



SANBI 
Biodiversity for Life
South African National Biodiversity Institute

13th National Biodiversity Planning Forum
7–10 June 2016
The Wilderness Hotel, Wilderness, Western Cape

Mapping Biodiversity Priorities

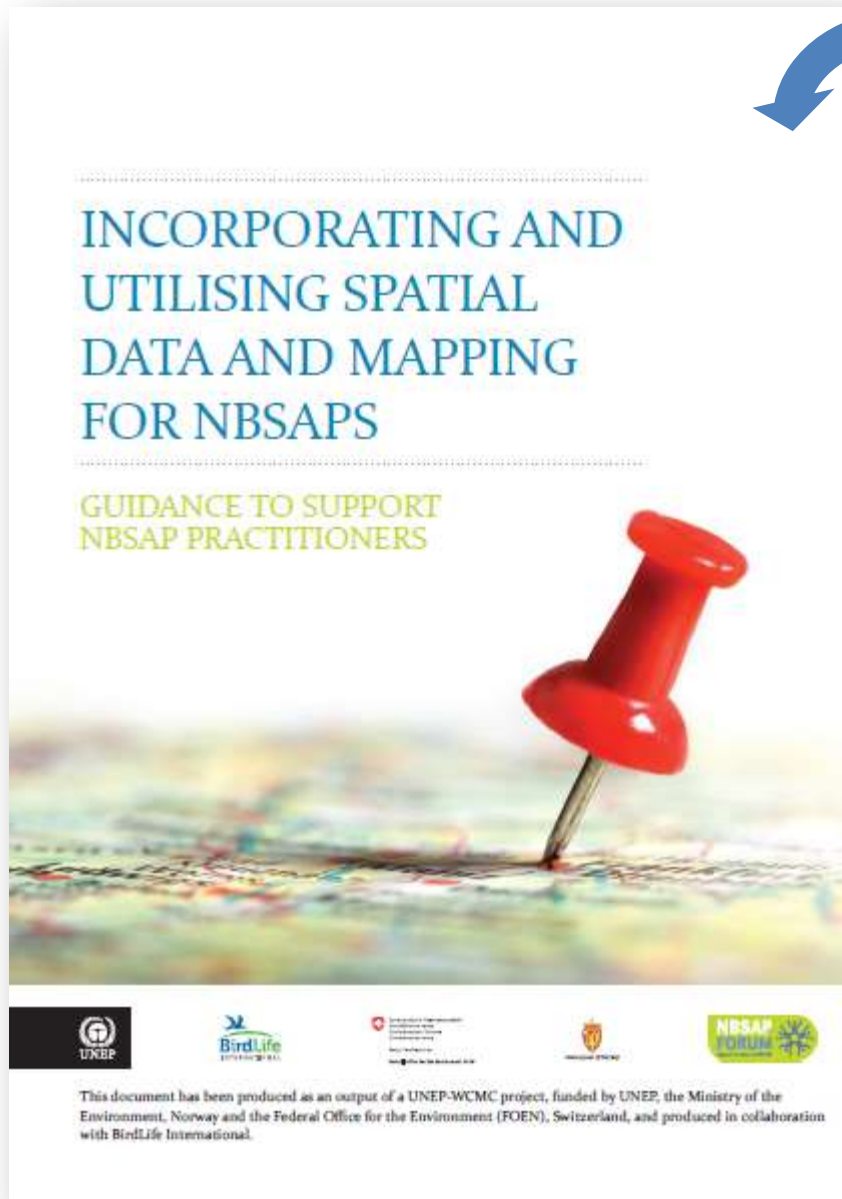
A practical science-based approach
to national biodiversity assessment
and prioritisation



Some background...

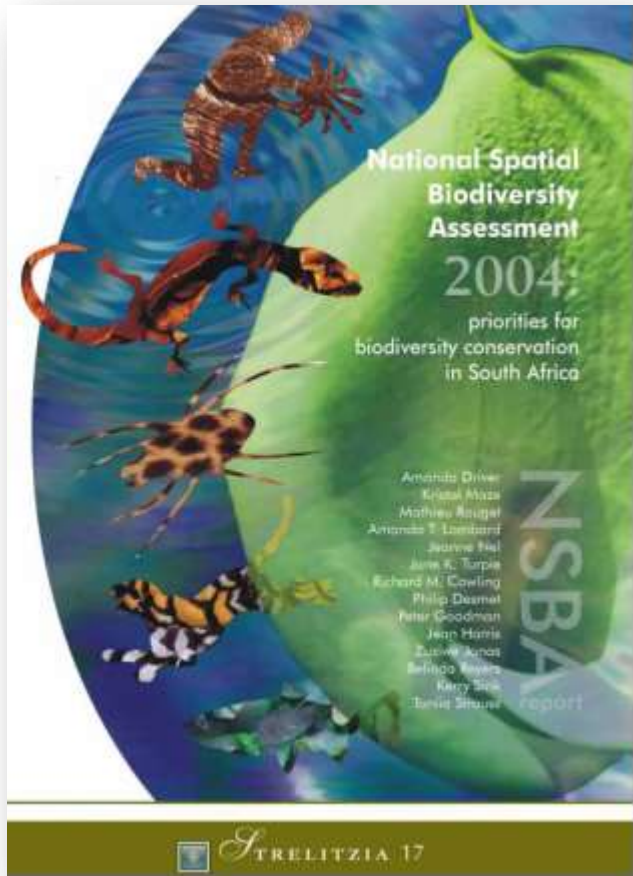


WCMC, 2014

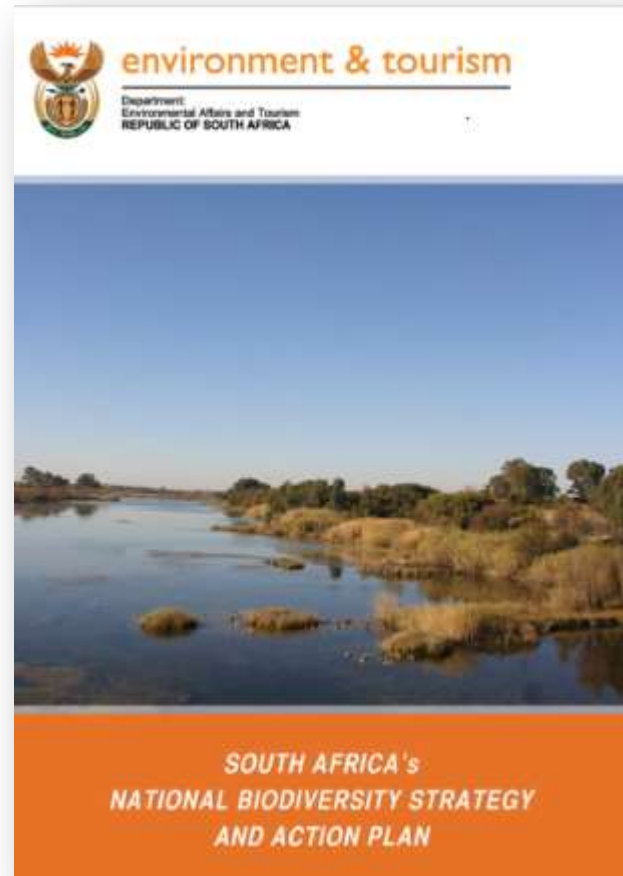


- Revision of NBSAPs underway
- CBD has urged countries to include spatial info about biodiversity in their NBSAPs...
- ...but for many countries this is a challenge

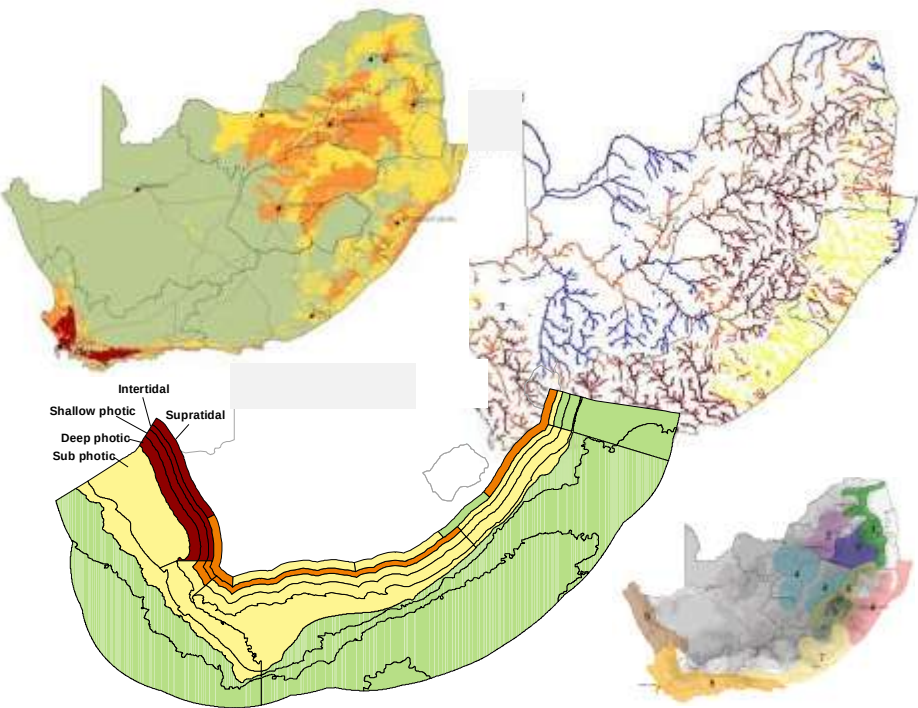
NSBA 2004



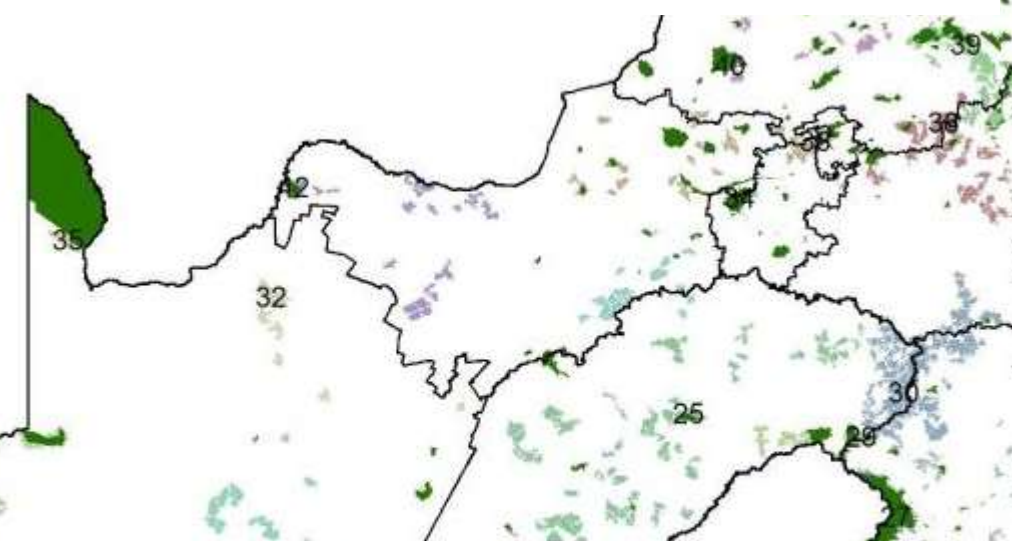
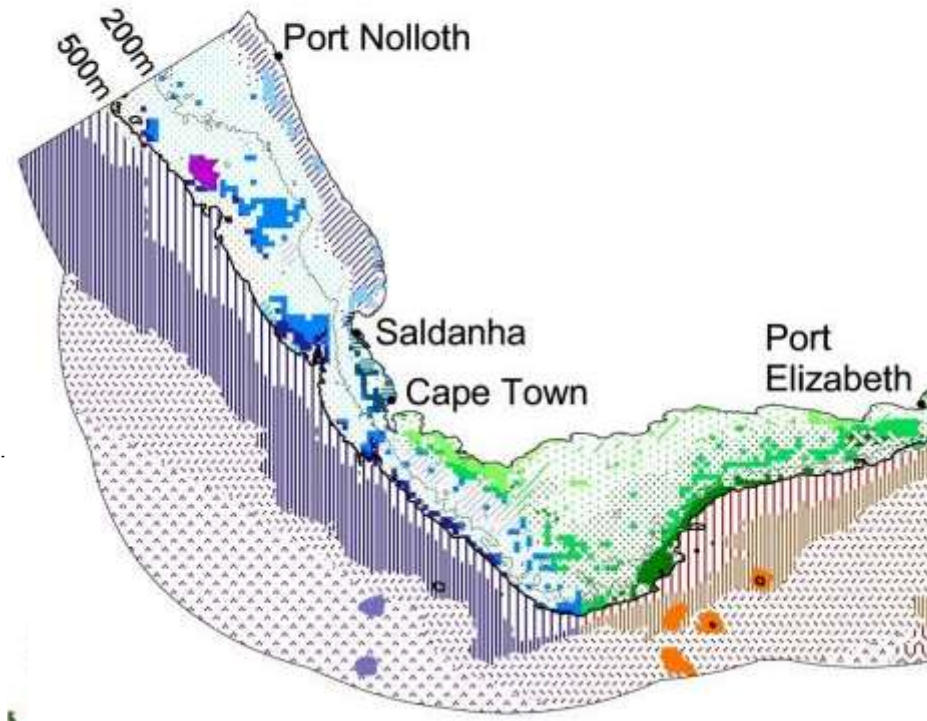
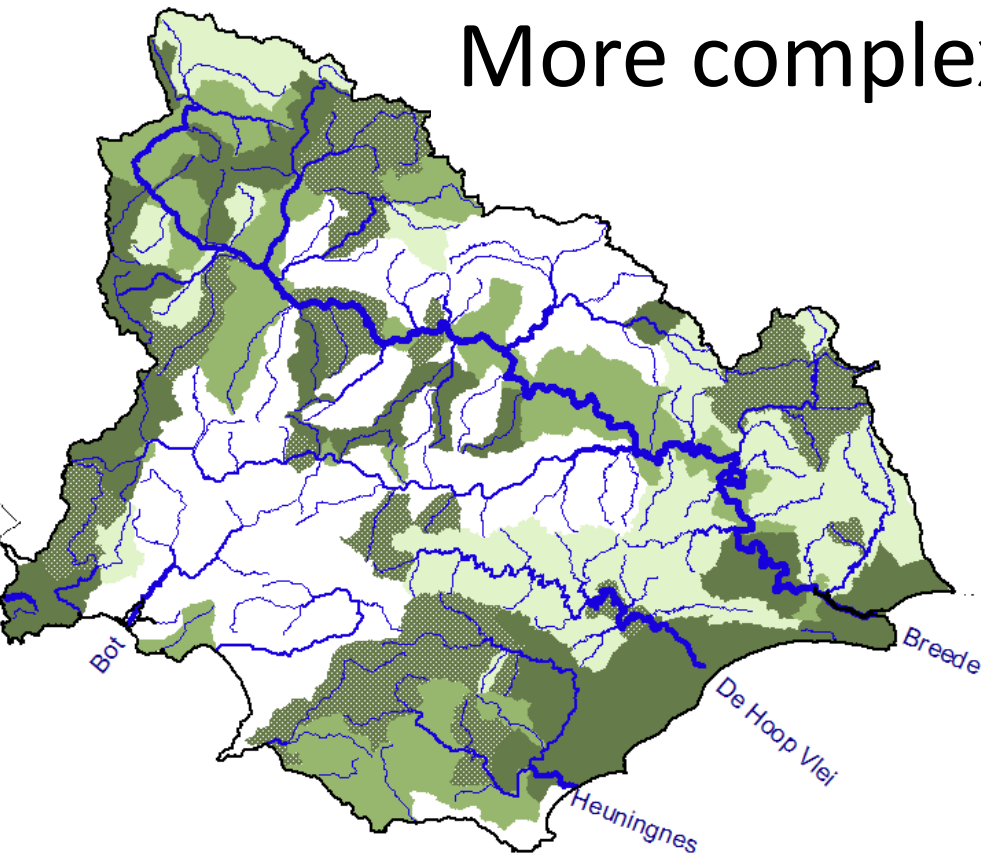
NBSAP 2005



NSBA 2004 – small team, small budget, short timeframe



More complex products since then...



The challenge

- Can we distil our approach to spatial biodiversity assessment and planning into its **most simple elements?**
- Primary audience: countries that are both biodiversity rich and resource constrained → tough choices





4 pillars

- map of ecosystem type
- biodiversity targets/thresholds
- map of ecological condition
good/fair/poor
- map of protected areas

ecological condition

- good — natural/near-natural
- fair — moderately modified
- poor — substantially modified



Writing workshop
September 2015, Kirstenbosch

MAPPING BIODIVERSITY PRIORITIES

A practical, science-based approach to national biodiversity assessment and prioritisation to inform strategy and action planning



- Available at <http://biodiversityadvisor.sanbi.org>
- Look under “Planning and Assessment”



The content...



3 key questions

- **Q1** What **biodiversity** do we have and where is it?
- **Q2** What is the **state of biodiversity** across the landscape and seascape?
- **Q3** Where and how should we **act first** to manage and conserve biodiversity?



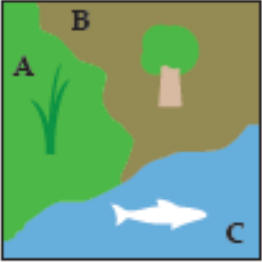
Guiding principles – first 3

1. Aim to conserve a viable **representative sample** of every different type of biodiversity
2. Aim to conserve key **ecological processes**
3. Set quantitative **biodiversity targets** for representation and persistence

→ Principles of **systematic biodiversity planning**



4 essential datasets

	Map of ecosystem types
	Map of ecological condition
	Map of protected areas
	Biodiversity targets for ecosystem types

Q1

Advice on how to develop these simply, in many cases based on existing globally available datasets

Essential datasets

Q1



Assessment

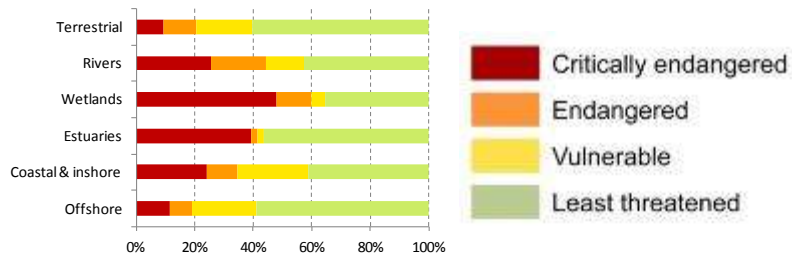
Q2

Prioritisation

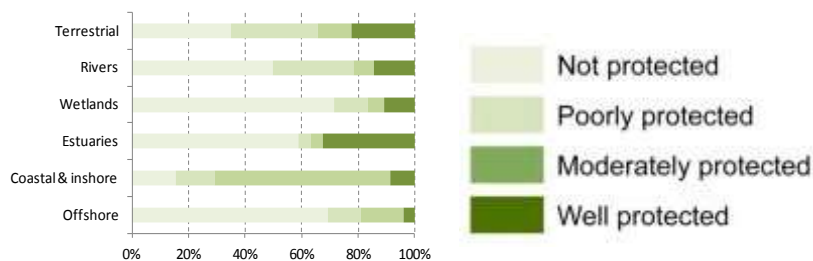
Q3

Headline indicators

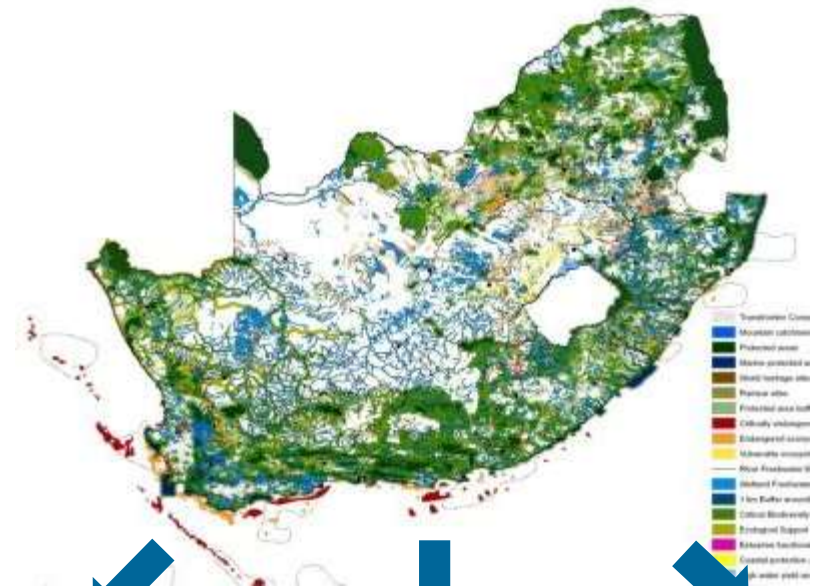
Ecosystem threat status



Ecosystem protection level



Maps to inform action



Avoid loss

Protect

Restore

Combining the datasets

✓ Ticks indicate which datasets are required for assessment and prioritisation		Assessment	
		Ecosystem threat status	Ecosystem protection level
Four essential datasets	Map of ecosystem types	✓	✓
	Biodiversity targets	✓	✓
	Map of ecological condition	✓	
	Map of protected areas		✓



Combining the datasets

✓ Ticks indicate which datasets are required for assessment and prioritisation

		Assessment		Prioritisation	
		Ecosystem threat status	Ecosystem protection level	Priority areas for planning and decision making	Priority areas for protected area expansion
Four essential datasets	Map of ecosystem types	✓	✓	✓	✓
	Biodiversity targets	✓	✓	✓	✓
	Map of ecological condition	✓		✓	✓
	Map of protected areas		✓	✓	✓

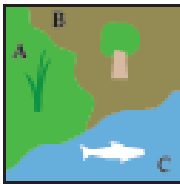
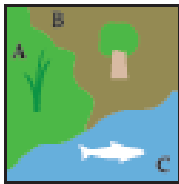
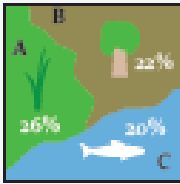
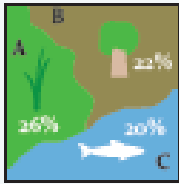
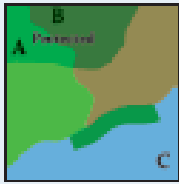
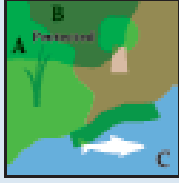
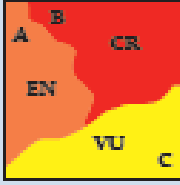
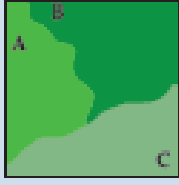


Steps for assessment

2

Assessment

Biodiversity assessment provides two useful high-level indicators of biodiversity status:

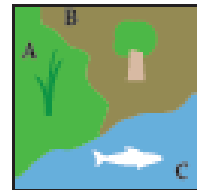
Ecosystem threat status	Ecosystem protection level
 Step 1: Map and classify ecosystem types.	 Step 1: Map and classify ecosystem types.
 Step 2: Set biodiversity targets for ecosystem types.	 Step 2: Set biodiversity targets for ecosystem types.
 Step 3: Map ecological condition.	 Step 3: Map existing protected areas.
 Step 4: Determine the proportion of each ecosystem type that is still in good ecological condition.	 Step 4: Determine the proportion of each ecosystem type that is included in the existing protected area network.
 Step 5: Evaluate this proportion against the biodiversity target and other thresholds to assign ecosystem threat status category.	 Step 5: Evaluate this proportion against the biodiversity target to assign ecosystem protection level category.

Steps for prioritisation

Prioritisation

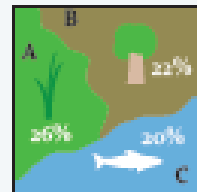
3

Prioritisation identifies a portfolio of geographic areas important for conservation action:



Step 1: Map and classify ecosystem types.

Options to include additional spatial data if available:



Step 2: Set biodiversity targets for ecosystem types and other biodiversity features.

Additional biodiversity data e.g. species, ecological processes

Ecological infrastructure or supply of ecosystem services



Step 3: Evaluate how much is already protected relative to biodiversity targets.



Step 4: Identify priority areas for meeting the remaining targets, in the most efficient configuration, favouring areas that remain in good ecological condition where possible.

Constraints e.g. conflicting land-uses

Opportunities e.g. conservation initiatives

Step 5: Identify appropriate conservation actions for priority areas.

Step 6: Develop interpretive products to guide actions.

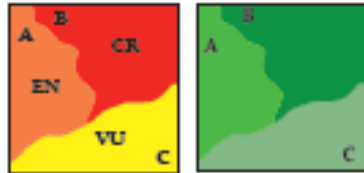
Key aspects of prioritisation

- Complementarity & efficiency
- Connectivity
- Conflict avoidance (where possible)
 - Portfolio of sites that collectively meet biodiversity targets



Products

A wide range of useful products are generated:



Maps that show threatened ecosystems, under-protected ecosystems, and priority areas for conservation action



Accompanying guidelines that interpret the outputs to make them useful to end-users

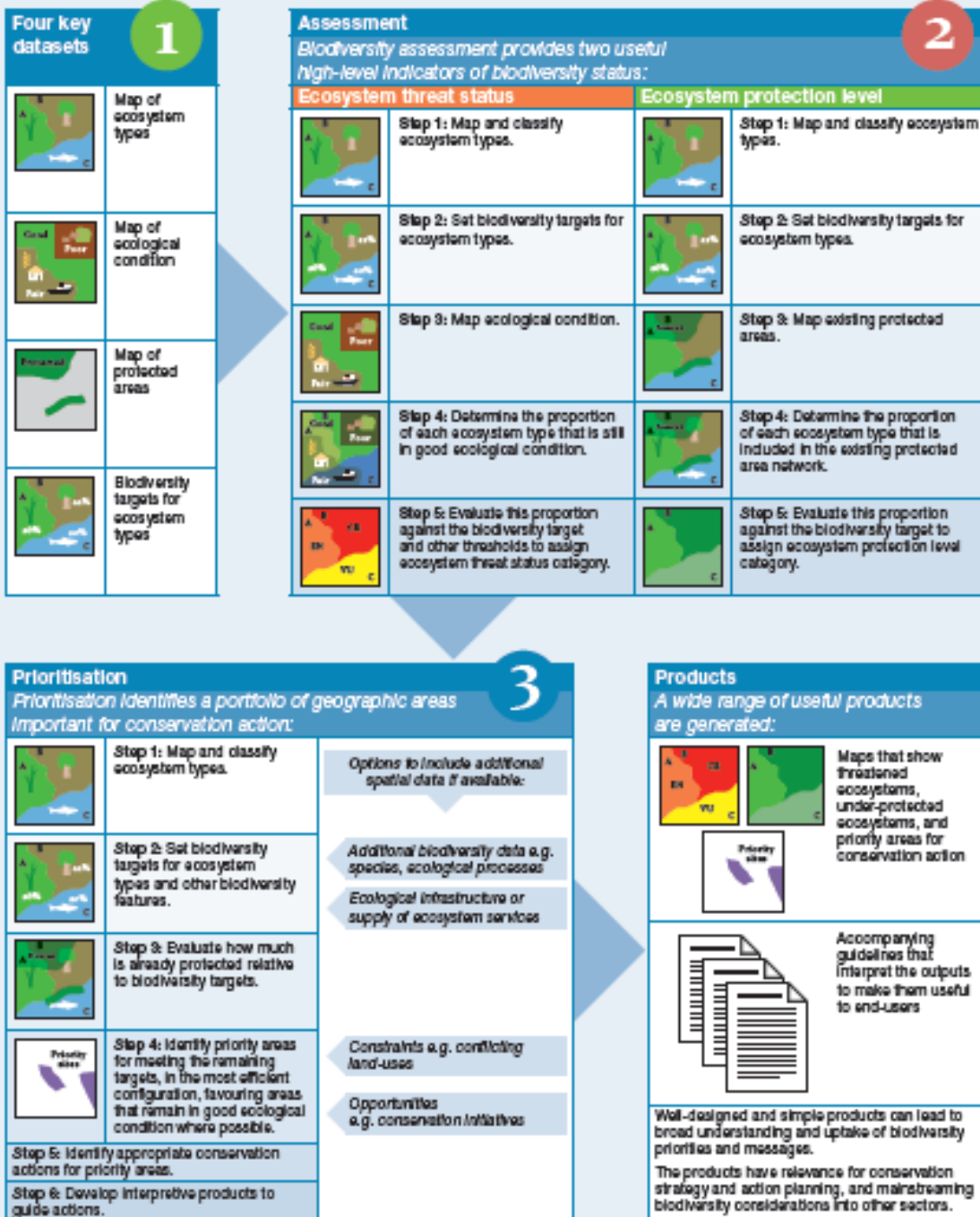
Well-designed and simple products can lead to broad understanding and uptake of biodiversity priorities and messages.

The products have relevance for conservation strategy and action planning, and mainstreaming biodiversity considerations into other sectors.

Products

- Maps to inform **land-use planning & decision-making**
- Maps to inform **protected area expansion**
- Maps to inform **priorities for restoration work**
- Accompanying **guidelines**

Overview of the approach



Guiding principles – next 7

4. Use the best available science
5. Aim for consistency across realms
6. Start simply and plan for iterative improvements
7. Keep the process and the products simple
8. Make a clear link to policy and implementation
9. Be inclusive and engage stakeholders
10. Make the products accessible for wide use



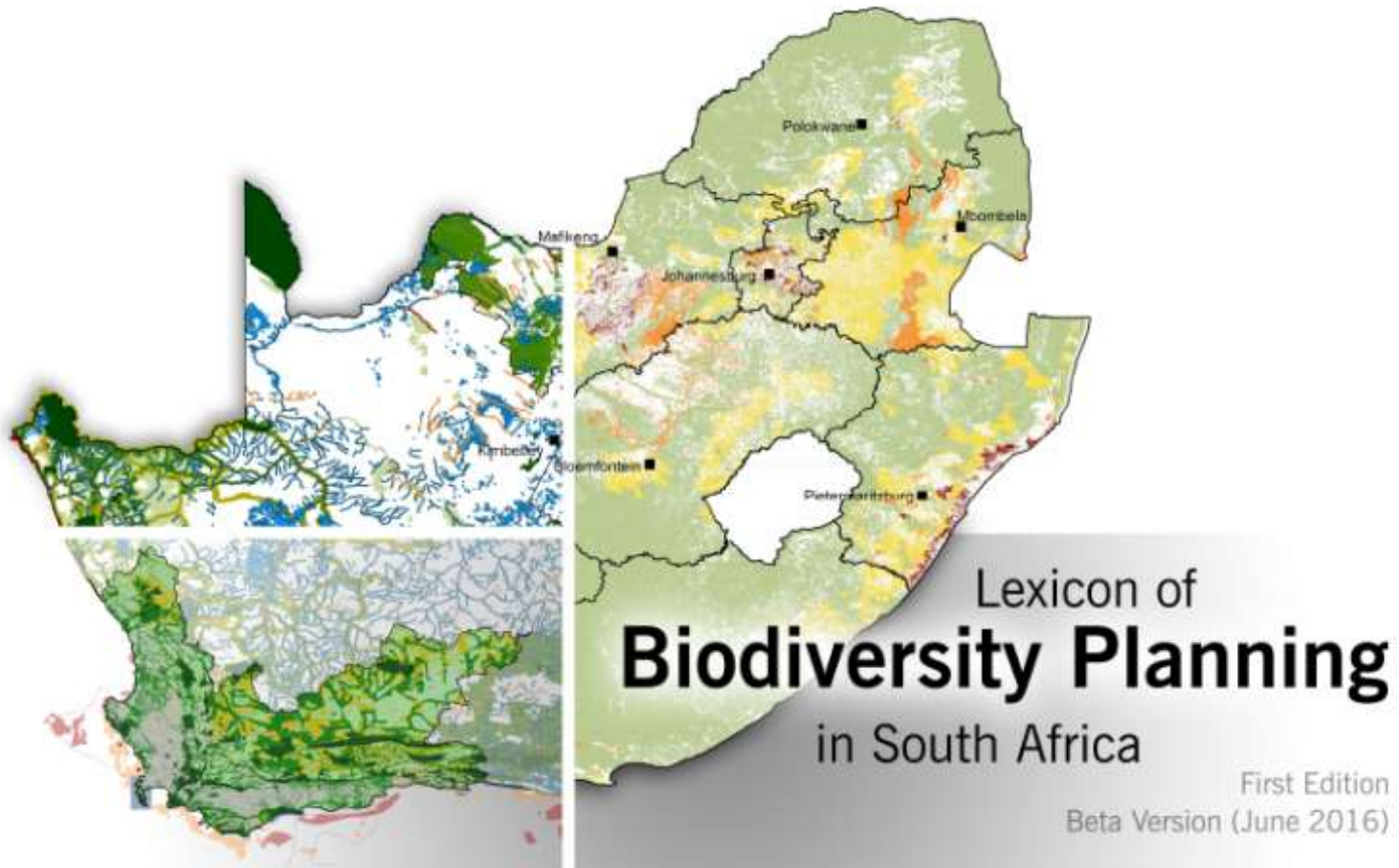
3 enabling factors

- An agency that can play a co-ordination role
- A strong community of practice that promotes learning and sharing
- Clear links to government priorities and processes



News flash...





A lexicon is the vocabulary
of a person, language, or branch of knowledge

Includes:

- 119 terms
 - Definitions
 - Common problems / what to avoid
- Clusters of related terms
- Terms to avoid

Available at <http://biodiversityadvisor.sanbi.org>
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