Sasol Biodiversity Management

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4 September 2025
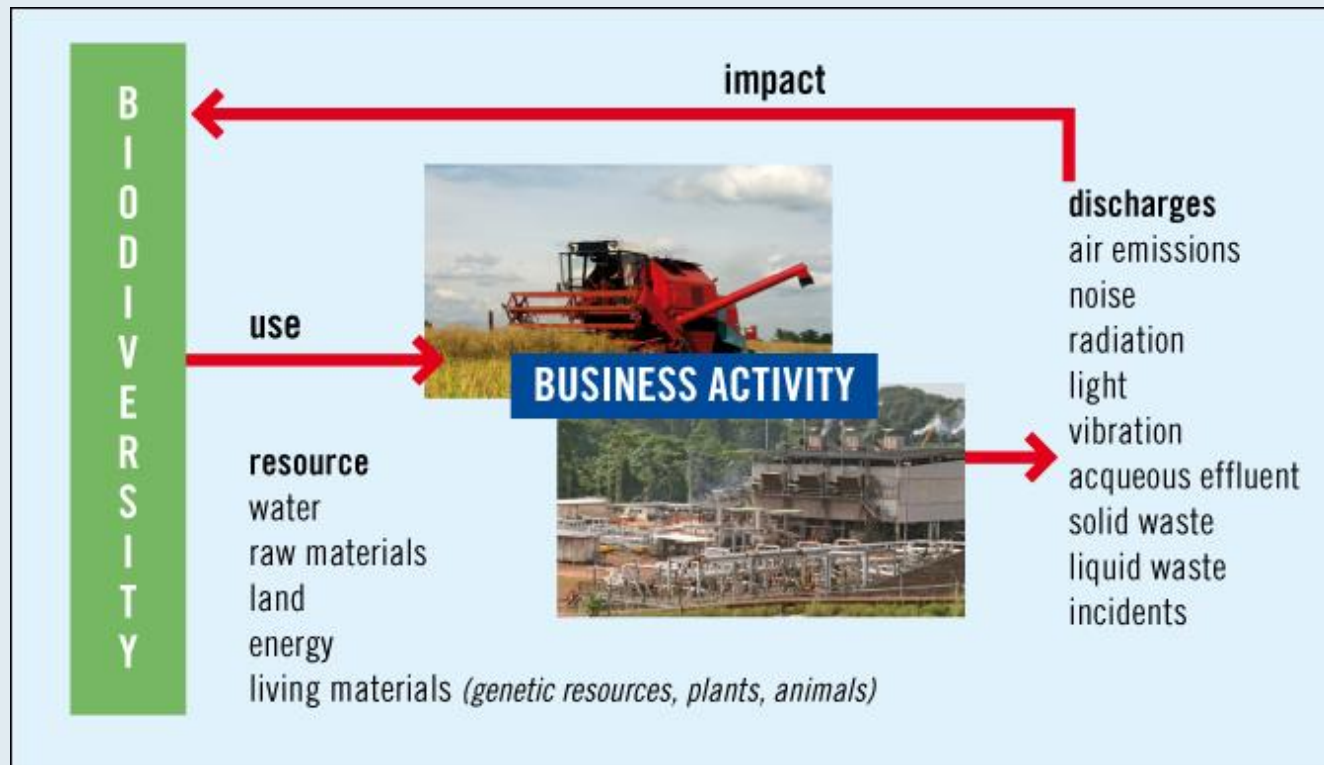
SAFELY DELIVERING TODAY,
SHAPING TOMORROW

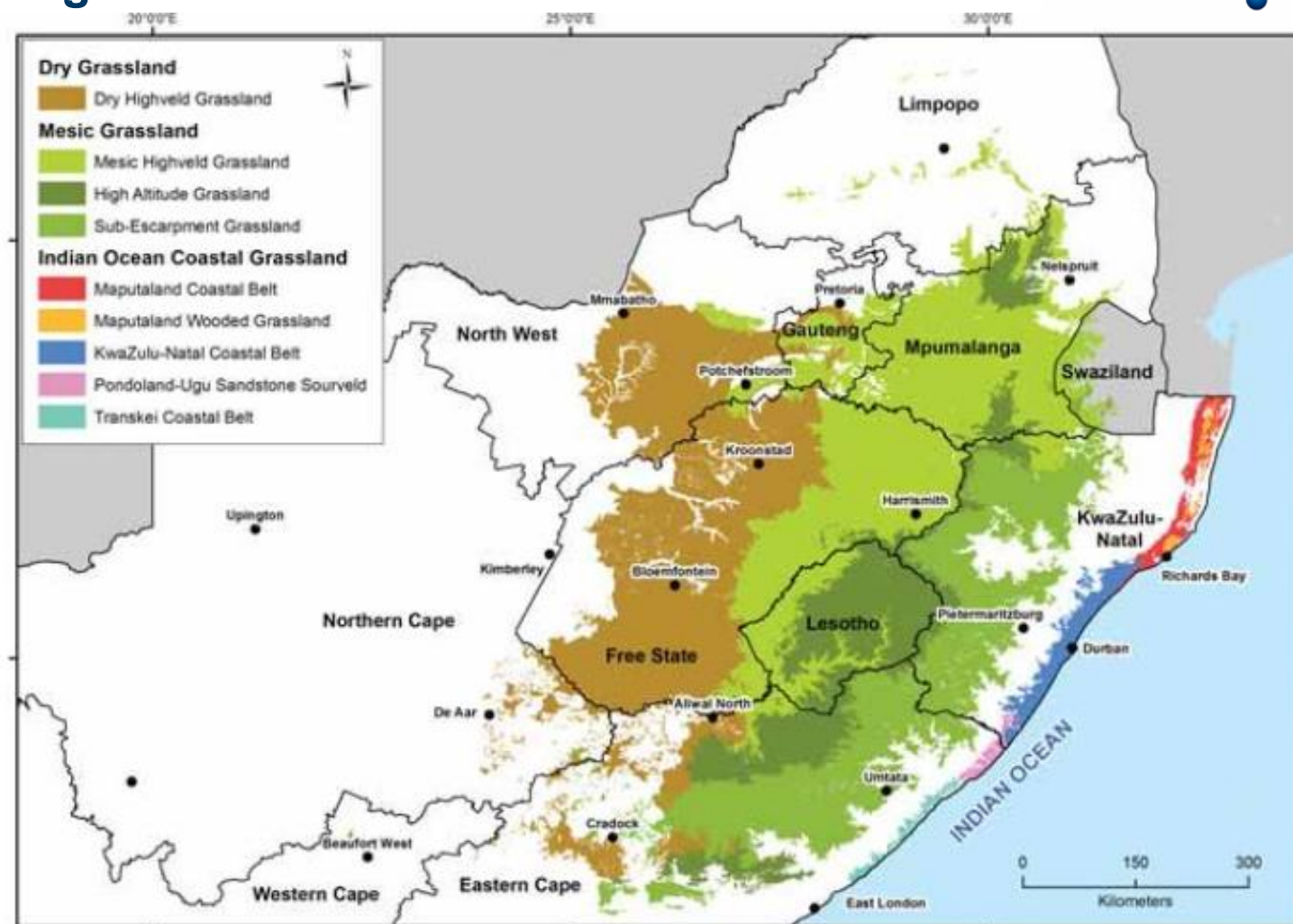# Sasol biodiversity

Index

Biodiversity conceptual model

- Is this conceptual model in balance?

- What is required to get it in balance?

Background to Sasol's biodiversity management

- Sasol operations are conducted in the grassland biome - only approximately 1.7% is formally conserved in which some Red Data species occur.

- Sasol's operational footprint impacts on the biodiversity, and we need to conserve our environment to protect ecosystem functions.

- Sasol commenced with our protection measures, by means of understanding our:

  - Footprint
  - Species diversity
  - Species abundance
  - Measures and targets
    - Understanding of impacts
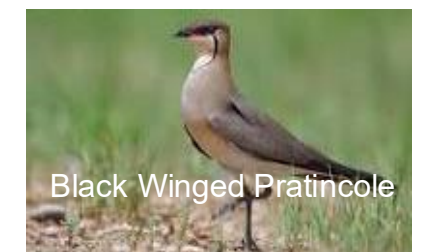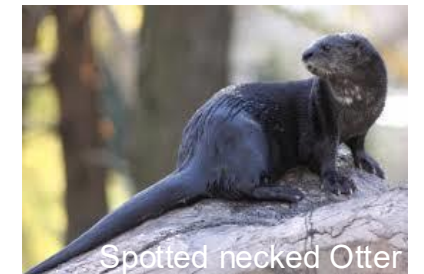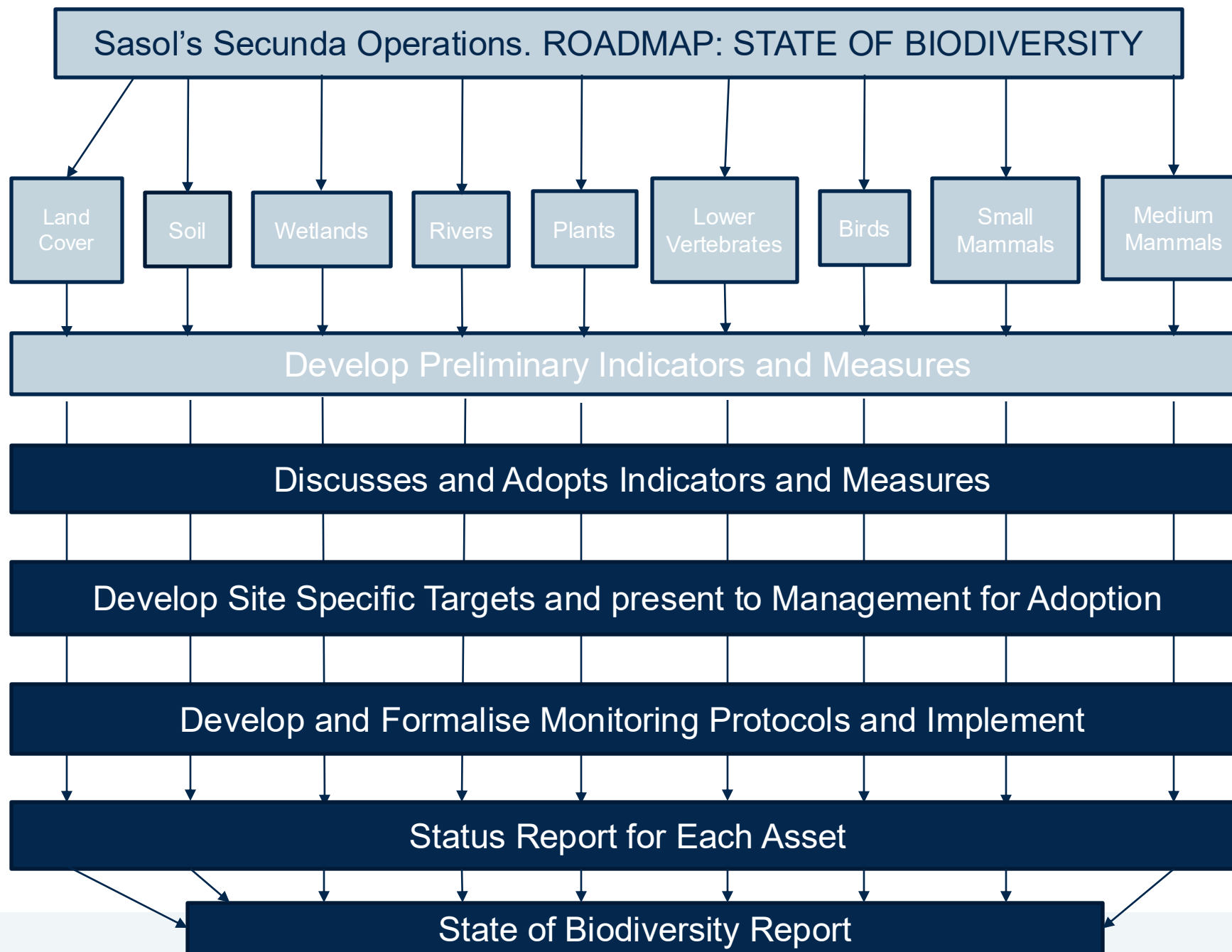   - Understanding of dependencies

  - STATE OF BIODIVERSITY

Source: **Burning and grazing for biodiversity in South Africa's grasslands**

Introduction to the state of biodiversity

- A comprehensive and well-structured knowledge base is essential for accurately assessing biodiversity assets, as well as the associated ecological impacts and dependencies. Variations in biodiversity monitoring trends are influenced by both natural cycles and anthropogenic activities, which together provide critical insights into ecosystem dynamics and pressures.

- Sasol's biodiversity inventory provides detailed documentation across the following key ecological components:
    - **Land Cover**
    - **Soil Composition and Health**
    - **Wetland Ecosystems**
    - **River Systems**
    - **Flora (Plant Diversity)**
    - **Lower Vertebrates (e.g., amphibians and reptiles)**
    - **Avifauna (Bird Species)**
    - **Small Mammals**
    - **Medium-Sized Mammals**

- The compilation of various scientific monitoring and reporting is combined into an annual report, the SOB.

Serval

Plough-breaker - Erythrina zeyheri

Spotted necked Otter

Black Winged Pratincole

Sasol's Secunda Operations. ROADMAP: STATE OF BIODIVERSITY

sasol

Land Cover | Soil | Wetlands | Rivers | Plants | Lower Vertebrates | Birds | Small Mammals | Medium Mammals

Develop Preliminary Indicators and Measures

Discusses and Adopts Indicators and Measures

Develop Site Specific Targets and present to Management for Adoption

Develop and Formalise Monitoring Protocols and Implement

Status Report for Each Asset

State of Biodiversity Report

Sasol Secunda: State of biodiversity

P.S. Goodman, W.S. Matthews and D.J. Loock

SOB (A SCIENTIFIC APPROACH TO BIODIVERSITY)

Overview and explanation of headline indicators to be used in the Secunda state of biodiversity reporting.

Headline Indicator	Explanation and local implementation
Trends in extent of selected biomes, ecosystems and habitats.	State indicator, giving trends in the change in the surface area of the main land cover types e.g. transformation rate.
Trends in abundance and distribution of selected species	State indicator giving abundance trends of selected species characteristic of the site.
Change in status of threatened and/or protected species	State indicator giving abundance trends of conservation important species including IUCN and RSA Red Listed and other listed species.
Trends in genetic diversity of selected vertebrate and plant species of conservation importance	State indicator expressing the change in the heterozygosity of selected important species e.g. serval

INDICATOR ASSESSMENT

- 🙂 NATURAL HABITAT

- 😐 SOILS

- ☹️ RIVERS AND STREAMS

- 😐 WETLANDS

- 🙂 VEGETATION CONDITION (grass)

- 🙂 FLORAL CONDITION (plants)

- 🙂 HERPETOFAUNA

- 🙂 AVIAN

- 🙂 SMALL MAMMALS

- 🙂 SMALL MAMMAL PREDATORS

Grasslands

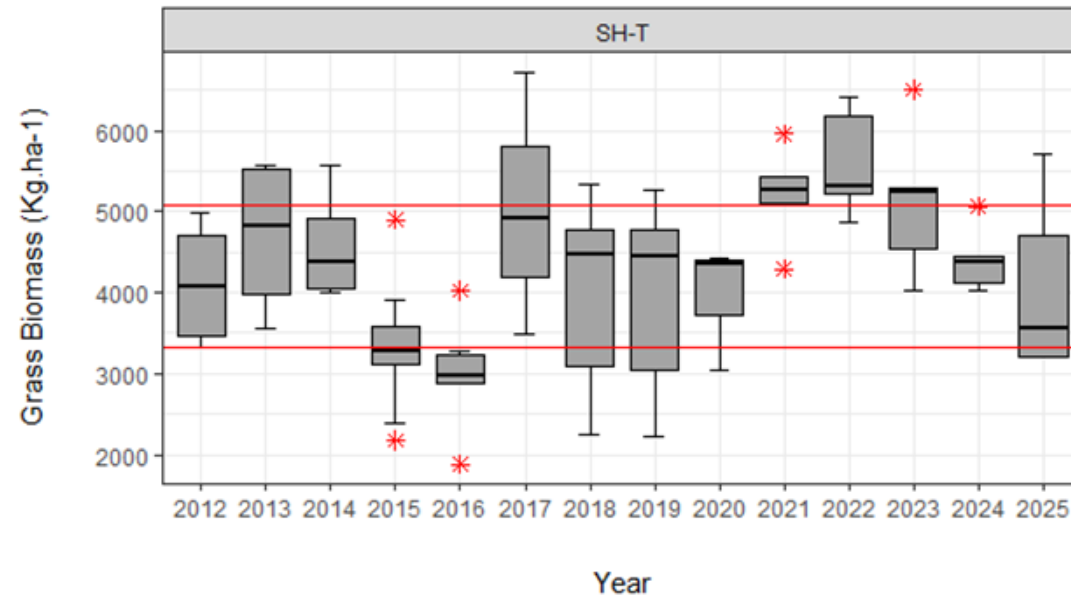- Summary of the state of grassland forage resources of the Secunda secondary area in 2025.

Biodiversity Asset	Biodiversity Indicator	Target (kg ha^{-1})	2025 Status	Target Assessment	Trend Assessment
SHG - pristine grassland (SH-T)	Total grass biomass	3313 – 5084	3560	Achieved	Stable
SHG - moist grassland (SH-B)	Total grass biomass	4152 - 5836	4836	Achieved	Stable
SHG - tall grassland (SH-Hy)	Total grass biomass	3941 - 7566	7368	Achieved	Stable
SHG - disturbed grassland (SH-D)	Total grass biomass	3868 - 6756	4084	Achieved	Stable
Transformed flats and floodplains (D)	Total grass biomass	3868 - 6756	4997	Achieved	Stable
Proportional contribution of high-quality forage	Percentage	None	36 to 53	Not assessed	Stable to Increasing

Biodiversity Asset	Biodiversity Indicator	Target	2025 Status	Target Assessment	Trend Assessment
SHG - pristine grassland	Species richness	>52	64	Achieved	Stable
SHG - moist grassland	Species richness	>51	49	Not Achieved	Decline
SHG - rocky grassland	Species richness	>59	68	Achieved	Stable
SHG - disturbed grassland	Species richness	>36	45	Achieved	Rel. Stable
SHG - pristine grassland	Community MORISITA Index	> 0.74	0.840	Achieved	Rel. Stable
SHG - moist grassland	Community MORISITA Index	> 0.67	0.723	Achieved	Stable
SHG - rocky grassland	Community MORISITA Index	> 0.63	0.670	Achieved	Stable
SHG - disturbed grassland	Community MORISITA Index	> 0.64	0.586	Not Achieved	Stable
Kniphofia typhoides	Number	>300	813	Achieved	Stable

Trend of biomass
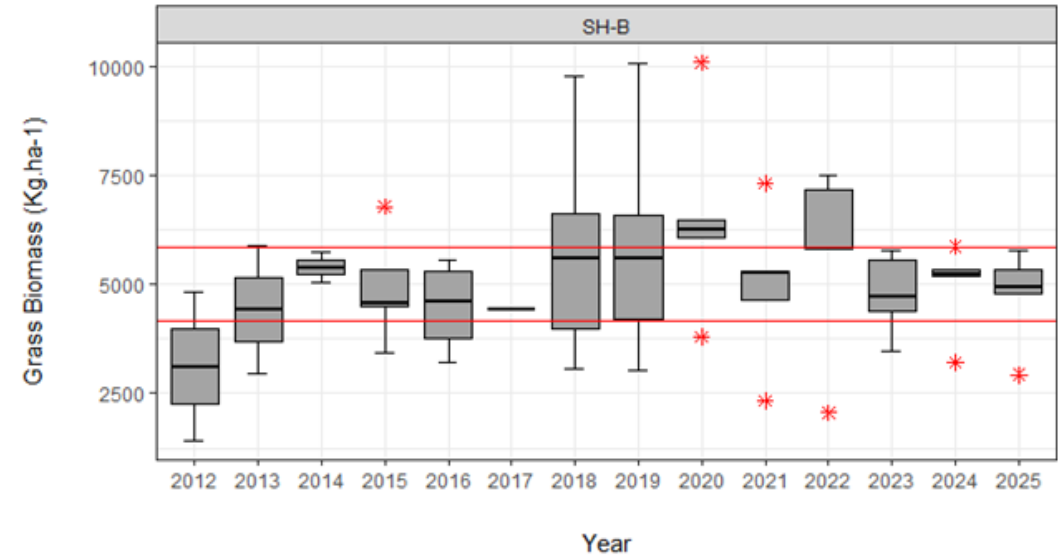
Biomass trends for all sub-communities except SH-T appear relatively stable with all estimated grass biomasses falling within their relative interquartile ranges (Figures 2 to 6). The SH-T community biomass estimate was relatively precise, and this year fell within the interquartile range

Biomass trends for all sub-communities

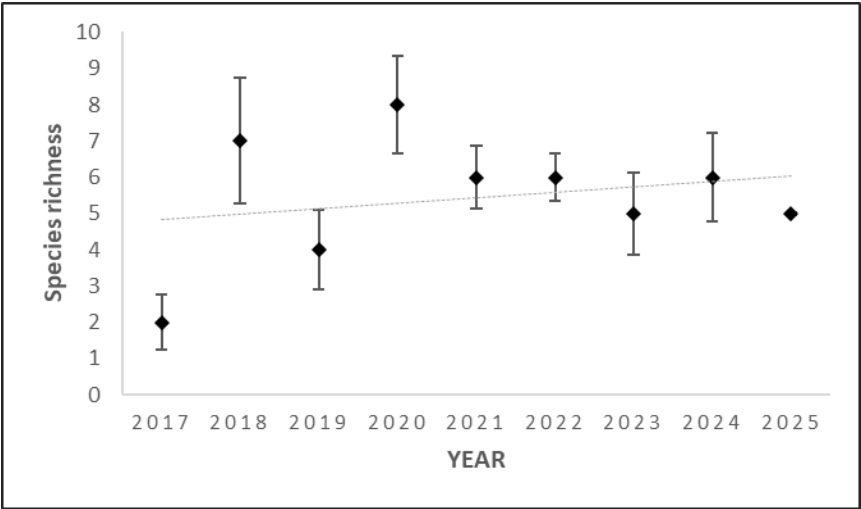Trend in species (kg. ha-1) of the Hypoxis hemerocallidea

Assessment of the biodiversity status of the herpetofauna community of the Secunda secondary area undertaken in 2025.

Biodiversity Asset	Biodiversity Indicator	Target	2025 Status	Target Assessment	Trend Assessment
Amphibians Species richness - SHG	Mao tau N_0	≥ 4.13	5	Achieved	Stable/Declining
Reptiles Species richness - SHG	Mao tau N_0	≥ 4.08	5	Achieved	Variable/Stable
Compositional similarity Amphibians - SHG	Morisita similarity index	≥ 0.7	0.788	Achieved	Stable
Compositional similarity Reptiles - SHG	Morisita similarity index	≥ 0.3	0.453	Achieved	Variable/Stable
Boettger's Caco	CPUE	≥ 0.35	0.038	Not achieved	Variable/Declining

Herpetofauna – State and trend of species richness and of selected important species.

Trend in the species richness (N0 - Estimated using sample rarefaction method of Mao tau) of amphibians in the Soweto Highveld Grasslands of the Secunda Secondary Area 2017 - 2025.

# Assessment of the biodiversity status of the bird community of the Secunda secondary area undertaken in 2025

Table 1. Assessment of the biodiversity status of the bird community of the Secunda secondary area undertaken in 2025.

Biodiversity Asset	Biodiversity Indicator	Target	2025 Status	Target Assessment	Trend Assessment
SHG Bird Community Species Richness	Species richness N_0	> 41	40	Not Achieved	Declining
Bird Community - Compositional similarity	Morisita similarity index	> 0.73	0.703	Not Achieved	Stable/Declining
Wing-snapping Cisticola	Density	> 0.031	0.145	Achieved	Stable
Cloud cisticola	Density	> 0.003	0.0214	Achieved	Stable
Cape longclaw	Density	> 0.23	0.457	Achieved	Stable/Increasing
Long tailed widow	Density	> 0.046	0.103	Achieved	Stable
Fantail widow	Density	< 0.039	0.00	Achieved	Stable/Declining

Trend
Species richness (Avifauna)

Estimated avifaunal species richness has declined by approximately 2.1 % per annum from 53 to ~40 species
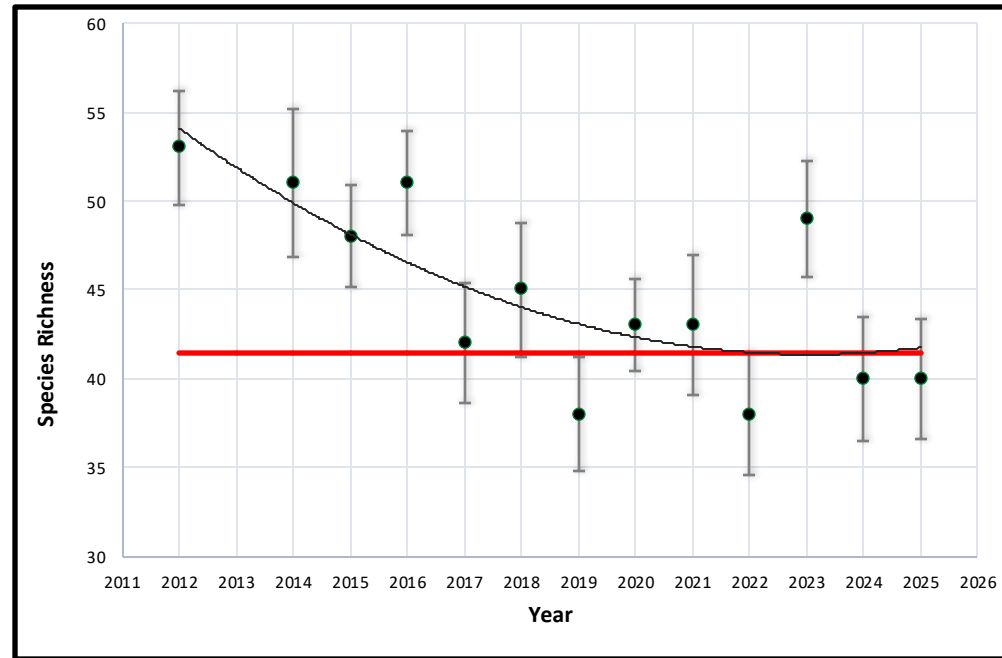
Trend in the estimated species richness (N0) of birds on the Soweto Highveld Grasslands at Secunda

The newest addition to the Secunda Operations team, a newborn white rhino. Photo courtesy of Dr. Wayne Matthews.

Rhino camp (Secunda)

Since the introduction of rhinos to our site in 2017, we have celebrated the birth of eight calves, bringing the total rhino population to 15 Successful breeding program highlights the positive conservation results.

Grasslands (Secunda)

Biodiversity highlights

Serval study

Publications and documentaries

12 Scientific publications

4 Documentaries (BBC, NatGeo and 50/50)

In closing…

- Biodiversity management remains a focus of our sustainability efforts. Various initiatives were implemented but we recognize that significant progress is still needed

- Key biodiversity management actions:
  - Understanding biodiversity trends over time
  - Understanding ecosystem health and function
  - Include anthropogenic covariates into models to understand impact contributions
  - Determine biodiversity dependencies
  - Disclosure

- Aligning strategies with global biodiversity goals for long-term environmental sustainability
  - Aligning with international standards e.g. Taskforce on Nature related Financial Disclosures and SDGs

- Collaboration and engagement – Industry, government, NGOs and local communities

- Reporting and Disclosing – Use guidance from disclosure frameworks, set measurable targets and report on progress

Managing biodiversity is complex and resource-intensive—requiring a coordinated, focused, and sustained effort.