Key achievements and progress towards National Biodiversity Assessment 2018

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What is the NBA?

Collaborative effort to synthesise the best available science on SA’s biodiversity to inform decisions in a range of sectors.
But also:
- build capacity
- coordinate, plan and share work within SANBI
- promote alignment & collaboration between partner institutions

<table>
<thead>
<tr>
<th>REALMS</th>
<th>THEMES</th>
</tr>
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<tbody>
<tr>
<td>Terrestrial</td>
<td>Describe biodiversity</td>
</tr>
<tr>
<td>Freshwater</td>
<td>Describe pressures on biodiversity and their trends over time</td>
</tr>
<tr>
<td>(wetlands &amp; rivers)</td>
<td>Assess the status of biodiversity</td>
</tr>
<tr>
<td>Estuarine</td>
<td>Determine the trends in biodiversity status over time</td>
</tr>
<tr>
<td>Coastal</td>
<td>Describe the range of responses to biodiversity pressures</td>
</tr>
<tr>
<td>Marine</td>
<td>Describe the range of benefits of biodiversity</td>
</tr>
</tbody>
</table>

- Policy
- Spatial Planning
- Prioritising Action
- National Reporting
- International Reporting
## Timeframes

<table>
<thead>
<tr>
<th>Date</th>
<th>Phase</th>
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<tbody>
<tr>
<td>2015</td>
<td>Initiation and planning; identification of key programs of work; identify partners and contributors and set up processes and governance</td>
</tr>
<tr>
<td>2016</td>
<td>Implement key programs of work and data collection</td>
</tr>
<tr>
<td>2017</td>
<td>Finalise ecosystem classification and mapping</td>
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<tr>
<td></td>
<td>Data collection and analysis</td>
</tr>
<tr>
<td></td>
<td>First Order Draft of Synthesis Report – mid 2017</td>
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<tr>
<td>2018</td>
<td>Analyses and drafting of reports</td>
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<tr>
<td></td>
<td>Second Order Draft of Synthesis Report – June 2018</td>
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<tr>
<td></td>
<td>Final Draft of Synthesis Report – December 2018</td>
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<tr>
<td>2019</td>
<td>Publication &amp; launch of final reports (May / June 2019)</td>
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<td></td>
<td>Popular report towards end of year</td>
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- Name of assessment = year of assessment
Major goals for NBA 2018

- Invest further in national *ecosystem classification*
- Improve assessment of *ecosystem condition*
- **Trend analysis** of habitat loss (and *Ecosystem* Threat Status) using times series Land Cover
- **Trend analysis** of *species* threat status (Red List Indices)
- Address *genetic* diversity
- Expand the *benefits* of biodiversity aspects to “make the case” for biodiversity and NBA findings
- Structure the *responses* well
- Explain **Key Biodiversity Areas** 🔄
- Publish as much as possible in peer-reviewed journals
Ecosystem classification and mapping

Ecosystem Classification Committees (ECCs) all functioning well

NECC: share lessons, over-arching guidance, ensure integration
Condition assessments

- Terrestrial: land cover
- Marine: uses cumulative impact mapping approach; has several projects on the go to ground-truth condition

<table>
<thead>
<tr>
<th>Pressures</th>
<th>Few pressures, low intensity</th>
<th>Range of pressures, moderate intensity</th>
<th>Many pressures, high intensities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condition</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
</tr>
<tr>
<td>Expected biodiversity impact</td>
<td>Pattern and process intact</td>
<td>Some ecosystem degradation</td>
<td>Loss of biodiversity pattern and disruption of ecological processes.</td>
</tr>
</tbody>
</table>
Trend analyses

Land Cover Change (1990-2013)

LC_CHANGE

- Primary natural areas
- Secondary natural areas
- Natural habitat lost pre 1990
- Natural habitat lost 1990-2013
Species work

- Improved data management
- Pressures on species
- Red List assessments
- Red-List Index for selected taxa - trends over time (terrestrial and freshwater)
- New indicator under development

[Protection Level of species] (later this morning)
Genetics Technical Report

• 2: **Review and synthesis.**

• 3: **High level indicators for tracking the status of ‘genetic’ diversity**
   Use high level indicators (PD, ED) on a large spatial and taxonomic scale. Trends relating to drivers of change/impacts on these metrics over time (e.g. protected area expansion, landcover changes, climate change).

• 4: **Conservation, taxonomy, species status informed by genetics**
   Create diversity layers ("heat maps") for evolutionary significant units; prioritise landscape protection using genetic diversity as a dimension. Highlights dangers of not knowing correct taxonomy.

• 5: **Monitoring trends in genetic diversity for priority species**
   Examine temporal trends in genetic diversity of wild populations of target species and propose indicators for monitoring trends and status.

• 6: **Risks and impacts to genetic diversity, pressures, and benefits**
   Cover risks and impacts to biodiversity and genetic diversity relating to: wild relatives of domestic species, invasive spp and hybridisation, game species and translocations/hybrids/captive bred. This chapter is a review of the risks and won’t include analyses.
Benefits of biodiversity clusters

1. Biodiversity contributes to **food security** (indigenous food, commercial production)
2. Biodiversity provides **medicine** (medicinal plants)
3. Biodiversity assets are vital for the **wildlife economy** (hunting and game ranching)
4. Biodiversity provides **employment**
5. Biodiversity stimulates **innovation** (biomimicry, bioprospecting, horticulture, crop wild relatives)
6. Biodiversity assets are vital for South Africa’s **tourism economy**
7. **Ecological infrastructure** supports water security, disaster protection, and climate change adaptation
8. Biodiversity supports **well-being** (everyday life)
10. Involving **citizens** in biodiversity science
11. **Careers** in biodiversity
Responses

3-way action plan

These are our key responses at a high level

Avoid further loss / maintain in good condition
Protect
Restore

**ETS, SppTS**
- Are ecosystem types becoming more threatened?
- Rate of habitat loss in TEs compared with background rate of loss (outside PAs)
- Are species becoming more threatened? (Red List Index)

**EPL, SppPL**
Effectiveness of the PA network for representation of ecosystem types and species

**Others:**
Ability to respond – science capacity and expenditure on biodiversity
Image Competition

Images of species, ecosystems, people in and/or using biodiversity, landscapes showing a variety of uses adjacent to natural habitats, pressures on biodiversity shown in-situ, multiple uses of nature, biodiversity features...

LUCKY DRAW PRIZES FROM NOW UNTIL END 2018

images@sanbi.org.za