



Semaine internationale des zones humides Ramsar

Ateliers - Séminaire technique - Animations

20 - 25 mai 2024

Ile de La Réunion - France





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The fight against invasive alien species in a context of climate change

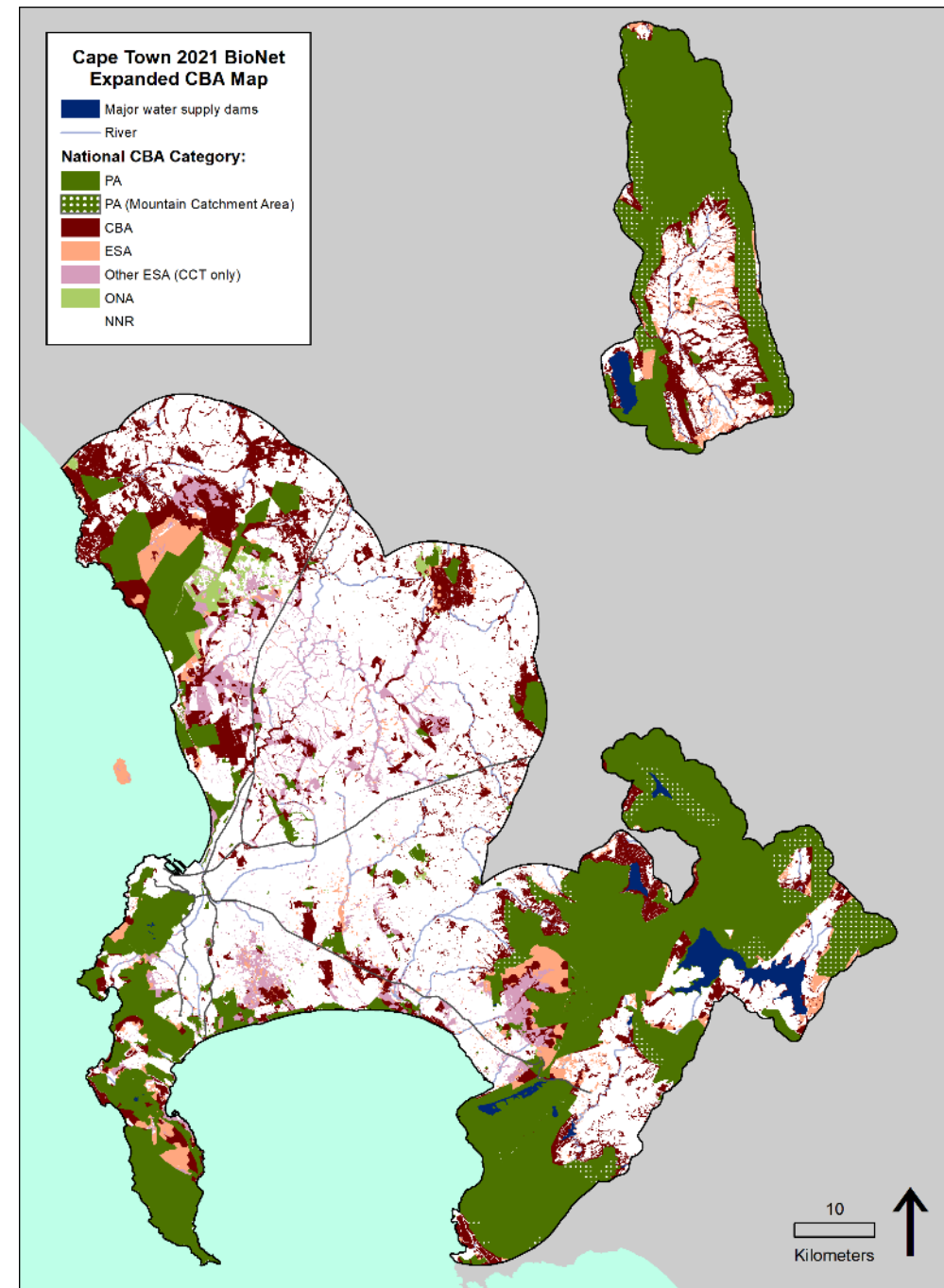
Presentation Delivered at the Ramsar wetlands International Week: Reunion Island - France
Bongani Zungu *Pr. Sci. Nat.*

24 May 2024

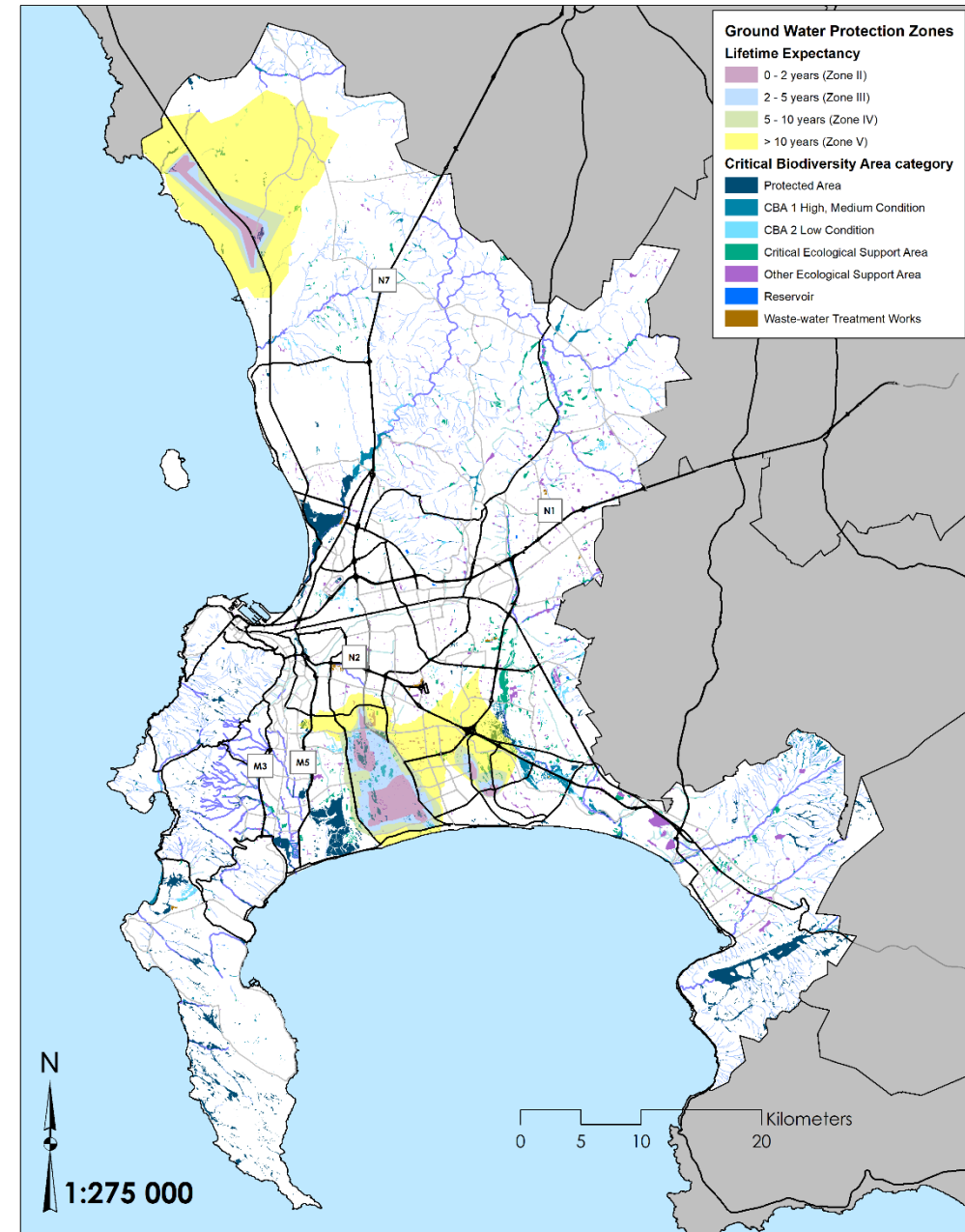
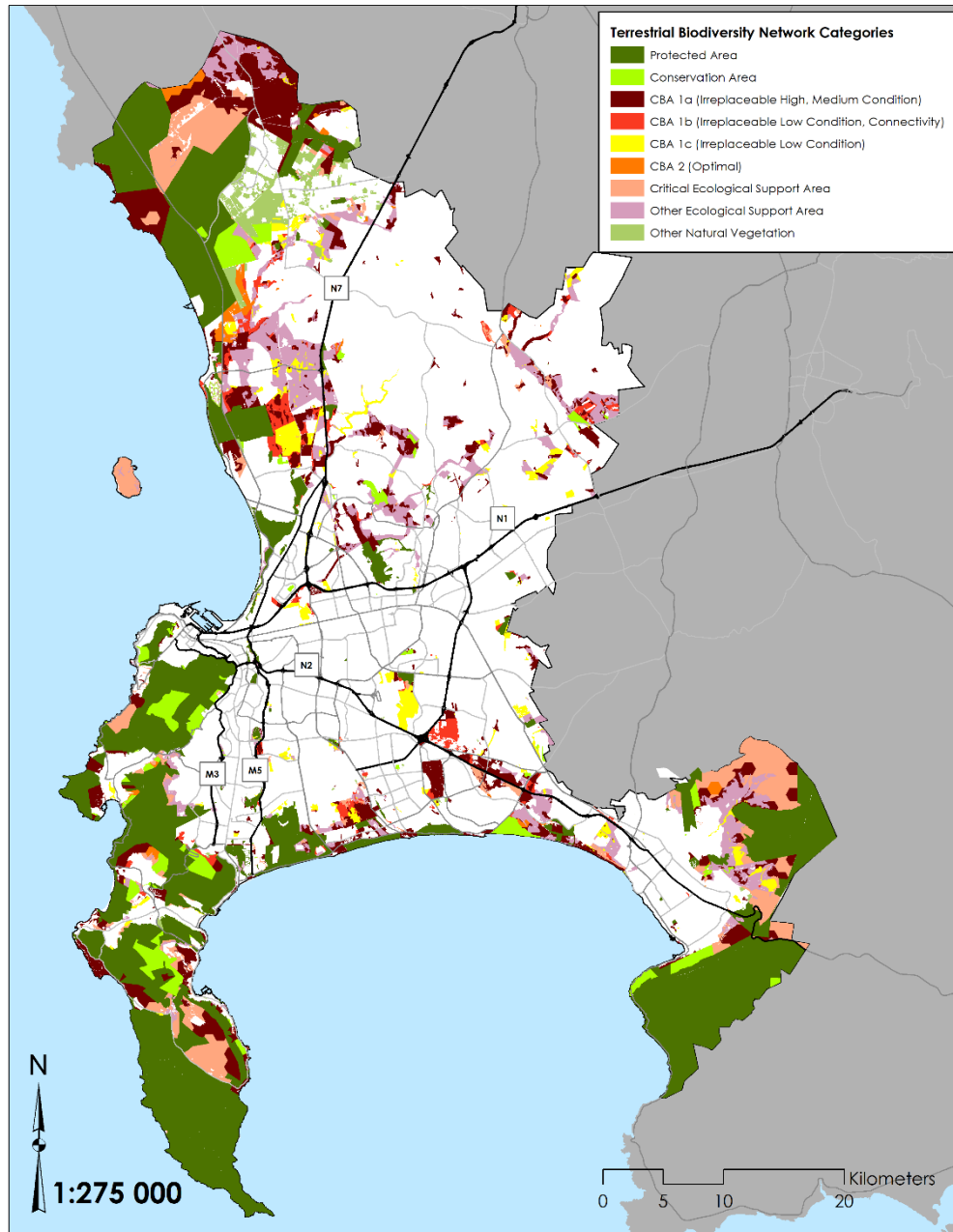
BioNet 2021 for CCT municipal area, extended domain (10 km buffer) and Water Supply Catchments

- Combined CBA map showing the national CBA categories.

With expert input after the initial BioNet re-run, several changes on the ground were identified and updated.



Cape Town Terrestrial and Aquatic BioNet 2023



Introduction to False Bay Nature Reserve

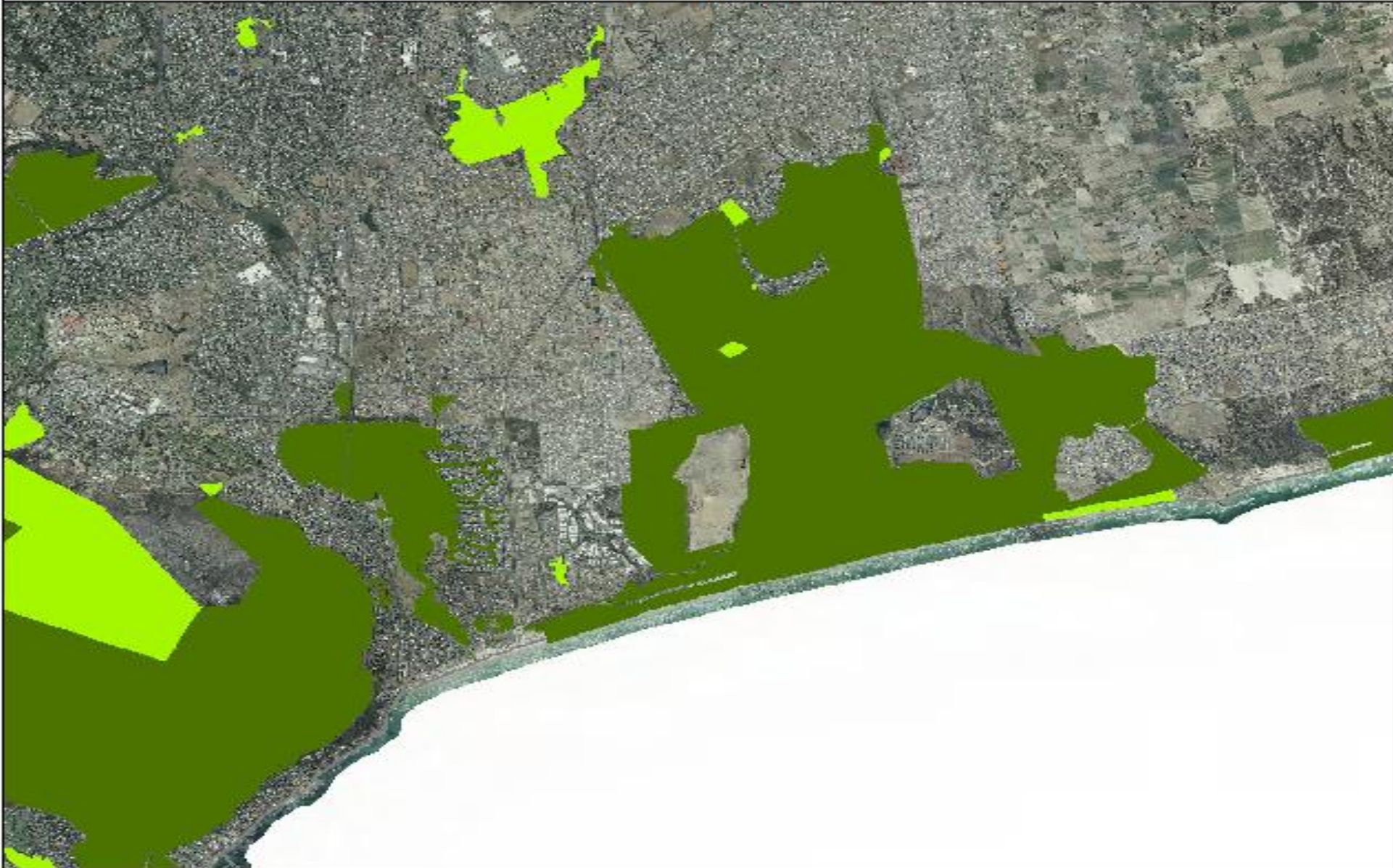
- Proclaimed Nature Reserve under the National Environmental Management: Protected Areas Act (Act 57 of 2003)
- One of the 23 Designated RAMSAR sites, Wetlands of International Importance, in South Africa,
- The reserve has a landmass of ± 2300 ha in extent
- Coastline of about 9.5 km,
- Its an urban reserve, bordered by residential area (Lavender Hills, Grassy Park, Pelican Park and Strandfontein)
- Has a formally operating Landfill Site and a Waste Water Treatment Works.

Different Sections of the Reserve

- Reserve comprising of several ecologically linked sections
 - Rondevlei Section: 290 ha
 - Zeekoevlei Section: 344 ha
 - Strandfontein Birding Area: 387 ha
 - Pelican Park Section: 244 ha
 - Slangetjebos Section: 220 ha
 - Zandwolf Section: ±815.7 ha



False Bay NR Sections



Legend



1:50,000

North arrow and projection: GCS New Zealand 1949, WGS 84 Ellipsoid using the New Zealand datum.

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Author: Benjamin Chung
Date: 18 September 2021



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Ecological importance of False Bay Nature Reserve

- A freshwater system of about **633 ha**, comprising of the following sections:
 - Rondevlei section: 58 ha
 - Zeekoevlei section: 256 ha
 - Strandfontein Birding Area: 319 ha
- Other important **seasonal wetlands** are found in the reserve. All of which contribute to certain and specific ecological functions.
- Habitat for some species.

Wetlands



Legend



1:50,000

This map is a derivative product of the City of Vancouver's Wetland Inventory and is not intended for use as a navigation tool.

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Author: Bengali
Date: 18 September 2021



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Importance Cont....

- Falls within 2 vegetation types
 - Cape Flats Dune Strandveld
 - Cape Flats Sand Fynbos
- Varying habitats, supporting about 300 plant species
- 24 mammal species including the first and the only viable Hippo population in Cape Town
- Supports about 240 bird species (84 breeding at False Bay)
- 29 Reptile Species
- 2 Endemic Butterflies



Vwgetation Types



Legend



1:50 000

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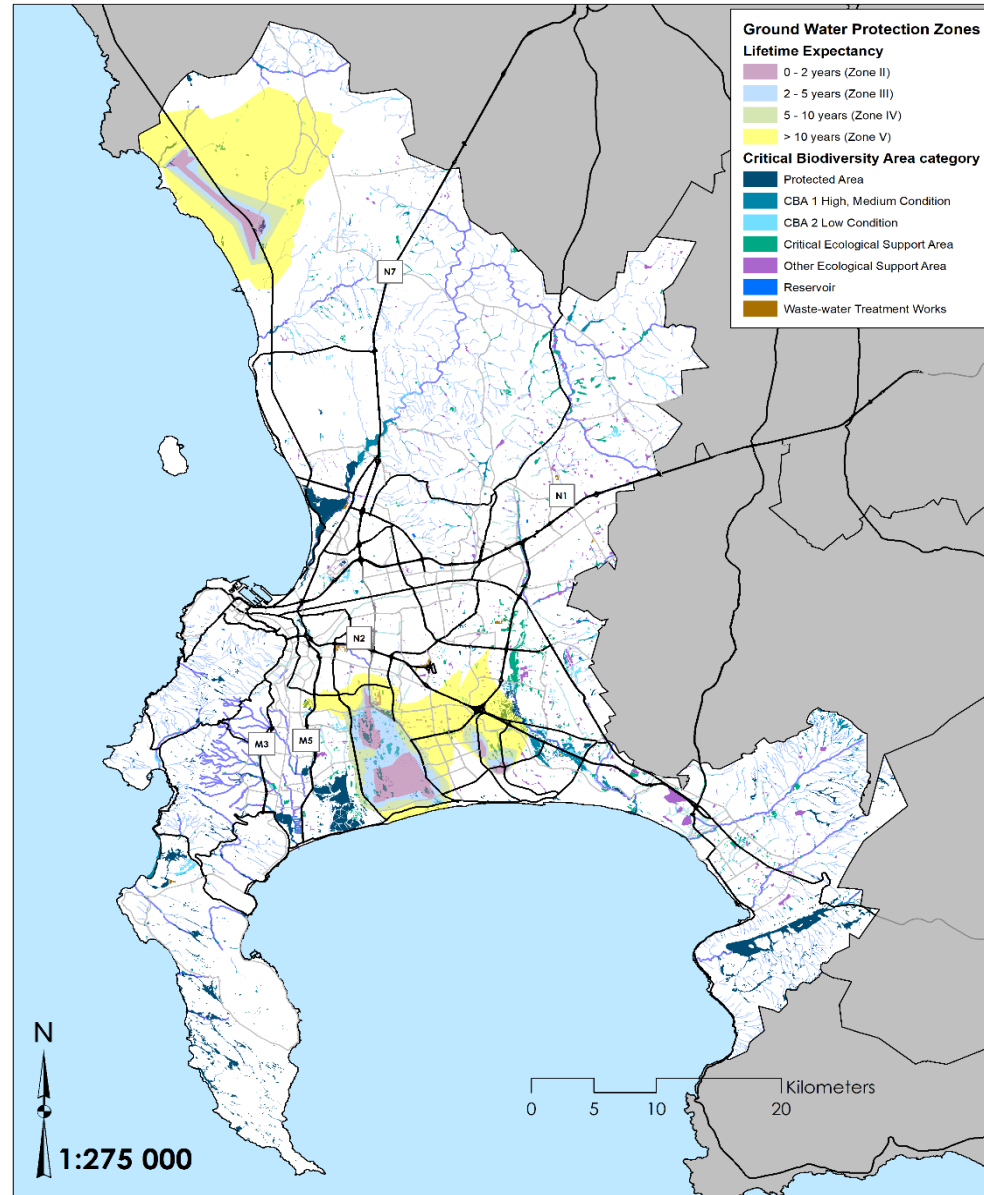
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100 WATERLOO STREET



Location of False Bay Nature Reserve w.r.t Catchment Management

Cape Town Aquatic BioNet 2023



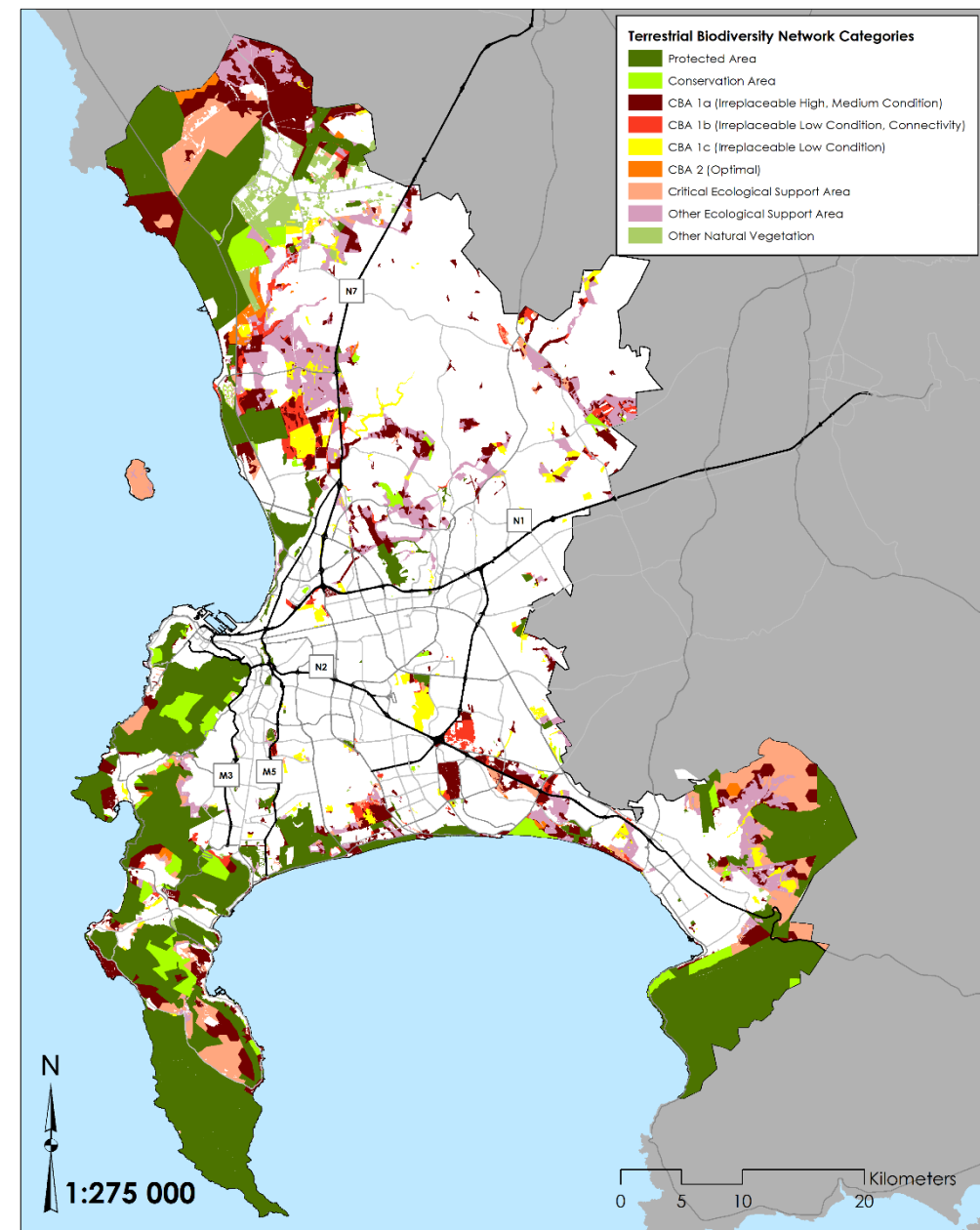
History of Invasive species in South Africa

- Coastal Areas inhabited about 110 thousand years ago (Marean *et al.*, 2014)
- First settlers in 1652: this period saw an increase in deliberate introduction of plants and animals which later became invasive
- The British took over from the Dutch in 1806: Slaves introduction from different countries, most South East Asia
- In 1847 there was an active drive to plant Australian Acacias (dune stabilisation): *Acacia mearnsii* (Black wattle) was first introduced in 1864 to produce tannins.
- In 1886 Fallow deer, Grey squirrels, Chaffinches and Common Starlings were introduced.
- Trout was introduced in 1897: Hatcheries established in the Western Cape and KwaZulu Natal. This facilitated the stocking of other species like Large and Small Mouth Baas and Grass carp and these were also later introduced.

Invasion in the context of rich biodiversity in Western Cape



Cape Town Terrestrial BioNet 2023



Please note:

Every effort has been made to ensure the accuracy of the information in the map at the time of publication. The spatial data portrayed in the map is as current, accurate and complete as provided by the various line departments responsible for maintenance of the datasets. The City of Cape Town accepts no responsibility for, and will not be liable for, any errors or mistakes contained herein.

Invasive Species in False Bay Nature Reserve



Pontederia crassipes (water hyacinth)

Floating aquatic species

Eucalyptus gomphocephala
Tuart

Cyprinus carpio
Common carp (Eurasian carp)

Oreochromis mossambicus
Mozambique tilapia

Invasive Species Management Approaches

- Data based planning: Mapping densities, species and life history
- Access to site: terrain, pressures like safety of workers
- Protected Area Management Plan and Invasive species control plans
- Early Detection and Rapid Response: Targeted species (mostly those with low densities)
- Integrated approaches: Varied control methods
- Budgets
- Community outreach



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Species specific control efforts: Water Hyacinth



Listed as one of the “Big Bad Five”
(world’s worst invaders)

Very prevalent of nutrient rich water
(Eutrophicated systems)

Produces productive seeds

Has several biocontrol agents in South
Africa

Species specific control efforts: Water Hyacith Cont...

- Landscape approach: Utilising available management tools (Drawdown)
- Allowa access to inaccessible areas
- Pressence of Hippos



Species specific control efforts: Water Hyacith Cont...

- Manual control works:
 - Low densities
 - Available resources (Human resources)
 - Has to be continuous
 - With the correct protective equipment and gear



Species specific control efforts: Water Hyacith Cont...

- Integrate methods: Use of fire where possible



Species specific control efforts: Water Hyacith Cont...

- Integrated methods:
- Use of machinery
- Method highly effective in Rondevlei where there are Hippos
- Can also be used where water quality conditions do not allow access by humans



In conclusion

- ✓ Invasive species are a threat to biodiversity
- ✓ New species are being discovered daily
- ✓ Need to keep records of species encountered, clearing efforts and methods
- ✓ Alternative use of invasives works but these cannot be prioritised over eradication efforts
- ✓ Planning of operations helps
- ✓ There is a need to prioritise when dealing with invasive species. There are more than 1500 listed invasive species in South Africa. Being everywhere will not lead to successes
- ✓ Use different methods
- ✓ Consider the ecosystem than to target the species
- ✓ Use a catchment wide approach, mostly for aquatic species
- ✓ Involve other institutions like universities and community groups



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THANK YOU | DANKIE | ENKOSI

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