

SECUNDA OPERATIONS BIODIVERSITY MANAGEMENT: SAPIA RMEF

April 2023



SECUNDA OPERATIONS

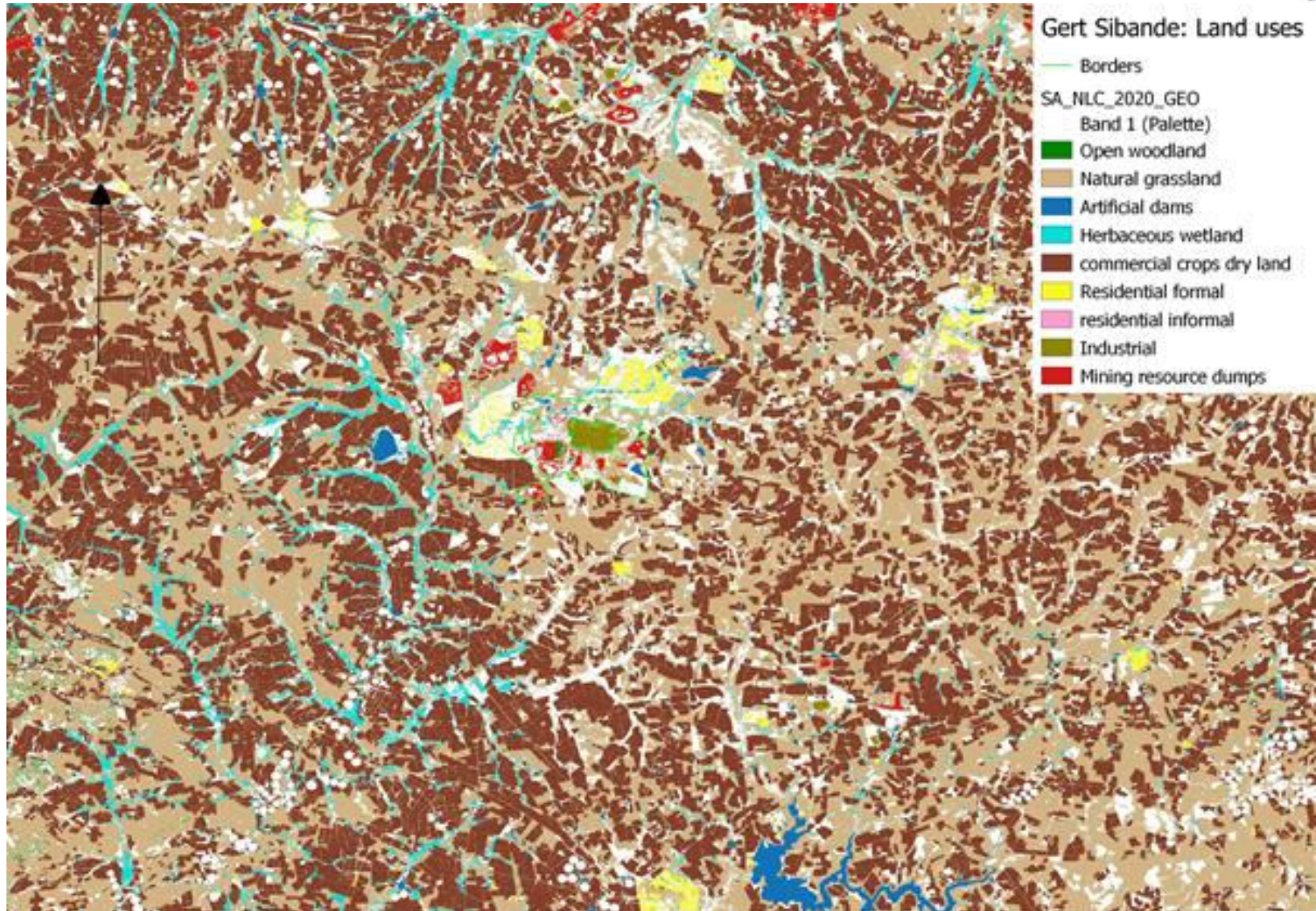
BIODIVERSITY MANAGEMENT: Daan Loock



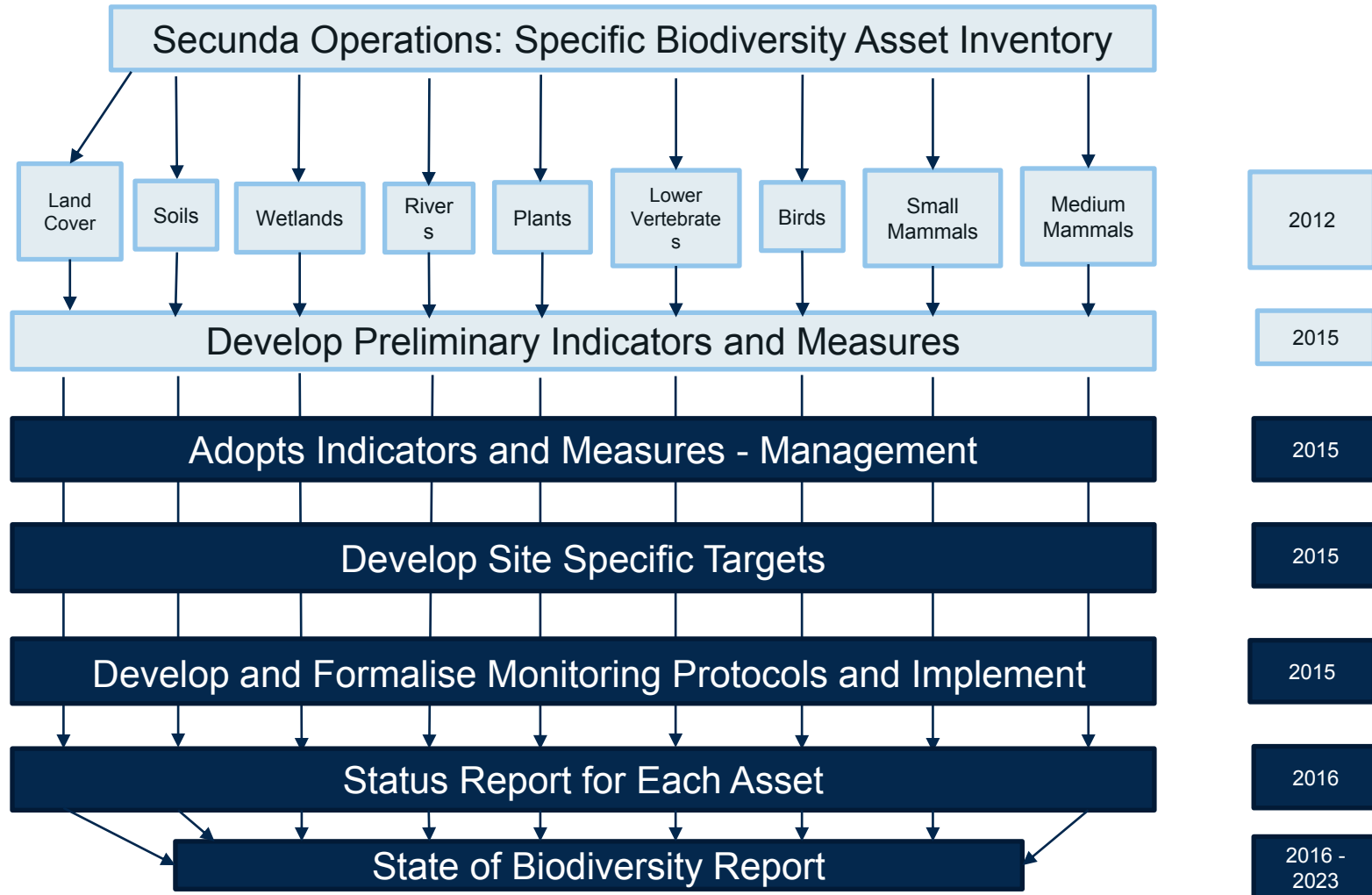
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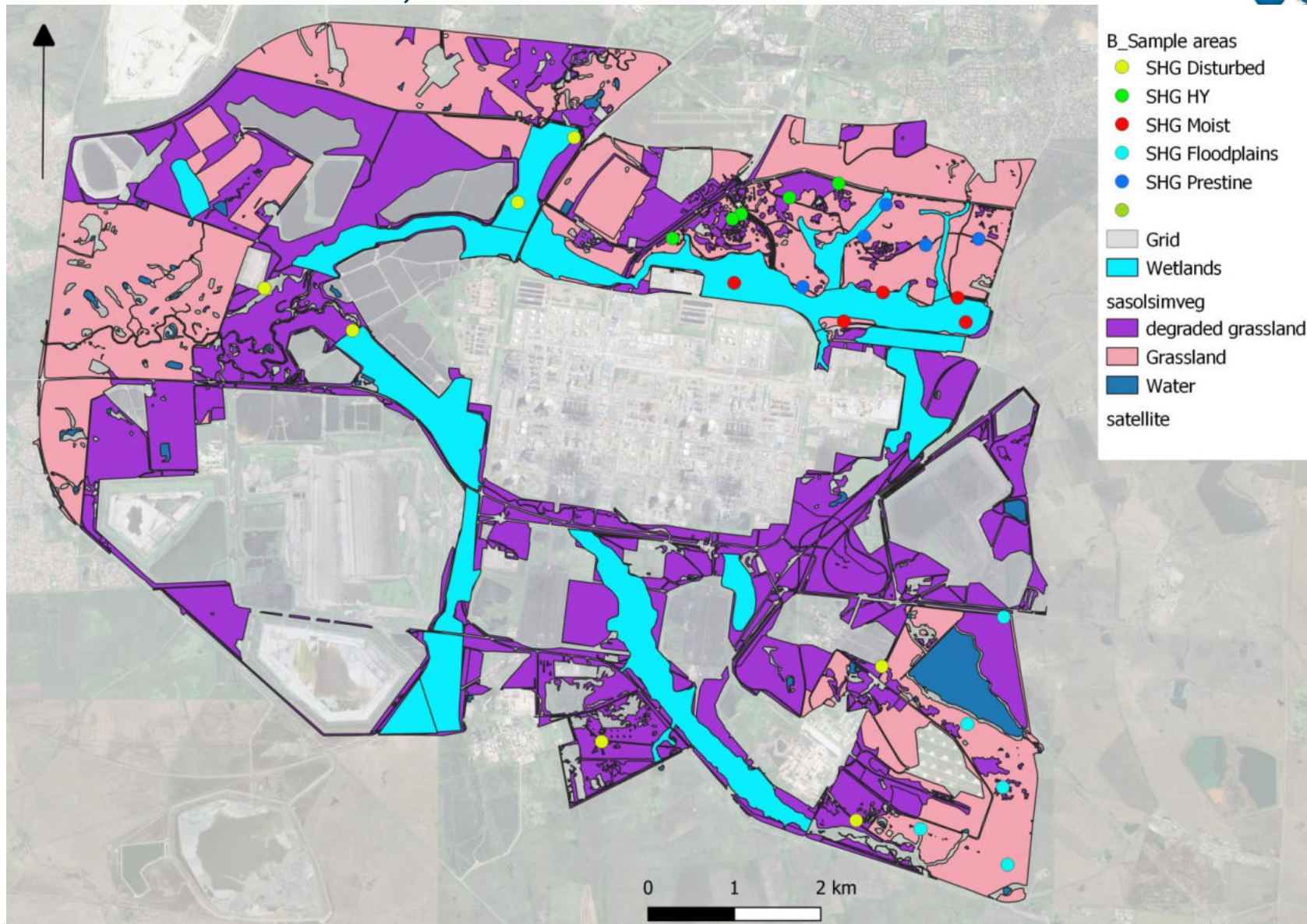
REGIONAL LAND USES – PROTECTED BIOME



SECUNDA OPERATIONS; APPROACH TO BIODIVERSITY MANAGEMENT



SECUNDA OPERATIONS; BIODIVERSITY SCOPE



Biodiversity focus areas



Biodiversity focus	Commencement	Years of data
Soil organic carbon	2018	1 Years
Wetlands (Dragonflies & wetland birds)	2021	2 Years
Waterways (Diatoms, macro invertebrates & fish)	2012	11 Years
Plants	2016	7 Years
Grasslands	2016	7 Years
Birds	2012	11 Years
Herpetology	2017	6 Years
Small mammals	2015	8 Years
Mammals	2015	8 Years

Biodiversity structure

Position	Responsibilities
Biodiversity manager	• Conducting assessments • Reviewing reports • Compiling SOB
Ecologist (one)	• Conducting several assessments • Managing service providers (ecologists) • Reviewing reports
External consultants (ecologists 3-4)	• Conducting specialized assessments • Reporting

STATE OF BIODIVERSITY FRAMEWORK

- The outcomes of the company's efforts in terms of their impact on the status and trend of biodiversity has not been measured since 2016.
- The aim of this state of biodiversity report is to layout a framework to monitor and report on the status and trend of biodiversity for Secunda Operations.
- We focus on the reporting of internationally termed headline indicators for biodiversity against a predetermined desired state or trend, rather than a driving-force-pressure-state-impact-response (DPSIR) framework.

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.

SOB – SHG status and trend

Biodiversity Asset	Biodiversity Indicator	Target	2022 Status	Target Assessment	Trend Assessment
<i>SHG - pristine grassland</i>	Species richness	>50	50	Achieved	Small Decline
<i>SHG - moist grassland</i>	Species richness	>51	49	Not Achieved	Decline
<i>SHG - rocky grassland</i>	Species richness	>58	60	Achieved	Stable
<i>SHG - disturbed grassland</i>	Species richness	>36	37	Achieved	Small Decline
<i>SHG - pristine grassland</i>	Community MORISITA Index	> 0.71	0.684	Not Achieved	Small Decline
<i>SHG - moist grassland</i>	Community MORISITA Index	> 0.65	0.691	Achieved	Stable
<i>SHG - rocky grassland</i>	Community MORISITA Index	> 0.618	0.597	Not Achieved	Small Decline
<i>SHG - disturbed grassland</i>	Community MORISITA Index	> 0.65	0.663	Achieved	Stable

Highlights

Rhino conservation



SERVAL RESEARCH – Highest serval populations ever recorded



Objectives

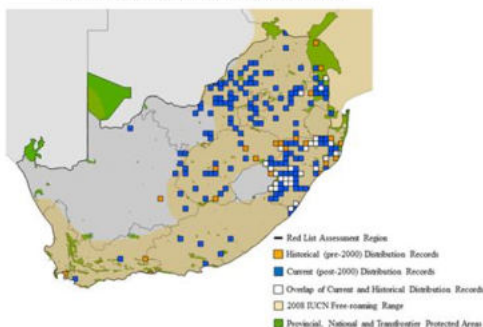
- To determine the population size of serval in the study area and what limits this
- To investigate variation in demographic patterns of a small population compared to other known sites
- To assess the current feeding ecology of a small enclosed population
- To investigate the spatial ecology of serval by determining variation in the spatio temporal dynamics in home range size, ranging patterns and habitat selection
- To address the implications of these results for the conservation and management of this species

AGE

In the wild – up to 11 years

In captivity – up to 20 years

Distribution Records for Serval (*Leptailurus serval*)



	Weight	Size
Female	9 - 11 kg	68 - 93 cm*
Male	11 - 13 kg	71 - 95 cm*
Shoulder height		53 - 60 cm
Tail 1/3 of length		25 - 32 cm

Biodiversity Publications



- Viral prevalence in wild serval population is driven by season and sex – EcoHealth
- Immobilization, cardiopulmonary and blood gas effects of ketamine-butorphanol... - Veterinary Anaesthesia and Analgesia
- Dental pathology in a wild serval population – Journal of comparative pathology
- Hi carnivore density highlights the conservation value of industrial sites – Nature
- Expanding the geographical distribution of the Egyptian Mongoose – Check List
- The value of rapid baseline surveys: documenting unexpected herpetofauna richness – Contemporary Conservation
- Survey effort and seasonally effects on small mammal diversity and density estimates... - Contemporary Conservation
- Seasonal and daily activity patterns of serval – SA Wildlife Management
- Diversity of carnivores around Sasol Secunda plant – SA Wildlife Management

Conclusion



- Sasol has over the years dedicated resources to the research, monitoring and management of the natural resources and biodiversity found on the semi-natural secondary area, as well water and wetland resources of the industrial site at Secunda.
- The extend and richness of the biodiversity assets on such industrial sites is normally expected to be very poor, however the contradiction has been proved here.
- The research on biodiversity over the past years has highlighted the conservation value that these semi-protected areas may have to wildlife in general and specifically protected species.
- Our biodiversity efforts may influence other industrial landowners to manage their biodiversity accordingly to enhance and protect the much-needed resources and habitat.

Questions / Discussion