South Africa's

National Biodiversity Assessment 2011

Key Concepts & Selected Highlights

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SANBI
Biodiversity for Life

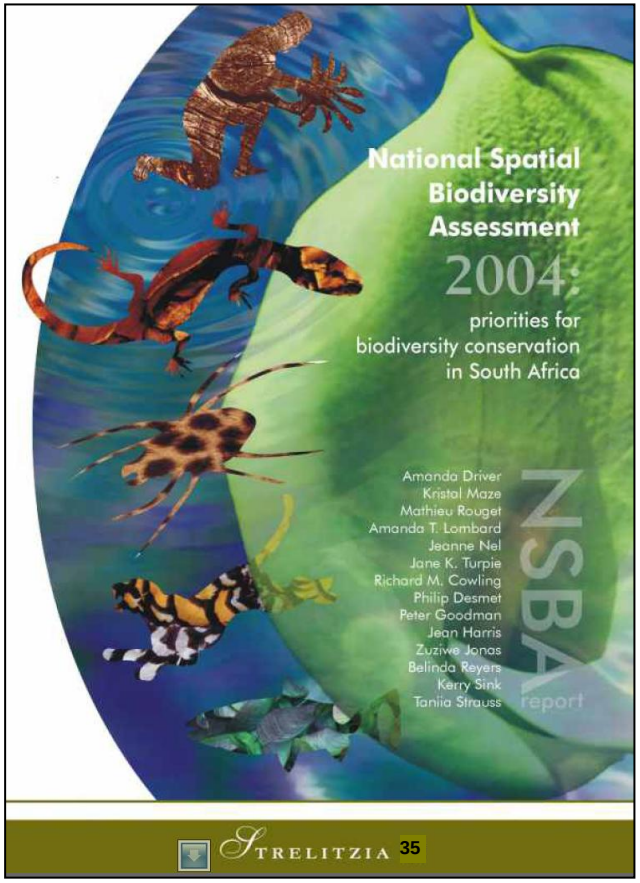
environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

What is the National Biodiversity Assessment?

- Assesses SA's biodiversity and ecosystems
- Every 5 to 7 years
- Part of SANBI's mandate to monitor and report on the state of biodiversity

National Spatial Biodiversity Assessment 2004

→ 1st assessment across terrestrial, river, estuarine & marine environments



NBA 2011 covers:

- Terrestrial, river, wetland, estuarine, coastal and marine environments
- Areas important for climate change resilience
- Species of special concern
- Invasive alien species

NBA informs NBSAP and NBF

•provides headline indicators for monitoring & reporting
• summarises spatial biodiversity priorities
• based on best available science

• broad, comprehensive
• sets strategic objectives
•sets long-term targets
• based on stakeholder engagement and consultation

• focused
• identifies top priority actions & targets for next five years

NBA = the science
NBSAP & NBF = “to do”

More than 200 scientists & practitioners from over 30 organisations contributed, 3 year process

and many more…

Agricultural Research Council (ARC) • Anchor Environmental Consultants • BirdLife South Africa • CapeNature • CapFish • Diatom and Environmental Management (DEM) • Endangered Wildlife Trust (EWT) • International Ocean Institute (IOI) Southern Africa, University of the Western Cape (UWC) • African Rhino Specialist Group of the International Union for Conservation of Nature (IUCN) Species Survival Commission • iSimangaliso Wetland Park Authority • KwaZulu-Natal Sharks Board • Marine and Estuarine Research (MER) • Mpumalanga Tourism and Parks Authority (MTPA) • National Center for Ecological Analysis and Synthesis, University of California, USA • Oceanographic Research Institute (ORI) • South African Shark Conservancy (SASC) • Stellenbosch University • University of Cape Town (UCT) • University of Queensland, Australia • University of Zululand

Key concepts

- Two **headline indicators** for ecosystem assessment
- Mapping & classification of **ecosystem types**

Headline indicators for ecosystems

Ecosystem threat status

- Four categories:
  - Critically endangered (CR)
  - Endangered (EN)
  - Vulnerable (VU)
  - Least threatened (LT)

Threatened ecosystems

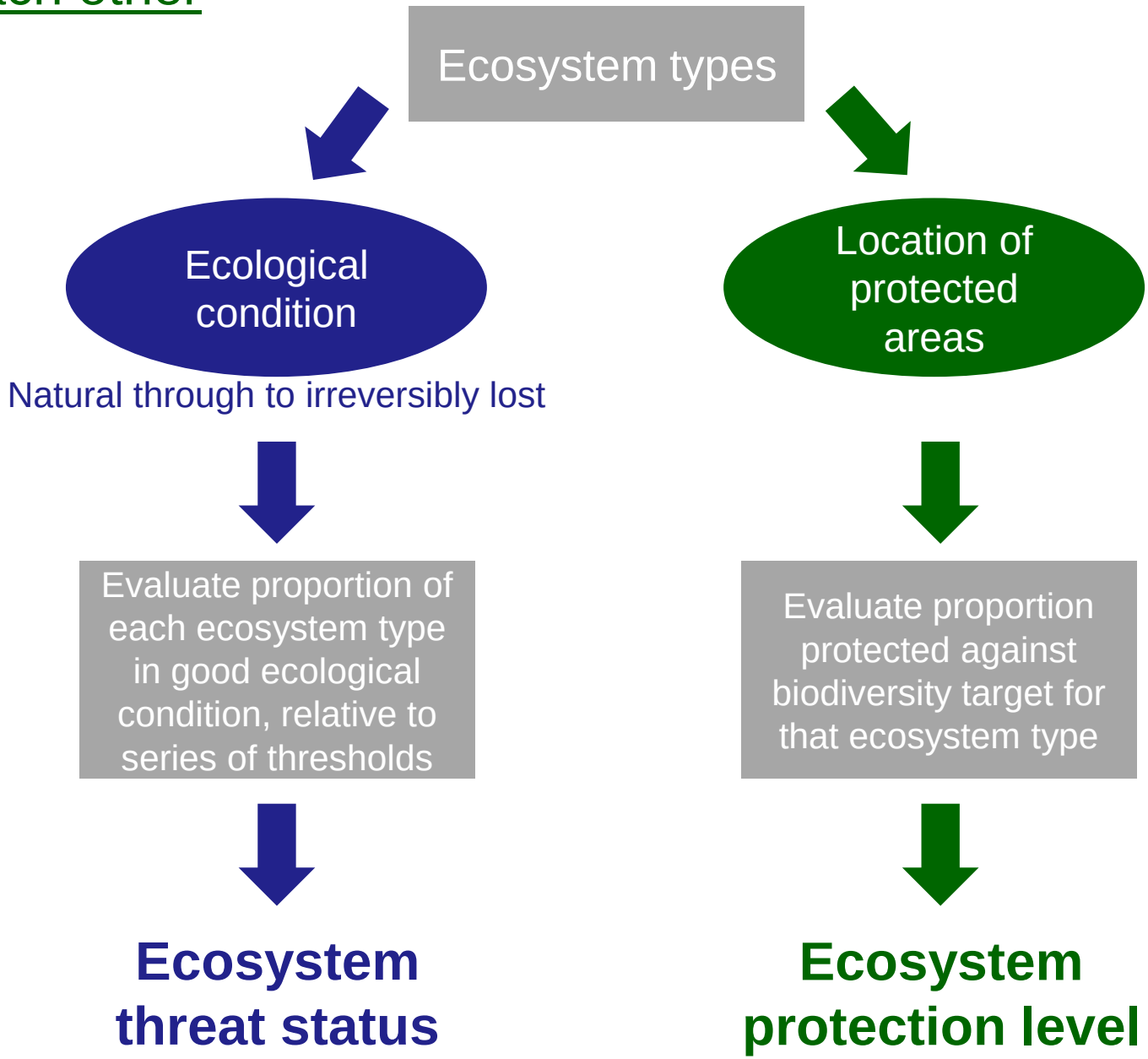
Ecosystem protection level

- Four categories:
  - Unprotected
  - Poorly protected
  - Moderately protected
  - Well protected

Under-protected ecosystems

→ Both indicators can be assessed in terrestrial and aquatic environments

Threat status & protection level are assessed independently of each other



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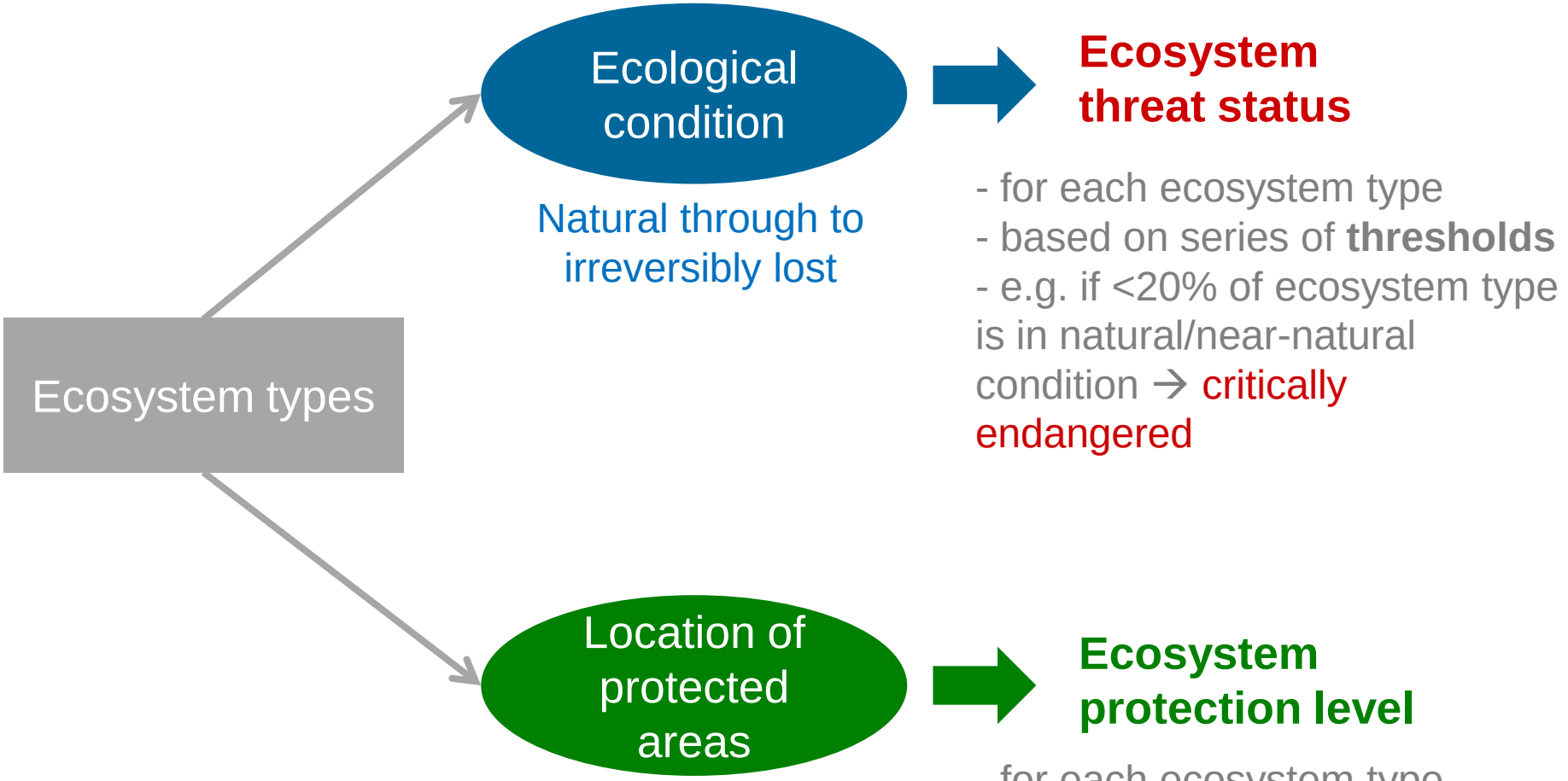


Starting point for both indicators is the ability to

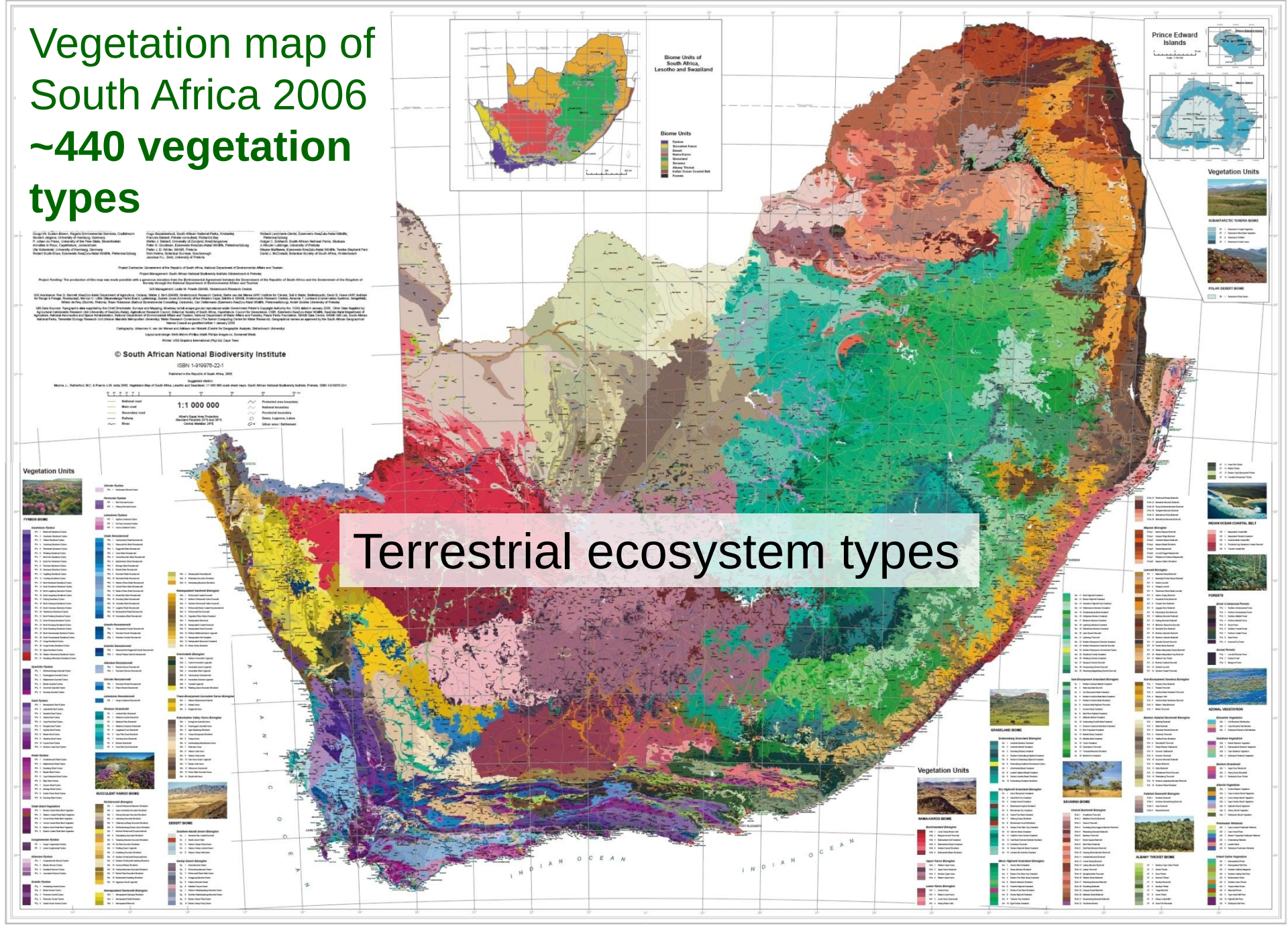
MAP and CLASSIFY ecosystem types

→ the foundation for all ecosystem-level assessment, monitoring, planning and management

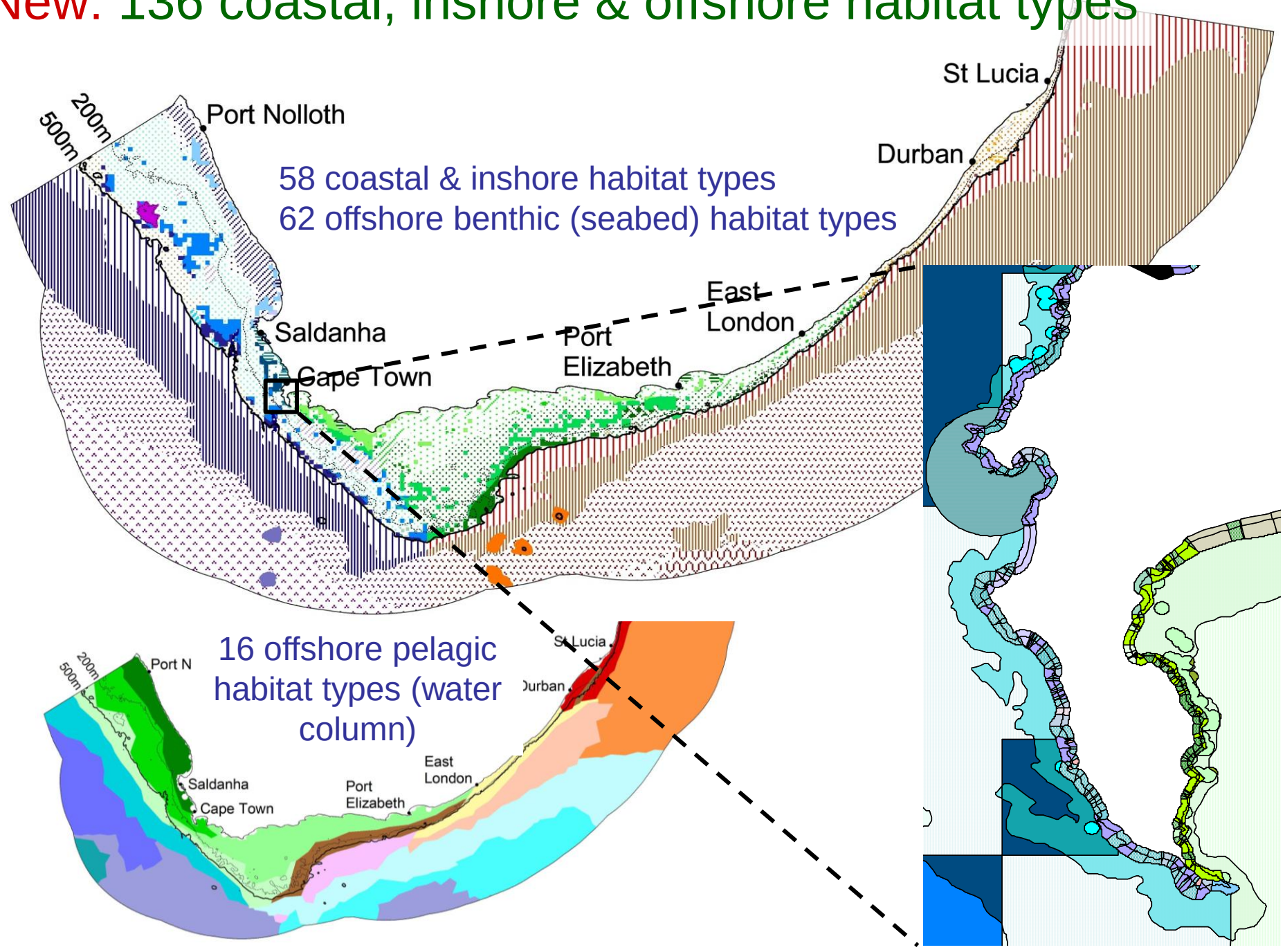
(the ecosystem equivalent of taxonomy)

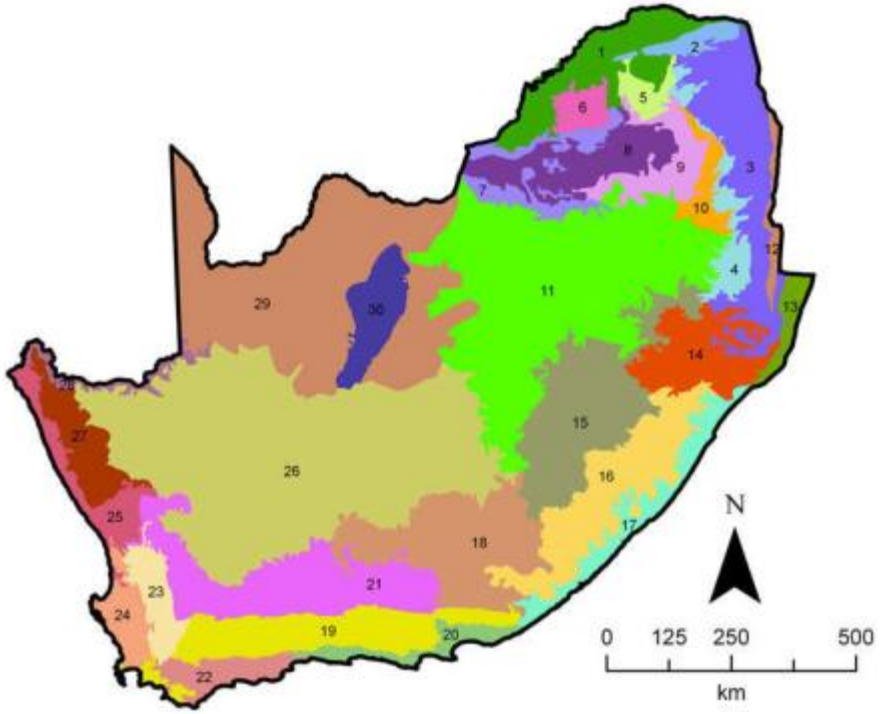
Ecosystems of the same type are expected to share broadly similar ecological characteristics and functioning

Vegetation map of South Africa 2006 **~440 vegetation types**



New: 136 coastal, inshore & offshore habitat types





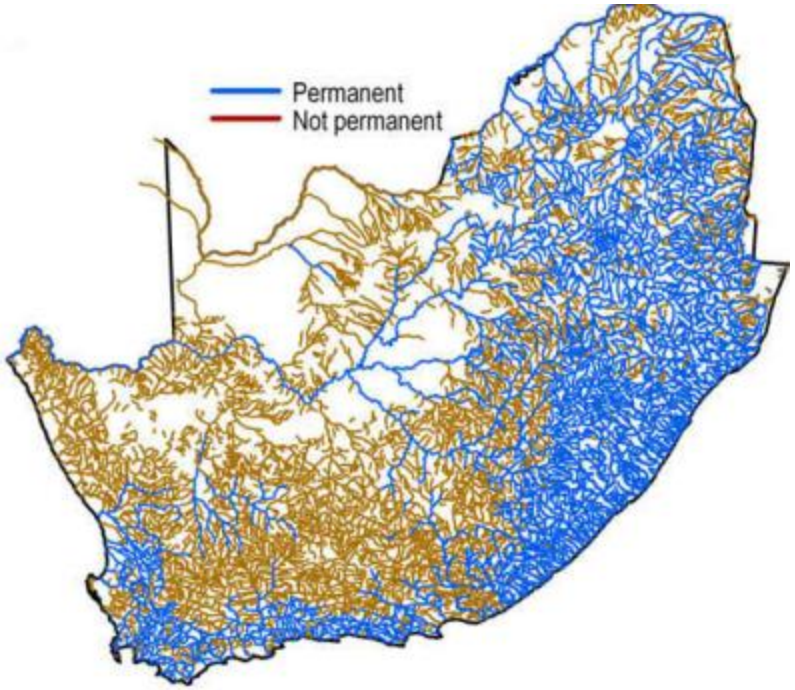
223 river ecosystem types

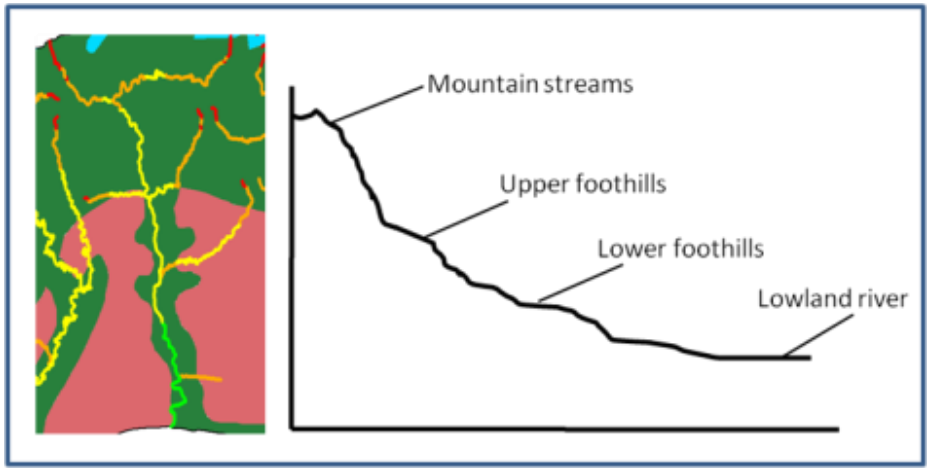
based on

– 31 ecoregions

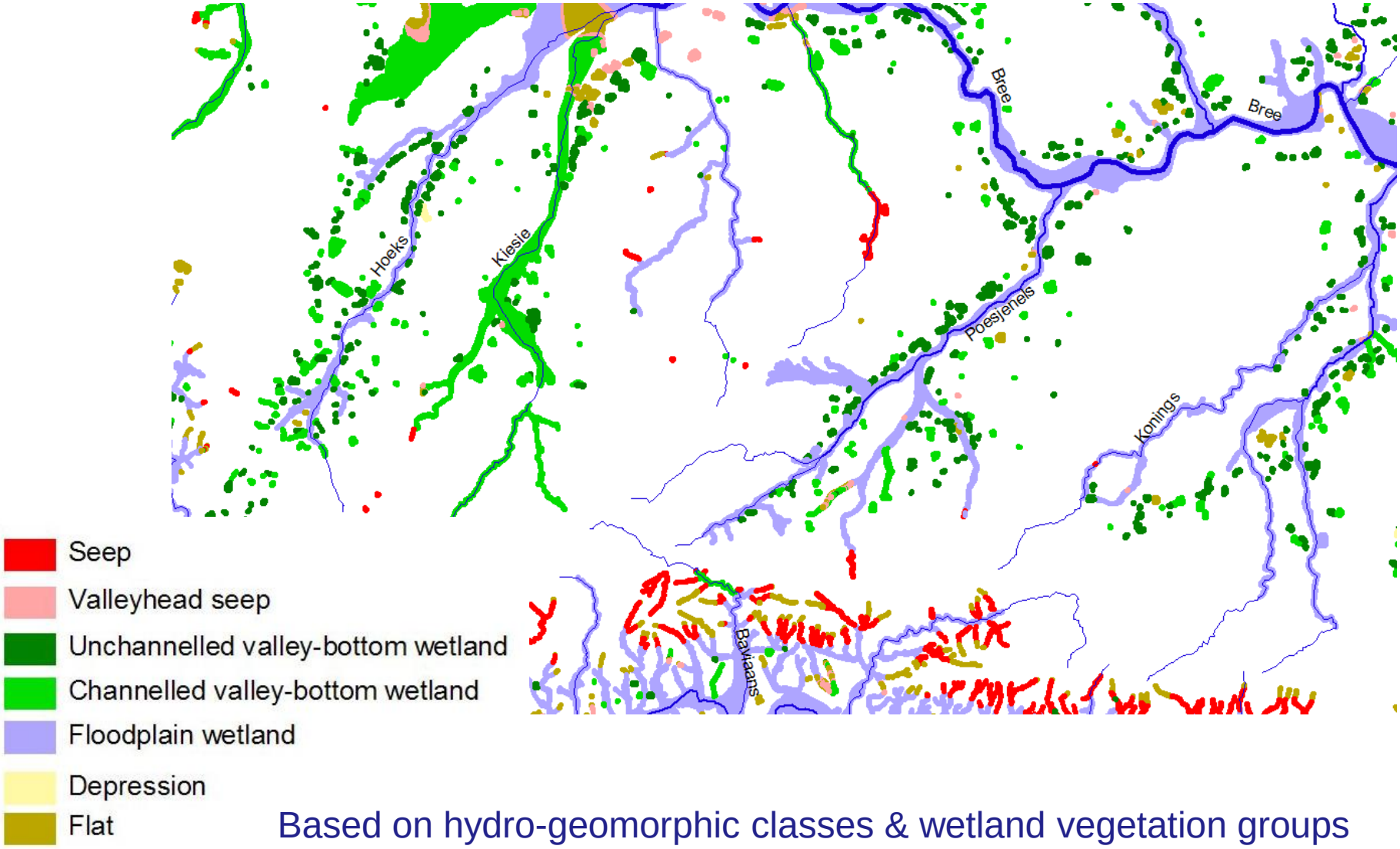
– 2 flow regime categories

– 4 longitudinal zones





New: wetlands (~300 000) → 792 types

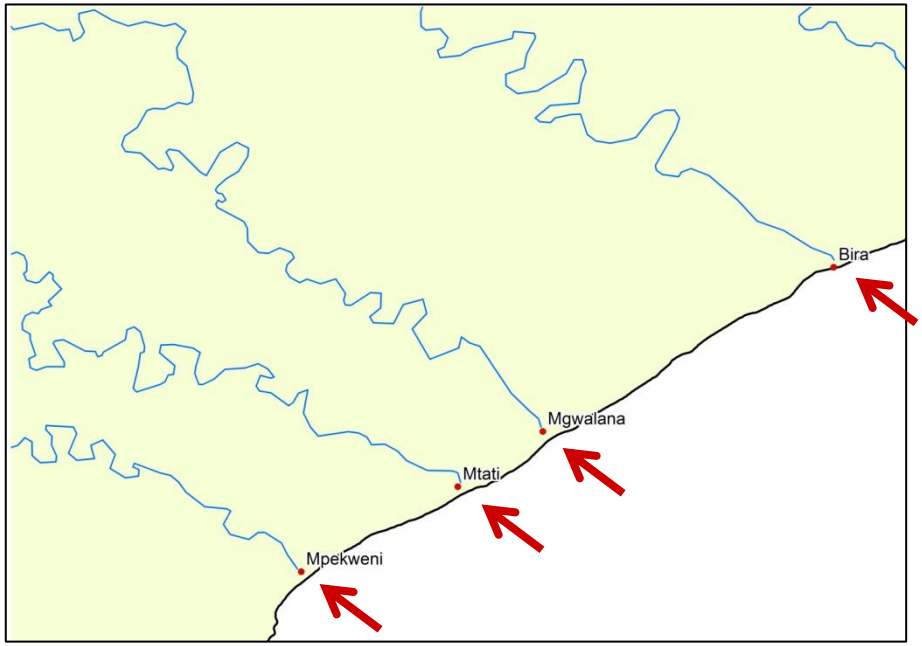


Based on hydro-geomorphic classes & wetland vegetation groups

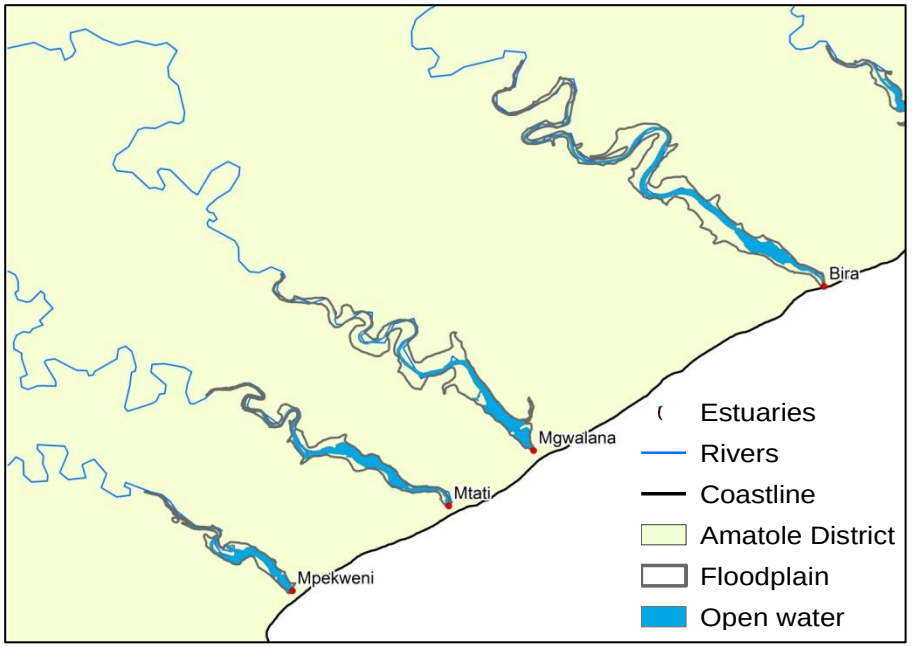
46 estuary ecosystem types (not easy to show on a national map)

New: 1st ever map of estuarine functional zone for all 291 estuaries

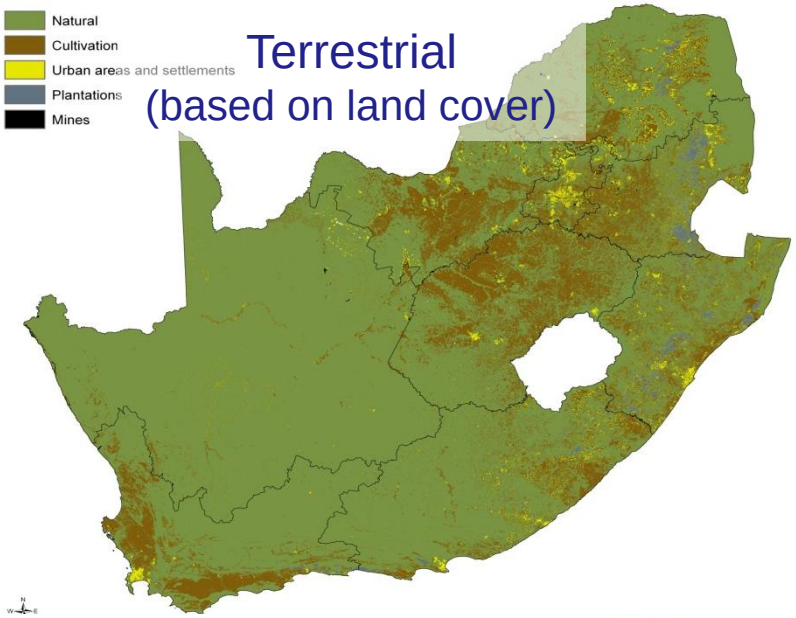
Previously: dots along the coastline

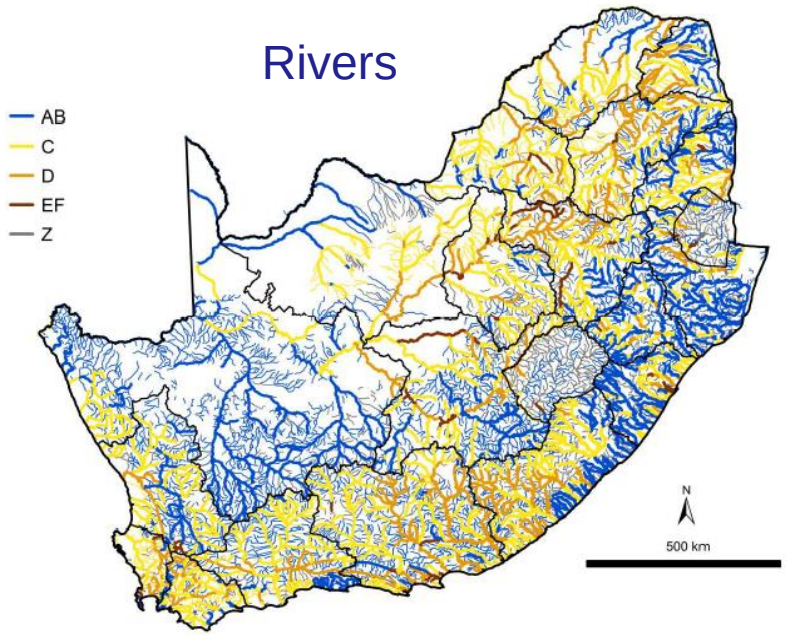


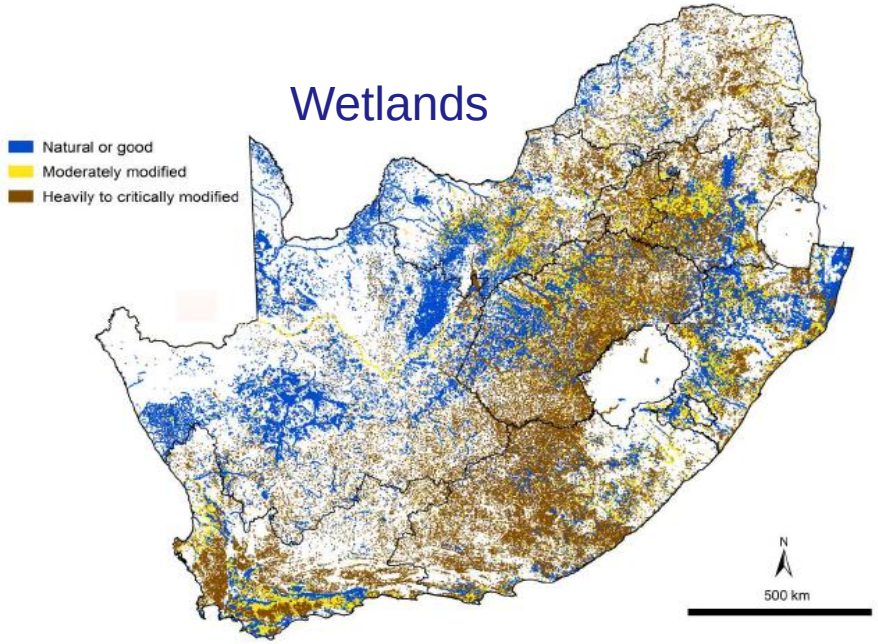
Now: actual mapping of open water area and floodplain

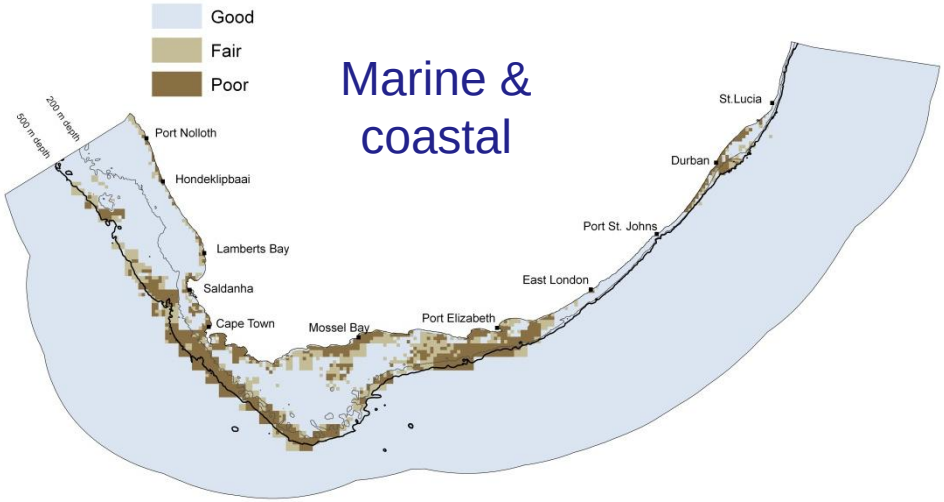


Maps of ecological condition

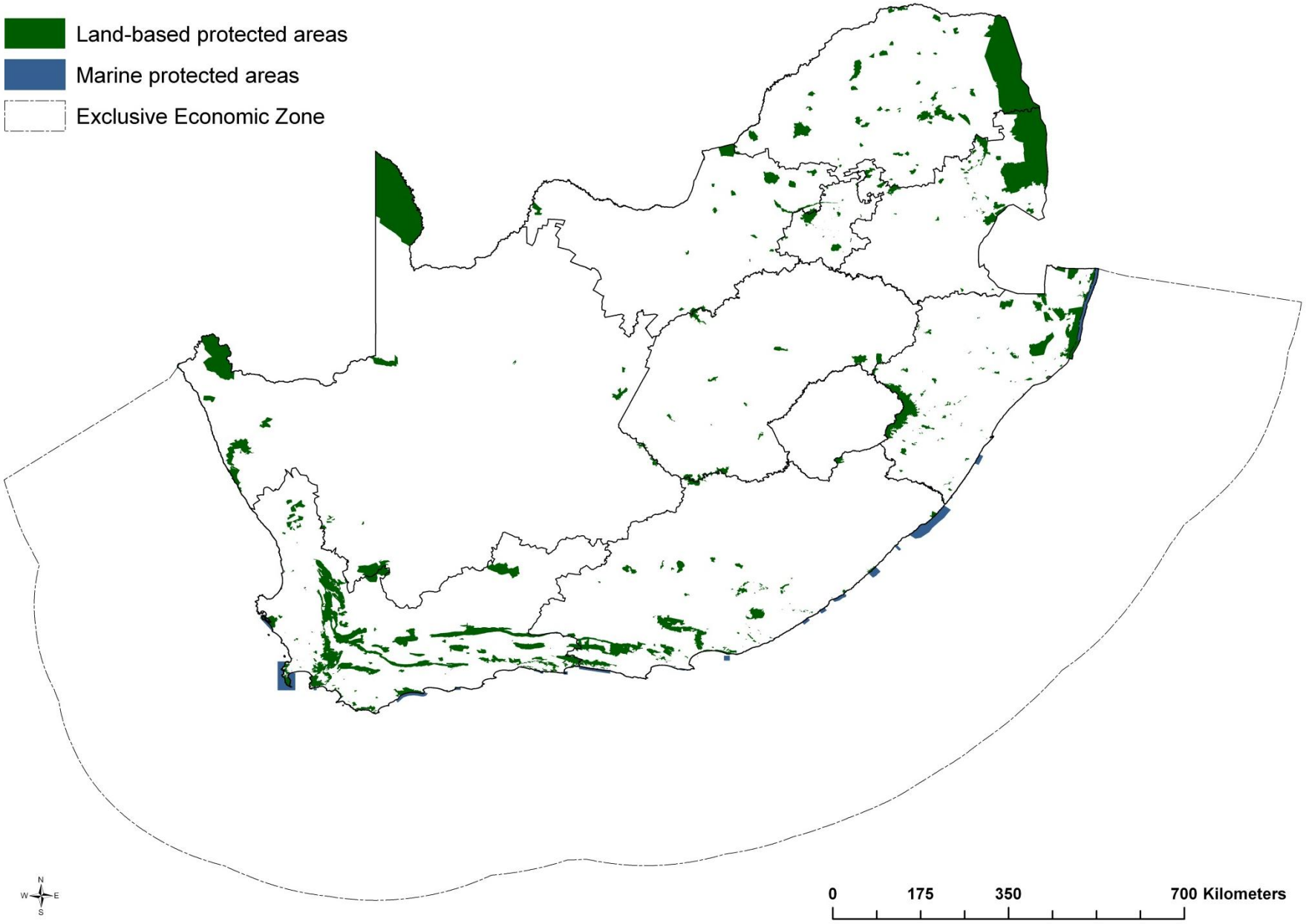








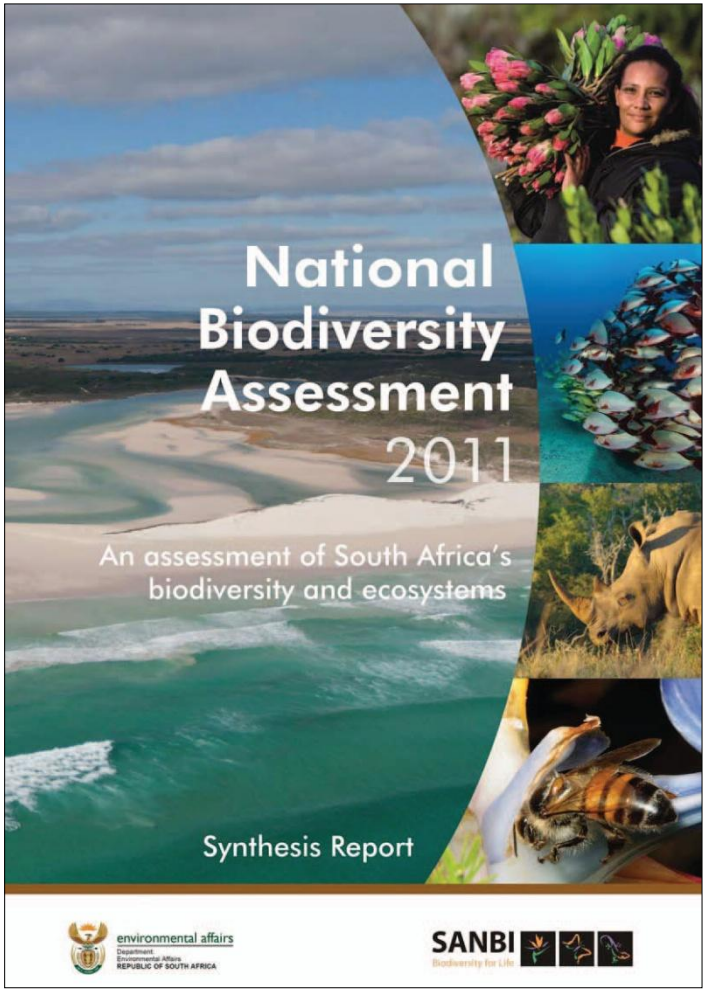
Map of protected areas – land-based & marine



Top highlights of NBA 2011…

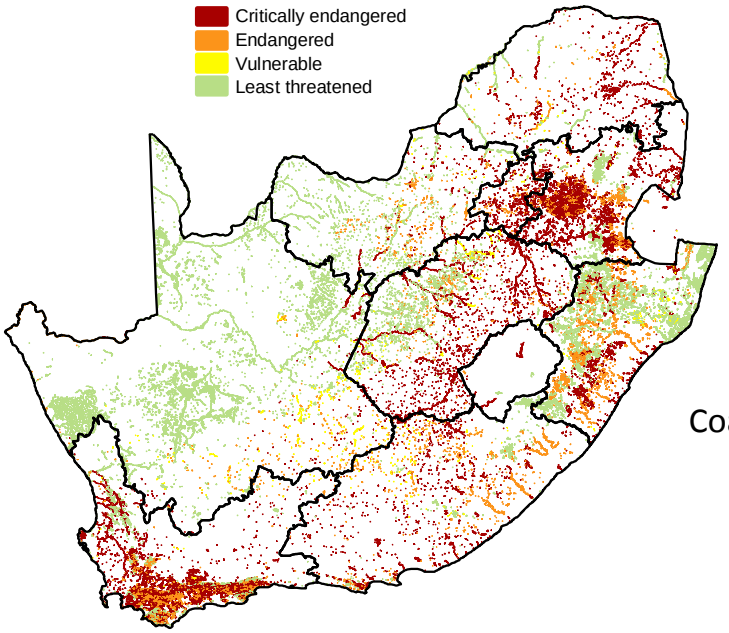
- 5 highlights out of 12…
- For more:

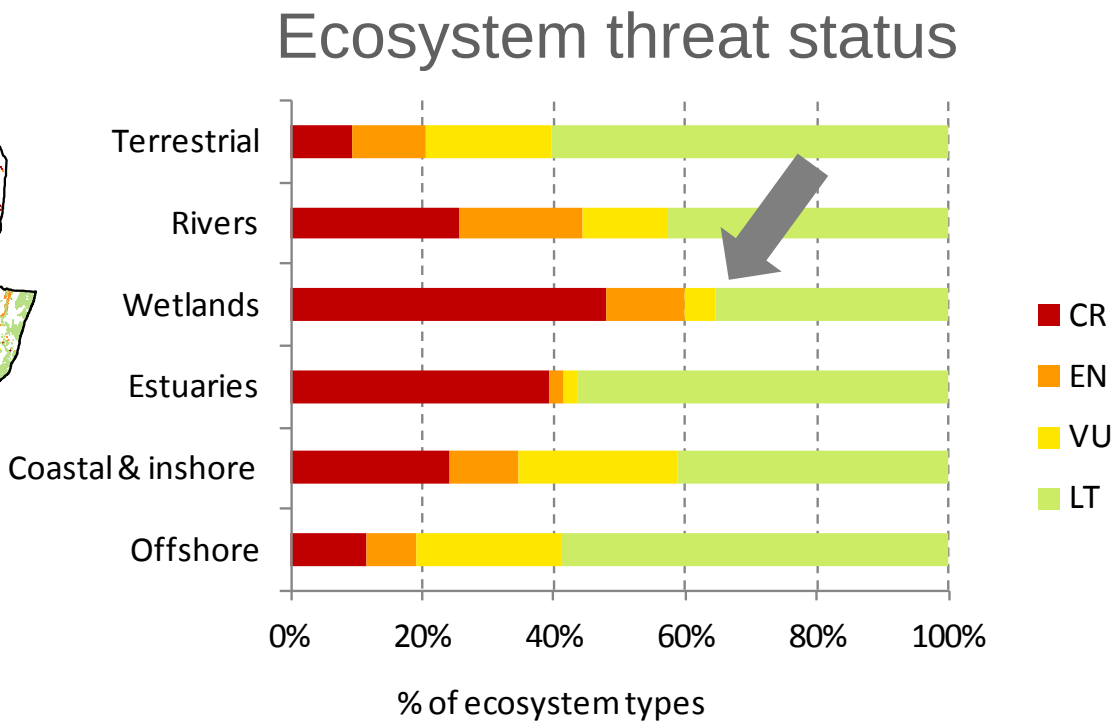
  NBA 2011 Synthesis Report
- http://bgis.sanbi.org



1. Wetlands are the most threatened of all South Africa's ecosystems

- 48% of wetland ecosystem types critically endangered
- Wetlands make up only 2.4% of the country's area
- Wetlands crucial for purifying water and regulating flow – high value ecological infrastructure

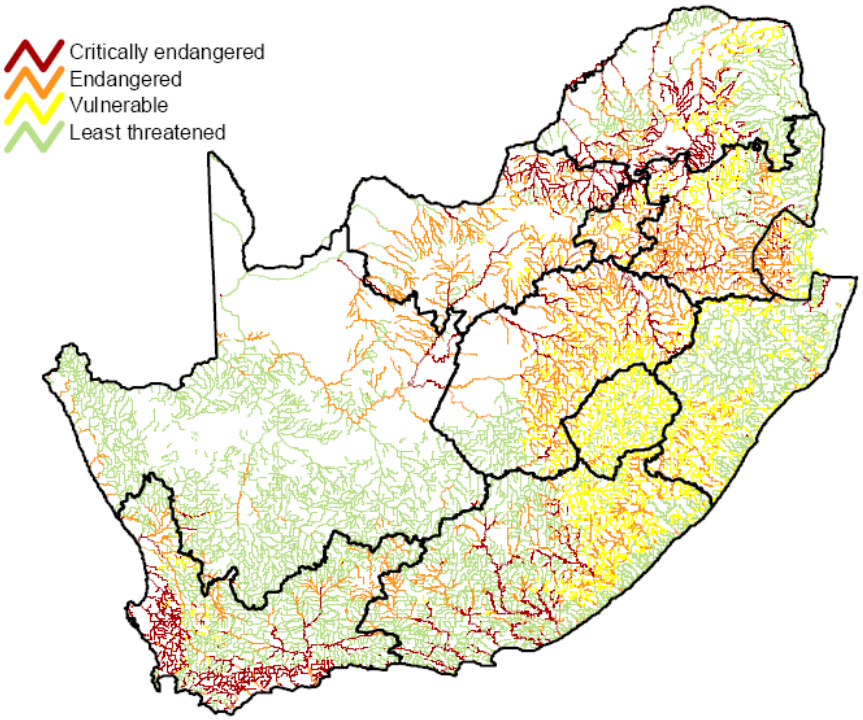




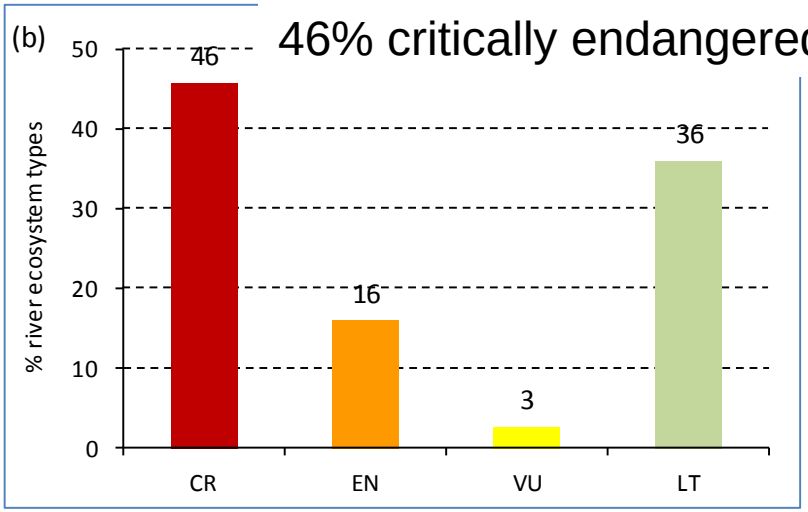
2. High water yield areas are SA's water factories, and make up less than 4% of the country's area

3. Tributaries are generally in better condition and less threatened than main rivers

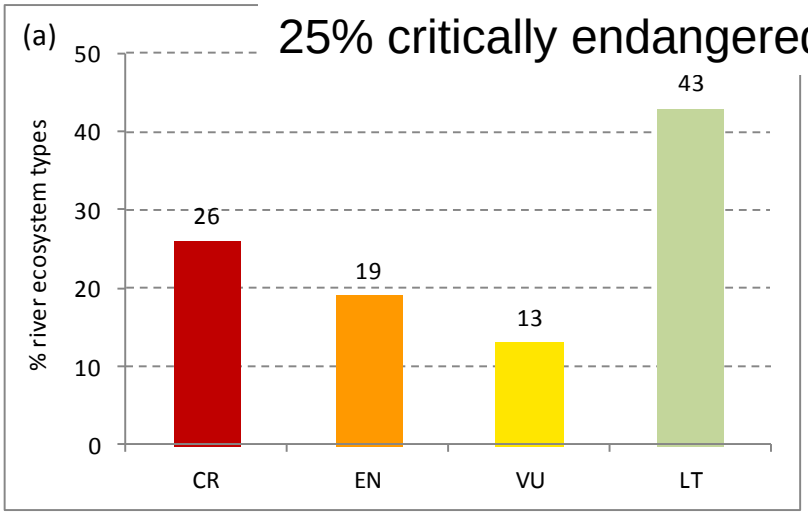
- Healthy tributaries play critical role in keeping hard working main rivers functioning, supporting water quality & quantity



Main rivers:
46% critically endangered

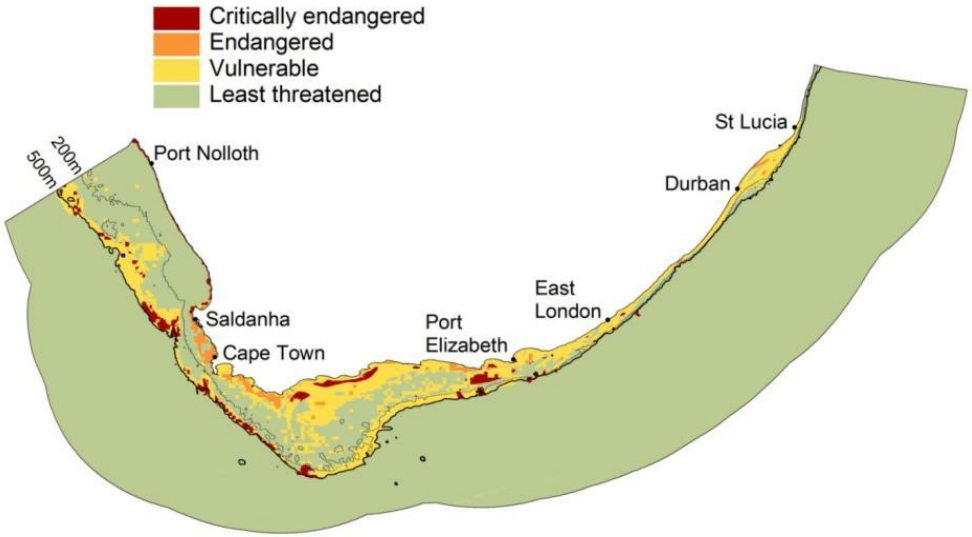


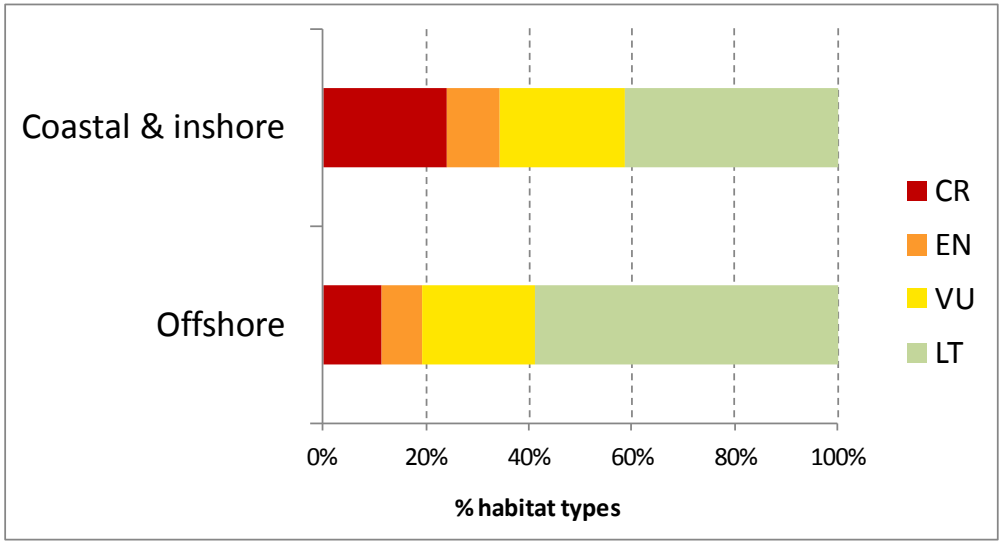
Main rivers & tribs:
25% critically endangered



4. Coastal and inshore ecosystems are more threatened than offshore ecosystems

- 24% of coastal and inshore ecosystems are critically endangered, compared with 12% of offshore ecosystems
- 17% of SA's coast has some form of development within 100m of the shoreline
- Nearly a quarter of South Africa's population lives within 30km of the coast
- A national coastal biodiversity plan to identify coastal ecosystem priority areas is an urgent priority

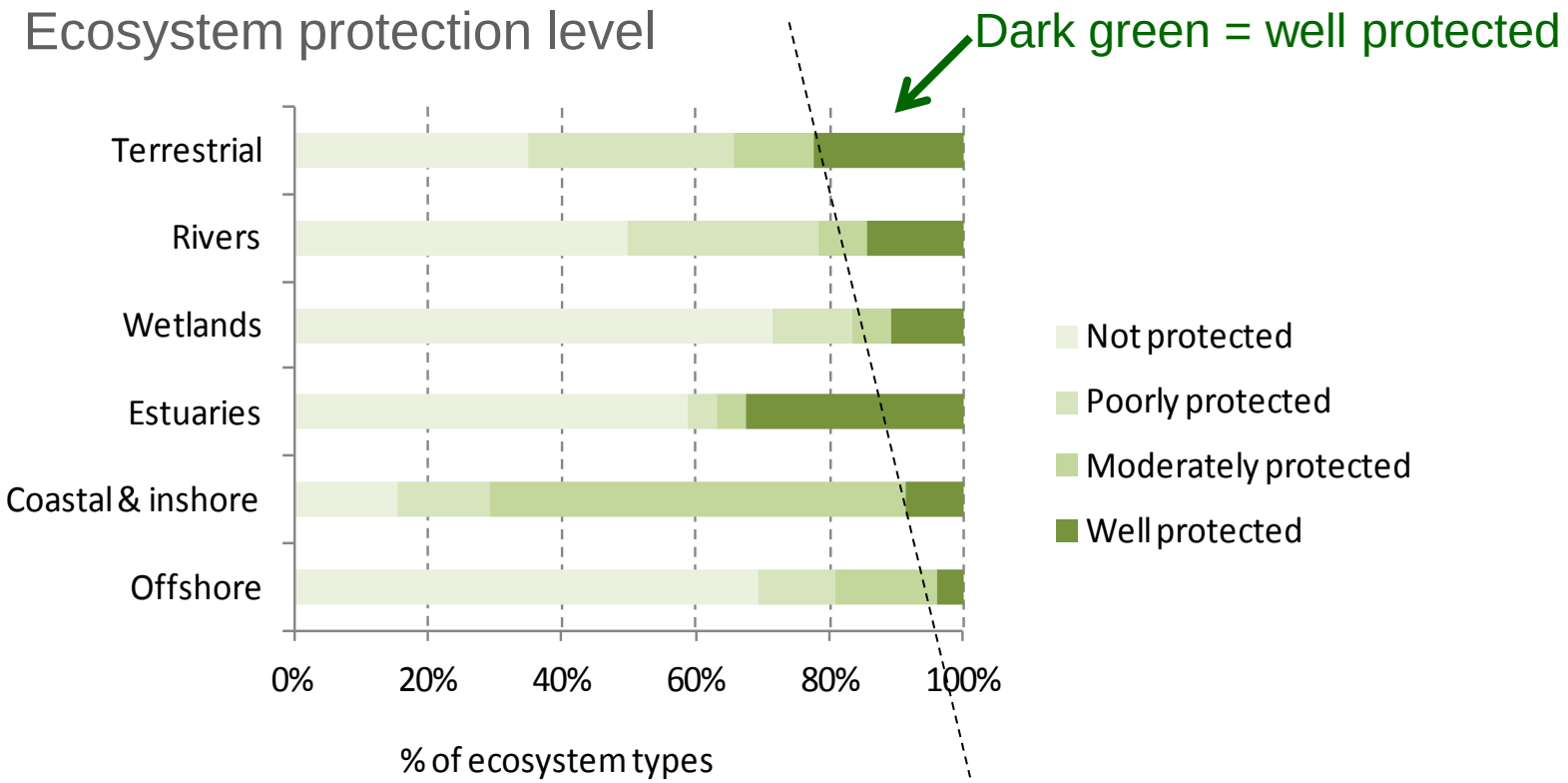




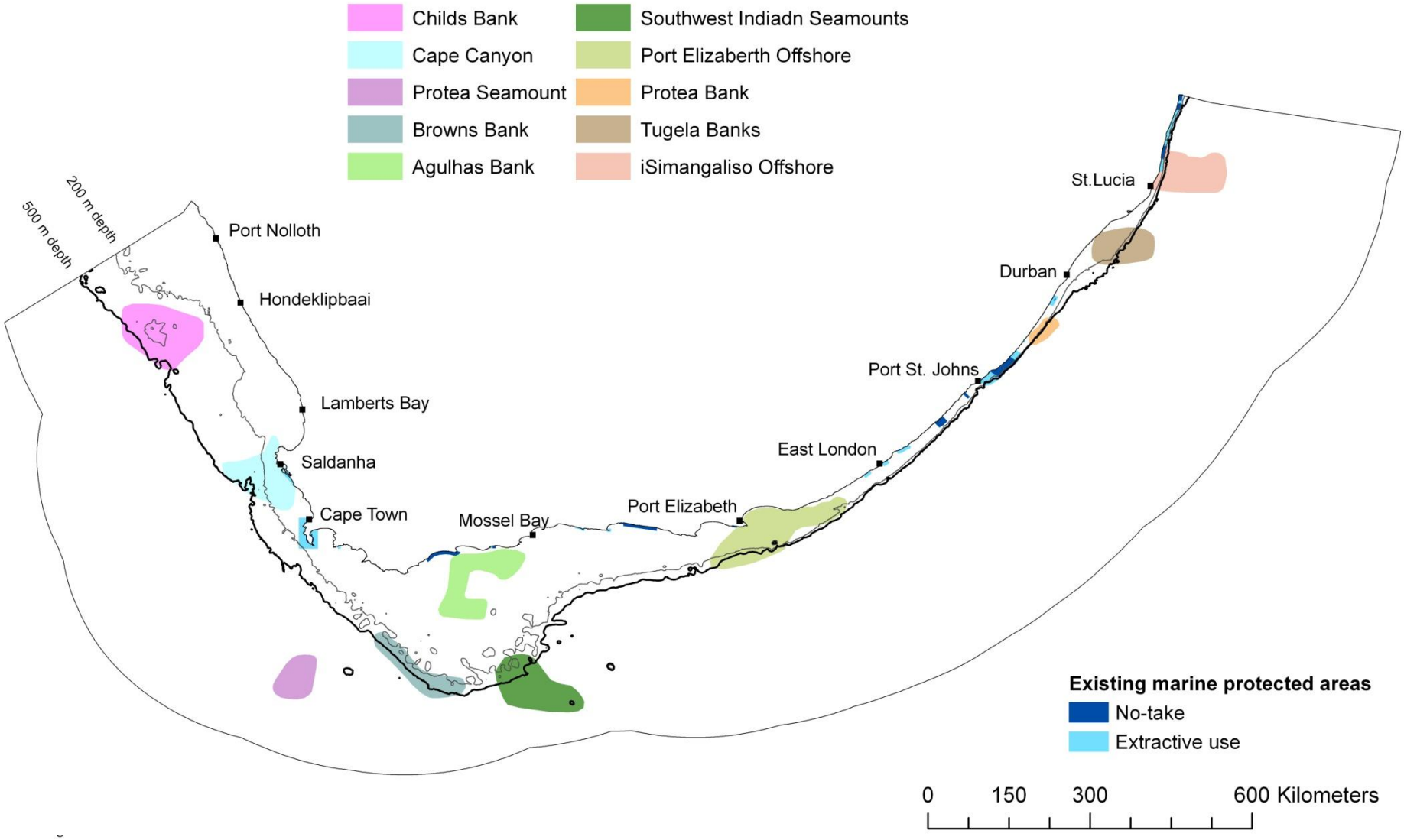
5. St Lucia, SA's flagship estuary, has been in a poor state – unable to fulfil its role as the most important nursery for marine fish on the south-east African coast

6. Offshore marine ecosystems are the most poorly protected of all SA's ecosystems, with only 4% of offshore ecosystem types well protected.

- Offshore Marine Protected Area project has identified focus areas for offshore protection
- Establishing offshore MPAs is a priority



10 focus areas for offshore protection

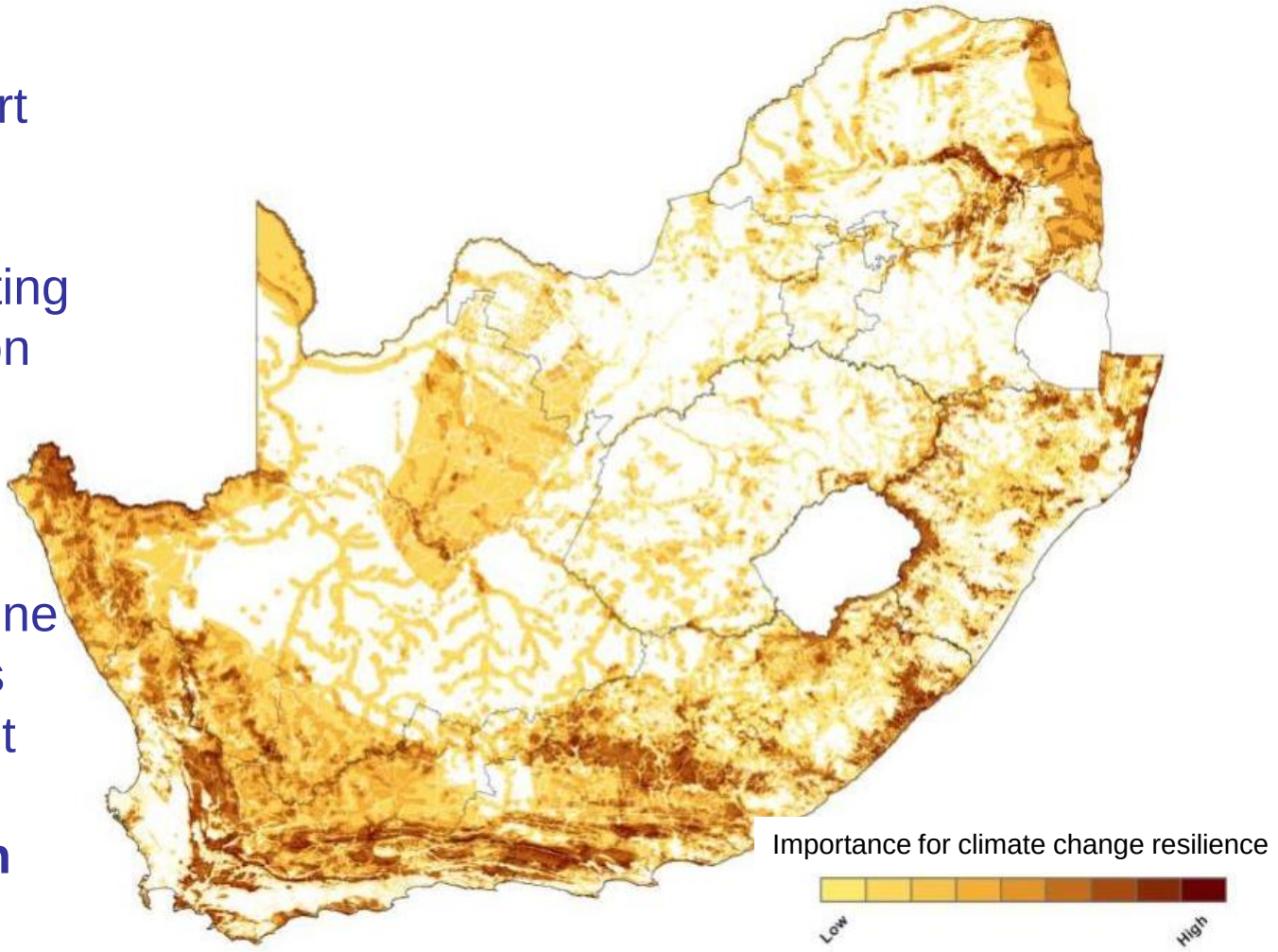


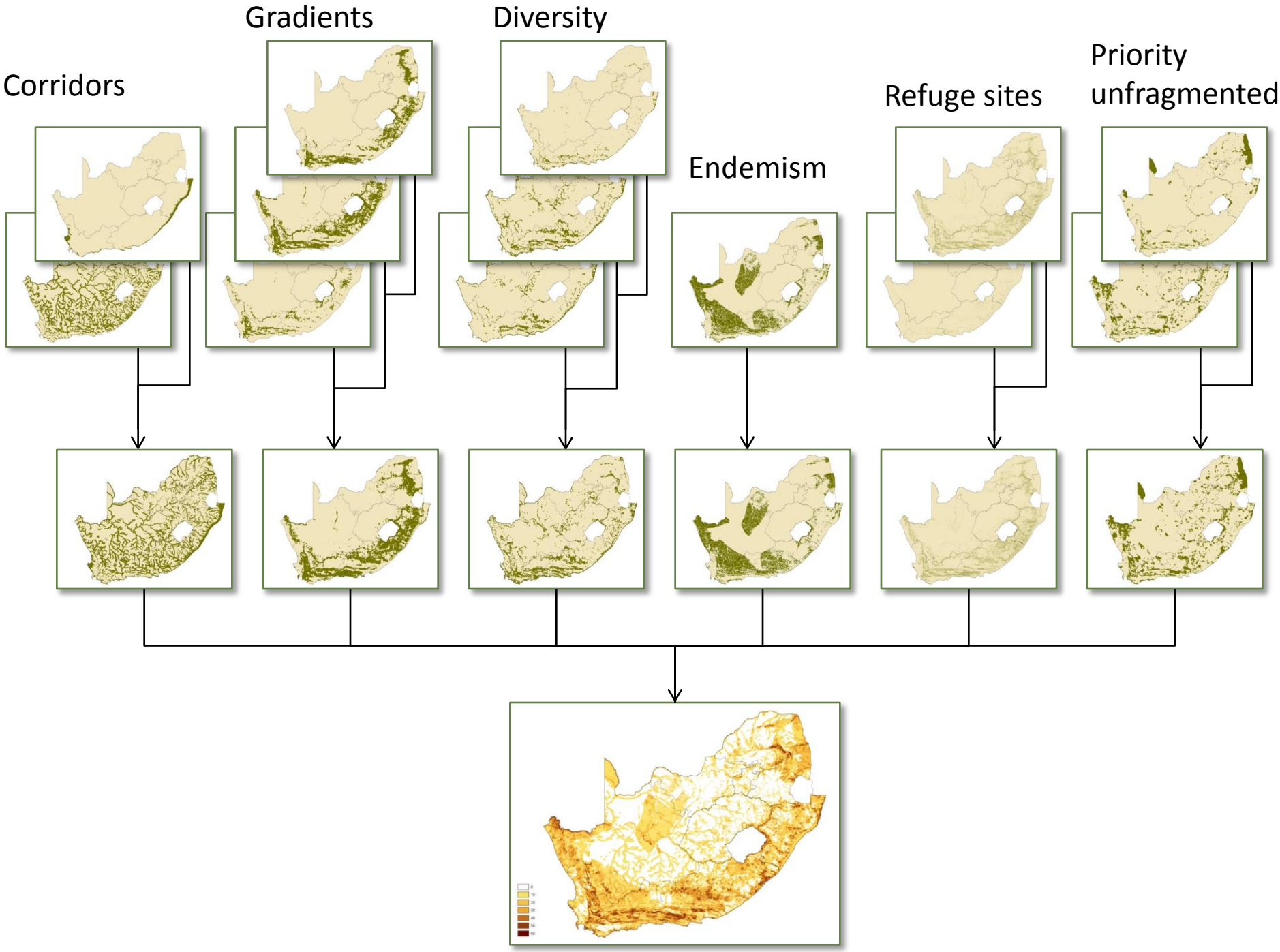
→ For protecting marine biodiversity, contributing to fisheries sustainability, and supporting management of by-catch

7. Biodiversity stewardship programmes are a major success story – making a significant contribution to meeting protected area targets, at low cost to the state

8. The NBA 2011 provides a new national map of areas that are important for climate change resilience

- Areas of natural habitat that support functional, stable landscapes in the long term, supporting continued provision of ecosystem services
- Further analysis needed to determine which of the areas are most important for **ecosystem-based adaptation**




Corridors
Gradients
Diversity
Endemism
Refuge sites
Priority unfragmented

9. Rates of loss of natural habitat are high in parts of the country

10. SA has over 2000 medicinal plant species.
    656 are traded, and of those, 56 are threatened.

11. Total area infested by invasive alien plants doubled from 10 million to 20 million ha between mid-1990s and 2007

12. Huge progress in mapping and classifying ecosystems

- Provides the foundation for ecosystem-level assessment, monitoring, planning and management
- Long history of mapping vegetation types in SA – terrestrial environment
- Now we also have:
  - Marine and coastal habitat types
  - River ecosystem types
  - Wetland ecosystem types
  - Estuary ecosystem types

NBA 2011 resources

Reports and maps available

on SANBI's BGIS website

http://bgis.sanbi.org

- Synthesis report
- Technical reports
- Jpegs of maps, graphs and diagrams
- Spatial data coming soon