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Biodiversity for Life
South African National Biodiversity Institute

Monitoring & Evaluating against Mechanisms for Securing SWSAs

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South African National Biodiversity Institute

NCA Forum
14-15 September 2026

Overview

- Background
- Mapping History
- Institutional Arrangements
- Mechanisms for Securing SWSAs
- Monitoring & Evaluating Against Mechanism
- The Proposed Dashboard

Background

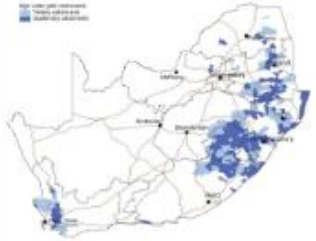
Strategic Water Source Areas
The **10% of land** in South Africa, Lesotho and Eswatini **that supplies 50% of SA's water**

SWSAs support **half the population** and **two thirds of the economy**, often in major urban centres some distance away.
They also provides 70% of water for **irrigation**.

National **ecological infrastructure assets** for water security and food security

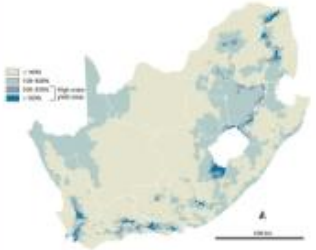
Mapping Timeline

2004



The National Spatial Biodiversity Assessment took the first step towards defining Strategic Water Source Areas when it identified high water yield catchments at tertiary and quaternary catchment scale. It was noted that these areas yield approximately 50% of the country's water supply.

2011

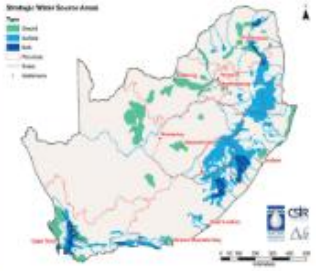


The National Freshwater Ecosystem Priority Areas project refined the high water-yield areas to the scale of sub-quaternary catchments. This map received a lot of attention from a variety of users, because water was understood as a scarce resource in the country and information regarding the supply of water was highly relevant.

2013

A short, focussed project sought to refine the methodology used in NFEPA, and address methodological concerns that had been raised by users. This was the first time the term "Strategic Water Source Areas" was used. Efforts were made to group these areas geographically and give them recognisable names to draw attention to them.

2018



SWSAs proved to be such a powerful concept that they were again updated in 2018. The purpose of the update was to refine the understanding about the hydrological processes of water runoff, to define clearer boundaries and expand the SWSAs to include groundwater. Further research showed that SWSAs provided water to more than 50% of the country's population, 90% of urban water users, 67% of economic activity, and 70% of the water used for irrigated agriculture.

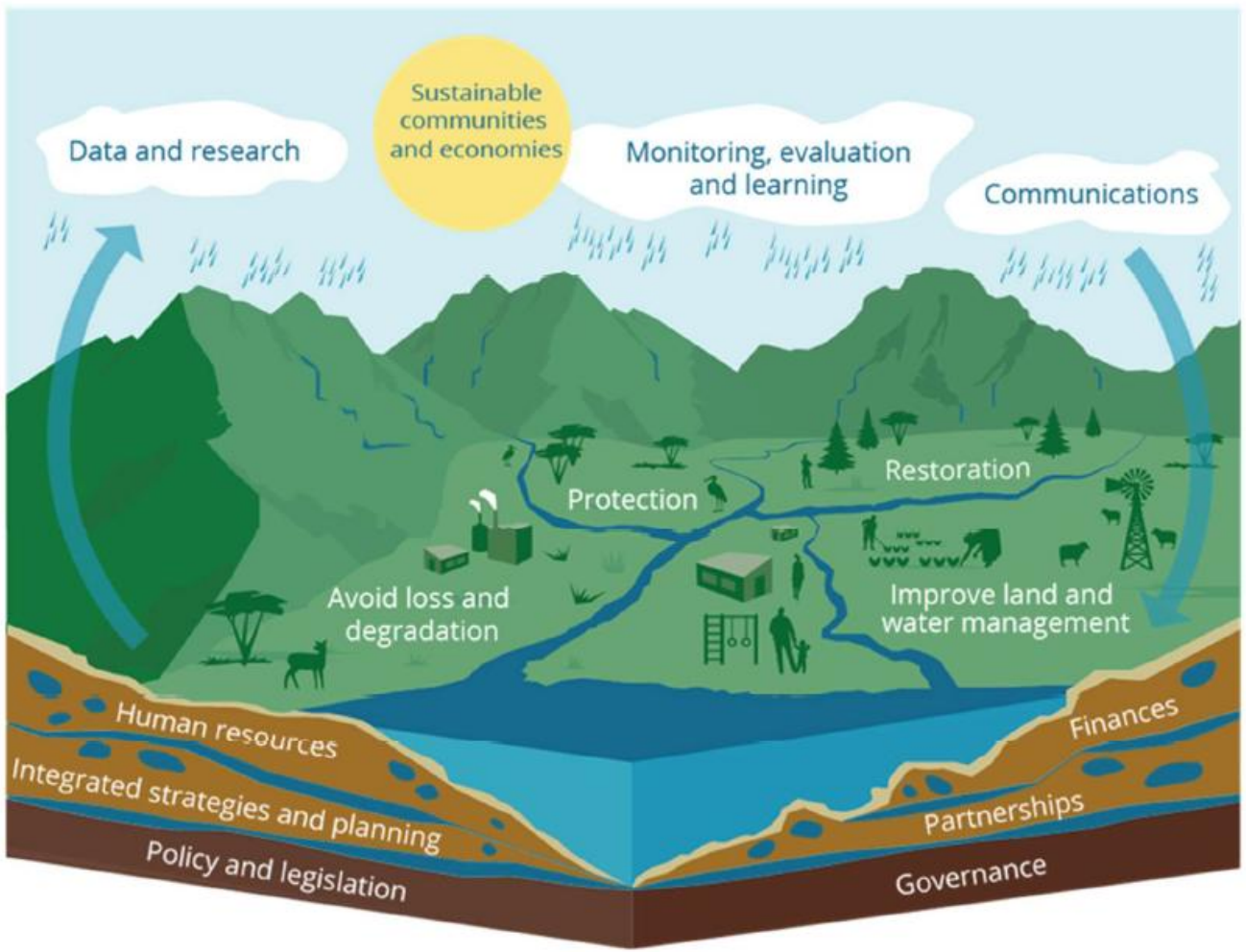
Fine-scale delineation

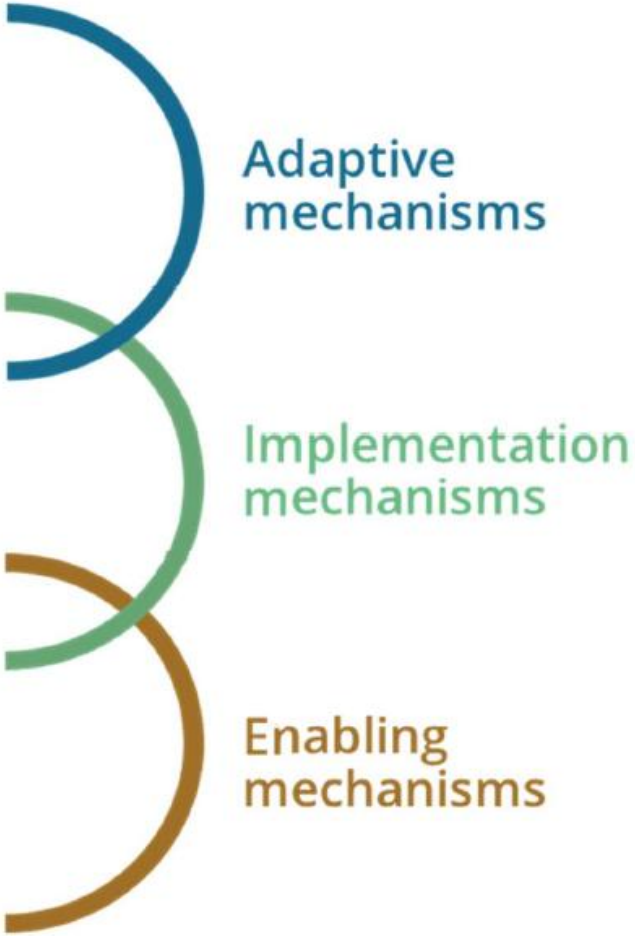
It was realised that to be legally gazetted, SWSAs would have to be defensibly delineated at an even more precise resolution. A methodology for fine-scale delineation of the boundaries of each individual SWSA was developed, using a newly developed geostatistical methodology. The result was the most fine-scaled delineation of SWSAs to date – and a noteworthy improvement to the methods for rainfall interpolation in the country.

Institutional Arrangements

- National Arrangements:
  - Governments Authority Committee;
  - Spatial Task Team;
  - 30*30 Collective
- Catchments:
  - Catchment based initiatives;
  - SWSAs collectives

Mechanisms to Secure SWSAs





Monitoring and Evaluating Against Mechanisms

- Towards achieving goals of the SWSAs strategy
- Measuring the effectiveness of mechanisms
- Coordinating the data from the ground
- Having a single publicly accessible portal

Top Five Bundles From Stakeholder Engagement

Bundles of work	Key Aspects
Ecosystem accounts (across realms) for SWSAs	Ecosystem extent and condition accounts would provide length of rivers with different condition classes, and extent of wetlands of different types and condition.
Delineate the hydrological management boundaries of support areas for SWSA for surface water	The SWSA-sw have areas that are just upstream of them (cutting through quinary catchments, and in some cases, pans and lakes).
Land ownership per SWSA	State, communal, private land ownership
Restoration: taking stock of existing efforts and prioritizing future work?	spatial prioritization within SWSAs to direct restoration efforts
[Beyond spatial] Economic contribution of SWSAs - Use of water in SWSAs and downstream: supporting trade-off analysis in different water uses and within and downstream of SWSAs	Updated estimates of economic contribution of SWSA to GDP, value of economic activity facilitated by water in SWSAs and from SWSAs

The Online Platform

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Strategic Water Source Area

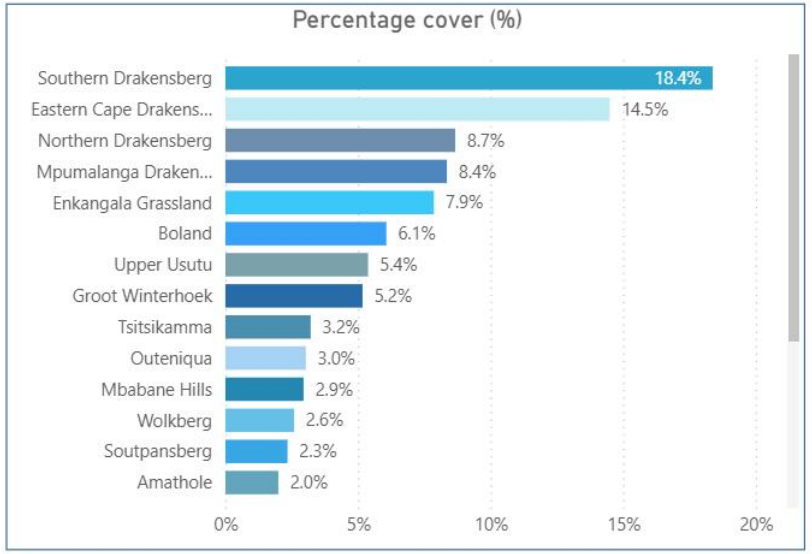
Report Date: August 21, 2025

Home | Geo-Population | Traditional Council | Land Cover | Freshwater | CBA & ESA | Threatened ecosystems | Nature-based... | MCDA

Amathole	Eastern Cape Drakensberg	Groot Winterhoek	Langeberg	Mbabane Hills	Mpumalanga Drakensberg	Outeniqua	Soutpansberg	Table Mountain	Upper Usutu	Waterberg
Boland	Enkangala Grassland	Kouga	Maloti Drakensberg	Mfolozi Headwaters	Northern Drakensberg	Southern Drakensberg	Swartberg	Tsitsikamma	Upper Vaal	Wolkberg

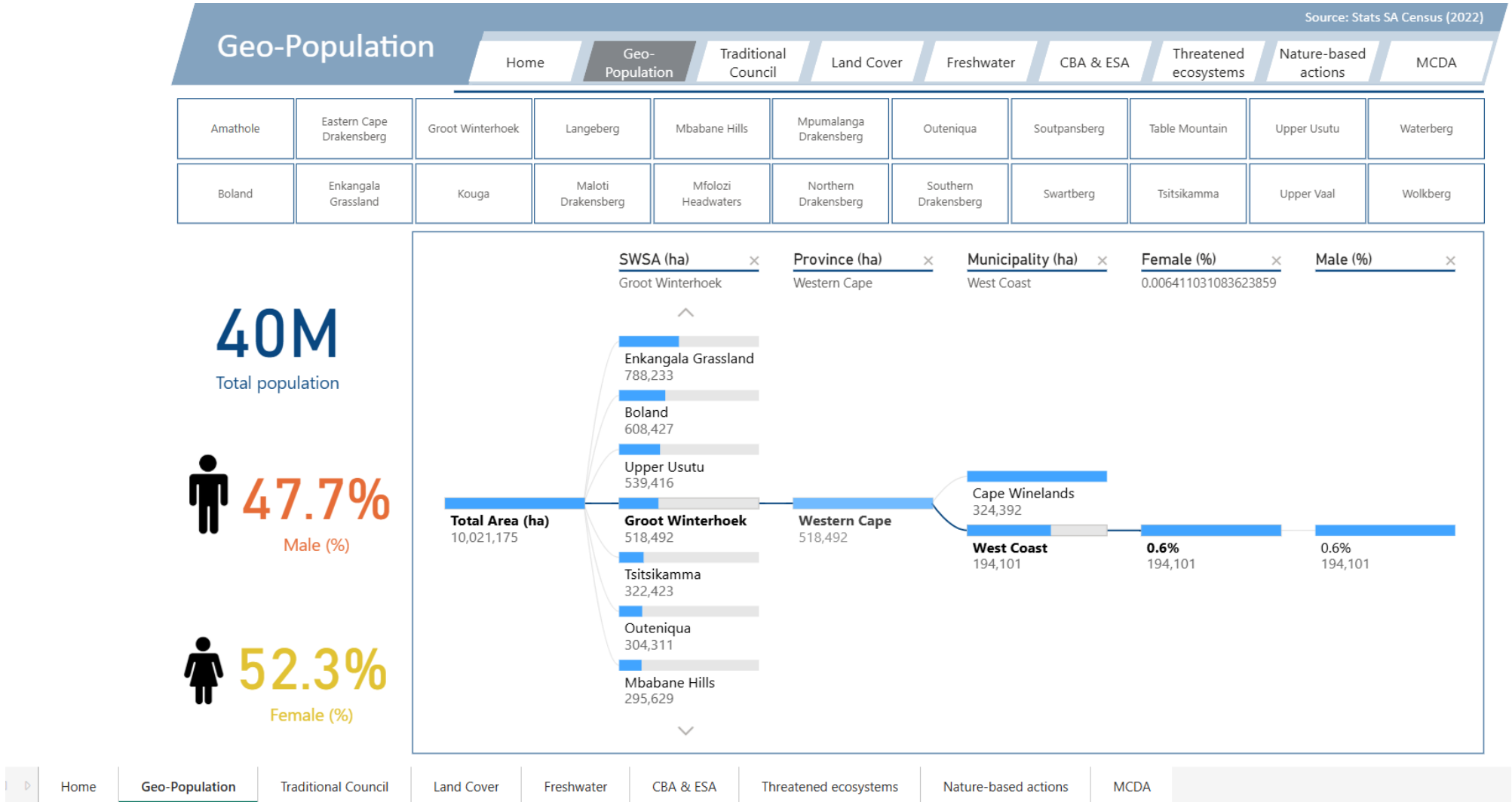
22
Total number of SWSA

10M
Total area (ha)



Home | Geo-Population | Traditional Council | Land Cover | Freshwater | CBA & ESA | Threatened ecosystems | Nature-based actions | MCDA

Population Dynamics



Traditional Council Areas

Traditional Council

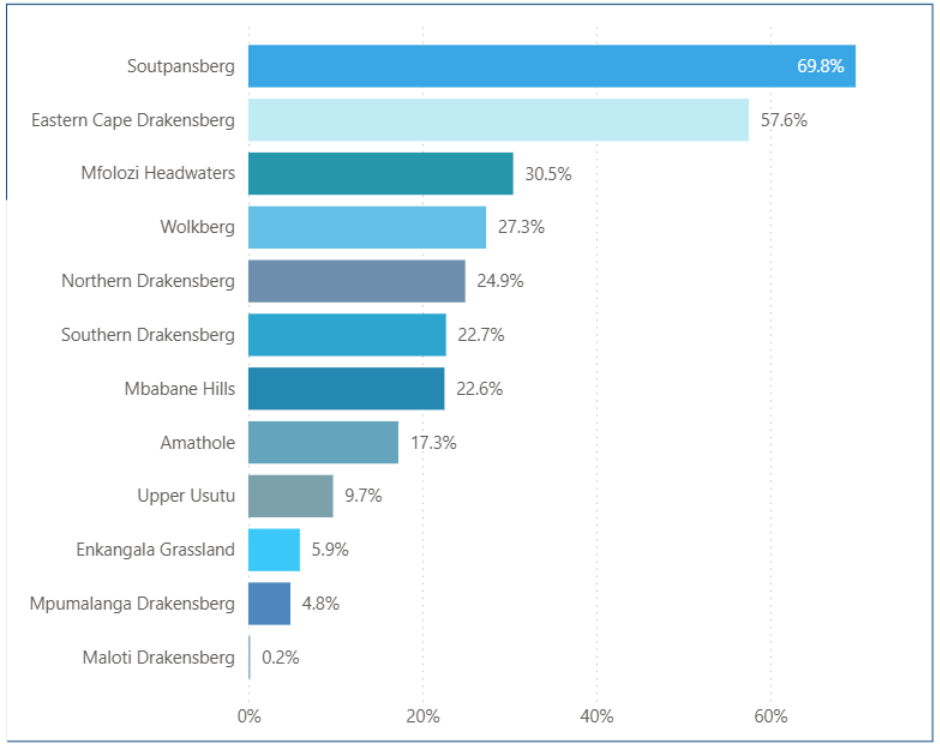
Home | Geo-Population | Traditional Council | Land Cover | Freshwater | CBA & ESA | Threatened ecosystems | Nature-based actions | MCDA

Amathole	Eastern Cape Drakensberg	Groot Winterhoek	Langeberg	Mbabane Hills	Mpumalanga Drakensberg	Outeniqua	Soutpansberg	Table Mountain	Upper Usutu	Waterberg
Boland	Enkangala Grassland	Kouga	Maloti Drakensberg	Mfolozi Headwaters	Northern Drakensberg	Southern Drakensberg	Swartberg	Tsitsikamma	Upper Vaal	Wolkberg

2M

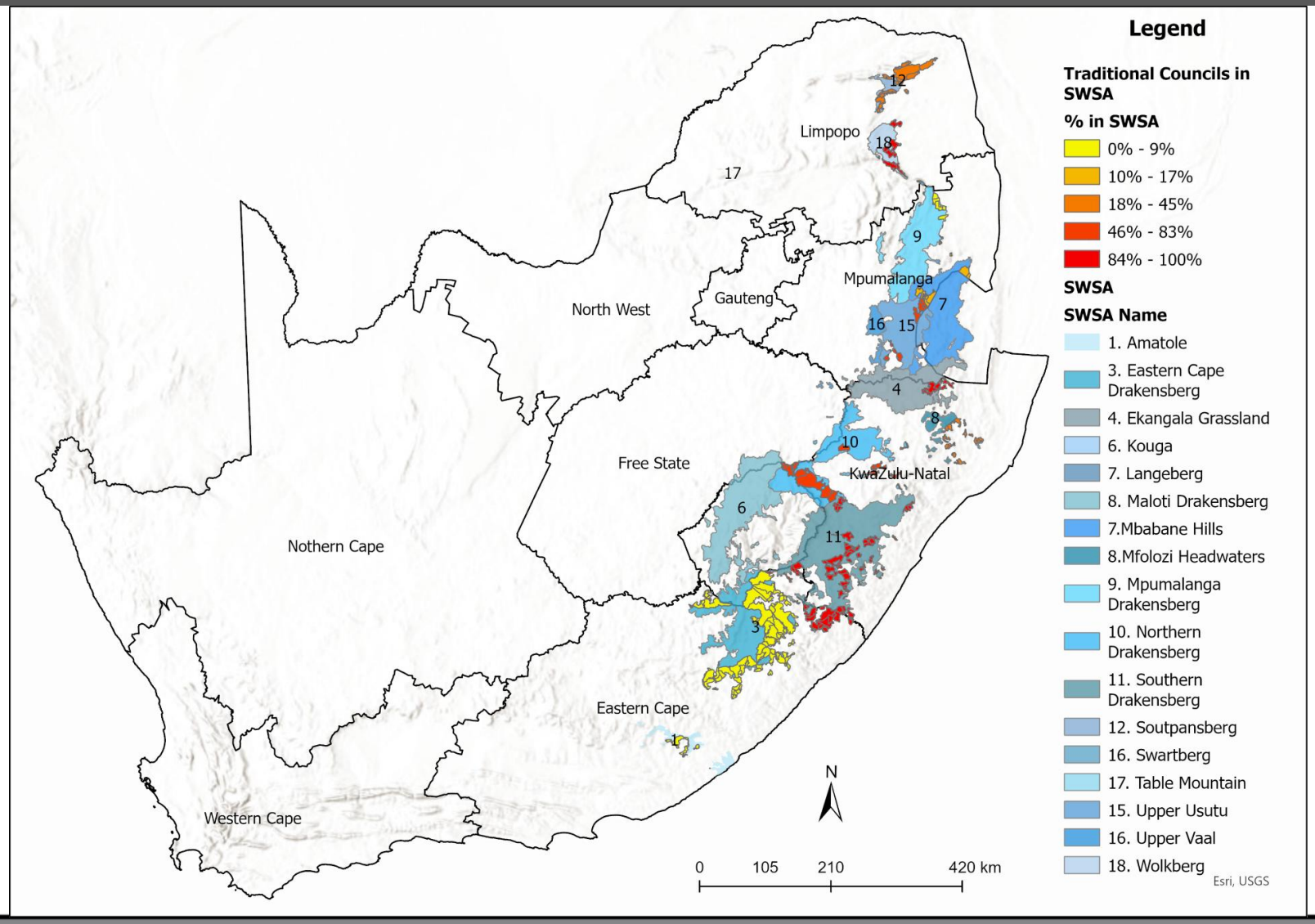
Total area (ha)

SWSAName	Mpumalanga	Limpopo	KwaZulu-Natal	Free State	Eastern Cape
Amathole	0	0	0	0	34541
Eastern Cape Drakensberg	0	0	0	0	836307
Enkangala Grassland	0	0	46646	0	0
Maloti Drakensberg	0	0	0	356	0
Mbabane Hills	66684	0	0	0	0
Mfolozi Headwaters	0	0	58659	0	0
Mpumalanga Drakensberg	39273	1254	0	0	0
Northern Drakensberg	0	0	184584	32128	0
Southern Drakensberg	0	0	244690	0	174094
Soutpansberg	0	164072	0	0	0
Upper Usutu	52567	0	0	0	0
Wolkberg	0	71011	0	0	0
Total	**158524**	**236337**	**534579**	**32484**	**1044942**

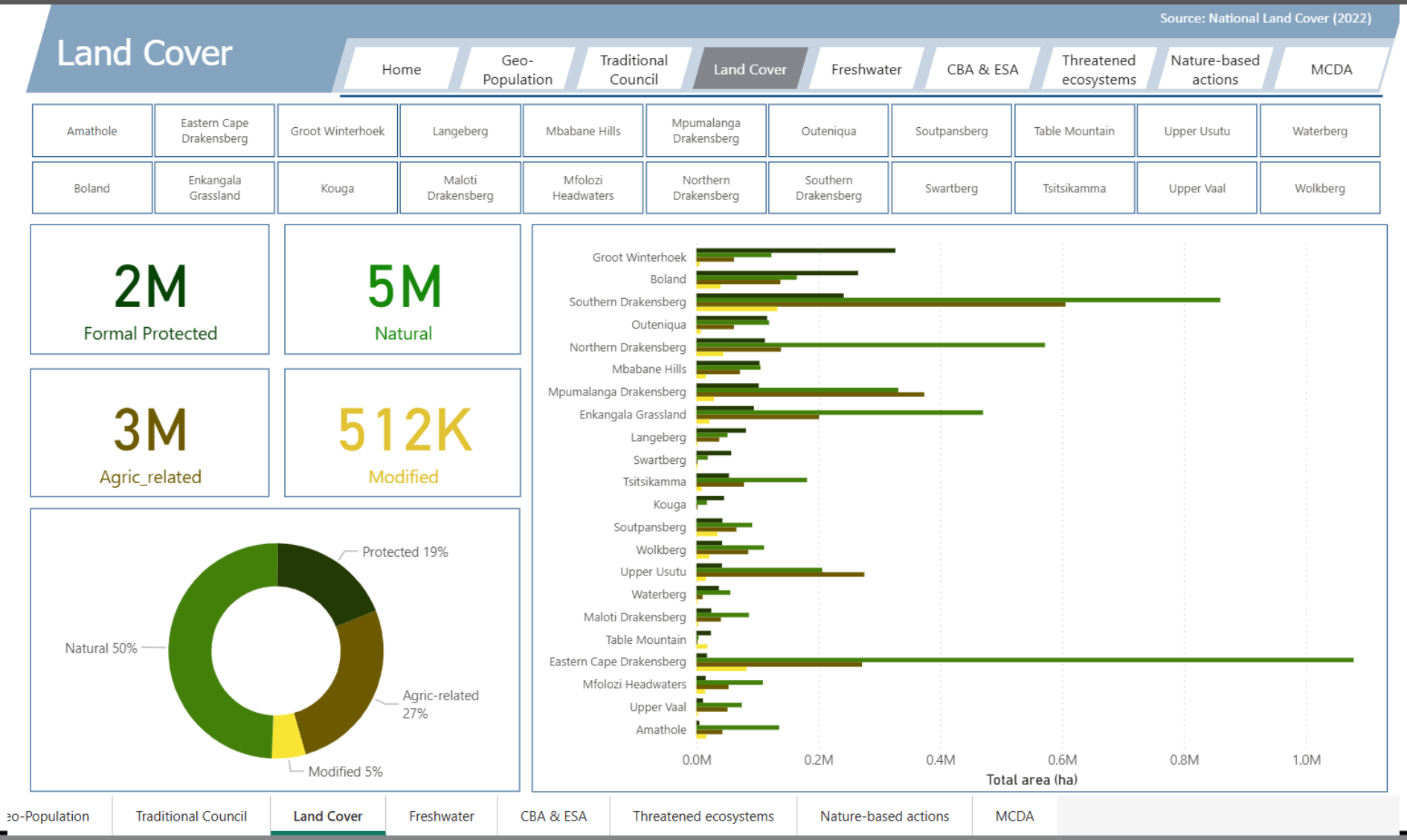


Geo-Population | Traditional Council | Land Cover | Freshwater | CBA & ESA | Threatened ecosystems | Nature-based actions | MCDA

Traditional Council Areas



Land Cover


Source: National Land Cover (2022)
Land Cover
Home
Geo-Population
Traditional Council
Land Cover
Freshwater
CBA & ESA
Threatened ecosystems
Nature-based actions
MCDA
Amathole
Eastern Cape Drakensberg
Groot Winterhoek
Langeberg
Mbabane Hills
Mpumalanga Drakensberg
Outeniqua
Soutpansberg
Table Mountain
Upper Usutu
Waterberg
Boland
Enkangala Grassland
Kouga
Maloti Drakensberg
Mfolozi Headwaters
Northern Drakensberg
Southern Drakensberg
Swartberg
Tsitsikamma
Upper Vaal
Wolkberg
2M
Formal Protected
5M
Natural
3M
Agric_related
512K
Modified
Protected 19%
Natural 50%
Agric-related 27%
Modified 5%
Groot Winterhoek
Boland
Southern Drakensberg
Outeniqua
Northern Drakensberg
Mbabane Hills
Mpumalanga Drakensberg
Enkangala Grassland
Langeberg
Swartberg
Tsitsikamma
Kouga
Soutpansberg
Wolkberg
Upper Usutu
Waterberg
Maloti Drakensberg
Table Mountain
Eastern Cape Drakensberg
Mfolozi Headwaters
Upper Vaal
Amathole
0.0M
0.2M
0.4M
0.6M
0.8M
1.0M
Total area (ha)
eo-Population
Traditional Council
Land Cover
Freshwater
CBA & ESA
Threatened ecosystems
Nature-based actions
MCDA

Freshwater Ecosystems

Freshwater (Rivers & Wetlands)

Source: NBA 2018 & NVW 6

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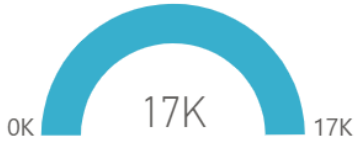
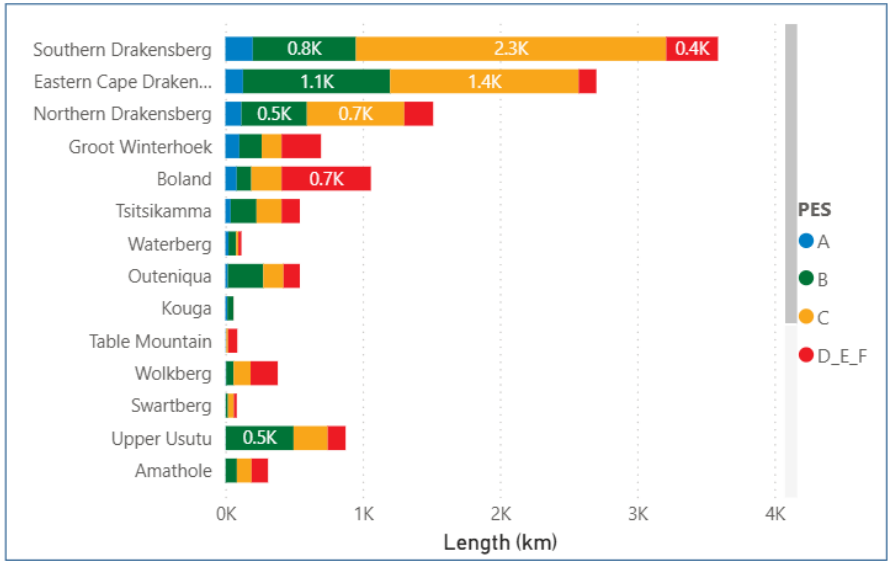
Rivers

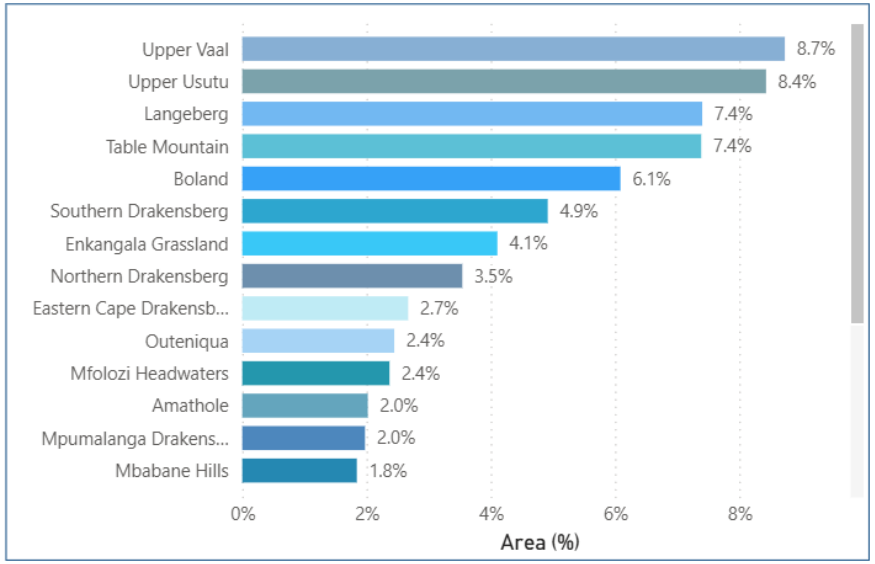


Wetlands

357K

Total area (ha)





eo-Population | Traditional Council | Land Cover | Freshwater | CBA & ESA | Threatened ecosystems | Nature-based actions | MCDA

CBAs Within SWSAs

Critical Biodiversity Areas

Source: SANBI Amalgamated National CBA & ESA (2025)

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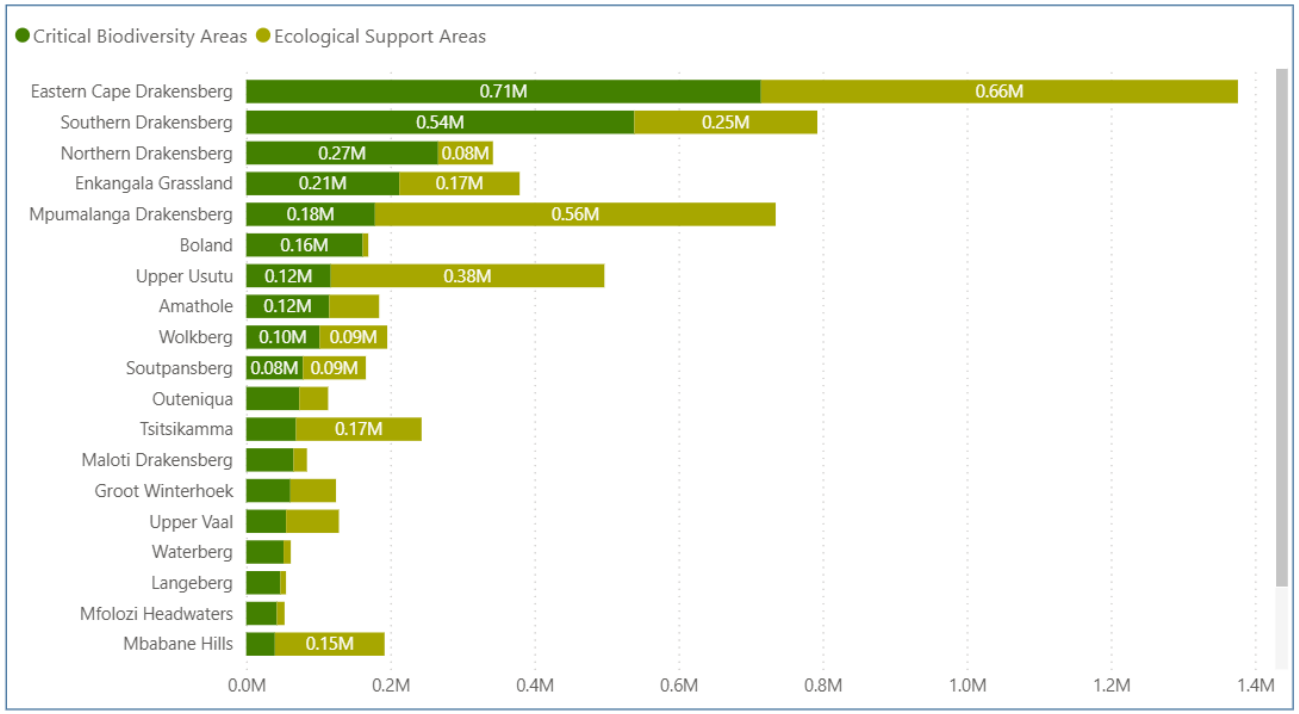
3M Critical Biodiversity Areas

3M Ecological Support Areas

SWSAName	Sum of Total
Amathole	184485
Boland	169435
Eastern Cape Drakensberg	1376299
Enkangala Grassland	379476
Groot Winterhoek	124621
Kouga	16977
Langeberg	55266
Maloti Drakensberg	84291
Mbabane Hills	192026
Mfolozi Headwaters	53276
Mpumalanga Drakensberg	734798
Northern Drakensberg	342427
Outeniqua	113651
Southern Drakensberg	792620
Total	**5931541**



-Population | Traditional Council | Land Cover | Freshwater | CBA & ESA | Threatened ecosystems | Nature-based actions | MCDA

Threatened Ecosystems Within SWSAs

Red List of Ecosystems

Source: RLE 2021

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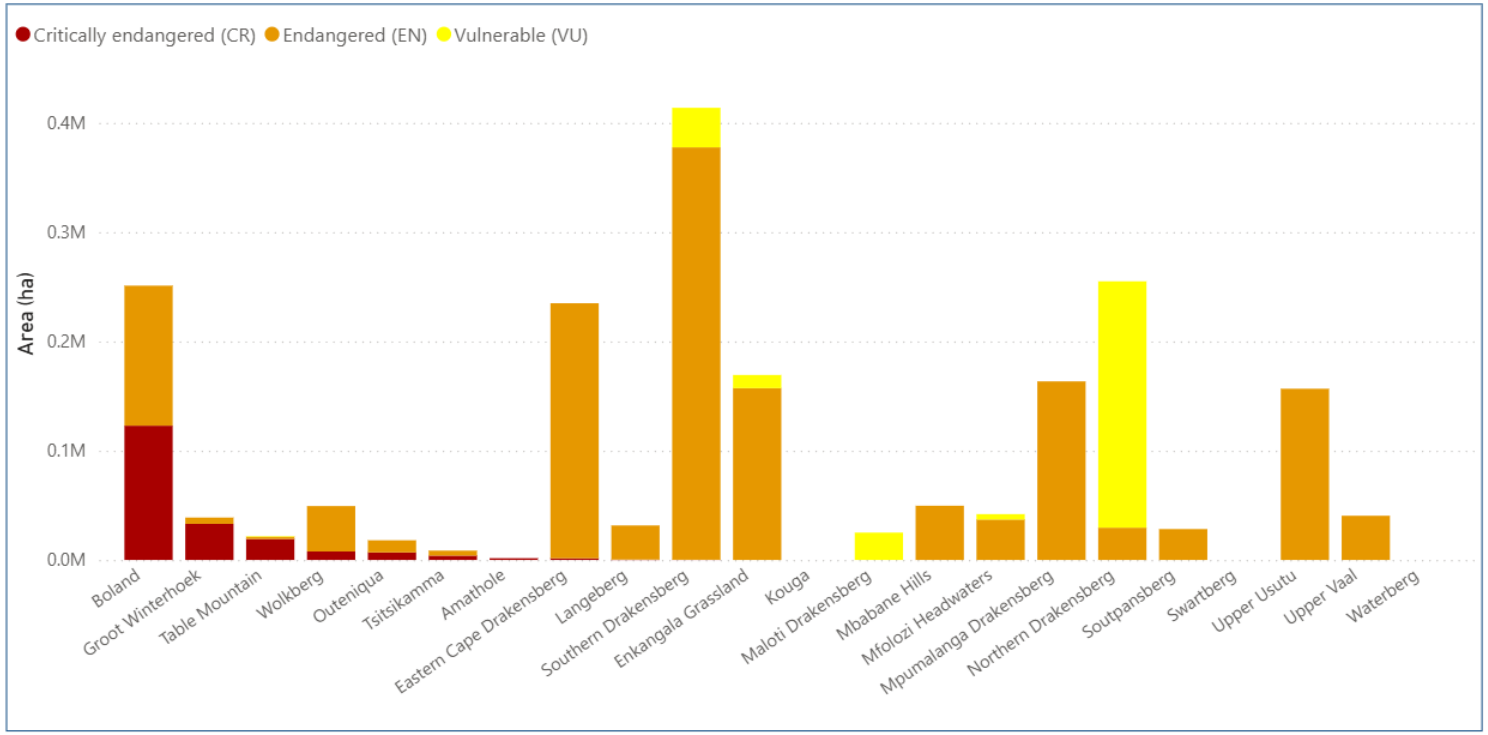
197K
Critically endangered (CR)

1M
Endangered (EN)

304K
Vulnerable (VU)



o-Population | Traditional Council | Land Cover | Freshwater | CBA & ESA | Threatened ecosystems | Nature-based actions | MCDA

Essential Life Support Action Areas

Essential Life Support Action Area

Source: Essential Life Support Action Areas

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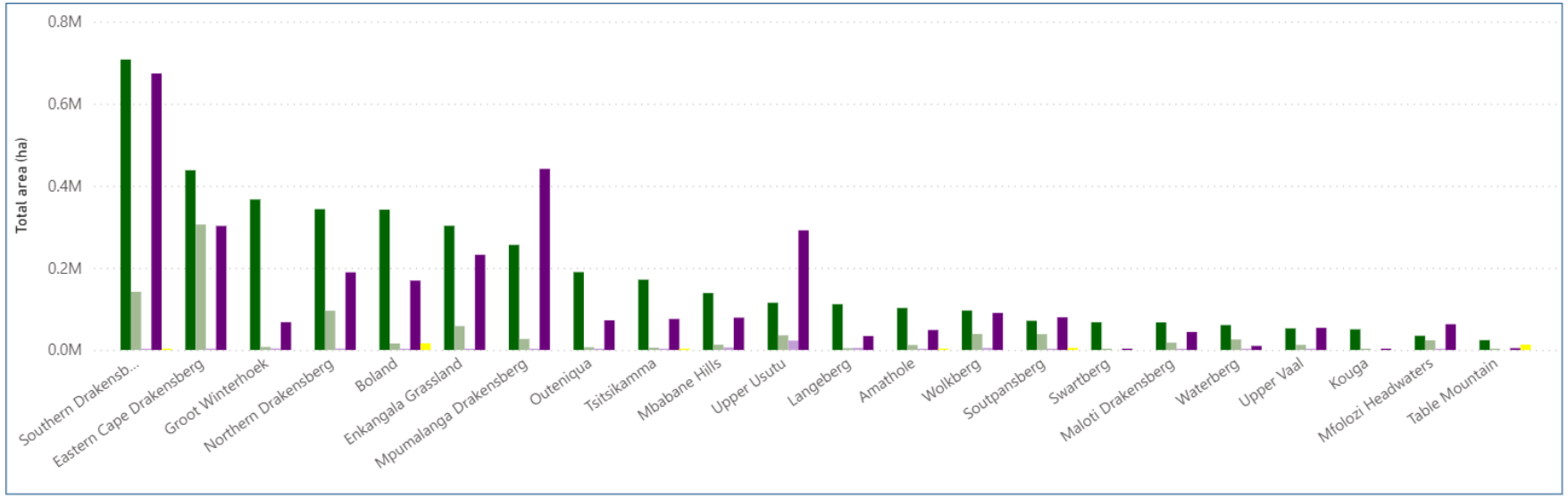
4M Protect

889K Avoid Loss

65K Reduce Pressures

3M Restore

40K Urban Adapt



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So What?

- Tool can give characterization of biophysical characteristics of SWSAs
- Tool to be used to support reporting against actions within SWSAs:
  - Spatial Task Team to be a platform to bring completed work within SWSAs
  - STT to establish a mechanism of validating the actions and create shapefiles associated with actions
  - Stakeholders can use data on each SWSAs to identify areas for prioritizing actions based on the needs
- Outstanding Areas
  - Census data at ward level;
  - An update of the SWSAs accounts data as current data is 5 years old;
  - Incorporating emerging layers i.e PDALA.

The Golden '&'

- Biodiversity AND development
- not Biodiversity OR development
  - There is room in the landscape and seascape for biodiversity AND intensive human uses…IF we plan in an integrated way and make decisions based on best available science
  - Biodiversity assets and ecological infrastructure provide jobs and can sustain and expand the economy
- Value proposition
  - Streamlined decision-making
  - Better decisions for sustainable development
  - Benefits for people and the economy

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Thank You

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REPUBLIC OF SOUTH AFRICA

2030 NDP