cities and Communities

Maintenance of green infrastructure in towns and settlements ensures the provision of flood attenuation, water and air filtration, and microclimate regulation, which can support traditional infrastructure (Bobbins and Culwick 2015). Ecosystem-based disaster risk reduction (Eco-DRR) aims to manage the environment (through sustainable management, conservation and restoration of ecosystems) in such a way that risk to communities is reduced (Estrella and Saalismaa 2013).

Examples include the protection of the wetland and watercourse buffers through protection of the 2019 ECBCP aquatic CBA 1 and 2 areas, which offers flood protection, reducing the potential costs and risks of flood damage to infrastructure.

2.2 Linking Biodiversity Protection and Management and Climate Action

In August 2021, the Intergovernmental Panel on Climate Change (IPCC) released its Assessment Report Six (AR6) Working Group I report, developed over 3 years and based on over 14 000 peer-reviewed papers, and this AR6 is a 'code red' for humanity. The current generation is regarded as the last generation that can effect changes to mitigate climate change. AR6 assesses that global warming has reached -1.1°C relative to pre-industrial temperature, approaching the dangerous thresholds of 1.5 and 2°C . The 1.5°C threshold, at which the most dangerous effects of climate change will be experienced, is likely to be exceeded as early as the 2030s under the Very High greenhouse gas (GHG) emissions scenario (Share Socioeconomic Pathways, SSP), even given the "best-effort" mitigation. The opportunity to mitigate climate change is limited and the widely held consensus is that we have left interventions too late. Based on AR6, Southern Africa is certain to become drastically warmer, and generally drier, under low mitigation futures. The Conference of the Parties (COP) 26, currently underway, is aiming to achieve SSP 1 1-9, which is based on net-zero emissions (no further funding for new coal, oil and gas projects by 2030, transition to renewable energy and electric vehicles), eventually resulting in negative carbon emissions (best effort mitigation trajectory) where CO_2 is removed from the atmosphere at the industrial scale. Even if global warming can be restricted to a $1.5-2^{\circ}\text{C}$ increase, at which changes such as sea-level rise become irreversible, in temperature, Southern Africa is projected to experience more intense heat waves and more frequent droughts. Southern Africa was classified as a climate change hotspot by the IPCC in 2018 as adaptation options are limited. Farmers may employ drought adaptation strategies such as shifting of planting date, reduction of maize cultivated area, planting drought-resistant varieties, crop diversification and intercropping. Under low mitigation, regional tipping points in Southern Africa may be reached during the 21st century, in terms of water security (potential 'day zero droughts' in key cities) and food security (potential collapse of the maize crop and cattle industry). The region is already water-stressed, and under higher temperatures and lower precipitation, multi-year droughts are possible with increased water stress and biodiversity tipping points may be reached. Bush encroachment into grasslands is anticipated to increase in eastern grasslands.

With COP 26 taking place 31 October-12 November 2021, and South Africa having revisited its Nationally Determined Contributions (NDCs) and associated carbon budget to 28% less than the previous NDCs, there is a growing imperative for all sectors of local government to address both climate change mitigation and

adaptation. Biodiversity management interventions and conservation planning must consider climate change projections and mitigation targets.

It is recognised that climate change adaptation measures, such as increasing natural carbon sinks, need to be implemented in conjunction with climate mitigation measures, or the decarbonization of the economy.

2.2.1 Climate change adaptation

Climate change adaptation is the “process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects” (IPCC, 2014).

There is scientific evidence for a changing climate in the District, associated with increased frequency of extreme events including drought, heavy rainfall events, coastal storm surges, strong winds and wildfires. Both inland and coastal biomes are vulnerable under various climate change scenarios. Thus, there is an urgency to implement measures to improve climate resilience to prevent the loss of threatened ecosystems or local extinction of species.

Early warning systems and disaster management planning can assist in mitigating climate risks, such as drought, flood and storm risks, particularly in the most vulnerable communities in the District. Implementing more resilient infrastructure and agriculture will reduce the potential impacts of climate change.

SDG 13: Climate Action

Ecosystem-based adaptation (EbA) is the use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people to adapt to the adverse effects of climate change. In the 2015 National Biodiversity Strategy and Action Plan, EbA “is shown to achieve multiple benefits in the context of sustainable development”.

EbA, which makes up over a third of South Africa’s adaptation measures under the NDCs, uses a variety of sustainable management, conservation and ecological restoration tools to enable adaptation to climate change. EbA aims to maintain and increase the resilience and reduce the vulnerability of ecosystems and people in the face of the adverse effects of climate change (CBD 2009). As part of EbA, climate change-integrated conservation strategies are conservation responses to climate change that are anticipatory and systematic in nature. They involve spatial and related types of conservation planning products that inform planning for heterogeneous ecosystem service corridors and protected areas that are resilient to climate change (Hannah et al. 2002). Where there is sufficient natural habitat remaining and sufficient connectivity in the natural landscape, biomes can effectively adapt and shift spatially in response to the changing climate. Islands of biodiversity can include isolated protected areas, small, naturally fragmented habitats, associated with distinctive geologic and topographic features, such as cliff faces, springs, or rocky outcrops, naturally insular ecosystems, or residual natural areas within degraded or transformed landscapes. While these islands of

biodiversity may offer some short and medium-term protection to biodiversity, in the longer term, the smaller climate envelope may restrict the adaptive capacity of species. There is often a lack of scientific knowledge and uncertainty around the impacts of climate change on these systems and species. Competing species may overwhelm the threatened species, and bush encroachment of grasslands and an increased threat of alien and invasive species may occur.

Biodiversity conservation strategies must seek to reduce fragmentation and improve the landscape-level connectivity of protected areas, ecosystems and habitats to improve resilience. In general, larger, contiguous protected areas across several climate gradients and the inclusion of various landscape features offer greater long-term protection to threatened ecosystems and species and more options for climate microrefugia.

The ESA 1 areas identified within the 2019 ECBCP are aimed, amongst others, at improving climate resilience, as landscape-level ecological corridors.

2.2.2 Climate Change Mitigation

Climate change mitigation refers to “human intervention to reduce the sources or enhance the sinks of greenhouse gases” (IPCC, 2014). Primary interventions to mitigate climate change include technological and behavioral changes that reduce reliance on fossil fuels and CO₂ emissions, which support achieving South Africa’s Nationally Determined Contributions (NDCs). However, responses to climate change, such as large-scale tree planting or renewable energy projects, may have an adverse impact on biodiversity in the District.

Conserving and restoring carbon-rich ecosystems can play a part in climate change mitigation. Ecosystem-based mitigation or ecosystem-based approaches to mitigation use ecosystems for their carbon storage and sequestration service to aid climate change mitigation. Emissions reductions are achieved through the creation, restoration and management of ecosystems (e.g. forest restoration, peat conservation) (Doswald and Osti 2011). Ecological restoration projects in forest and wetland ecosystems can provide climate change mitigation co-benefits such as water security and carbon sequestration. Protection of wetlands and associated buffer zones through aquatic CBA 1, 2 and ESA 1 areas in the 2019 ECBCP also mitigate the disturbance of the carbon-rich peat remains stored within the wetland (Grundling, 2004).

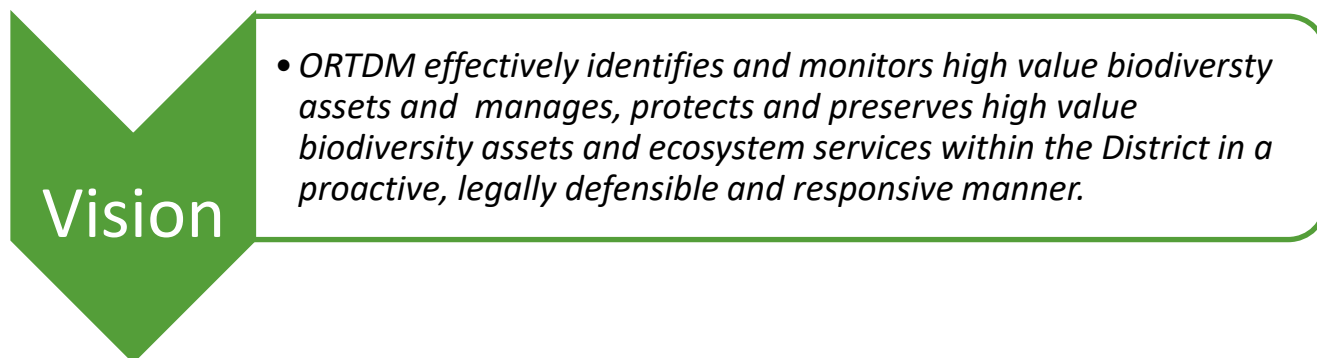
3 OBJECTIVES

The objectives of Phase 3 include:

- Presentation of criteria for prioritization of biodiversity sites within the District;
- Identification of high priority biodiversity sites for protection, management and restoration interventions;
- Targeted, long term conservation strategies for threatened ecosystems and species;
- Presentation of land-use guidelines for CBAs, ESAs and other high priority biodiversity sites; and
- Establishment of a long-term implementation, review and monitoring programme for the BSP.

3.1 Vision

The proposed vision for the ORTDM BSP is as follows:



3.2 Outcomes of BSP

This section outlines a set of 10 outcomes that were identified through the Phase 2 Situational Analysis (Figure 5). In addition, recommendations from the National Biodiversity Strategy and Action Plan 2015-2025 (Government of South Africa, 2015) have been incorporated where these are applicable at the District level. The 10 Outcomes address both proactive and reactive measures to support biodiversity protection and management in the District.

It is recognised that collaboration and coordination are required with other entities and external organisations, the provincial Departments, such as the Eastern Cape Parks and Tourism Authority (ECPTA), the Department of Water and Sanitation (DWS), the Department of Mineral Resources (DMR), and the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (DEDEAT). There may also be a need for consultation and partnerships with the national Department of Forestry, Fisheries and Environment (DFFE) and NGOs, and private individuals and entities in achieving these outcomes.

Outcome 1	•Expanding the Network of Protected Areas to Protect High Value Ecological Infrastructure
Outcome 2	•Limiting Threats and Transformation in High Priority Biodiversity Areas
Outcome 3	•Identification of Priority Areas for Ecological Restoration and Landscape Rehabilitation
Outcome 4	•Addressing Potential Planning Conflict Areas
Outcome 5	•Establishing and Maintaining Biodiversity Offset Area
Outcome 6	•Improving Biodiversity Compliance, Monitoring and Enforcement;
Outcome 7	•Establishing and strengthening networks to strengthen biodiversity management and conservatio
Outcome 8	•Training, Capacity Building, and Environmental Advocacy
Outcome 9	•Improving the knowledge base to support biodiversity conservation and management
Outcome 10	•Mainstreaming Biodiversity Norms and Standards

Figure 5: 10 BSP Outcomes

Outcome 1: Expanding the Network of Protected Areas to Protect High Value Ecological Infrastructure

The key output from the Phase 2 Situational Analysis was a set of refined CBA areas (CBA 1 and CBA 2) (also known as the refined 2019 ECBCP CBA layers) that must inform biodiversity protection and management interventions in the District. This document seeks to direct the resources and efforts of the District to these and other priority landscapes to best meet biodiversity protection targets and commitments and to ensure sustainable development into the future.

The refined 2019 ECBCP CBA layers are areas that represent the highest biodiversity value sites and should be prioritised. Conservation of CBAs is crucial, to maintain a natural or near-natural state in these areas and to ensure that biodiversity conservation targets are met.

Although 2019 ECBCP CBA areas will receive a level of statutory protection through the NEMA EIA regulations once the ECBCP is adopted by the MEC (through the Listing Notice 3 geographic areas), the refined 2019 ECBCP CBA layers should be considered in the review of the Eastern Cape Protected Areas Expansion Strategy (ECPAES).

The 2012 ECPAES is based on a multi-criteria prioritization method, based on existing systematic conservation planning products. Twenty priority areas were identified and mapped in the Province. These priority areas were grouped into i) areas where the ECPTA are leading implementation (Pondoland, QhorhaManubi, Greater Baviaanskloof, Katberg-Amathole, East London Coast - Sunshine Coast & St Francis); ii) areas where other

agencies are leading expansion (Mountain Zebra-Camdeboo, Greater Addo & North Eastern Cape Grasslands); areas where there are significant challenges to implementation or no immediate action is required (Oviston, Great Fish, Dwesa-Cwebe & Garden Route), and areas in which further investigation is required (Cathcart-Black Kei, Mount Ayliff, Mount Frere, Matatiele Wetlands, Indwe Grasslands & Commando Drift-Bedford) (Eastern Cape Parks and Tourism Agency, 2012).

The high precedence focus areas in ORTDM are:

- Mkhambathi- formal proclamation of at least an additional 2 000 ha of land into Mkhambathi Nature Reserve; and
- Silaka- Formal proclamation of at least 600 ha of land as a new Nature Reserve (the second phase of expansion will be inland to Mt Thesiger -anticipated to be prioritised post-2018);

Medium precedence focus area in ORTDM is:

- Lambasi- part of Wild Coast hiking trail, ~7935 ha, aiming for a documented community agreement/resolution to proclaim a Nature Reserve;

Low precedence/ opportunistic focus area in ORTDM is:

- Mtentu - Aiming for a documented community agreement/resolution to proclaim a Nature Reserve or Protected Environment, ~1980 ha.

Note that, according to ECPTA, the latest version of the ECPAES is dated 2016 (S. Gertze, pers comm) and that this data was not available at the time of compilation of this Report. There are expected to be significant differences between the 2012 and 2016 versions and further review and changes are possible.

Such protected areas expansion planning should feed into District State of Biodiversity reporting and respond to the urgency of the global biodiversity crisis.

Other effective area-based conservation measures (OECMs) are measures for the long-term, effective in-situ conservation of biodiversity outside of formally protected areas and are regarded as key to South Africa achieving the CBD 2030 Target 2. In addition to the suite of formally protected areas, biodiversity stewardship programmes should be promoted to build conservation partnerships around privately-owned land. Biodiversity stewardship is successful in participation by private and communal landowners in formal conservation. This is a particularly important approach where there are limited funds for acquiring or securing new protected areas. Important biodiversity assets and river catchment areas should be legally secured using a cooperative approach through the declaration of nature reserves and protected environments and biodiversity agreements.

From recent research into the breeding and feeding habits of the Cape Vulture, it is recommended that conservation efforts focus on mitigating threats mainly in subsistence farmland.

The knowledge base (Outcome 9) should inform the acquisition programme to increase the area under management and to improve the management effectiveness of areas identified for biodiversity conservation and the supply of ecosystem services. Management plans with appropriate biodiversity protection measures should be compiled and regularly updated for these areas.

A prioritisation matrix should be established, in consultation with ECPTA, to guide biodiversity interventions by the District, and support protected areas expansion and OECM plans (see Table 1) and should be guided by the Systematic Conservation Plan (SCP).

Table 1: Prioritisation Guide for OECMs (Ngubeni, et al., 2017)

CRITERIA	WEIGHTING	INDICATOR	RATING	SCORE	WEIGHTED SCORE
ECOLOGICAL IMPORTANCE	70				
Systematic Conservation Plan Classification	15	Critical Biodiversity Area	5		
		Priority Ecosystem Service Area	4		
		Ecosystem Support Area Ecological Corridor	3 1		
Systematic Conservation Plan (or site assessment) Vegetation Type Threat Status	25	Endangered/Critically Endangered	5		
		Threatened/Vulnerable	4		
		Vulnerable	3		
		Near-threatened	2		
Systematic Conservation Plan (or site assessment) Species Threat Status	25	Endangered/Critically Endangered	5		
		Threatened/Vulnerable	4		
		Vulnerable	3		
		Near-threatened	2		
Property Area	20	Super (>100ha)	5		
		Extra Large (51ha-100ha)	4		
		Large (16ha – 50ha)	3		
		Medium (5ha – 15ha)	2		
Systematic Conservation Plan Ecosystem Condition	15	Good	5		
		Intermediate	3		
		Degraded	0		
		Transformed	0		
B. GOVERNANCE	30.0				
SCP threat ranking	30	Yes (High)	5		
		Few (Medium)	3		
		None (Low)	0		
Land Use Planning Threats (zoning, SDF)	25	Yes (High)	5		
		None (Low)	0		
There is support for stewardship of this property/site	20	Yes	4		
		Partial	2		
		No	0		

CRITERIA	WEIGHTING	INDICATOR	RATING	SCORE	WEIGHTED SCORE
NGO activities within or close to the proposed property/site	5	Yes	4		
		No	2		
Management Requirements (Estimate Cost per ha based on WESSA data)	20	Low <R40 000	5		
		High >R40 000	0		
TOTAL WEIGHTED SCORE	100.0%				

This prioritisation tool can be adapted based on identified high-risk or hotspot areas in the District. Such a prioritisation tool allows for proactive monitoring and early interventions in these areas.

SDG 3: Good Health and Wellbeing

The inclusion of well-maintained and safe protected areas, conservation areas and open spaces in urban and rural planning improves the quality of the living environment and the health and wellbeing of communities. Parks can provide ecological protection, improve the immediate environment, and serve as recreational areas to encourage more active lifestyles.

The following performance indicators are proposed to assess the implementation of Outcome 1 of the BSP:

- Number of engagements with ECPTA, SANBI, BirdLife South Africa, the Wildlife and Environment Society of South Africa (WESSA), Endangered Wildlife Trust (EWT), Conservation International, DEDEAT, and DFFE.
- Establishing conservation targets for CBA1, unprotected, poorly protected, Critically Endangered and Endangered terrestrial ecosystems.
- % Improvement in formal protection of CBA1, unprotected, poorly protected, Critically Endangered and Endangered terrestrial ecosystems.
- Number of biodiversity stewardship agreements/ OECMs in CBA1, unprotected, poorly protected, Critically Endangered and Endangered terrestrial ecosystems.
- Formal proclamation of unproclaimed municipal and provincial nature reserves.
- % achievement of goals and indicators of biodiversity stewardship agreements in CBA1, unprotected, poorly protected, Critically Endangered and Endangered terrestrial ecosystems
- Number of biodiversity threat hotspots identified at quaternary catchment scale within the District
- Number of proactive monitoring inspections in high-risk sites
- Number of funding partners/ funding agreements to support land acquisition and management of natural habitat in threatened ecosystems

Outcome 2: Limiting Threats and Transformation in High Priority Biodiversity Areas

Targeted strategies should be established for key biodiversity threats in the District. Such key threats may include illegal dumping, illegal coastal development, alien invasive vegetation, pollution, ad hoc settlement and development, and illegal sand mining. Each strategy would need inputs from relevant Departments and provincial and national governments, and the affected local municipalities would require improved capacity to implement such strategies.

To support these target strategies, quantitative data on the level of threat is required to identify hotspots or threats of growing concern in the District.

These target strategies should include the coordination and integration of responses from various biodiversity partners. Task teams should be formed to deal with cross-cutting non-compliance issues effectively, such as in the coastal zone. These Task teams should include all relevant role players, to clarify who has the necessary resources or mandate to respond effectively and to ensure cooperative governance.

Existing patterns of land use and land cover change (LULCC) are compounding the existing and potential impacts of global warming and climate change, including loss of habitat and local extinctions of species. With the government's focus on providing housing and basic services in impoverished areas in the District, there is a need to track the cumulative impact of these large-scale projects on biodiversity. Land-use change is often more rapid in marginalised landscapes, such as former apartheid homelands. Patterns of LULCC can assist in identifying the relative spatial level of threat in specific target ecosystems. Spatial planning can help to manage competing demands on land (e.g., agriculture, afforestation, conservation, infrastructure, etc.).

LULCC significantly influence hydrological responses and water availability in catchments, for example, commercial afforestation decreases stormflows, reduces groundwater recharge, and alters streamflow patterns. Commercially afforested areas have higher evapotranspiration rates and afforestation is classified as a "streamflow reduction activity" according to the South African National Water Act, 1998 (Act No. 36 of 1998) (NWA).

GIS analysis was undertaken to assess where the current loss of natural habitat (transformation) has occurred in the refined CBA 1 areas in the District, using a transformation mask developed from the latest 2020 SANLC data. See Maps 7-12 in Appendix A showing in red the areas of transformation in the refined CBA 1 areas.

Bush/ woody encroachment represents a threat to grasslands, with the loss of open ecosystems and associated ecosystem services. An increase in trees in grassland systems can lead to loss of grass biomass, and subsequent changes in species community structure, such as loss of ground-dwelling birds, reptiles, small mammals, insectivores etc.

The following performance indicators are proposed to assess the implementation of Outcome 2 of the BSP:

- Number of research programmes on LULCC in specific threatened landscapes and high priority biodiversity areas.
- % transformation/ change in land use in high priority biodiversity areas
- Number of assessments of threats in high priority biodiversity areas

- Mapping of threats in high priority biodiversity areas
- Number of target response strategies in relation to biodiversity threats
- Number of alien and invasive species monitoring, control and eradication plans developed and updated
- Number of hectares of land cleared of alien and invasive species
- Number of targeted forum meetings with civic organisations, stakeholders and government departments
- Number of task teams for cross-sectoral threats
- Number of formal waste collection systems established
- Number of waste management projects along major tourist routes
- % improvement in water quality in high priority catchments

Outcome 3: Identification of Priority Areas for Ecological Restoration and Landscape Rehabilitation

Ecological degradation in the form of gully erosion and eroded lands is a key issue in the District. Five ecological degradation hotspots have been identified based on available GIS data (See Map 13 in Appendix A). Erosion leads to loss of valuable topsoil, sedimentation of rivers and dams and loss of biodiversity and livelihoods supported by the land.

A comparison of the extent of gully erosion in 2011 at Mzuzanto settlement in Mhlontlo Local Municipality (LM) (DAFF, 2011) and the extent of eroded land cover in 2020 (DFFE, 2020) (see Map 14 in Appendix A) reveals extensive land degradation. The gully erosion at Mzuzanto is located along the steeper drainage lines and hillsides. Another significantly affected area is at Nthushuntushu, west of Tsolo in the Mhlontlo LM.

The recently-launched UN Decade on Ecosystem Restoration 2021-2030 (www.decadeonrestoration.org) aims to prevent, halt and reverse the degradation of ecosystems, to help end poverty, combat climate change and prevent mass extinction. However, misguided interventions, such as mass tree planting, or ineffective restoration interventions may incur the opportunity cost of distracting from and retarding effective global responses to climate change. Ecological restoration projects may be implemented at the expense of valuable ecosystem services and lead to large scale losses of biodiversity and reduced streamflow, and further exacerbate social inequalities. Therefore, ecological restoration in affected areas must be context-relevant, evidence-based, and promotes resilience for the most vulnerable in society. There is a need to advocate for context-appropriate interventions in the District in light of the UN Decade of Ecosystem Restoration. In particular, attention should be paid to more cost-effective 'preventative measures rather than the more complex and expensive 'halt and reverse' (restore) component.

Ecological restoration may involve removal of vegetation (in the case of alien or invasive species), or planting of trees, depending on the local context. The single-minded focus on climate mitigation (the tree planting hype) may not support broader benefits to communities and may impact negatively on local biodiversity.

There is a need to address the drivers of ecological degradation rather than just applying projects and programmes of restoration. Local knowledge is key to understanding how the ecological degradation occurred

and possible solutions. In some cases, livestock may need to be excluded from areas undergoing restoration, and costs for fencing of sites may need to be factored into project budgets.

Ecological restoration has a role in safeguarding rare endangered and endemic species and improving resilience to climate change by increasing habitat area, reconnecting fragmented landscapes, improving ecosystem function and structural complexity at the landscape scale. The National and Provincial Extended Public Works Programmes (EPWP) can assist in the proactive planning, assisting planning and prioritisation of areas for restoration in ORTDM.

Approximately one-third of the District is classified as degraded areas, and in the King Sabata Dalindyebo (KSD) Local Municipality (LM), over 58% of the local municipality is affected by soil erosion in the form of dongas. Degraded ecosystems have the potential for restoration and rehabilitation, and areas of high biodiversity value or areas adjacent to these high value sites and protected areas (such as the eroded areas around Nduli and Luchaba nature reserves) should be prioritised for ecological restoration and landscape rehabilitation efforts.

The UN Task Force on Best Practices released 10 principles to guide restoration initiatives, which were released at the World Conservation Congress in Marseilles, France. These principles are linked to the SDGs and define good ecosystem restoration practices based on the feedback and lessons learned. These are (UN Environment Programme, 2021):

1. **Principle 1: Global Contribution:** Healthy ecosystems underpin all 17 Sustainable Development Goals (SDGs) and are essential for preventing climate catastrophe and mass extinction. Successful ecosystem restoration contributes to the achievement of the SDGs and brings together the goals of the three Rio Conventions by simultaneously tackling climate change, biodiversity loss and land degradation.
2. **Principle 2: Broad Engagement:** To ensure the long-term success of ecological restoration initiatives, those affected should be engaged throughout the process - in particular underrepresented and marginalized groups.
3. **Principle 3: Continuum of Activities:** Recognising that there is no one-size-fits-all approach to ecological restoration, but all projects should aim to achieve a net gain for biodiversity and ecosystem health while benefitting people.
4. **Principle 4: Benefits to Nature and People:** Ecosystem restoration activities, such as planting fruit trees in school gardens, should aim for a broad range of optimal benefits. Restoration should not lead to further degradation of the environment or the people that depend on it.
5. **Principle 5: Addressing Causes of Degradation:** Effective restoration needs to address the drivers of degradation, from the direct contributors, such as resource extraction, to indirect factors, like climate change.
6. **Principle 6: Knowledge Integration:** Ecosystem restoration should integrate various kinds of knowledge, including scientific data and indigenous and traditional knowledge and the experience of local communities. Best practices and innovations should also be captured, assessed and made widely available.

7. **Principle 7: Measurable Goals:** At the outset of ecological restoration projects, defined targets should be set - such as the number and variety of trees to be replanted, for example - as well as economic and social goals. All targets should be measured against a baseline to determine the impact of restoration.
8. **Principle 8: Local and Land/Seascape Contexts:** Restoration needs to be tailored to local contexts.
9. **Principle 9: Monitoring and Management:** Continuous monitoring is essential to ensure measures are progressing towards a project's goals. Restoration initiatives should therefore follow adaptive management practices and adjust interventions as needed.
10. **Principle 10: Policy Integration:** Several factors, including financing, can determine the long-term success of an initiative. Governance instruments, such as laws and policies, are critical to sustaining the revival of ecosystems.

The state the ecological restoration is aiming to achieve is a matter of societal needs and choice - the needs on the ground, not necessarily the “natural state”, i.e. restoring ecosystems forwards in time rather than backwards.

The District can access further knowledge resources and financing for ecological restoration via the Agricultural Research Council (ARC), DFFE, and the UN Environment Programme Ecological restoration hub.

The following performance indicators are proposed to assess the implementation of Outcome 3 of the BSP:

- Number of assessments of drivers of degradation within hotspot areas.
- Numbers of agricultural extension and training projects in hotspot areas.
- Number of engagements with affected communities on the desired state for ecological restoration projects.
- Number of ecological restoration projects completed within hotspot areas.
- Number of ecological restoration projects completed in the District.
- % achievement of goals and indicators of ecological restoration projects.
- % improvement in species diversity and ecological function in ecological restoration projects.
- Number of long-term ecological restoration monitoring projects within the hotspot areas.
- Hectares of land within the hotspot areas that have been rehabilitated/ restored to the desired state.
- Number of ecological restoration projects referenced in District and local municipal SDFs and IDPs.

Outcome 4: Addressing Potential Planning Conflict Areas

Ideally, the BSP should inform the hierarchy of biodiversity strategies and plans and feed into multi-sectoral planning and assessment processes such as EMFs, SDFs, IDPs, SEAs, and EIAs (Department of Environment, Forestry and Fisheries, n.d.).

There may be instances where previous SDF or IDP proposals, other development pressure points such as housing projects, agri-parks, infrastructure planning, nodes, development corridors, or development zones may potentially conflict with high priority biodiversity areas in the District.

Conflicts can be proactively avoided by considering the CBA categories in SDFs and IDPs and other land use planning policies. Ultimately, an EMF process should be initiated to identify Environmental Management Zones (EMZs) and appropriate/ inappropriate land uses within these EMZs. A Conservation EMZ can be established to add a further layer of protection to high-value biodiversity sites in the District.

One such example of potential conflicts in the District relates to high voltage distribution and transmission power lines close to vulture breeding colonies and supplementary feeding sites, leading to electrocution incidents. From Figure 6, much of the District forms part of the Bearded Vulture and Cape Vulture habitats. This points to the need to prioritise the proactive mitigation of power lines around vulture breeding colonies and supplementary feeding sites and identify hotspot sites within their range to implement measures to slow the effect of power lines on vultures. Vultures, and other large birds of prey, are also vulnerable to Wind Energy Facilities (WEFs).



Figure 6: Important vulture colonies and 10 km (Bearded Vulture) & 50km (Cape Vulture) buffers (Eastern Cape Department: Economic Development, Environmental Affairs and Tourism, 2020)

Monoculture agricultural land uses means large scale conversion of natural habitat with detrimental effects on diversity. Retaining natural and semi-natural edge vegetation and corridors in agricultural areas can support connectivity, foraging and roosting sites, and promote biodiversity and ecosystem service provision.

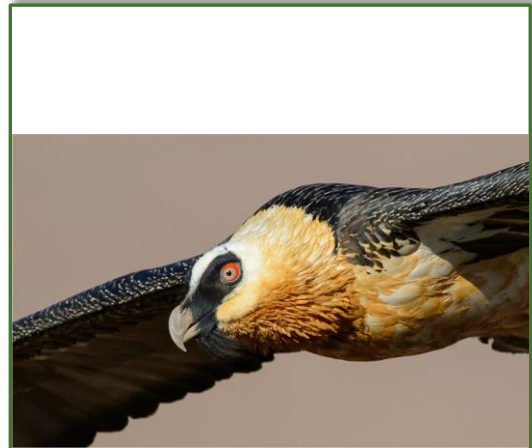
The following performance indicators are proposed to assess the implementation of Outcome 4 of the BSP:

- Compilation of District EMF.
- Number of references to District EMF in SDFs and IDPs.
- Number of Municipal projects screening in terms of District EMF.
- Number of bird of prey collision or electrocution incidents.

Outcome 5: Establishing and Maintaining Biodiversity Offset Areas

In terms of the mitigation hierarchy, biodiversity offsets should only be considered once all attempts have been made to avoid or mitigate the impacts of proposed developments. The 2019 ECBCP land-use guidelines specify that, in CBA 1 areas, if land-use activities are unavoidable and depending on expert opinion of the condition of the site, a Biodiversity Offset must be designed and implemented.

Approximately 96 km of the authorised N2 Wild Coast Toll Highway (N2WCTH) is a greenfields alignment, and the conditions of the Environmental Authorisation (EA) include the need for a Biodiversity Offset agreement. The affected areas were encapsulated at the time as the proposed Pondoland Park. However, to date, the Pondoland Park proposal has not been realised. The current proposed biodiversity offsets cater for approx. 39% of the originally proposed Pondoland Park area. These offset areas have not been included in the “Conservation Areas” for the 2019 ECBCP but are considered in the ORTDM BSP.



Wind Energy Facilities and the Bearded Vulture

The Bearded Vulture *Gypaetus barbatus* (Linnaeus 1758) is a Critically Endangered raptor that inhabits mountainous regions, nesting on high cliffs generally above 1,800 m above sea level (Heredia 1991, Bustamante 1996, Brown 1997, García et al. 2009).

The population of Bearded Vulture is declining, and species may become locally extinct. WEFs are regarded as a threat to the remaining Southern African population. The species is associated with a 10 km range around nesting sites (*pers. comm* Dr. Sonja Krüger). Therefore, WEFs within a 10 km buffer of these sites are considered inappropriate without detailed long-term monitoring in accordance with relevant best practice guidelines.

Of the 35 000 ha of N2WCTH biodiversity offsets acquired to date:

- 439 ha are located in the Port St Johns Local Municipality (LM) (~22 %); and
- 27 561 ha are located in Ingquza Hill LM (~78 %).

The ECPTA is implementing an 8-year programme for land acquisition and management and implementation plans related to the proposed N2WCTH biodiversity offsets. ECPTA has confirmed that a stewardship programme will allow for the declaration of these biodiversity offset sites as protected areas and will run concurrently with the rehabilitation program during the project life cycle. At the time of compilation of this report, further engagement was needed with the N2WCTH Stakeholders Forum regarding the status of the offsets and related management plans.

The contribution of the proposed N2WCTH biodiversity offset areas to the protection of biodiversity in the District is significant as approximately 28% of the refined CBA 1 areas fall within the proposed N2WCTH biodiversity offset areas (approx. 59 255.43 ha). Most of the proposed N2WCTH biodiversity offset areas fall within the coastal belt biome.

The proposed N2WCTH biodiversity offset areas will conserve the vegetation types listed in Table 2. As is evident, most of the vegetation types are classified as “Least Concern” in terms of the 2018 National Biodiversity Assessment (NBA). Although the offset areas will contribute significantly to the protection of the CBA 1 areas, further interventions are required in the District to target specific threatened ecosystems, such as Mthatha Moist Grassland (Endangered in the 2011 National List of Threatened Ecosystems). The primary contribution of the offset areas relates to the provision of protection to almost the entire extent of Mangrove Forests in the District (classified as Critically Endangered in terms of the 2011 National List of Threatened Ecosystems, not classified as Least Concern in terms of 2018 NBA).

Table 2: Contribution of N2WCTH biodiversity offset areas to the protection of Threatened Ecosystems in the District

Threatened Ecosystems	Threatened ecosystem name	Ecosystem Threat Status	Conservation target for each vegetation type	Extent (% of total in ORTDM) included in Offset Areas (combined)
Mangrove Forest	Mangrove Forest	EN	100%	90%
Pondoland-Ugu Sandstone Coastal Sourveld	Pondoland-Ugu Sandstone Coastal Sourveld	LT	25%	40%
Subtropical Estuarine Salt Marshes	Subtropical Estuarine Salt Marshes	LT	24%	37%
Scarp Forest	Scarp Forest	LT	40%	27%

Threatened Ecosystems	Threatened ecosystem name	Ecosystem Threat Status	Conservation target for each vegetation type	Extent (% of total in ORTDM) included in Offset Areas (combined)
Subtropical Coastal Lagoons	Subtropical Coastal Lagoons	LT		10%
Subtropical Dune Thicket	Subtropical Dune Thicket	LT	20%	9%
Transkei Coastal Belt	Transkei Coastal Belt	LT	25%	3%

The following performance indicators are proposed to assess the implementation of Outcome 5 of the BSP:

- Number of engagements with the N2WCTH Stakeholders Forum regarding the status of the offsets and related offset management plans.
- Number of Biodiversity Offset Management Plans and programmes established in high priority biodiversity areas.
- Review and gap analysis of Biodiversity Offset Management Plans.
- % implementation of Biodiversity Offset Management Plans and programmes in high priority biodiversity areas.
- Number of community engagements in Biodiversity Offset Areas.

Outcome 6: Improving Biodiversity Compliance, Monitoring and Enforcement

Threats to biodiversity in the District include activities such as illegal hunting or poaching, excavation and use of unlicensed borrow pits, illegal dumping of waste, pollution, illegal coastal developments and illegal sand mining. Addressing these incremental threats requires increased vigilance, compliance monitoring and enforcement. Lack of resources and capacity may hinder environmental compliance monitoring and enforcement. To effectively implement biodiversity compliance, monitoring and enforcement (CME) within resource constraints, the District needs to prioritise areas for intervention, both in terms of proactively preventing non-compliance in these areas and responding to non-compliance.

In addition, social development generally has a higher priority than environmental governance and relationships between communities and government institutions may be strained. The lack of biodiversity CME may threaten the high value biodiversity sites in the District.

The key to improving biodiversity CME is support for local municipalities to facilitate the appointment of identified staff as Environmental Management Inspectors (EMIs). Although the mandate of local government is limited by the Part B of Schedule 4 and 5 of the Constitution, recent case law has shown that local municipal EMIs can enforce all matters that are reasonably necessary for, or incidental to, the effective performance of

the municipality's functions in managing parks, planning and natural resources with the Municipality. Coordination of the actions and responses of Law Enforcement Officers (LEOs) and EMIs can support biodiversity CME.

The EWT has recently piloted a self-governance, community-centred environmental compliance enabling system within areas of ecological significance in KZN. Environmental Compliance Officer (ECO) training was provided to a local community representative per site and compliance assessments were undertaken using an "Environmental Legislation Compliance Assessment app" to identify, categorise, and map local issues, such as illegal development along watercourses and illegal and mining. Outcomes of assessments and reports were collated and presented to relevant mandated authorities, where responses were determined and initiated. Such a local-driven programme could be established within the District to upskill local ECOs to support biodiversity compliance, monitoring and enforcement. The findings of the local ECOs can be used to prioritise the time and resources of the local EMIs.

Failure of biodiversity CME can be linked with segmented management of the environment with little integration between Departments and sectors involved in land use planning i.e. silo approach or horizontal institutional fragmentation. This fragmentation undermines the ability of the District to implement and enforce environmental regulations. Environmental enforcement activities are often centred at the local government level around land use management and building regulations. Improved cooperative governance between government departments and institutions and within these departments and institutions is required.

A centralised biodiversity CME coordination department should be considered at the local government level to support biodiversity CME. Due to the pace of law reform relating to biodiversity CME, EMIs need to have ongoing training in terms of applicable environmental legislation to ensure that their actions are legally defensible and comprehensive (Department of Environment, Forestry and Fisheries, 2014). This relates to both current and historical legislation that may relate to particular activities and requires access to consolidated legislation which reflects all relevant legislative amendments.

A centralised user-friendly portal for the submission of complaints online with specific categories for the nature of complaints could improve the effectiveness of the complaints handling process. Categories such as "water pollution", "illegal dumping of waste", "clearing of protected plants", etc. could be incorporated to ensure that the complaints are redirected to the appropriate agency. This portal could be linked to an "App" for use by residents on mobile cellphones or other mobile devices. Specific alien and invasive species monitoring projects can be set up through the iNaturalist app to identify hotspots.

The draft national Compliance Monitoring and Enforcement Strategy highlights the need for a centralised real-time EMI information system to build a profile of the regulated sectors, entities, activities and individuals (Department of Environment, Forestry and Fisheries, 2014). DEFF has developed a workflow tracking system (NCEIS) for use by EMIs based at the national office, with the intention that it will be expanded to the provinces, and where appropriate, the parks. This system has the potential to be expanded to meet all the needs of the EMIs (Department of Environment, Forestry and Fisheries, 2014). It is anticipated that such a centralised EMI Information system would assist the District in the identification of repeat offenders.

Performance indicators within ORTDM should be guided by the objectives of the District Environmental Management Plan and should allow for more effective reporting in terms of the National Environment Compliance and Enforcement Report (NECER).

The following performance indicators are proposed to assess the implementation of Outcome 6 of the BSP:

- Number of incidents relating to illegal hunting or poaching, excavation and use of unlicensed borrow pits, illegal dumping of waste, removal of or damage to Threatened or Protected Species (TOPS) listed species, pollution, illegal coastal developments and illegal mining.
- Average time taken for the response to queries and complaints
- Establishing the framework for a centralised real-time EMI information system
- Establishing online complaints and query portal with a mobile application.
- The number of complaints/ cases/ queries tracked.
- Number of compliance inspections conducted.
- Number of enforcement actions undertaken for non-compliance with environmental legislation.
- Number of engagements with the national Department regarding delegating CME functions.
- Number of CME functions delegated to EMIs.
- Number of certified training sessions attended by active EMIs.
- Number of coordinated responses by LEOs and EMIs.
- Number of staff actively involved in biodiversity CME.
- Number of prosecutions for environmental offences.
- Establishment of Coastal Management Unit.
- Review of District CMP.
- Number of references to the District BSP, EMF and CMP in IDPs or SDFs.
- Establishment of regional Service Level Agreements with South African Police Services (SAPS) and National Prosecuting Authority (NPA).

Outcome 7: Establishing and strengthening networks to strengthen biodiversity management and conservation

The effectiveness of biodiversity conservation and management strategies depends upon credible, recent biodiversity research and data. Partnerships that support biodiversity research in the District, particularly for threatened ecosystems and species, should be promoted to support the integration of biodiversity data into District policies and plans. Such partners may include non-governmental organisations, such as the EWT,

WESSA, and BirdLife South Africa, academic institutions, such as Rhodes University and the Nelson Mandela Bay University, the South African Environmental Observation Network (SAEON) and conservation groups. Such partnerships to support biodiversity conservation and management are particularly relevant given the economic impacts of COVID-19 and associated budget cuts in local government and conservation agencies.

SDG 17: Partnerships for the Goals

The BSP aims to identify potential biodiversity partners to support the work of ORTDM. These can include non-governmental organisations, academic institutions and government partners. This is enshrined in Outcome 7: Establishing and strengthening partnerships to strengthen biodiversity management and conservation.

Spatial planning processes should be transparent, participatory, and iterative, to ensure the needs of local and Indigenous peoples are understood and incorporated.

Conservation planning and biodiversity management interventions must anticipate potential long-term shifts in important biodiversity areas and shifts in livelihood strategies / extensive food production efforts. The consideration of the latest climate change data and research requires closer collaboration with climate change science centres and research institutes, such as climate science programmes at academic institutions, the Global Change Institute and the African Climate and Development Initiative (ACDI) at the University of Cape Town.

The partnership should be strengthened with non-profit organisations (NPOs) or NGOs such as the EWT, the Wildlands Trust, WESSA and Conservation International. Such organisations are generally more agile and flexible in terms of adapting to changes. Ongoing communication with stakeholders and funders and partners is key to strengthening these partnerships over time.

The following performance indicators are proposed to assess the implementation of Outcome 7 of the BSP:

- Number of engagements with biodiversity partners (ECPTA, SANBI, BirdLife South Africa, WESSA, EWT, Conservation International, DEDEAT, and DFFE).
- Number of District Biodiversity Forum meetings.
- Number of District Biodiversity Forum resolutions.
- Number of collaborative projects with biodiversity partners.

Outcome 8: Training, Capacity Building, and Environmental Advocacy

Outcome 8 is supported by Outcome 7, as the work of NPOs and NGOs through improving environmental literacy, awareness campaigns, education programmes, internships, and learning opportunities.

Support for community-based adaptation, encouraging community-led processes, based on communities' priorities, needs, knowledge, and capacities, allows for the empowerment of people to plan for and cope with the impacts of climate change (IIED 2009).

There is a need for targeted communication, education and awareness initiatives and programmes to promote compliance with biodiversity legislation and policy and the conservation of biodiversity in the District. The awareness of the value of biodiversity is enhanced through more effective coordination and messaging. It is only through a strategic approach to environmental education and advocacy that the underlying societal values - and hence political priorities - can gradually align with biodiversity protection. Complex biodiversity information must be translated into more accessible information for dissemination to wider audiences as part of the Environmental Advocacy Strategy. Environmental advocacy should make use of political 'windows of opportunity' such as floods, periodic media interest, or changes in government to make the case for biodiversity protection.

One of the means to improve environmental awareness is through the provision of appropriate informative and regulatory signage along the coastline and at high-priority biodiversity sites.

An inclusive District Biodiversity Forum and circulation of regular newsletters relating to activities of the ORTDM and benefits of biodiversity could improve awareness of the role of the Municipality and encourage participation in biodiversity protection, citizen science initiatives and enable reporting of non-compliances.

The following performance indicators are proposed to assess the implementation of Outcome 8 of the BSP:

- Compilation of District Environmental Advocacy Strategy to be updated annually
- Number of internal Municipal biodiversity awareness-raising and training programmes or events
- Number of posts and articles relating to biodiversity on District and local municipality websites
- Number of social media portals for distribution of information/issues/awareness-raising
- Number of environmental educators per local municipality.
- Number of queries relating to development suitability, BSP, EMP, IWMP and other environmental planning tools.
- Number of appropriate informative and regulatory signs along the coastline and at high-priority biodiversity sites.
- Number of school outreach programmes, including coordinated programmes with partners
- Number of awareness-raising events, including coordinated events with other stakeholders
- Number of individuals who participated in environmental training or awareness-raising programmes or events

Outcome 9: Improving the knowledge base to support biodiversity conservation and management

Effective knowledge foundations, based on accurate and current data, including indigenous knowledge (such as ethnobotanical or traditional medicinal uses) and citizen science, need to be established and maintained to support biodiversity planning and decision-making in the District. This knowledge base should be built on ongoing research and monitoring and aim to highlight ecosystems providing critical ecosystem services as high-value ecological infrastructure. In addition, areas of high sensitivity, where certain types of development are prohibited, or 'no go' areas, should be identified. The status of species and ecosystems should be regularly monitored and assessed. Geographic priority areas for the management, conservation and restoration of biodiversity assets and ecological infrastructure should be identified based on the best available science. Collaboration opportunities with academic institutions should be investigated. Importantly, the knowledge base should be accessible to decision-makers, developers and researchers.

The NDP 2030 calls for a set of indicators for natural resources, accompanied by the publication of annual reports on the health of identified resources to inform policy. On this basis and given the high level of endemism in the District, a State of Biodiversity Report should be compiled for the District, outlining key biodiversity trends, emerging threats and progress towards achieving the targets outlined in the BSP. This State of Biodiversity Report should be updated on an annual basis and be used to update the BSP and systematic conservation planning and to redirect conservation efforts as required. In addition, and to inform the State of Biodiversity Report, species-specific Biodiversity Management Plans (BMPs) should be compiled in terms of the NEM: BA for TOPS in the District. In terms of the Act, a BMP can be developed by any person, organ of state desiring to contribute to the management of biodiversity for any indigenous or migratory species.

Further, the progress towards the achievement of goals and objectives of species and habitat monitoring programmes should be reported to assess the quality and level of implementation of these programmes.

Where gaps are identified in the spatial data to support biodiversity planning, these gaps should be addressed through quality-controlled records and the relevant biodiversity datasets updated accordingly. Large-scale monitoring surveys, through collaboration with biodiversity partners (see Outcome 7), can support the improved management and protection of threatened species and ecosystems.

Site-specific ground-truthing surveys can provide up to date information on high-value sites, however, these require a large commitment in terms of personnel and resources, and there may be delays in converting the field data to spatial data for planning and decision-making purposes. Field surveys should be supplemented with remote sensing data, which can provide real-time data on high-value sites and collect multi-scale biodiversity data to evaluate the effectiveness of conservation strategies. Remote sensing data can provide early warning signals related to changes in habitats that require urgent intervention.

Monitoring needs precise, and long-term data collection and analysis to monitor the changes at the different spatial and time scales. Landscape-scale data is of prime importance, and drones can be used to track the extent of the impact of alien and invasive species, the extent of habitats for target species, and threats. The use of drones in South Africa is regulated through the Civil Aviation Regulations, Part 101 - Remotely Piloted Aircraft Systems ("Part 101") in effect from 1 July 2015. Such large-scale, real-time monitoring surveys could

allow for prioritisation of hotspots within the District, proactive monitoring of high-risk sites, and quantification and mapping of the impacts of non-compliance.

The following performance indicators are proposed to assess the implementation of Outcome 9 of the BSP:

- Compile District State of Biodiversity Report to be reviewed on an annual basis.
- Number of Biodiversity Management Plans implemented for TOPS listed species.
- % achievement of goals and objectives of data collection and monitoring programmes.
- Number of priority gaps in spatial data addressed.
- Number of biodiversity datasets updated.
- Number of quality-controlled records added to address priority gaps.
- Number of large-scale, real-time monitoring surveys.
- Number of projects aimed at community-based natural resource management.
- Number of funding partners/ funding agreements to support biodiversity research, policy and planning.

Outcome 10: Mainstreaming Biodiversity Norms and Standards

To enhance and conserve biodiversity in the District, there is a need for the development of relevant policies, strategies and legislation. This BSP should be implemented consistently across the District and embedded into municipal development planning and monitoring to promote a sustainable pattern of development. The overall level of municipal environmental compliance should be improved.

To this end, the updated, District Environmental Policy and EMP, which references the Integrated Waste Management Plan (IWMP), CMP and BSP, should be compiled and included as part of all internal project contract documentation, to clarify municipal environmental norms and standards. ISO certified Environmental Management Systems could be pursued to further improve the image of the District. This would allow for mainstreaming of biodiversity protection across line departments and increase accountability for compliance throughout the Municipality. In addition, commitment to such a cross-cutting Environmental Policy could improve working relationships and coherence between line functions.

The following performance indicators are proposed to assess the implementation of Outcome 10 of the BSP:

- Implementation of District EMF
- Number of local municipalities with ISO certified Environmental Management Systems
- Review of District EMP
- Review of BSP
- Number of contracts/ tenders where BSP and EMP were referenced in RFP

- Number of contract documents including reference to BSP and EMP
- Number of plans into which EMF and BSP land-use guidelines are embedded, including SDFs, IDPs and land-use schemes
- Number of internal biodiversity awareness-raising and training programmes or events
- Number of environmental non-compliances or complaints related to municipal projects

4 BIODIVERSITY LAND MANAGEMENT GUIDELINES

From the 2019 ECBCP, a set of desired state management objectives have been established for each CBA map category in the District. See Table 3. Refer also to the Matrix of recommended land use management guidelines for Terrestrial based activities in the Eastern Cape in the 2019 ECBCP.

Table 3: 2019 ECBCP CBA Map Category Management Objectives (Eastern Cape Department: Economic Development, Environmental Affairs and Tourism, 2020)

CBA Map Category	Desired State	Land management objective
Protected Areas	Natural	Protected Areas are managed through Protected Area Management Plans and are therefore not managed through the ECBCP2019 or the ORTDM BSP.
Critical Biodiversity Area 1	Natural	<p>Maintain in a natural state (or near-natural state if this is the current condition of the site) that secures the retention of biodiversity pattern and ecological processes:</p> <p>For areas classified as CBA1, the following objectives must apply:</p> <ul style="list-style-type: none"> · Ecosystem and species must remain intact and undisturbed; · Since these areas demonstrate high irreplaceability, if disturbed or lost, biodiversity targets will not be met; · Important: these biodiversity features are at, or beyond, their limits of acceptable change. <p>If land-use activities are unavoidable in these areas and depending on expert opinion of the condition of the site, a Biodiversity Offset must be designed and implemented.</p>
Critical Biodiversity Area 2	Natural	<p>Maintain in natural (or near-natural state if this is the current condition of the site) that secures the retention of biodiversity pattern and ecological processes:</p> <p>For areas classified as CBA2, the following objectives must apply:</p> <ul style="list-style-type: none"> · Ecosystem and species must remain intact and undisturbed; · There is some flexibility in the landscape to achieve biodiversity targets in these areas. It must be noted that the loss of a CBA2 area may elevate other CBA 2 areas to a CBA 1 category. · These biodiversity features are at risk of reaching their limits of acceptable change. <p>If land-use activities are unavoidable in these areas and depending on the condition of the site, set-aside areas must be designed in the layout and implemented. If site-specific data confirms that biodiversity is significant, unique and/or highly threatened or that a Critically Endangered or Endangered species is present, Biodiversity Offsets must be implemented.</p>

CBA Map Category	Desired State	Land management objective
Ecological Support Area 1	Functional	<p>Maintain ecological function within the localised and broader landscape. A functional state in this context means that the area must be maintained in a semi-natural state such that ecological function and ecosystem services are maintained.</p> <p>For areas classified as ESA1, the following objectives apply:</p> <ul style="list-style-type: none"> · These areas are not required to meet biodiversity targets, but they still perform essential roles in terms of connectivity, ecosystem service delivery and climate change resilience. · These systems may vary in condition and maintaining function is the main objective, therefore: <ul style="list-style-type: none"> ○ Ecosystems still in the natural, near-natural state should be maintained. ○ Ecosystems that are moderately disturbed/degraded should be restored.
Ecological Support Area 2	Functional	<p>Maintain current land use with no intensification</p> <p>For areas classified as ESA2, the following objectives apply:</p> <ul style="list-style-type: none"> · These areas have already been subjected to severe and/or irreversible modification · These areas are not required to meet biodiversity targets, but they may still perform <i>some</i> function with respect to connectivity, ecosystem service delivery and climate change resilience · Objective is to maintain the remaining function, therefore: <ul style="list-style-type: none"> ○ Areas should not undergo any further deterioration in ecological function. ○ Opportunities to change land-use practices to improve ecological function (i.e., cultivation agriculture to livestock grazing agriculture) are desirable in ESA2 areas.
Other Natural Areas and No Natural Habitat Remaining	Production	No desired state or management objective is provided for ONA or NNR.

5 IMPLEMENTATION MONITORING, REVIEW AND AMENDMENTS

The loss or modification of natural environments due to ongoing LULCC, changing conservation priorities in the light of climate change, new findings from biodiversity research and updated biodiversity data may impact the identified network of CBAs and ESAs. This highlights the importance of long term monitoring, evaluation and revision of the BSP.

It is recognised that mainstreaming biodiversity targets and commitments into IDPs and SDF is critical to ensuring sustainable development at the local government level.

All government and municipal plans (including IDPs and SDFs) are monitored, evaluated and updated to:

- Establish implementation success of the BSP;
- Measure effectiveness of the BSP in terms of biodiversity conservation objectives;
- identify and resolve challenges by developing response strategies; and
- Incorporate new data, research and knowledge.

The guidelines for bioregional plans stipulate that plans be monitored and reviewed on at least a five-yearly cycle. It is therefore recommended that formal monitoring, reviewing and updating of the ORTDM BSP takes place to ensure that the CBA Map and associated maps remain current and useful to land use planning and decision-making.

The ORTDM are primary responsible agents for the implementation, monitoring, reviewing of the BSP. The following activities will be undertaken by ORTDM:

- Monitor implementation of the ORTDM BSP in relation to the performance indicators listed for each BSP outcome;
- Awareness-raising through the District Biodiversity Forum, municipal Project Steering Committees and IDP Forums;
- Review of, and, if necessary, revision of, BSP at least every five years; and
- Update the BSP at least every five years.

ORTDM will, in consultation with its biodiversity partners, monitor, and evaluate, the implementation of the BSP in terms of:

- Monitoring implementation of the BSP through the performance indicators listed for each BSP outcome;
- Ensuring review and update of the ORTDM BSP when necessary;
- Gathering of data on the performance monitoring indicators per BSP Outcome; and
- Compiling a monitoring and evaluation report for the ORTDM BSP implementation.

The BSP, once finalised and adopted, should be incorporated into the performance management system and Key Performance Indicators (KPIs) of ORTDM. To ensure that the BSP is meaningful and effective, the S.M.A.R.T principle (SPECIFIC, MEASURABLE, ATTAINABLE, RELEVANT, TIME-BOUND) has been applied when defining

indicators under each outcome. High-level indicators have been suggested and greater detail should be provided in specific strategies and project plans, and in the Service Delivery & Budget Implementation Plans (SDBIPs).

6 PRIORITY INTERVENTION PROJECTS AND IMPLEMENTATION PLAN

PRIORITY INTERVENTION PROJECTS	AREA	RESPONSIBILITY	TIMEFRAME	POTENTIAL FUNDING SOURCES
BSP Outcome 1: Expanding the Network of Protected Areas to Protect High Value Ecological Infrastructure				
Establish District Biodiversity Forum, to include biodiversity partners (ECPTA, SANBI, BirdLife South Africa, WESSA, EWT, Conservation International, DEDEAT, and DFFE)	All	ORTDM	2022/ 2023	ORTDM, National Treasury, DFFE
Facilitate quarterly District Biodiversity Forum meetings	All	ORTDM	Quarterly	ORTDM, National Treasury, DFFE
Establishing conservation targets for CBA1, unprotected, poorly protected, Critically Endangered and Endangered terrestrial ecosystems	CBA1, unprotected, poorly protected, Critically Endangered and Endangered terrestrial ecosystems	ORTDM, ECPTA, SANBI, DFFE	2022, to be updated annually	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Establish formally protected areas in CBA1, unprotected, poorly protected, Critically Endangered and Endangered terrestrial ecosystems	CBA1, unprotected, poorly protected, Critically Endangered and Endangered terrestrial ecosystems	ORTDM, ECPTA, SANBI, DFFE	2030	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Identify and establish OECMs, including Biodiversity Stewardship Agreements, in CBA1, unprotected, poorly protected, Critically Endangered and Endangered terrestrial ecosystems	OECM and Biodiversity Stewardship Sites	ORTDM, ECPTA, SANBI, DFFE	2022/ 2023	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Formal proclamation of unproclaimed municipal and provincial nature reserves	Unproclaimed municipal and provincial nature reserves	ORTDM, ECPTA, SANBI, DFFE	2030	ORTDM, National Treasury, DFFE, ECPTA, SANBI

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PRIORITY INTERVENTION PROJECTS	AREA	RESPONSIBILITY	TIMEFRAME	POTENTIAL FUNDING SOURCES
Monitoring of OECMs, including Biodiversity Stewardship Agreements	OECM and Biodiversity Stewardship Sites	ORTDM, ECPTA, SANBI, DFFE	2030	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Identification and mapping of biodiversity threat hotspots at quaternary catchment scale	Biodiversity Threat Hotspots	ORTDM, ECPTA, SANBI, DFFE, DEDEAT, DMR, DWS	2022/ 2023, to be updated annually	ORTDM, National Treasury, DFFE, ECPTA, SANBI, DEDEAT
Undertake proactive monitoring inspections in biodiversity threat hotspots	Biodiversity threat hotspots	ORTDM and LM EMIs, ECPTA, DEDEAT, DMR, DWS	Monthly, or in response to threat	ORTDM, National Treasury, DFFE, ECPTA, SANBI, DEDEAT
Establish partnerships and funding agreements with funding partners to support land acquisition and management of natural habitat in threatened ecosystems	CBA1, unprotected, poorly protected, Critically Endangered and Endangered terrestrial ecosystems	ORTDM, ECPTA	2022/ 2023	ORTDM, National Treasury, DFFE, ECPTA, SANBI, DEDEAT
BSP Outcome 2: Limiting Threats and Transformation in High Priority Biodiversity Areas				
Implement and support research programmes on LULCC in specific threatened landscapes and high priority biodiversity areas	CBA1, unprotected, poorly protected, Critically Endangered and Endangered terrestrial ecosystems	ORTDM, ECPTA, SANBI, DFFE, DEDEAT, academic institutions, SAEON and other research partners	2022/ 2023	ORTDM, National Treasury, DFFE, ECPTA, SANBI, NRF
Monitor transformation/ change in land use in high priority biodiversity areas	CBA1, unprotected, poorly protected, Critically Endangered and Endangered terrestrial ecosystems	ORTDM, ECPTA, SANBI, DFFE, DEDEAT, academic institutions, SAEON and other research partners	2022/ 2023, to be updated annually	ORTDM, National Treasury, DFFE, ECPTA, SANBI, NRF

OR TAMBO BIODIVERSITY SECTOR PLAN- DRAFT BIODIVERSITY SECTOR PLAN

PRIORITY INTERVENTION PROJECTS	AREA	RESPONSIBILITY	TIMEFRAME	POTENTIAL FUNDING SOURCES
Assess the level of threat in high priority biodiversity areas	CBA1, unprotected, poorly protected, Critically Endangered and Endangered terrestrial ecosystems	ORTDM, ECPTA, SANBI, DFFE, DEDEAT, academic institutions, SAEON and other research partners	2022/ 2023, to be updated annually	ORTDM, National Treasury, DFFE, ECPTA, SANBI, NRF
Mapping of threats in high priority biodiversity areas	CBA1, unprotected, poorly protected, Critically Endangered and Endangered terrestrial ecosystems	ORTDM, ECPTA, SANBI, DFFE, DEDEAT, academic institutions, SAEON and other research partners	2022/ 2023, to be updated annually	ORTDM, National Treasury, DFFE, ECPTA, SANBI, NRF
Establish target response strategies in relation to biodiversity threats	CBA1, unprotected, poorly protected, Critically Endangered and Endangered terrestrial ecosystems	ORTDM, ECPTA, DEDEAT, DMR, DWS	Monthly, or in response to threat	ORTDM, National Treasury, DFFE, ECPTA, SANBI, DEDEAT
Develop/ update alien and invasive species monitoring, control and eradication plans in high priority biodiversity areas	CBA1, unprotected, poorly protected, Critically Endangered and Endangered terrestrial ecosystems	ORTDM, DWS, EPWP, DEDEAT, ECPTA	2022/ 2023, to be updated annually	ORTDM, National Treasury, DFFE, ECPTA, SANBI, EPWP
Monitor extent of land cleared of alien and invasive species	All	ORTDM, DWS, EPWP, DEDEAT, ECPTA	Quarterly	ORTDM, National Treasury, DFFE, ECPTA, SANBI, EPWP
Facilitate targeted District Biodiversity Forum meetings with civic organisations, stakeholders and government departments	All	ORTDM	2022/ 2023	ORTDM, National Treasury, DFFE

PRIORITY INTERVENTION PROJECTS	AREA	RESPONSIBILITY	TIMEFRAME	POTENTIAL FUNDING SOURCES
Establish Task Teams for cross-sectoral threats	All	ORTDM, ECPTA, DEDEAT, DMR, DWS	In response to threat	ORTDM, National Treasury, DFFE, ECPTA, SANBI, DEDEAT
Establish formal waste collection systems	All	ORTDM	2022/ 2023	ORTDM, National Treasury, DFFE, ECPTA, SANBI, DEDEAT
Establish waste management projects along major tourist routes	Major tourist routes	ORTDM	2022/ 2023	ORTDM, National Treasury, DFFE, ECPTA, SANBI, DEDEAT
Monitor water quality in high priority catchments	High priority catchments	DWS	Monthly	DWS, National Treasury, DFFE, ECPTA, SANBI, DEDEAT
BSP Outcome 3: Identification of Priority Areas for Ecological Restoration and Landscape Rehabilitation				
Assessment drivers of degradation within hotspot areas	5 Restoration Hotspot Areas	ORTDM, ECPTA, SANBI, DFFE, DEDEAT, academic institutions, SAEON and other research partners, ARC	2022/ 2023, to be updated annually	ORTDM, National Treasury, DFFE, ECPTA, SANBI, NRF
Establish agricultural extension and training projects in hotspot areas	5 Restoration Hotspot Areas	ECPTA, DEDEAT, DRDAR, ARC	2022/ 2023, to be updated annually	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Facilitate engagements with affected communities on the desired state for ecological restoration projects	5 Restoration Hotspot Areas	ORTDM, ECPTA, DEDEAT, DRDAR, ARC	2022/ 2023	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Implementation of ecological restoration projects within hotspot areas	5 Restoration Hotspot Areas	ORTDM, ECPTA, DEDEAT, DRDAR, ARC	2022/ 2023	ORTDM, National Treasury, DFFE, ECPTA, SANBI

PRIORITY INTERVENTION PROJECTS	AREA	RESPONSIBILITY	TIMEFRAME	POTENTIAL FUNDING SOURCES
Monitoring of achievement of goals and indicators, including species diversity and ecological function, in ecological restoration projects	5 Restoration Hotspot Areas	ORTDM, ECPTA, SANBI, DFFE, DEDEAT, academic institutions, SAEON and other research partners, ARC	Quarterly	ORTDM, National Treasury, DFFE, ECPTA, SANBI, NRF
Establish long term ecological restoration monitoring projects within the hotspot areas	5 Restoration Hotspot Areas	ORTDM, ECPTA, SANBI, DFFE, DEDEAT, academic institutions, SAEON and other research partners, ARC	Quarterly	ORTDM, National Treasury, DFFE, ECPTA, SANBI, NRF
Assessment of the extent of land within the hotspot areas that have been rehabilitated/ restored to the desired state	5 Restoration Hotspot Areas	ORTDM, ECPTA, SANBI, DFFE, DEDEAT, ARC	Annual	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Reference ecological restoration projects in District and local municipal SDFs and IDPs	All	ORTDM, LMs	Annual	ORTDM, LMs, National Treasury
BSP Outcome 4: Addressing Potential Planning Conflict Areas				
Compilation of District EMF	All	ORTDM, LMs	2022/ 2023, review 5-yearly	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Reference District EMF in SDFs and IDPs.	All	ORTDM, LMs	Annual	ORTDM, LMs, National Treasury
Screening of Municipal projects in terms of District EMF	All	ORTDM, LMs	Project basis	ORTDM, LMs, National Treasury
Monitoring of bird of prey collision or electrocution incidents	All	ORTDM, ECPTA, SANBI, DFFE, DEDEAT, Bird Life SA, VulPro, Eskom, EWT	Quarterly	ORTDM, National Treasury, DFFE, ECPTA, SANBI
BSP Outcome 5: Establishing and Maintaining Biodiversity Offset Areas				

PRIORITY INTERVENTION PROJECTS	AREA	RESPONSIBILITY	TIMEFRAME	POTENTIAL FUNDING SOURCES
Facilitate engagement with N2WCTH Stakeholders Forum regarding the status of the biodiversity offsets and related offset management plans	N2WCTH Biodiversity Offsets	ORTDM, ECPTA, N2WCTH Stakeholders Forum	Quarterly	ORTDM, National Treasury, DFFE, ECPTA, SANBI, SANRAL
Implement Biodiversity Offset Management Plans and programmes in high priority biodiversity areas	CBA1, unprotected, poorly protected, Critically Endangered and Endangered terrestrial ecosystems	Developers/ Applicants, ORTDM, ECPTA, SANBI, DFFE, DEDEAT	In response to development proposals in CBA 1 and other high value sites	Developers/ Applicants
Review and gap analysis of Biodiversity Offset Management Plans	Biodiversity Offsets	ORTDM, ECPTA, SANBI, DFFE, DEDEAT	Once-off	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Facilitate community engagements in Biodiversity Offset Areas	Biodiversity Offsets	Developers/ Applicants, ORTDM, ECPTA, SANBI, DFFE, DEDEAT	Quarterly	Developers/ Applicants
BSP Outcome 6: Improving Biodiversity Compliance, Monitoring and Enforcement				
Monitoring and tracking of incidents relating to illegal hunting or poaching, excavation and use of unlicensed borrow pits, illegal dumping of waste, removal of or damage to TOPS listed species, pollution, illegal coastal developments and illegal mining	All	ORTDM and LM EMIs, ECPTA, DMR, DWS, DFFE, DEDEAT	Quarterly	ORTDM, National Treasury, DFFE, ECPTA, SANBI, DMR< DWS
Response to environmental queries and complaints	All	ORTDM and LM EMIs	Within 30 days of query or complaint	ORTDM, LMs, National Treasury
Establish a framework for a centralised real-time EMI information system	All	ORTDM, DFFE	2022/ 2023	ORTDM, LMs, National Treasury, DFFE

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PRIORITY INTERVENTION PROJECTS	AREA	RESPONSIBILITY	TIMEFRAME	POTENTIAL FUNDING SOURCES
Establish online environmental complaints and query portal with mobile application	All	ORTDM, DFFE	2022/ 2023	ORTDM, LMs, National Treasury, DFFE
Tracking of complaints/ cases/ queries	All	ORTDM and LM EMIs	Monthly	ORTDM, LMs, National Treasury, DFFE
Conduct compliance inspections	All	ORTDM and LM EMIs	Weekly/ as required	ORTDM, LMs, National Treasury, DFFE
Undertake enforcement actions for non-compliance with environmental legislation	All	ORTDM and LM EMIs	As required	ORTDM, LMs, National Treasury, DFFE
Facilitate engagements with DFFE regarding delegating EMI functions	All	ORTDM and LM EMIs	Quarterly	ORTDM, LMs, National Treasury, DFFE
Attend certified EMI training sessions	All	ORTDM and LM EMIs	As required	ORTDM, LMs, National Treasury, DFFE
Establish District Coastal Management Unit	All	ORTDM	2022/ 2023	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Review and update District CMP	All	ORTDM	5-yearly	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Reference the District BSP, EMF and CMP in Integrated Development Plans (IDPs) or Spatial Development Frameworks (SDFs)	All	ORTDM and LMs	Annual	ORTDM, National Treasury
Establish regional Service Level Agreements with SAPS and NPA	All	ORTDM and LM EMIs	As required	ORTDM, LMs, National Treasury, DFFE, SAPS, NPA

PRIORITY INTERVENTION PROJECTS	AREA	RESPONSIBILITY	TIMEFRAME	POTENTIAL FUNDING SOURCES
BSP Outcome 7: Establishing and strengthening networks to strengthen biodiversity management and conservation				
Facilitate District Biodiversity Forum engagements with biodiversity partners	All	ORTDM	Quarterly	ORTDM, National Treasury, DFFE
Establish collaborative projects with biodiversity partners	All	ORTDM	Annual	ORTDM, National Treasury, DFFE
BSP Outcome 8: Training, Capacity Building, and Environmental Advocacy				
Compilation of District Environmental Advocacy Strategy to be updated annually	All	ORTDM	2022/2023, updated annually	ORTDM, National Treasury, DFFE
Facilitate internal Municipal biodiversity awareness-raising and training programmes or events	All	ORTDM, LMs	Quarterly	ORTDM, National Treasury, DFFE
Posts and articles relating to biodiversity on District and local municipality websites	All	ORTDM, LMs	Monthly	ORTDM, National Treasury, DFFE
Update social media portals relating to biodiversity information/issues/awareness-raising	All	ORTDM, LMs	Weekly	ORTDM, National Treasury, DFFE
Train environmental educators in each local municipality	All	ORTDM, LMs	2022/2023	ORTDM, National Treasury, DFFE
Address queries relating to development suitability, BSP, EMP, IWMP and other environmental planning tools	All	ORTDM, LMs	As required	ORTDM, National Treasury, DFFE
Erect appropriate informative and regulatory signs along the coastline and at high-priority biodiversity sites	Coastal zone, CBA1, unprotected, poorly protected, Critically Endangered and Endangered terrestrial ecosystems	ORTDM	2022/2023, annual maintenance	ORTDM, National Treasury, DFFE

PRIORITY INTERVENTION PROJECTS	AREA	RESPONSIBILITY	TIMEFRAME	POTENTIAL FUNDING SOURCES
Establish biodiversity education school outreach programmes, including coordinated programmes with partners	All	ORTDM, LMs	Monthly	ORTDM, National Treasury, DFFE
Facilitate biodiversity awareness-raising events, including coordinated events with biodiversity partners	All	ORTDM, LMs	Monthly	ORTDM, National Treasury, DFFE
BSP Outcome 9: Improving the knowledge base to support biodiversity conservation and management				
Compile District State of Biodiversity Report to be reviewed on an annual basis.	All	ORTDM	2022/2023, updated annually	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Implement Biodiversity Management Plans for TOPS listed species.	All	ORTDM	2022/2023, updated annually	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Monitoring of goals and objectives of data collection and monitoring programmes.	All	ORTDM, ECPTA, SANBI, DFFE, DEDEAT, academic institutions, SAEON and other research partners	Quarterly	ORTDM, National Treasury, DFFE, ECPTA, SANBI, NRF
Gap analysis of biodiversity spatial data.	All	ORTDM	2022/2023, updated annually	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Updating of systematic conservation planning.	All	ORTDM	2022/2023, updated annually	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Establish large-scale, real-time monitoring surveys.	All	ORTDM, ECPTA, SANBI, DFFE, DEDEAT, academic institutions, SAEON and other research partners	Annual	ORTDM, National Treasury, DFFE, ECPTA, SANBI, NRF

PRIORITY INTERVENTION PROJECTS	AREA	RESPONSIBILITY	TIMEFRAME	POTENTIAL FUNDING SOURCES
Establish projects aimed at community-based natural resource management.	All	ORTDM	2022/2023, updated annually	ORTDM, National Treasury, DFFE, ECPTA, SANBI
BSP Outcome 10: Mainstreaming Biodiversity Norms and Standards				
Monitor implementation of District EMF	All	ORTDM, LMs	Quarterly	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Review of District EMP	All	ORTDM, LMs	5-yearly	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Review of District BSP	All	ORTDM, LMs	5-yearly	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Reference the BSP and EMP in RFPs for contracts/ tenders	All	ORTDM, LMs	As required	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Reference the BSP and EMP in Service Level Agreements/ contracts	All	ORTDM, LMs	As required	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Embed EMF and BSP land-use guidelines into SDFs, IDPs and land-use schemes	All	ORTDM, LMs	Annual	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Facilitate internal biodiversity awareness-raising and training programmes or events	All	ORTDM, LMs	Quarterly	ORTDM, National Treasury, DFFE, ECPTA, SANBI
Monitor environmental non-compliances or complaints related to municipal projects	All	ORTDM, LM EMIs	Quarterly	ORTDM, National Treasury, DFFE, ECPTA, SANBI

7 REVIEW AND UPDATE OF BSP

Land cover data is frequently updated. Since the OR Tambo BSP refinement process was undertaken, the latest 2020 SANLC has been released, and the implications of LULCC are shown in Maps 7-12 in Appendix A. Future updates of the BSP should consider further refining the 2019 ECBCP CBA layers, as appropriate based on the latest available land cover data.

The 2019 ECBCP CBA areas were refined using the 2019 ArcGIS online aerial imagery. Should more recent aerial imagery become available for the District, this imagery should be used for further CBA layer GIS refinement and prioritisation of high priority biodiversity landscapes.

Biodiversity priority areas should be identified and regularly updated and incorporated into the BSP to ensure the persistence of biodiversity and the ecosystem services that it provides. The BSP should also be updated in terms of new conservation areas, protected areas, stewardship sites and OECMs in the District. An example is the N2WCTH biodiversity offset areas which were not included in the “Conservation Areas” for the 2019 ECBCP but are considered in the ORTDM BSP.

As new climate research and data relating to habitats and species become available, climate change scenarios would be updated at the national level. Updates to the climate change scenarios and potential medium- and long-term impacts to biomes in the District should be revisited and biodiversity conservation management interventions updated as required.

This BSP is intended to guide officials within ORTDM and, understanding that the legislative and policy framework for biodiversity protection and management is constantly changing, this is intended as a dynamic document, to be updated based on the further review at least every 5 years.

8 CONCLUSIONS

The effective management and protection of the biodiversity assets within the District will enhance resilience to the effects of climate change, protect species of conservation concern, and maintain the quality of life and provision of valuable ecosystem services for communities. Without an effective means to enforce and monitor biodiversity, the network of CBAs, ESAs, protected areas, biodiversity corridors and open spaces could be undermined. The BSP allows for a robust, legally defensible tool to support biodiversity protection and management in the District, achieving the vision of the BSP to protect and enhance biodiversity and respond positively to the challenges of climate change.

The ORTDM BSP would need to be taken to Council to be formally adopted and mainstreamed.

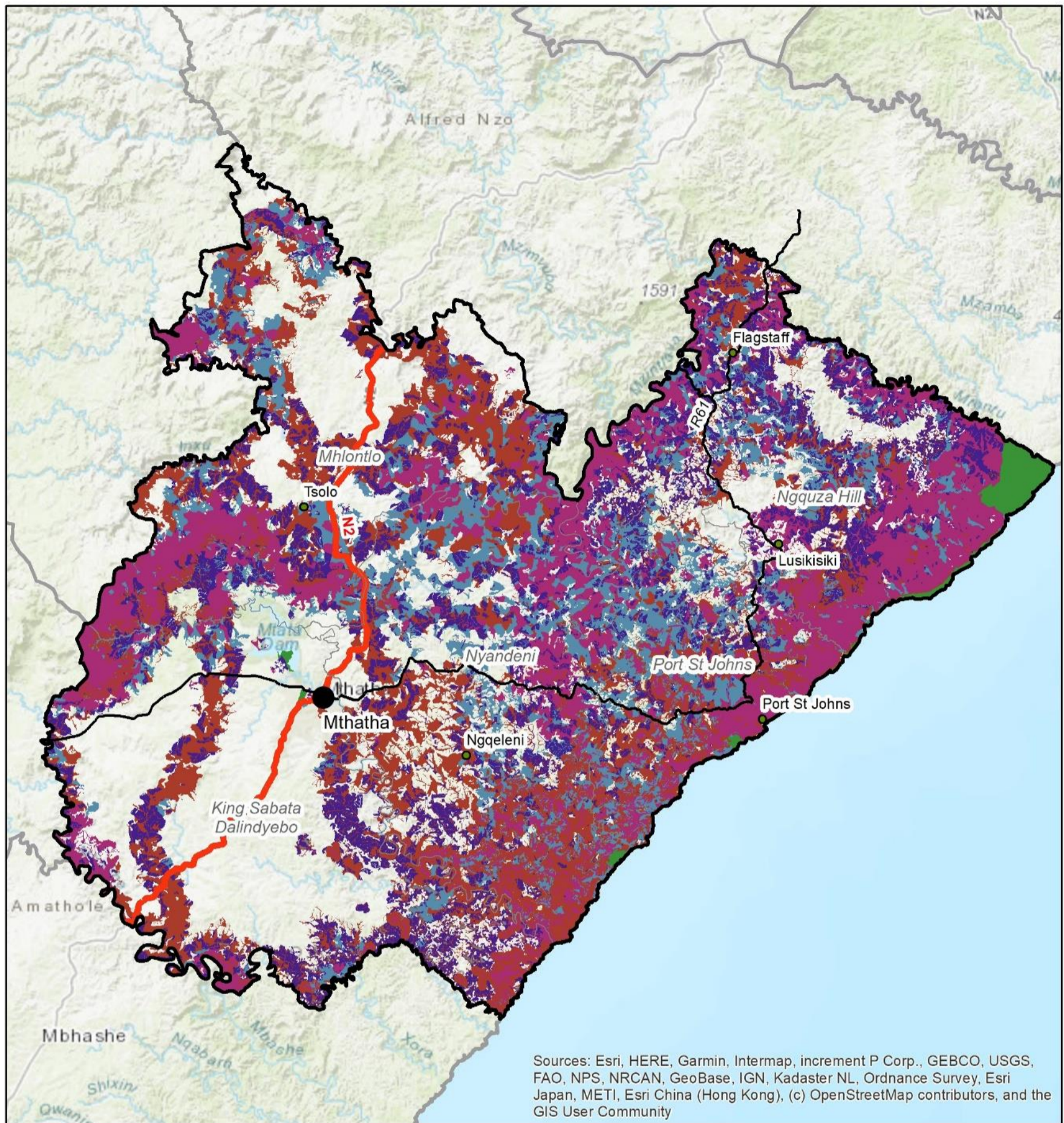
The preparation, coordination and monitoring of the BSP are led by ORTDM. However, the implementation of the BSP requires coordination with multiple biodiversity partners through intergovernmental and sectoral coordination structures. It is recommended that a District Biodiversity Forum be established to monitor the implementation of the BSP.

This BSP is intended to guide officials within ORTDM and, understanding that the legislative and policy framework for management and protection of biodiversity is dynamic, the BSP remains a dynamic document, to be updated based on the further review at least every 5 years.

9 REFERENCES

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APPENDIX A: LIST OF MAPS



Legend

OR Tambo District Municipality (MDB, 2016)

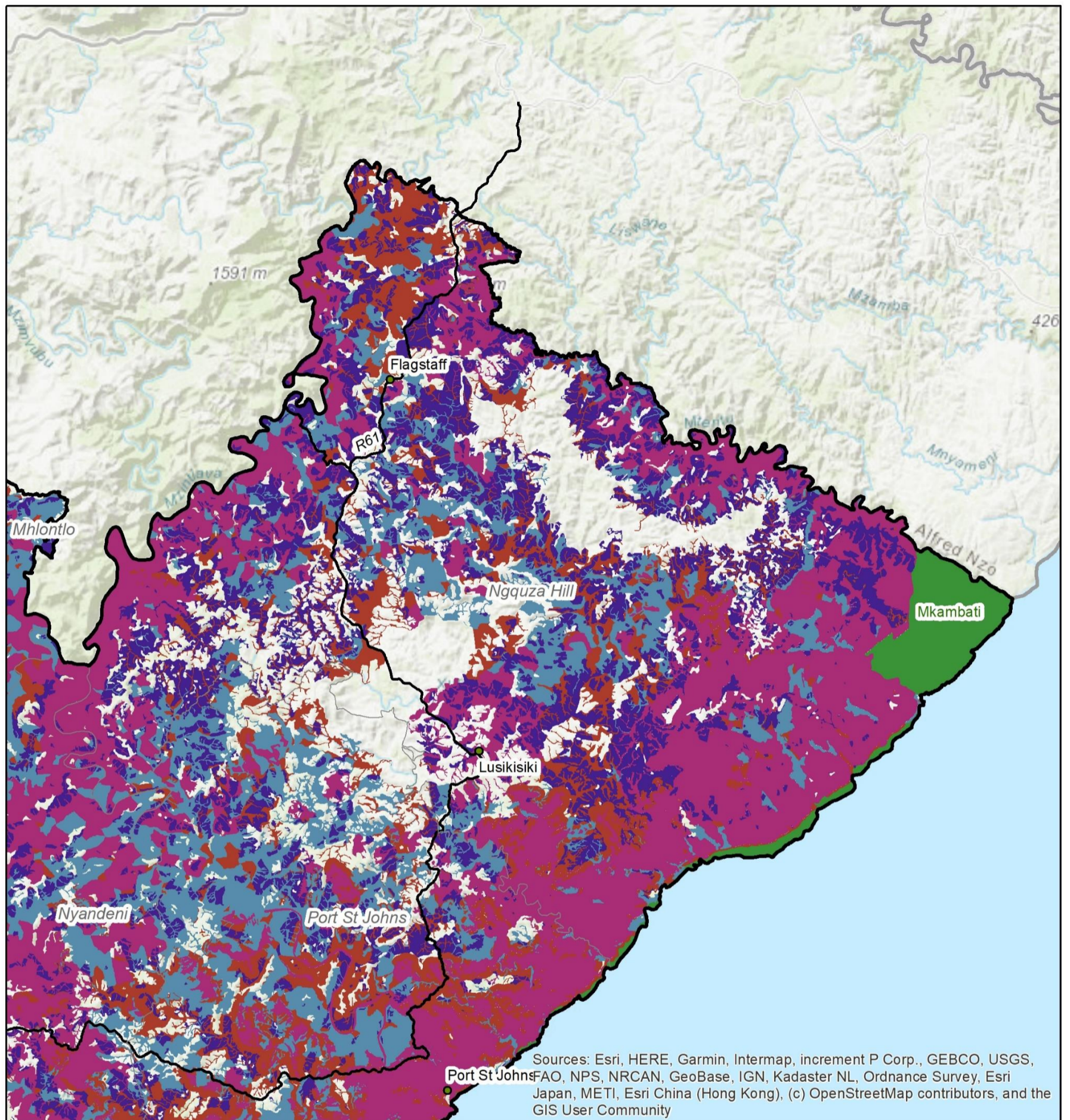
CBA_Reclas

- CBA 1
- CBA 2
- ESA 1
- ESA 2
- Protected Areas

0 25 50 Kilometers



Map 1: Refinement of the 2019 ECBCP CBA Layers



Legend

OR Tambo District Municipality (MDB, 2016)

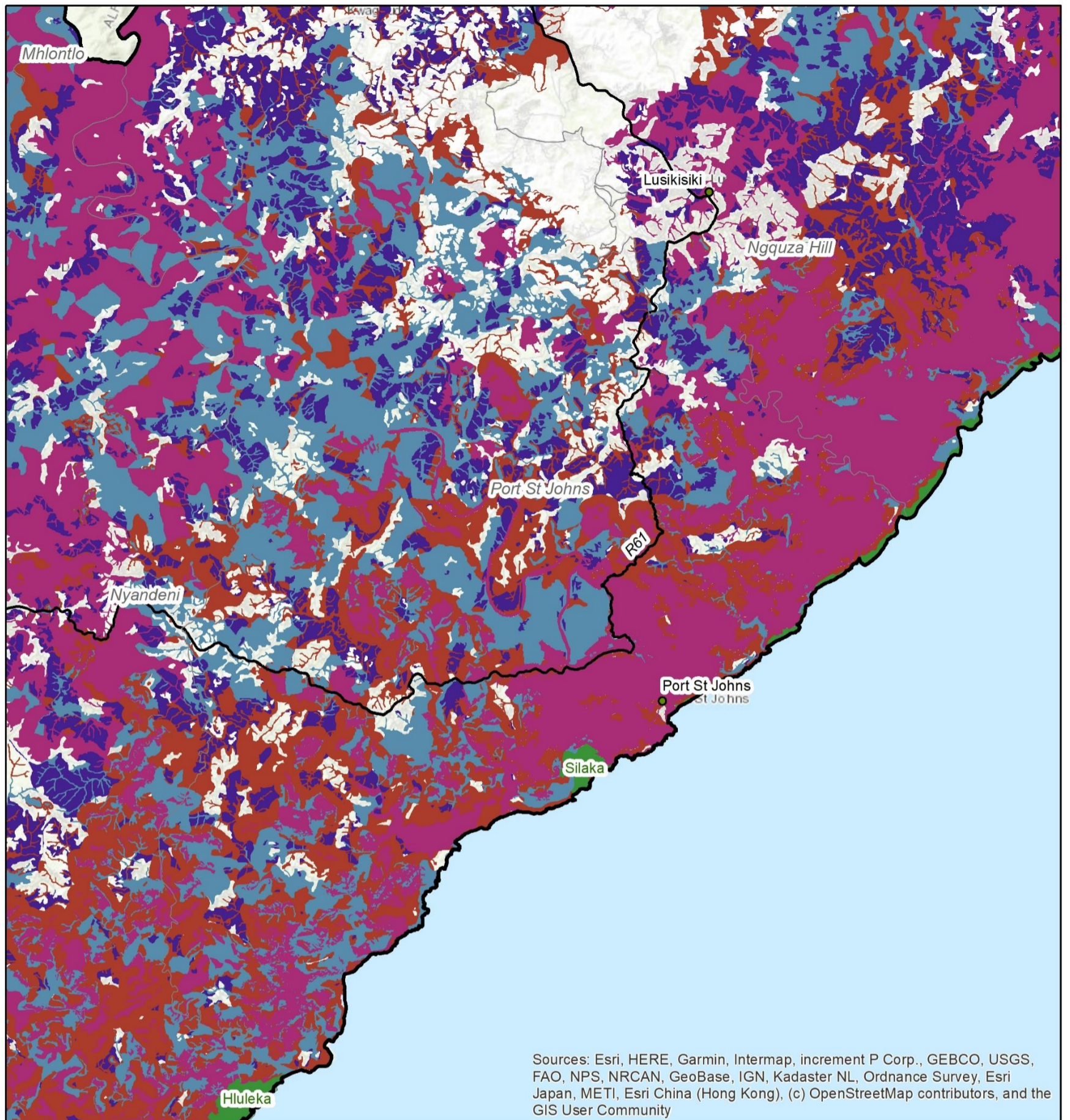
CBA_Reclas

- CBA 1
- CBA 2
- ESA 1
- ESA 2
- Protected Areas

0 12,5 25 Kilometers



Map 2: Refinement of the 2019 ECBCP CBA Layers- Ingquza Hill LM



Legend

OR Tambo District Municipality (MDB, 2016)

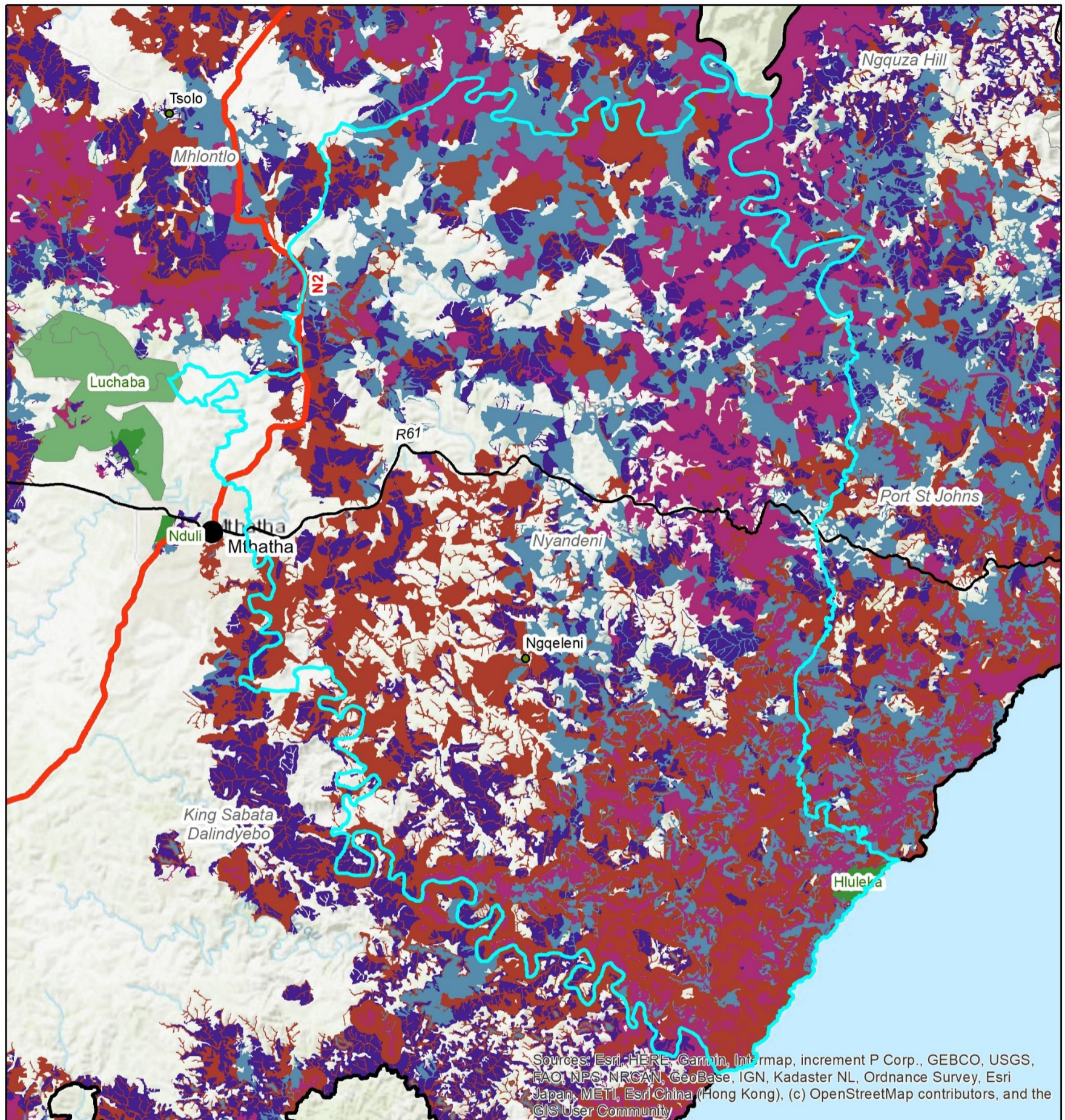
CBA_Reclas

- CBA 1
- CBA 2
- ESA 1
- ESA 2
- Protected Areas

0 5 10 Kilometers



Map 3: Refinement of the 2019 ECBCP CBA Layers- Port St Johns LM



Legend

 OR Tambo District Municipality (MDB, 2016)

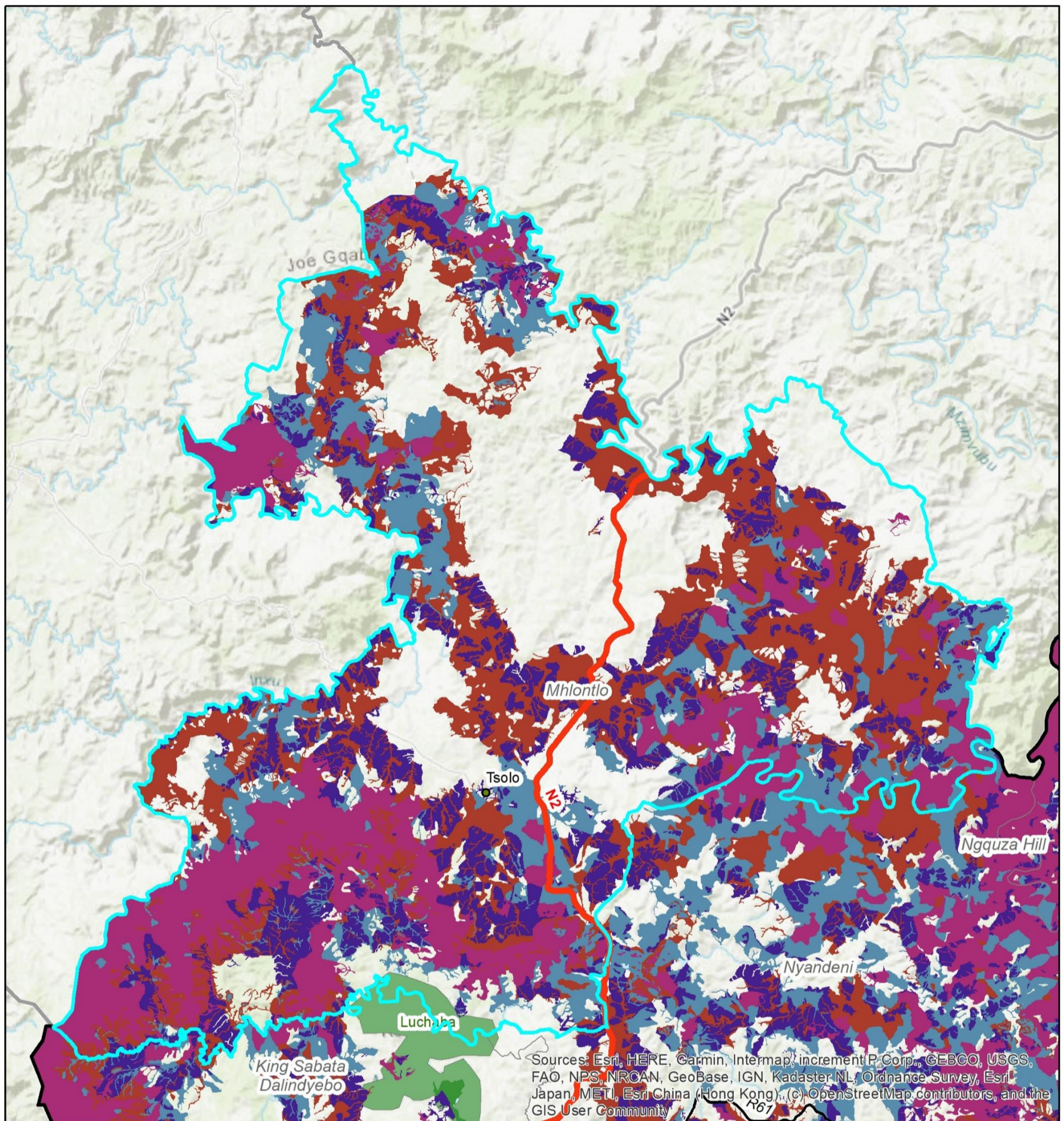
CBA_Reclas

-  CBA 1
-  CBA 2
-  ESA 1
-  ESA 2
-  Protected Areas

0 10 20 Kilometers




Map 4: Refinement of the 2019 ECBCP CBA Layers- Nyandeni LM



Legend

 OR Tambo District Municipality (MDB, 2016)

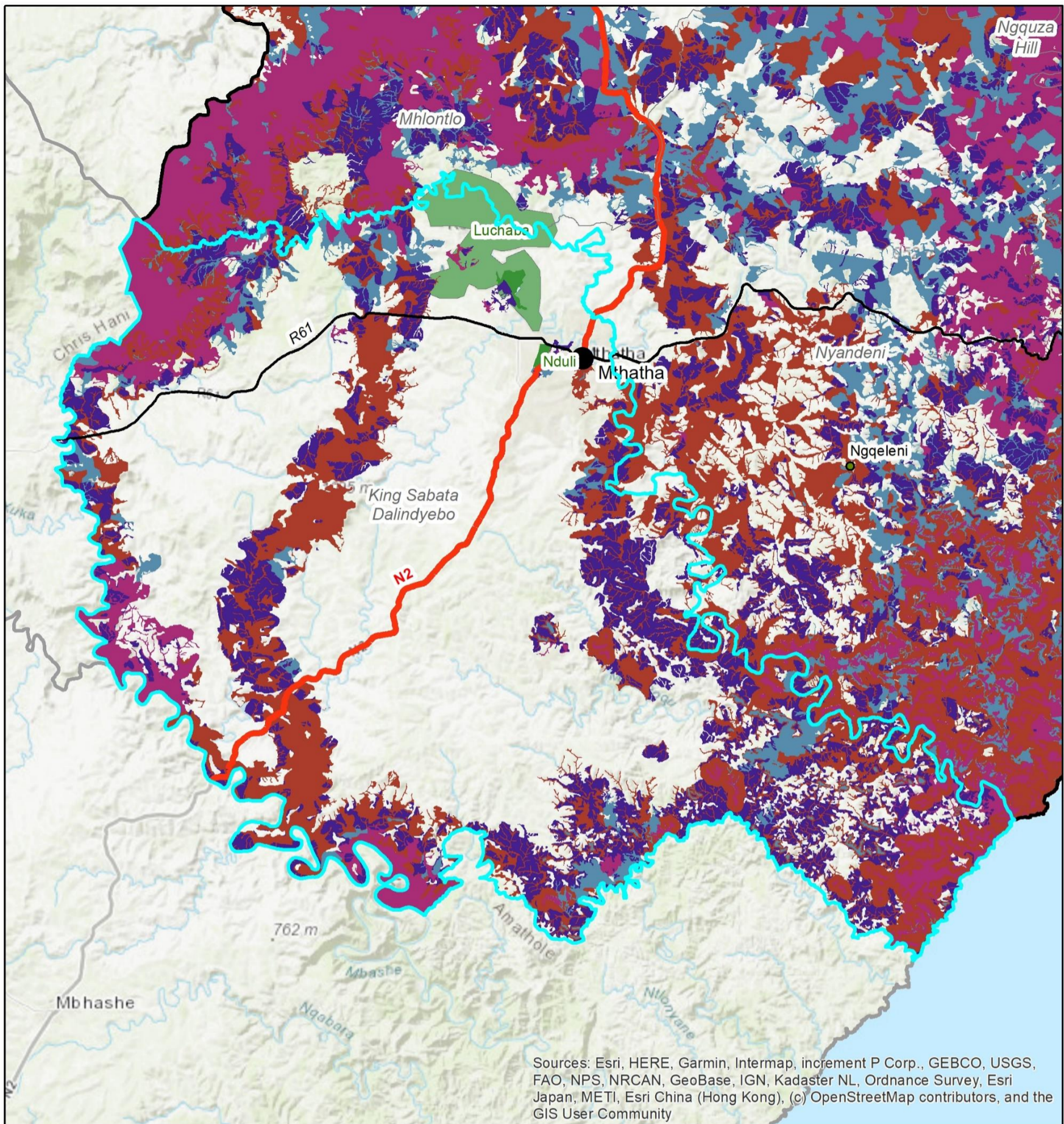
CBA_Reclas

-  CBA 1
-  CBA 2
-  ESA 1
-  ESA 2
-  Protected Areas

0 12,5 25 Kilometers



Map 5: Refinement of the 2019 ECBCP CBA Layers- Mhlontlo LM



Legend

OR Tambo District Municipality (MDB, 2016)

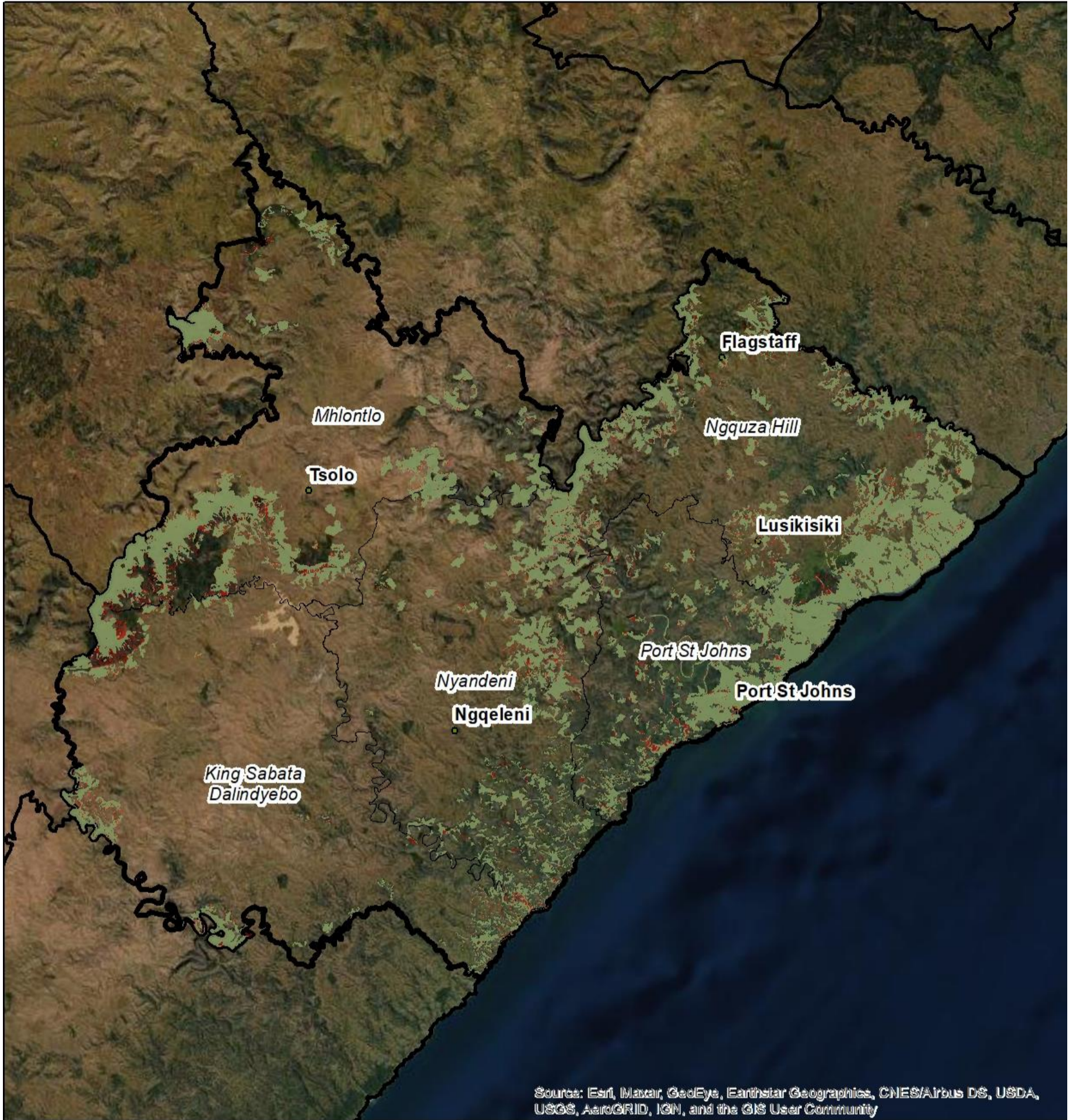
CBA_Reclas

- CBA 1
- CBA 2
- ESA 1
- ESA 2
- Protected Areas

0 12,5 25 Kilometers

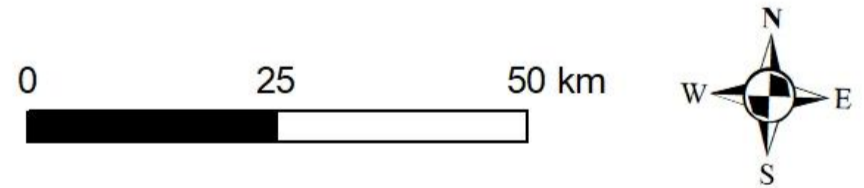


Map 6: Refinement of the 2019 ECBCP CBA Layers- KSD LM

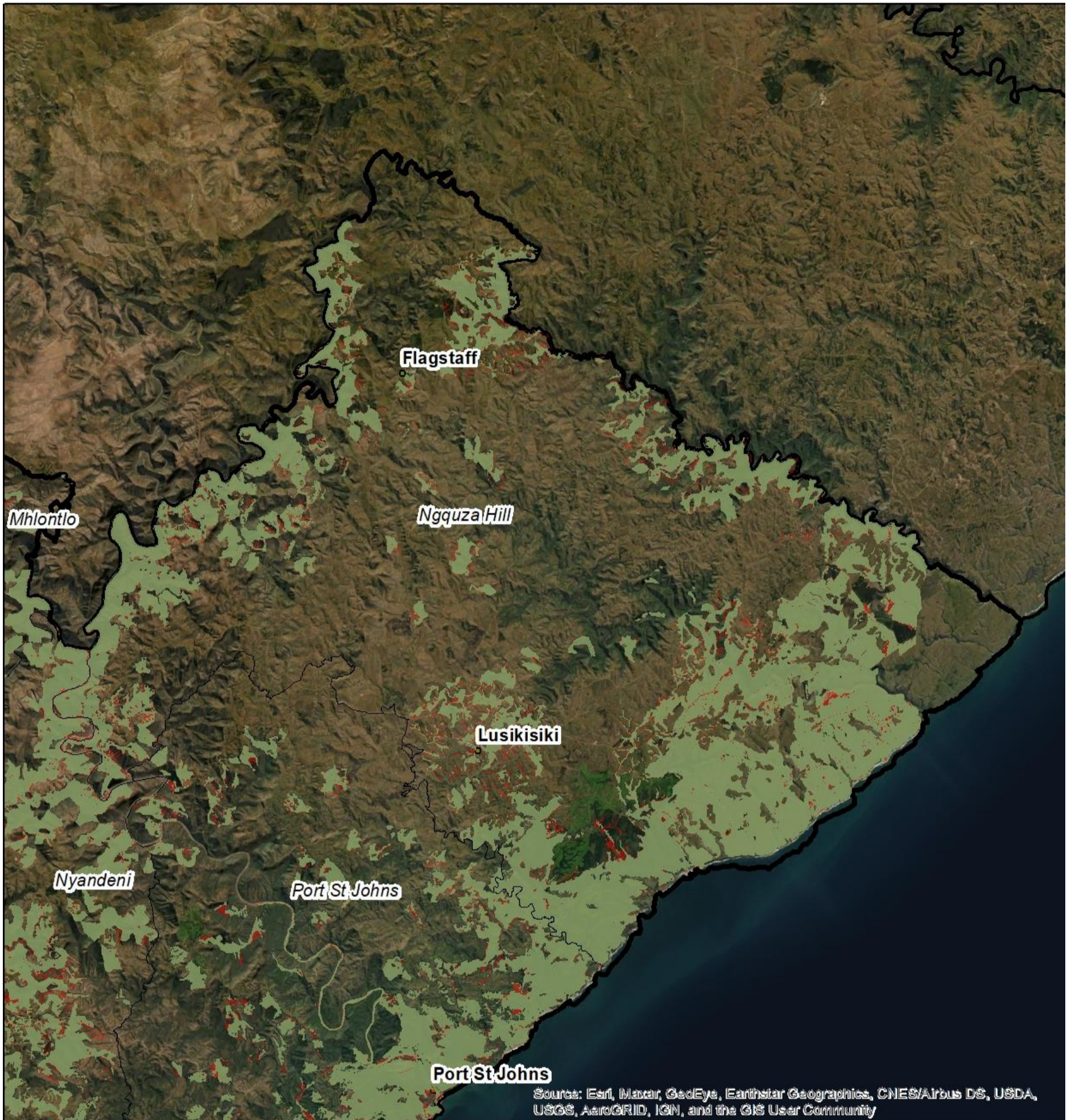


Legend






- Natural CBA 1 (refined)
- Transformed CBA 1 (refined)
- OR Tambo District Municipality
- Local Municipalities

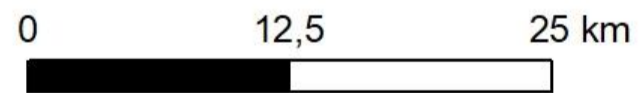


Map 7: CBA 1 Transformation in ORTDM

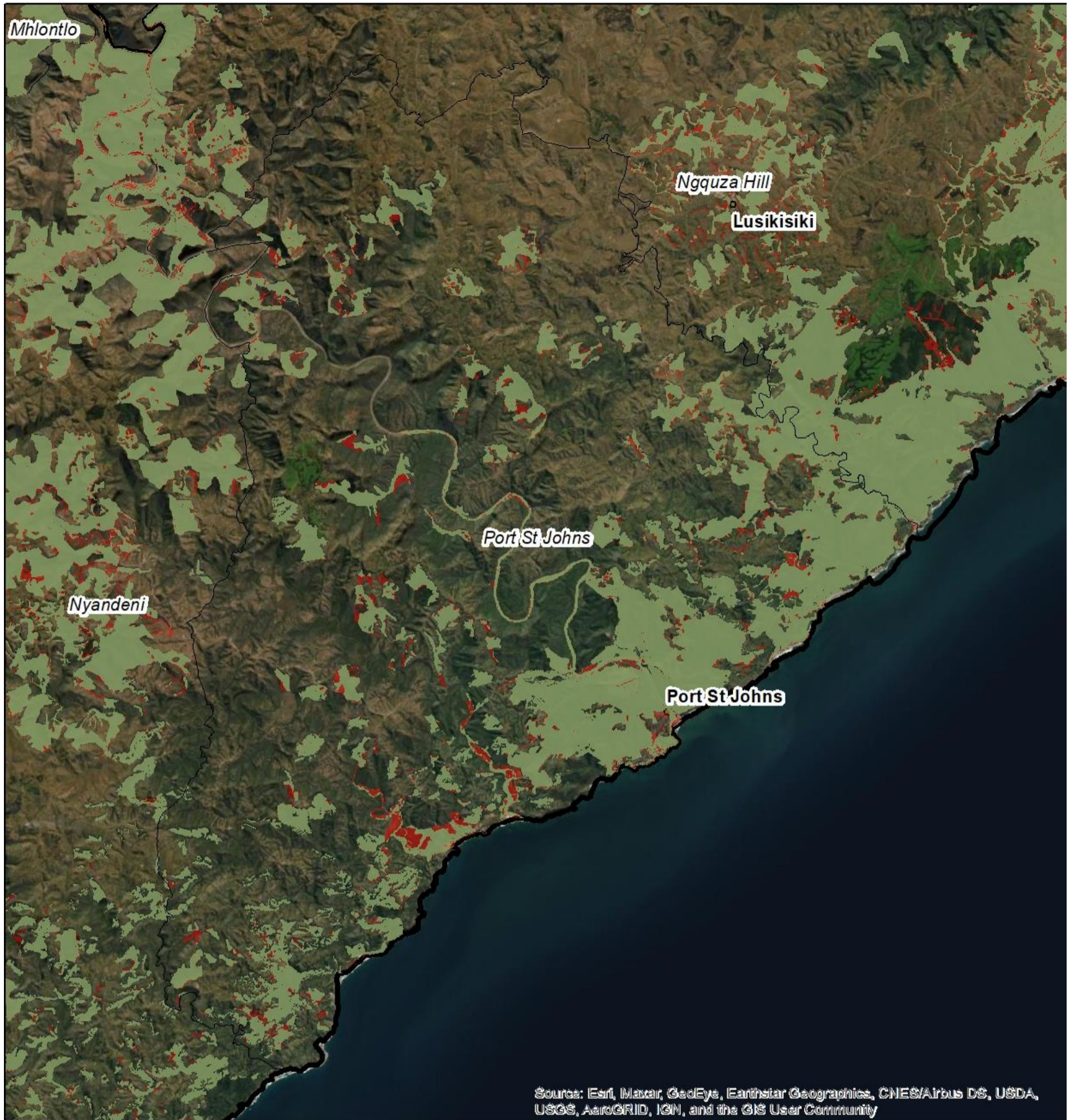


Legend

-  Ngquza Hill LM
-  Natural CBA 1 (refined)
-  Transformed CBA 1 (refined)
-  OR Tambo District Municipality
-  Local Municipalities

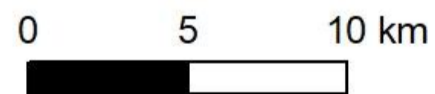


Map 8: CBA 1 Transformation in Ngquza Hill LM



Legend

- PSJ LM
- Natural CBA 1 (refined)
- Transformed CBA 1 (refined)
- OR Tambo District Municipality
- Local Municipalities

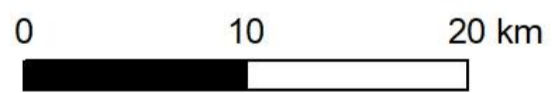


Map 9: CBA 1 Transformation in PSJ LM

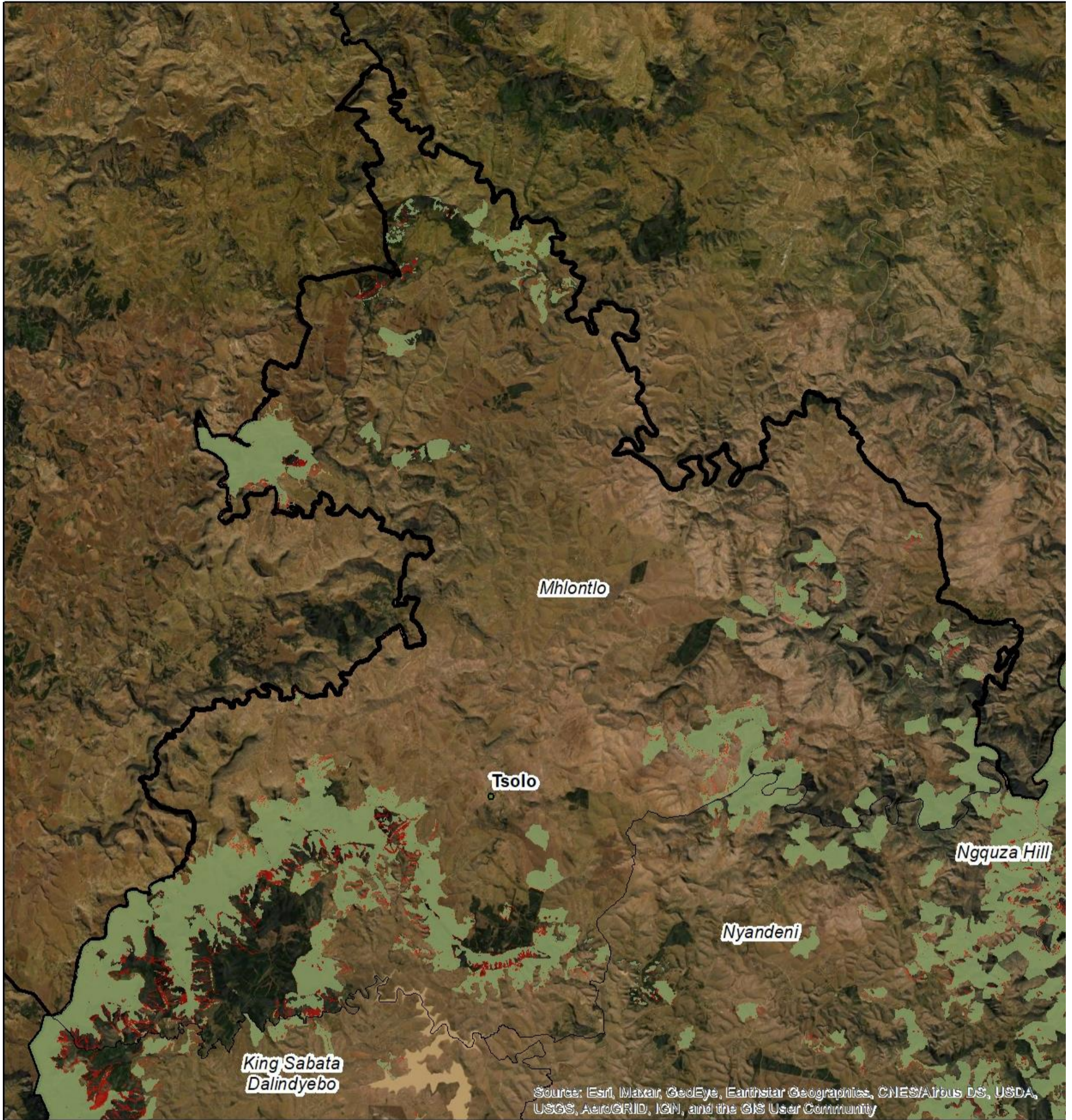


Legend






- Nyandeni LM
- Natural CBA 1 (refined)
- Transformed CBA 1 (refined)
- OR Tambo District Municipality
- Local Municipalities

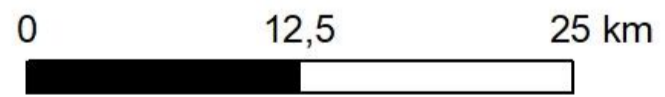


Map 10: CBA 1 Transformation in Nyandeni LM

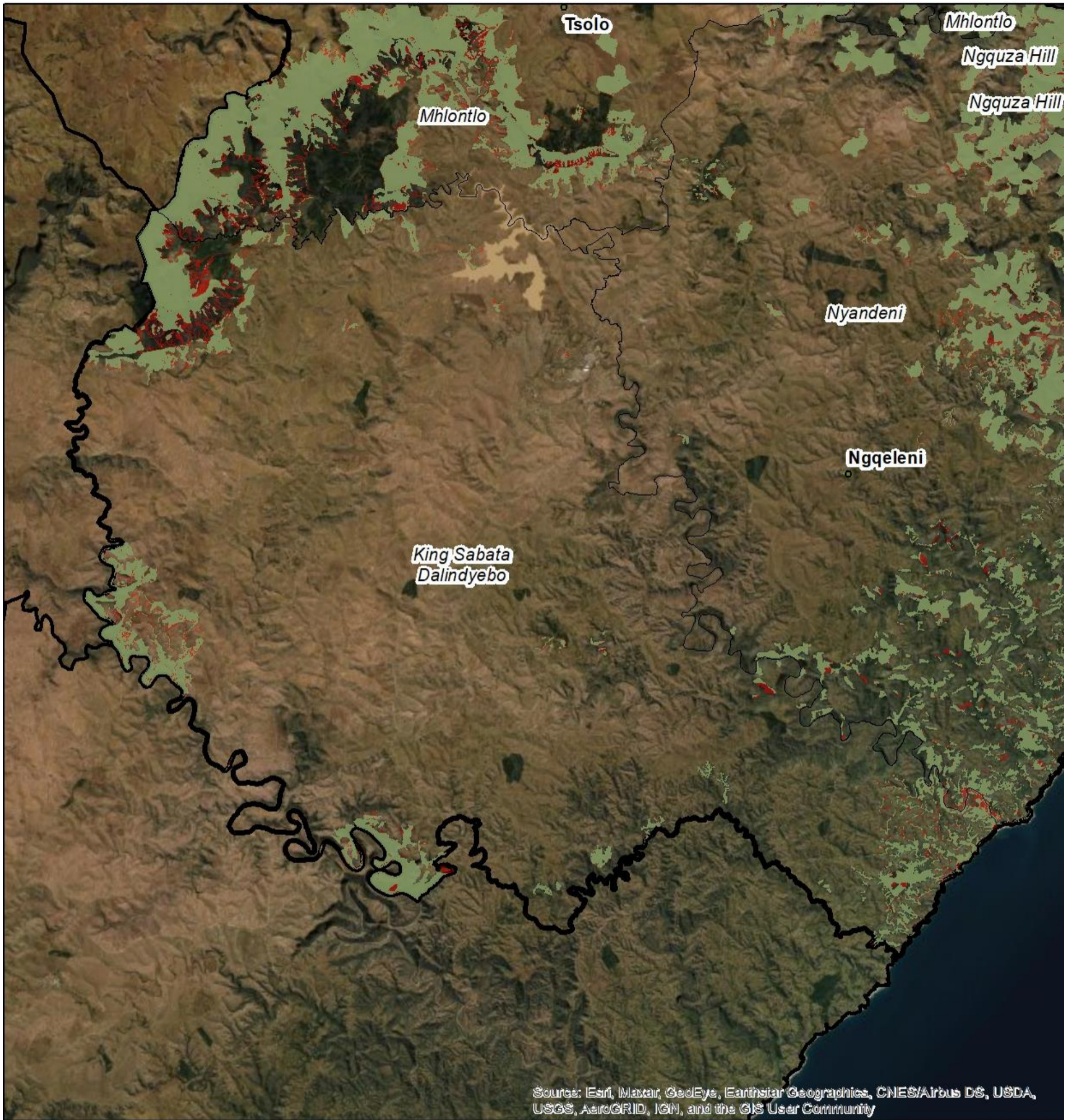


Legend

-  Mhlontlo LM
-  Natural CBA 1 (refined)
-  Transformed CBA 1 (refined)
-  OR Tambo District Municipality
-  Local Municipalities

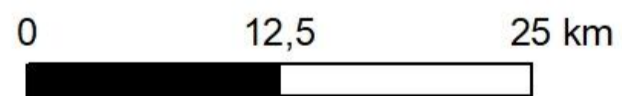


Map 11: CBA 1 Transformation in Mhlontlo LM

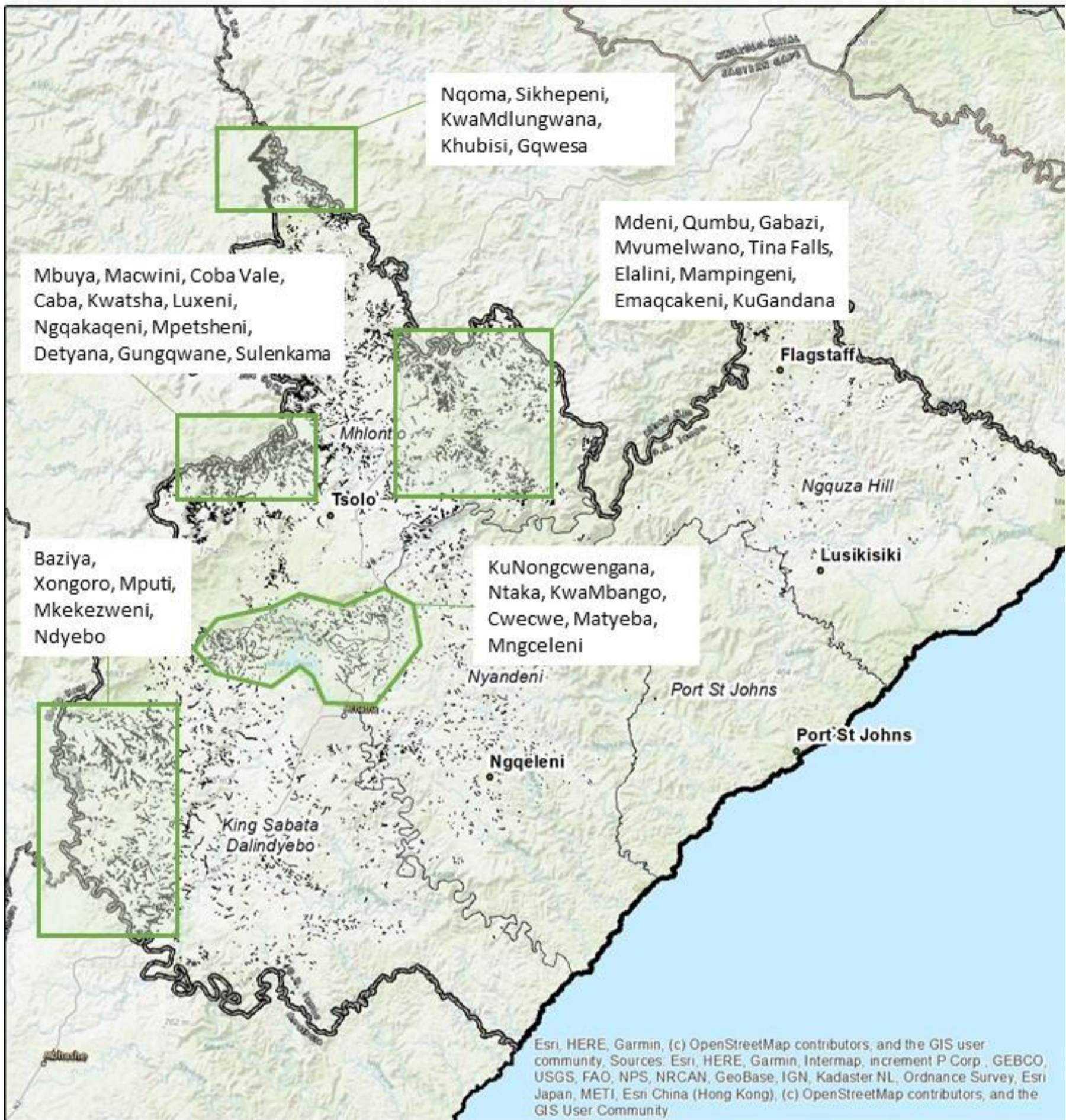


Legend

- KSD LM
- Natural CBA 1 (refined)
- Transformed CBA 1 (refined)
- OR Tambo District Municipality
- Local Municipalities

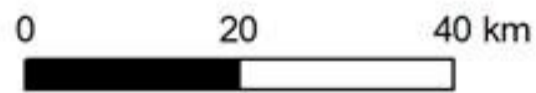


Map 12: CBA 1 Transformation in KSD LM

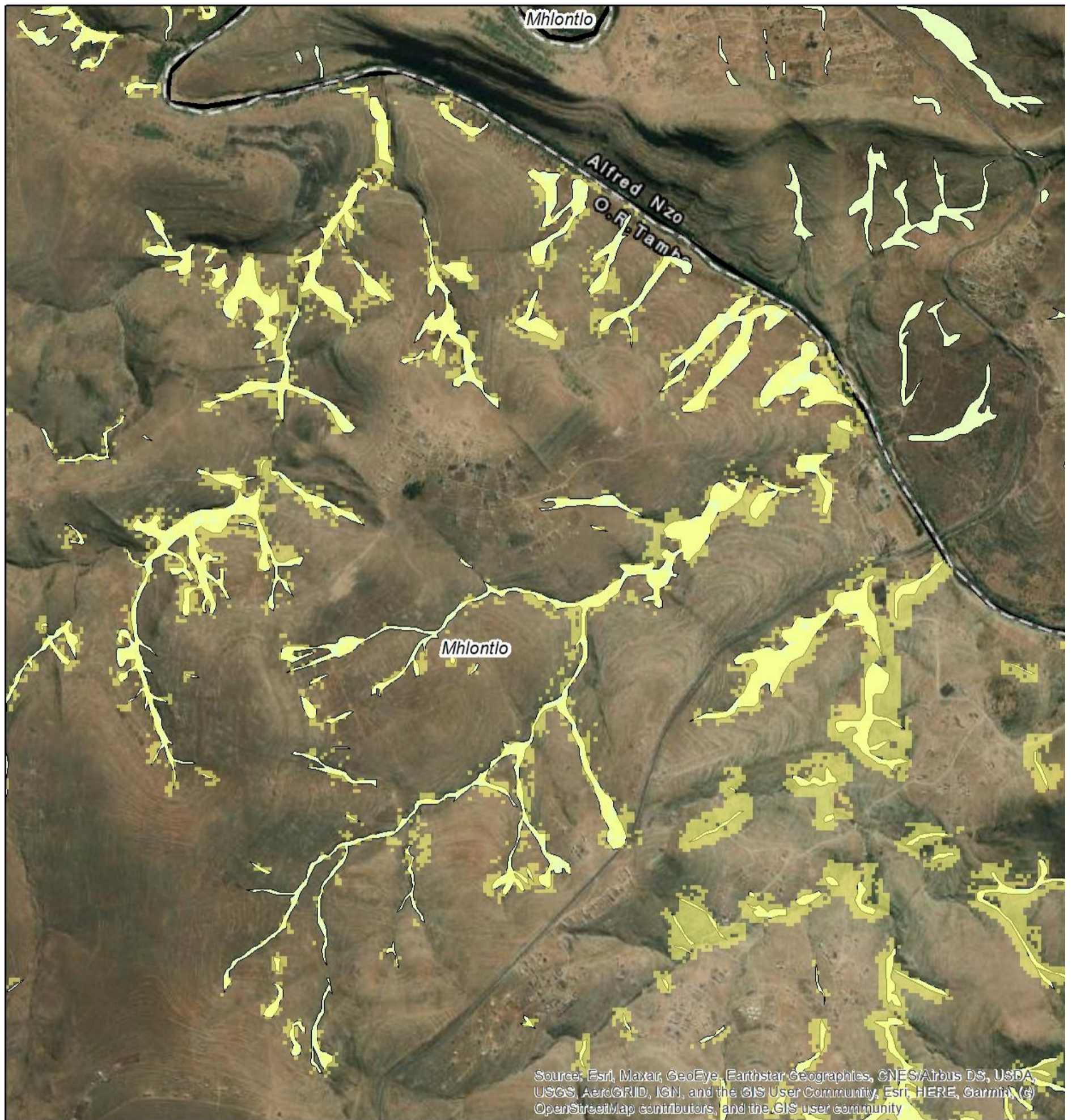


Legend

-  OR Tambo District Municipality
-  Local Municipalities
-  Gully erosion ORTDM (DAFF, Feb 2011)
-  Eroded Lands (DFFE, 2020)



Map 13: Ecological Degradation Hotspots



Legend

- Eroded Lands (DFFE, 2020)
- Gully erosion (DAFF, Feb 2011)
- OR Tambo District Municipality
- Local Municipalities



Map 14: Comparison of Gully Erosion in 2011 vs Eroded Lands Land Cover (2020) in Mhlontlo Local Municipality