National Biodiversity Assessment 2011:
Top Twelve Highlights

Biodiversity Planning Forum
22 May 2012
What is biodiversity?

The extraordinary variety of life on earth → the basis for ecological infrastructure…
…which provides people with ecosystem services
e.g. water, grazing, food, recreation

Important to know the state of this resource
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
National Biodiversity Assessment 2011
An assessment of South Africa’s biodiversity and ecosystems
Synthesis Report
SANBI
NBA 2011 covers:

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

Green = new, not in NSBA 2004
NBA informs NBSAP and NBF

**NBA**
National Biodiversity Assessment
- provides headline indicators for monitoring & reporting
- summarises spatial biodiversity priorities
- based on best available science

**CBD requirement**

**NBSAP**
National Biodiversity Strategy & Action Plan
- broad, comprehensive
- sets strategic objectives
- sets long-term targets
- based on stakeholder engagement and consultation

**Biodiversity Act requirement**

**NBF**
National Biodiversity Framework
- focused
- identifies top priority actions & targets for next five years

NBA informs NBSAP and NBF
More than 200 scientists & practitioners from over 30 organisations contributed, 3 year process

and many more…
Top twelve highlights of NBA 2011...
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

Ecosystem threat status

- Terrestrial
- Rivers
- Wetlands
- Estuaries
- Coastal & inshore
- Offshore

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<tr>
<th>Ecosystem Type</th>
<th>CR</th>
<th>EN</th>
<th>VU</th>
<th>LT</th>
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% of ecosystem types

- CR (Critically endangered)
- EN (Endangered)
- VU (Vulnerable)
- LT (Least threatened)
2. High water yield areas are SA’s water factories, and make up less than 4% of the country’s area

- Currently only 18% of high water yield areas have any form of formal protection
- Strategic importance for water security
- Explore options for extending and strengthening protection
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
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, is in a poor state and thus unable to fulfil its role as the most important nursery for marine fish on the south-east African coast

- St Lucia Lake system makes up more than half of SA’s estuarine area, and is part of a World Heritage Site
- Reduced freshwater flow to St Lucia due to diversion of the uMfolozi River since 1950s and other factors has resulted in the estuary being closed to the sea for much of the last decade
- Restoring the health of St Lucia has been prioritised by iSimangaliso Wetland Park Authority – challenging but feasible, and a national priority.
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
7. Biodiversity stewardship programmes are a major success story – making a significant contribution to meeting protected area targets, at low cost to the state

- Contracts with private or communal landowners to protect land of high biodiversity importance
- In 2004 biodiversity stewardship was a new and unfamiliar term, one pilot project underway
- Just 7 years later…
  - 6 provinces have biodiversity stewardship programmes
    - 24 contract nature reserves and protected environments declared
    - Over 100 more awaiting proclamation or in negotiation
  - If all of these are successfully proclaimed, around 430 000 ha will have been added to the protected area network – contributing 16% of the 2013 national protected area expansion target
7. Biodiversity stewardship programmes are a major success story – making a significant contribution to protecting ecosystems, at low cost to the state

- Low cost to the state – biodiversity stewardship contracts cost a fraction (~ one tenth) of land acquisition

- Modest extra resources for provincial conservation authorities → could expand contribution of biodiversity stewardship, including to river & wetland ecosystems
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
9. Rates of loss of natural habitat are high in parts of the country

- Loss of natural habitat (e.g. cultivation, plantations, mining, urban sprawl) = biggest pressure on terrestrial ecosystems
- In North West, KZN and Gauteng: if current rates of conversion of natural vegetation to other land uses continue → almost no natural habitat left outside protected areas by about 2050

→ Use maps of Critical Biodiversity Areas to guide decisions about where best to locate development
10. SA has over 2000 medicinal plant species. 656 are traded, and of those, 56 are threatened.

- Urgent action required for threatened medicinal plants
- Research and monitoring required to ensure that harvesting patterns are sustainable for those currently not threatened

Distribution of medicinal plant species

- 2062 plant species used in traditional medicine
- 656 (a third) traded in medicinal markets
- 56 threatened, including 7 Critically Endangered
Traditional medicine trade is a large industry – worth nearly R3 billion a year (2007), employs over 130 000 people.

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

- At least R6.5 billion worth of ecosystem services (e.g. water, grazing) are lost every year as a result of invasive alien plants
- Huge scope to scale up natural resource management programmes such as Working for Water, with coupled job creation and ecosystem service benefits
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
Vegetation map of South Africa 2006
~440 vegetation types
New: 136 coastal, inshore & offshore habitat types

58 coastal & inshore habitat types
62 offshore benthic (seabed) habitat types

16 offshore pelagic habitat types (water column)
46 estuary ecosystem types (not easy to show on a national map)

New: 1\textsuperscript{st} ever map of estuarine functional zone for all 291 estuaries

Previously: dots along the coastline

Now: actual mapping of open water area and floodplain
Next steps

- State of Biodiversity report based on NBA – summarised for policy audience
  
  → NBA puts us in a strong position to develop a focused, highly strategic NBSAP

  NBA = the science
  NBSAP = “to do”

  SA’s first NBSAP 2005 →
  Review to be initiated this year
NBA 2011 resources

Reports and maps available BGIS
http://bgis.sanbi.org

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