



2014 Biodiversity Planning Forum
13–16 May, Mpekwani Beach Resort, Eastern Cape

SANBI Biodiversity monitoring

Draft framework for mandated
biodiversity monitoring and input into
the National Biodiversity Assessment

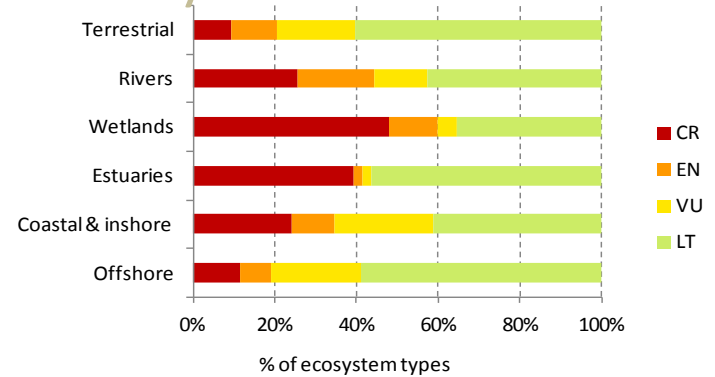
Heather Terrapon

Biodiversity Monitoring

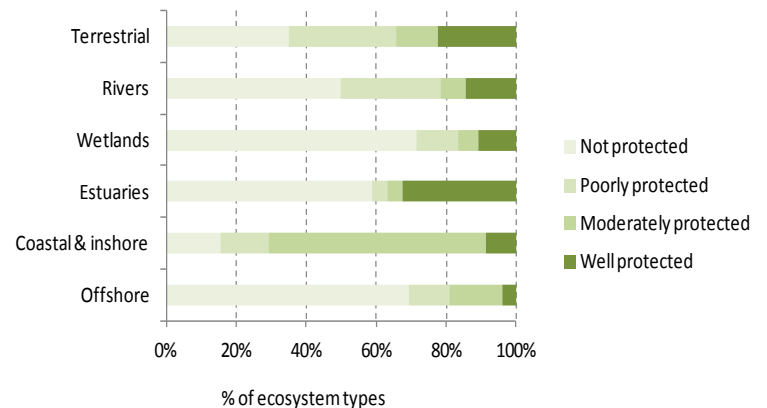
Indicators that inform biodiversity action

- **Using SANBI and partner research and knowledge to derive indicators**
- Indicators are fed into NBA and other reporting mechanisms (local & international)

Ecosystem threat status



Ecosystem protection level



SANBIs monitoring mandate (NEMBA)

NEMBA S11(1)(a) the Institute **must monitor and report** regularly to the Minister on:

- (i) the **status** of the Republic's **biodiversity**;
- (ii) the **conservation status** of **all listed threatened or protected species** and **listed ecosystems**;
- (iii) the **status** of **all listed invasive species**.

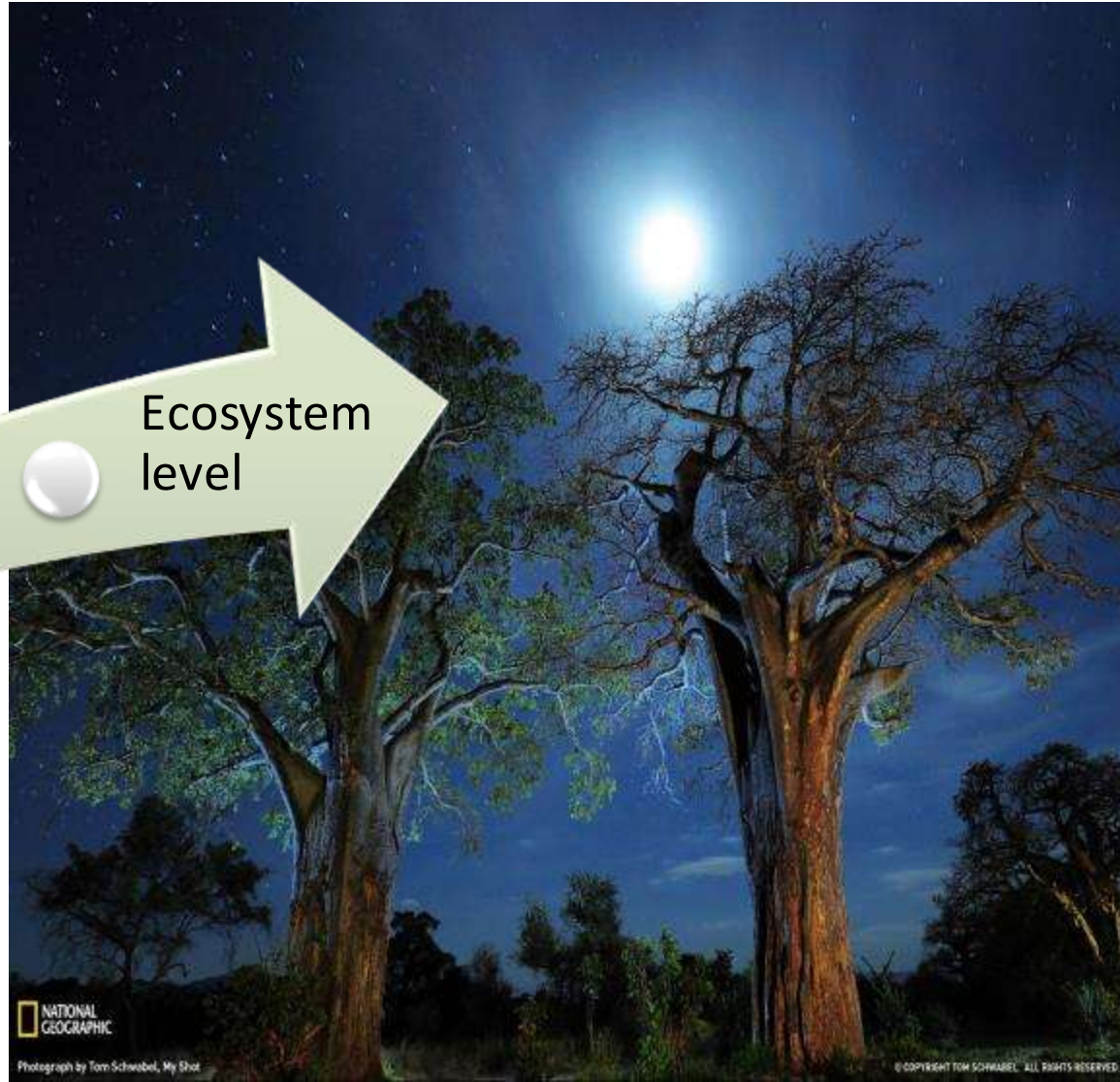
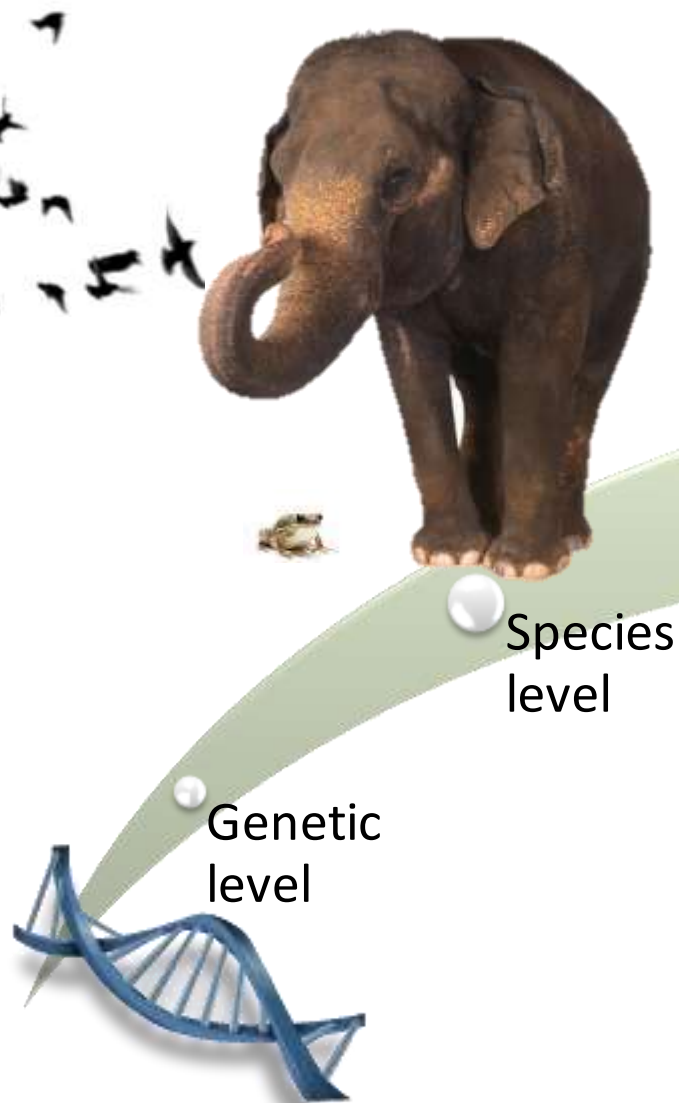
(b) **Environmental impacts** of all categories of **GMOs**, post commercial release, **based on research** that identifies and evaluates risk

NEMBA S49 – Monitoring The Minister must designate monitoring mechanisms and set indicators to determine:

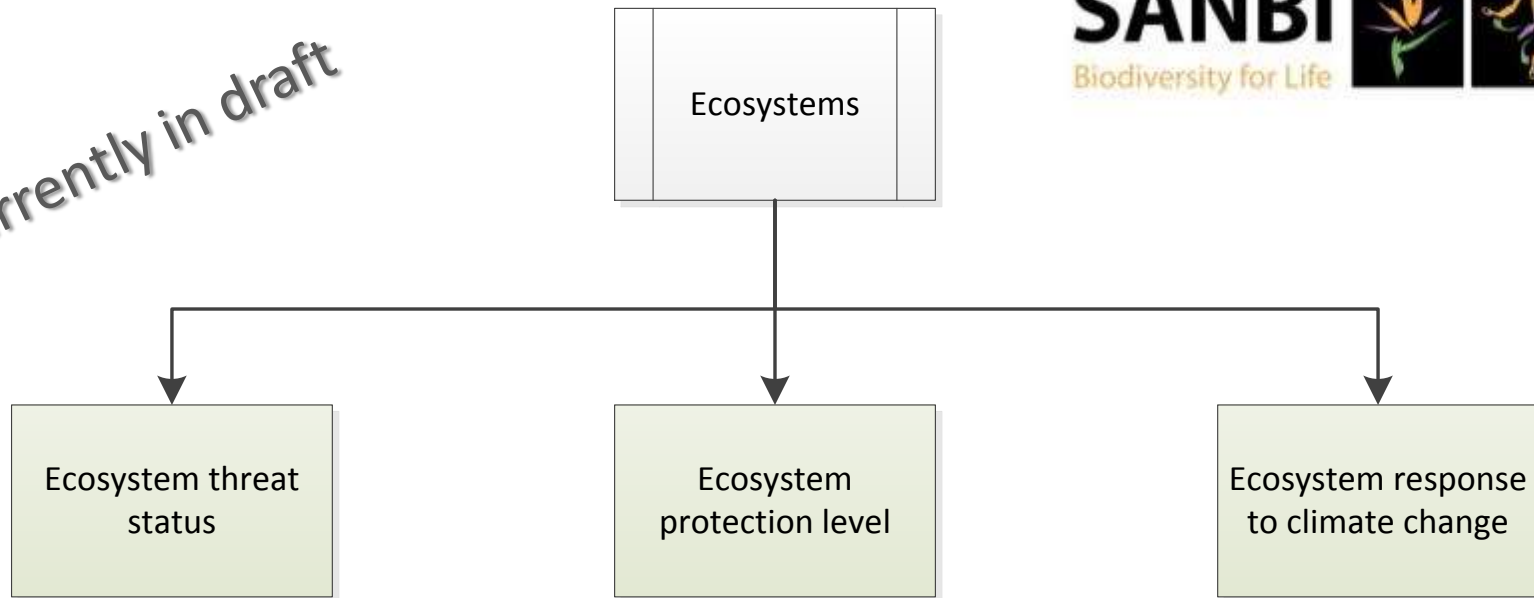
- (i) The conservation **status of various components of SAs biodiversity**
- (ii) Any **negative and positive trends** affecting the conservation status of various components
- (iii) Any person, organisation or organ of State involved in monitoring may report to the Minister on results of monitoring **measured against predetermined indicators**.



Components of the monitoring framework

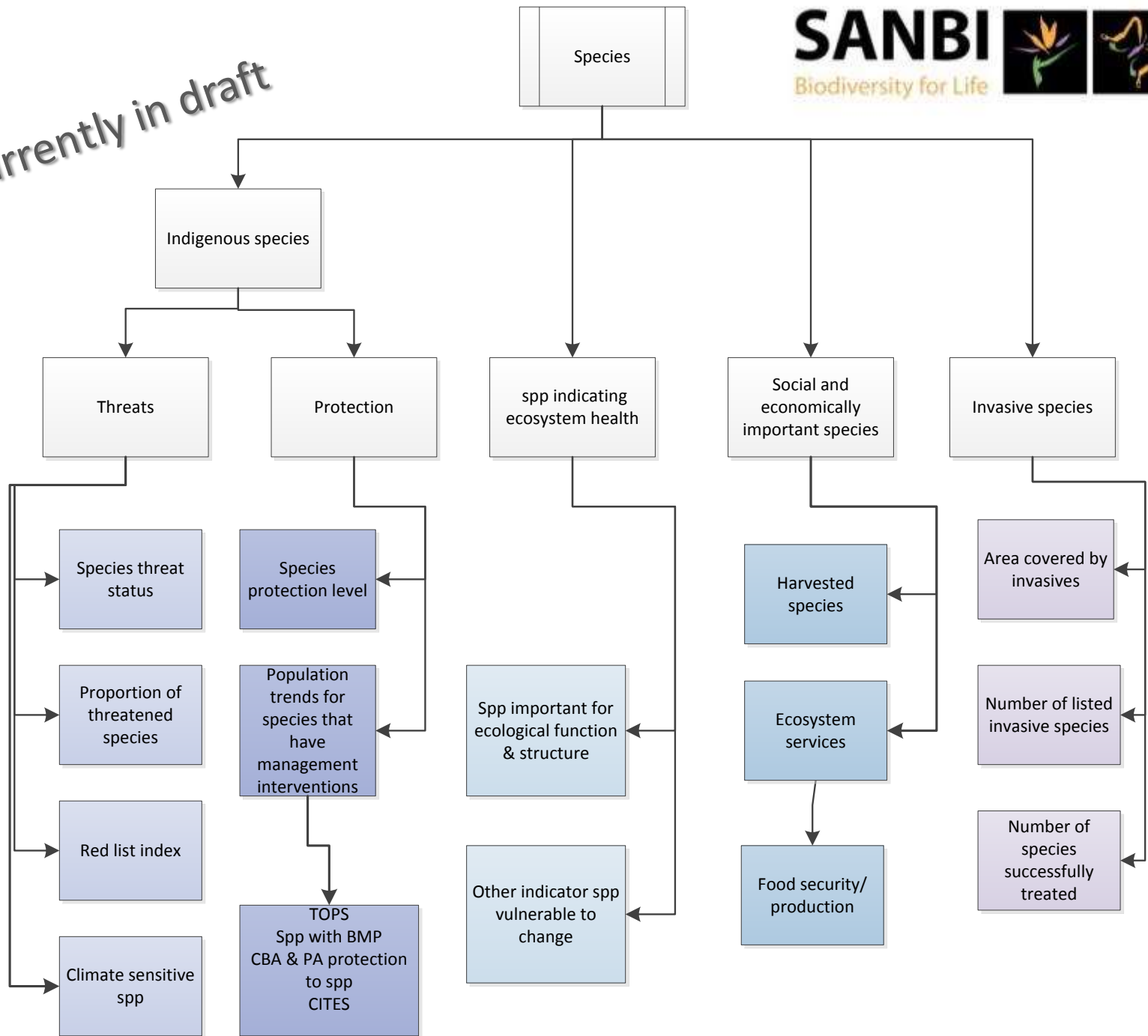


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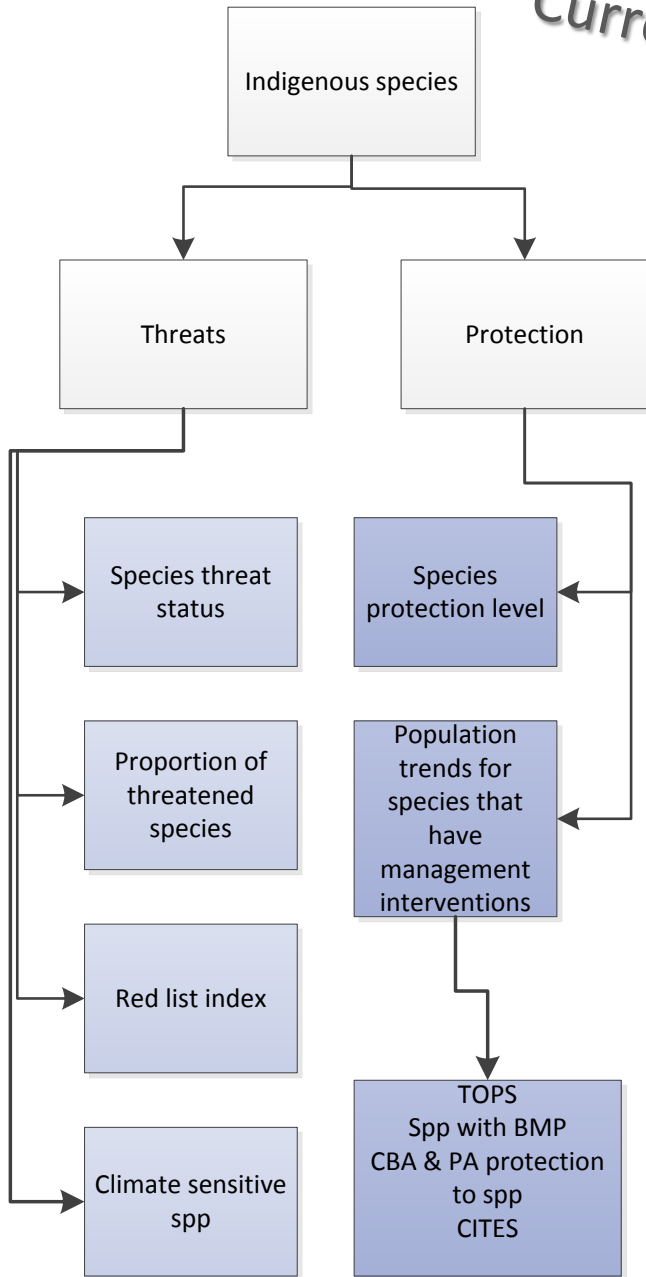


- Aim is to indicate the state of South Africa's ecosystems
- The following indicators are the same as those previously published in the NBA 2011:
 - Ecosystem protection level
 - Ecosystem threat status
- The Ecosystem response to climate change indicator will be used to show climate change impacts on biodiversity, such as bush encroachment.
- Data required for these indicators includes:
 - Ecosystem types for all environments (08:30 – 10:00 Thursday)
 - Ecosystem condition data e.g. Flow alteration; Habitat modification layer (Smiso Bhengu – 13:30 Thursday)

Currently in draft



Currently in draft



- Aim is to focus on threatened and protected species
 - How threatened are our species?
 - Current threat status for species from atlases (where available)
 - Status of red listed species are updated using the IUCN red list index method
 - Threat status of climate sensitive species
 - How protected are our species?
 - Species found in formally protected areas
 - Species with some form of management interventions, such as: TOPS; CITES; Biodiversity Management Plans; Species occurring in Critical biodiversity areas
- Indicator data is expected to be generated by many sources and partners are seen as especially important

SANBIs managed network approach



- Botanical Society of South Africa – Custodians of Rare and Endangered Wildflowers (CREW)
- Animal Demography Unit @UCT
- BirdLife South Africa
- Lepidopterist Society of Africa
- Herpetological Association of Africa
- Agricultural Research Council
- Universities
- Museums
- Herbaria
- Provincial Conservation Agencies
- SANParks
- Municipalities
- NGOs
- Local communities (Northern Cape Bokkeveld region – Niewoudtville area); Pondoland (traditional healers & the use of medicinal plants)
- Citizen scientists (general public), iSpot



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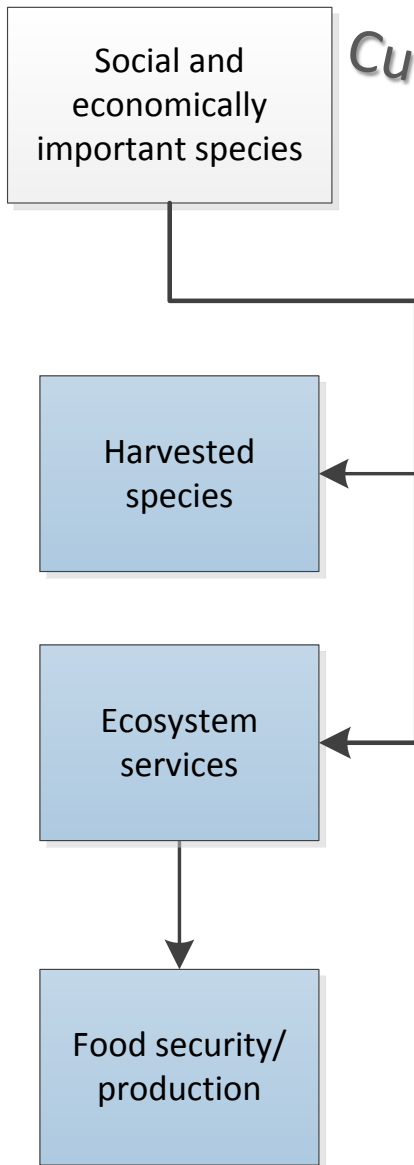
Species indicating
ecosystem
condition

- Aim is to focus on species that can indicate the condition of an ecosystem
 - Focus on species important for ecological function and structure
 - These could include: pollinators; species involved in nutrient cycling; dung beetles; termites; spiders; fungi; keystone species; ecosystem engineers; large trees; coral.
 - Focus on other species that can act as good indicators of change

Spp important for
ecological function
& structure

Other indicator spp
vulnerable to
change

Currently in draft



- Aim is to focus on species that are seen as important to the South African economy and social well being.
- These indicators could be case studies that tell stories about the chosen species.
 - Focus on species that are harvested
 - Those harvested species not listed on TOPS, such as: Mopane worms; Kalahari silk worms; Aloe Ferox; various harvested marine resources; species harvested for medicinal use.
 - Focus on species that provide ecosystem services with a special focus on those providing food security or production
 - These could include: mangroves; wild pollinators; dung beetles; bats; termites; spiders; indigenous forage species; coral
 - This section is focused on ecosystem services and not ecosystem condition which was discussed in a previous slide

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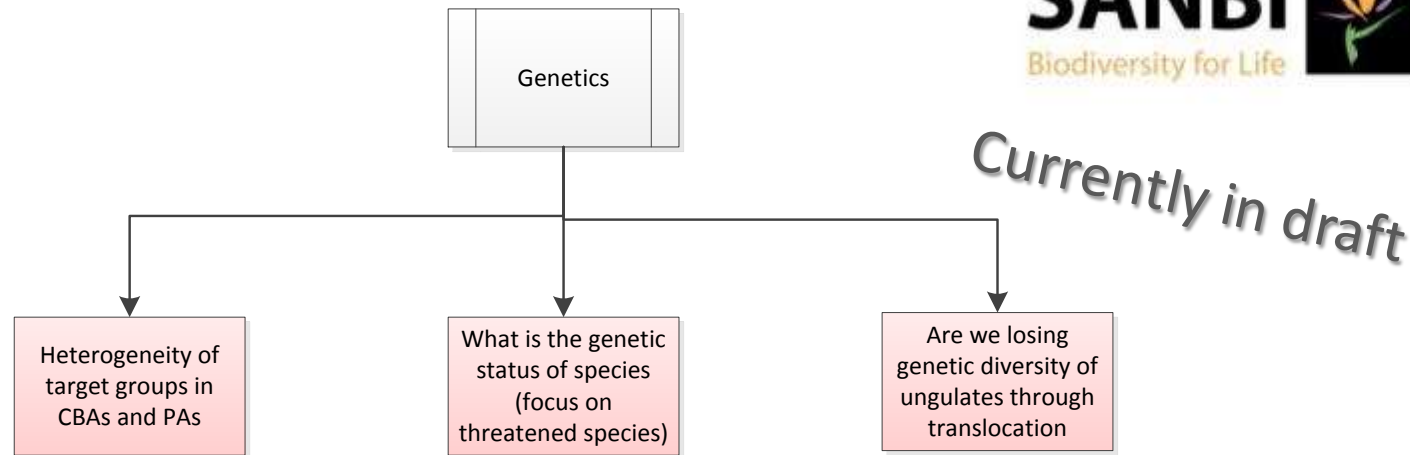
Invasive species

Area covered by
invasives

Number of listed
invasive species

Number of
species
successfully
treated

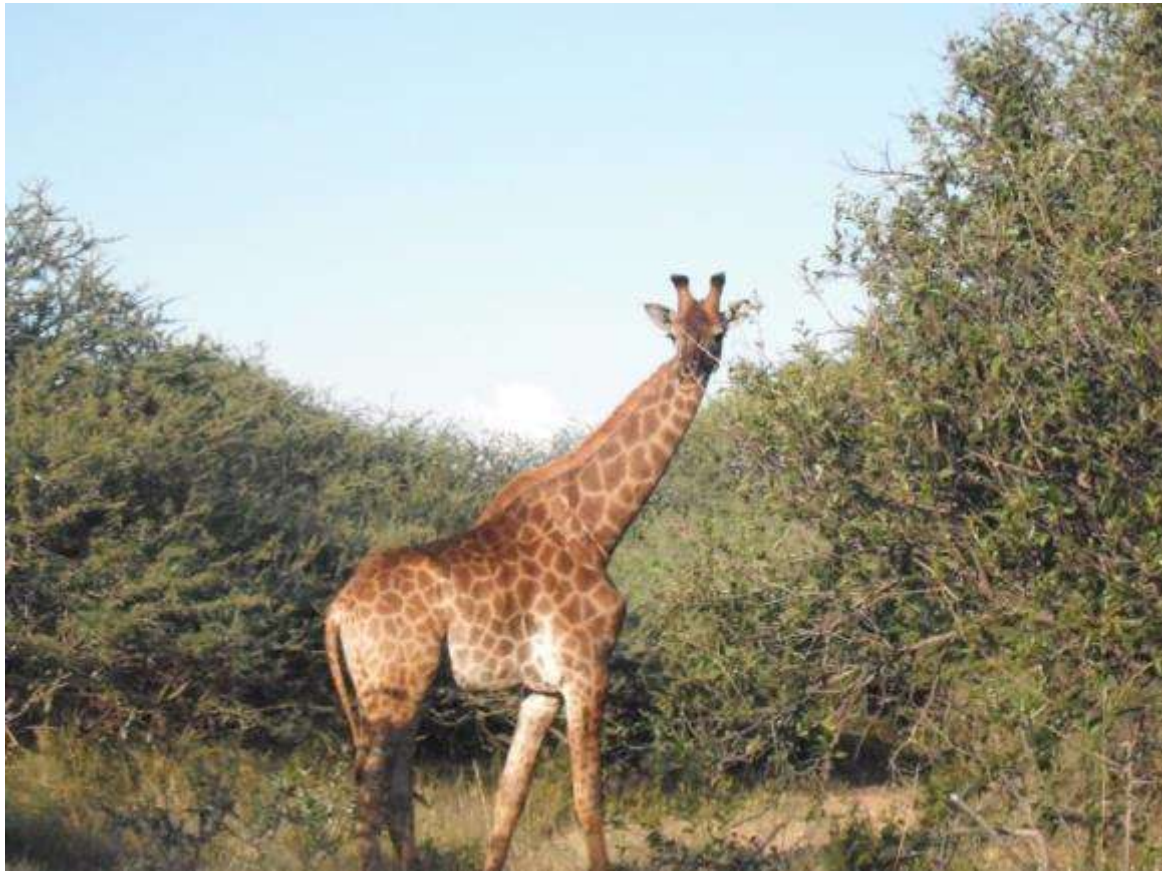
- Aim is to focus on invasive species (plant or animal)
- These indicators will be developed in tandem with the national registers required by the NEMBA AIS regulations
 - What area that is covered by invasive species?
 - How many invasive species are listed in terms of NEMBA section 70(1)(a)?
 - How many invasive species can be classified as successfully treated?
 - Note that this does not mean that they have been eradicated



- Aim is to inform current questions faced in biodiversity conservation and management
 - Are our Critical Biodiversity Areas (CBAs) and Protected Areas (PAs) conserving the genetic diversity of our species?
 - Is the genetic diversity of our threatened species decreasing?
 - Does the translocation of our ungulates affect their genetic diversity?
 - Possible addition: Indicator showing potential genetic bottlenecks due to human activities e.g. fishing.
- Indicators will be focused on target groups and control groups of species

Next up...

- Finalization of the monitoring framework by SANBI monitoring reference group in consultation with partners
 - Circulation for comment in September 2014
- Through NBA 2017 process, calls for data and ground truthing (John Donaldson – 08:30 Thursday)



SANBI

Biodiversity for Life



Thank you

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