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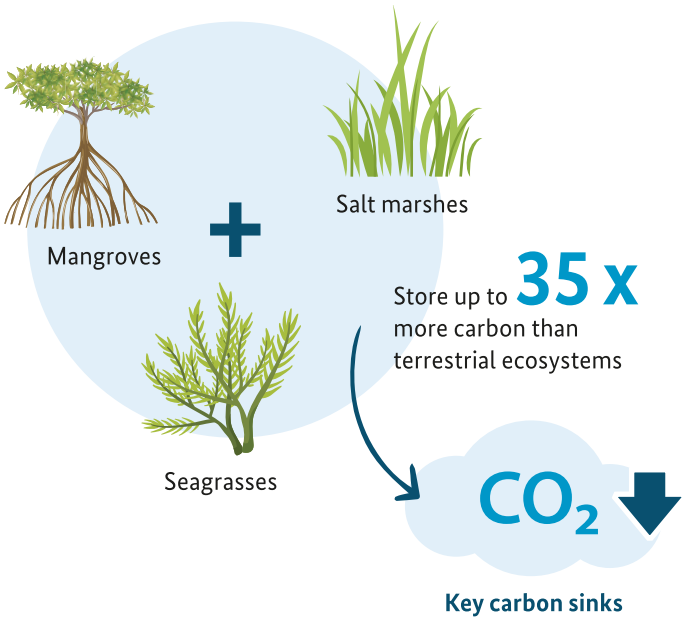
Blue Carbon Ecosystems (BCE) in South Africa – a first comprehensive assessment

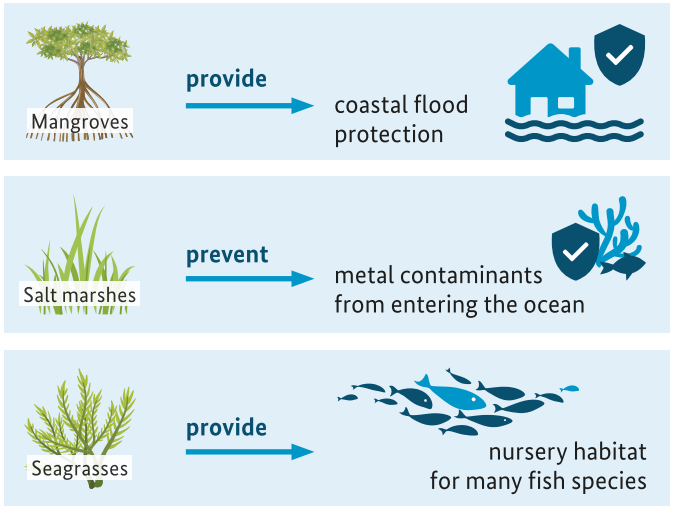
Blue Carbon Ecosystems (BCEs)

"Blue carbon" ecosystems occur along South Africa's coastline and include mangroves, salt marshes, and seagrasses. These ecosystems are important contributors to the global carbon cycle of the ocean as they can store carbon in the sediments as well as in their stems, leaves, branches, and roots. BCEs also contribute to climate change adaptation and resilience by protecting coastal communities and ecosystems from sea-level rise and associated erosion or flooding impacts.

BCEs in South Africa



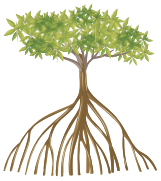
BCEs are important for recreational use and nutrient cycling, and **provide these important ecosystem services** among others

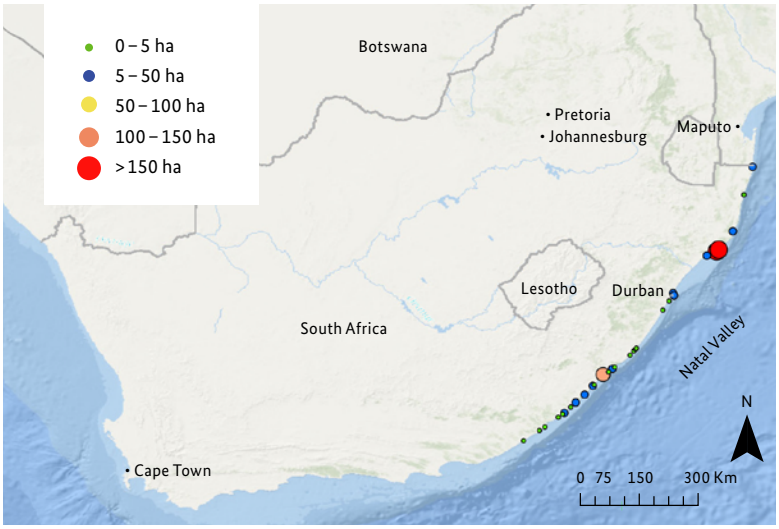


Distribution of Blue Carbon Ecosystems in South Africa

Mangroves

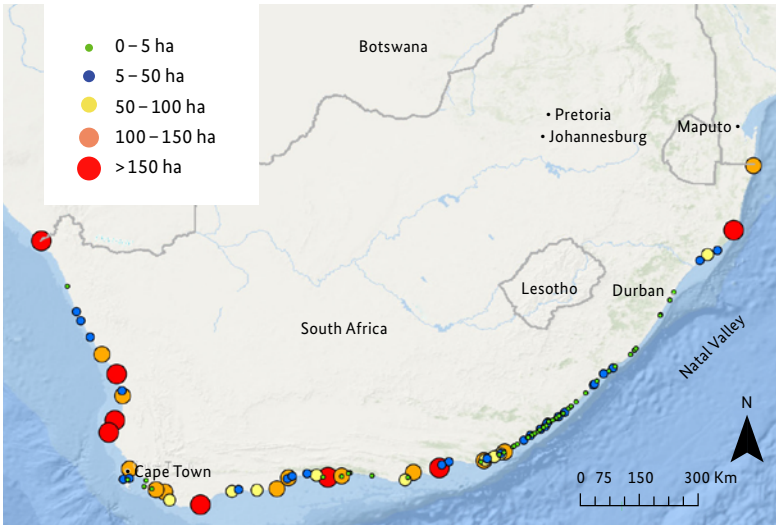
- Found along the eastern coastline in the warm temperate, subtropical, and tropical bioregions
- Cover an area of 2,087 ha





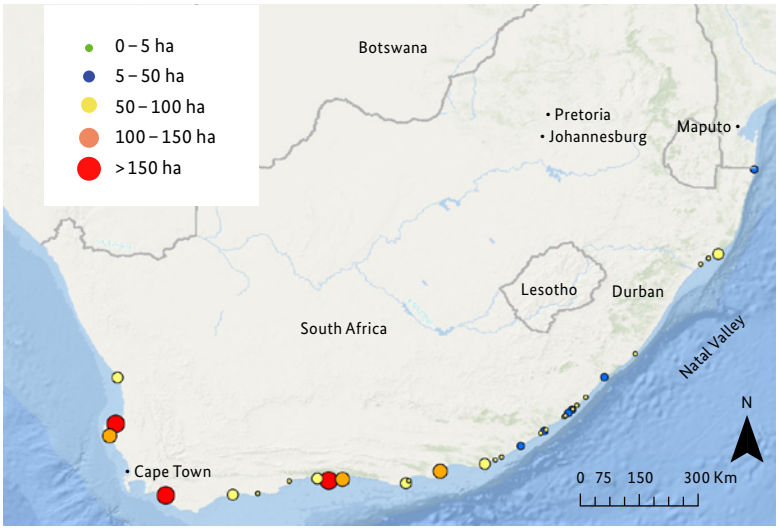
Salt marshes

- Occur from the intertidal zone to the terrestrial ecozone along the coastline
- Cover an area of 14,955 ha



Seagrasses

- Occur in 37 estuaries
- From warm-temperate west coast to the subtropical east coast of South Africa
- Cover an estimated area of 1,755 ha



Sources: Esri, GEBECO, NOAA, National Geographic, Gsrmin, HERE, Geonames.org, and other contributors, Esri, Garmin, GEBECO, NOAA NGDC, and other contributors

Need for restoration

Estuaries are the **most degraded ecosystems** in South Africa.

39 %

of the ecosystem require some sort of restoration or rehabilitation

Examples of estuaries prioritised for restoration

Mangroves
Mtata Estuary, Eastern Cape
All three South African mangrove species present; impacted by wood harvesting, cattle browsing and footpaths

Salt marsh
Olifants Estuary, Western Cape
Impacted by mining, a reduction in freshwater flows, and motorised boats

Seagrass
Knysna Estuary, Western Cape
Largest area coverage of seagrass in South Africa; impacted by eutrophication and human activities like boating

How to measure restoration success?

- Measure carbon storage & sequestration
- Estimations of biomass
- Hydrological conditions, growth of vegetation, etc.

What needs to be done?

STEP 1: Reduce negative impacts
Reduction of anthropogenic activities through the establishment of more formally protected areas, OECMS and biodiversity stewardships – see next page

STEP 2: Improve ecosystem management
Involvement of key stakeholders from government, conservation agencies, and local leaders; inclusion of mangroves in national REDD+ programme; etc.

THE BIODIVERSITY PLAN
For Life on Earth

Kunming-Montreal Global Biodiversity Framework (GBF) Targets addressed

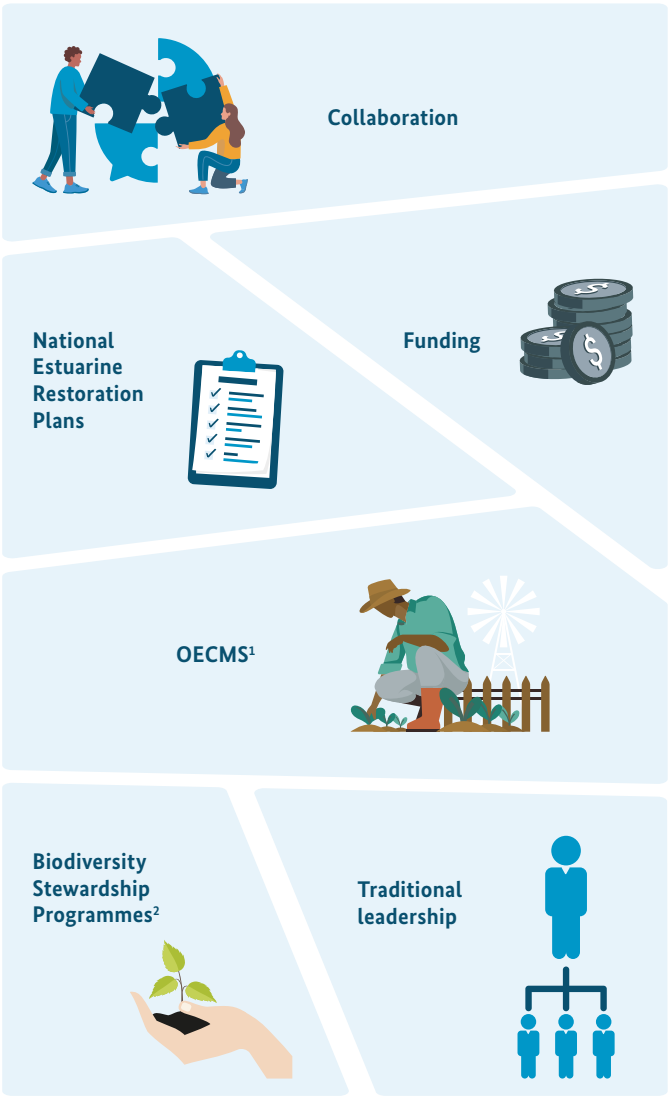
Target 2	Effectively restore at least 30 % degraded areas
Target 4	Conservation of species
Target 8	Reduce climate change impacts through ecosystem-based approaches
Target 11	Restore, maintain and enhance nature's contributions to people

Recommendations

- Increase restoration action & monitoring frameworks in a whole-of-government and whole-of-society approach
- Increase in designation and improved management of protected areas
- Research on threats to BCEs and how to mitigate them (incl. climate change impact predictions)
- Field studies to quantify carbon storage and sequestration

Policy & management needs

Increased use & recognition of ...



1 Other effective area-based conservation measures (OECMs) are a new conservation approach, separate from protected areas, where conservation is achieved mainly as a by-product of other management.

2 Biodiversity stewardship is an approach to entering into agreements with private and communal landowners to protect and manage land in biodiversity priority areas, led by conservation authorities in South Africa.

This factsheet is based on and condenses key findings of the following study: Adams JB, Van Deventer H, Whitfield EC, Machite A, Riddin T, Van Niekerk L, Apleni A & Madasa A (in print). *Prioritisation of blue carbon ecosystems for implementation of restoration measures.*

CONTACT

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