

WILD AND FREE: WHAT ARE WE CONSERVING AND HOW DO WE MEASURE IT?



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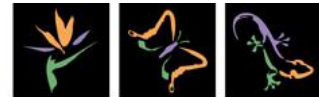


ENDANGERED
WILDLIFE TRUST
conservation in action

SANBI

Biodiversity for Life

South African National Biodiversity Institute



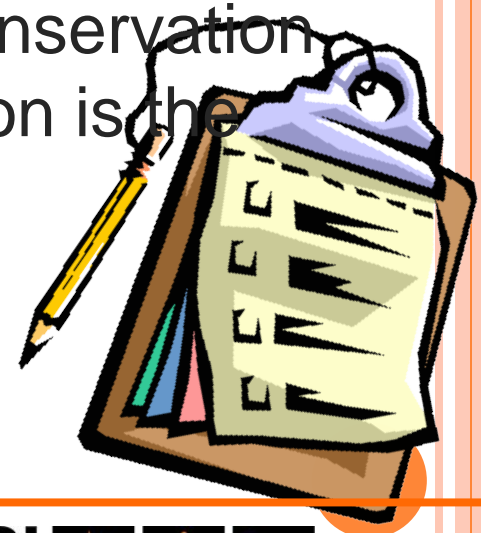
INTRODUCTION

- Minimum goal is saving species from extinction
- Ideal goal is to conserve (& create) wild, flourishing, adaptive & self-sustaining populations
- IUCN Red List – only wild populations can be considered
- There is no clear definition of wild
- Wildness - spectrum from captive-bred to free roaming
 - management intensity and property size, location and isolation
 - Viability in short or long term
- South Africa unique situation



GOALS

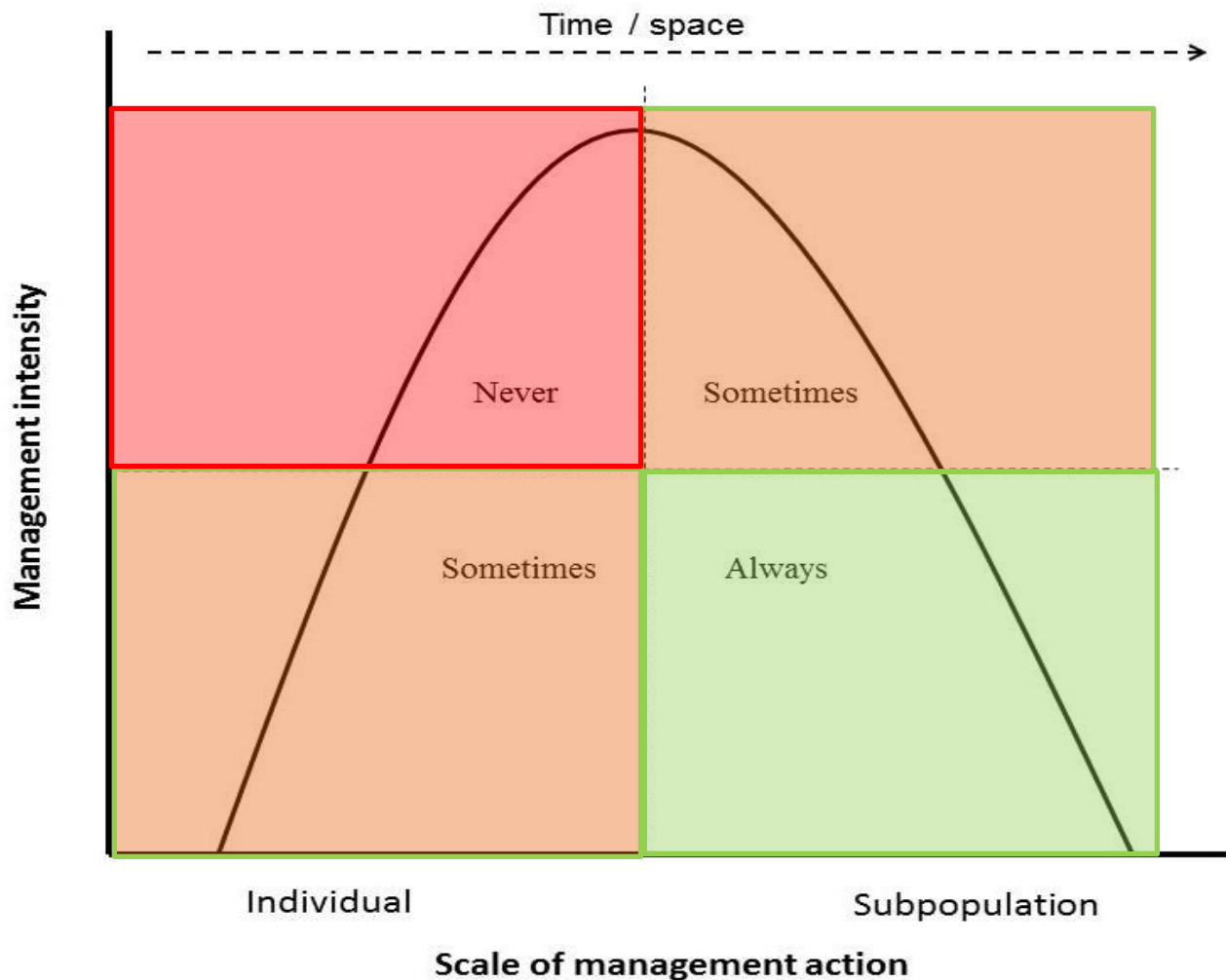
1. Need an objective framework that
 - a. unambiguously measures the conservation value or wildness of a subpopulation, regardless of the management system or philosophy
 - b. evaluates which subpopulations are eligible for the Red List assessments.
2. A more proactive & inspiring metric of conservation success (saving something from extinction is the minimum goal).



METHODS

- Two expert workshops
- Achieved the following:
 - Used Redford *et al.* 2014 defined nodes along wilderness spectrum as a starting point, adapted it to local requirements
 - Listed the potential management attributes / actions that applied to each wilderness node
 - Developed measurable thresholds for each attribute for each node
 - Averaged the score for each attribute to determine the wilderness status of each subpopulation and used radar plots to visualise the score
- Framework was then tested for subpopulations of several spp. incl. Cape mountain zebra and sable
 - Red List requested data from the wildlife ranching sector
 - Data obtained from wildlife ranching survey (EWT)





Attributes & actions chosen to reflect effects on short-term survival of individuals, as well as long-term resilience of the overall population based on subpopulation connectivity & adaptive capacity.

o Potential South African wildness nodes

1. **Captive managed:** Social resource dynamics completely negated by management.
2. **Intensively managed:** Direct intervention at the individual and/or subpopulation levels. May exist in extensive systems (as opposed to breeding camps) but with conditions controlled to benefit the focal species.
3. **Simulated Natural:** Limited set of interventions directed at subpopulation sustainability and mitigating extrinsic factors (for example, metapopulation management).
4. **Near Natural:** Interventions are directed at long-term ecosystem process management and not at the individual or subpopulation level.
5. **Self-sustaining:** No deliberate interference to sustain or grow subpopulations and can adapt to change.

Attributes relating to ecological and evolutionary functioning

Space

Disease &
parasite
resistance

Natural
predation

Food
limitations

Water
limitations

Reproduction



Home
range

Dispersal



Vet
care



Exposure
to native
predators



Presence
& freq.
food
prov.



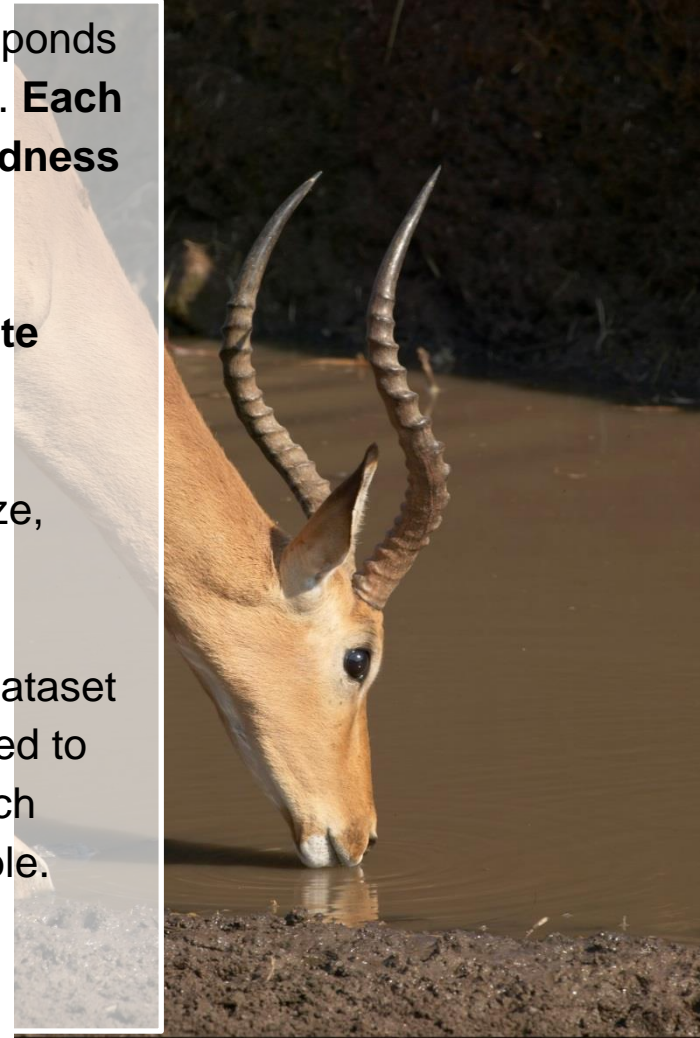
Freq. &
spatial
orientation
H2O

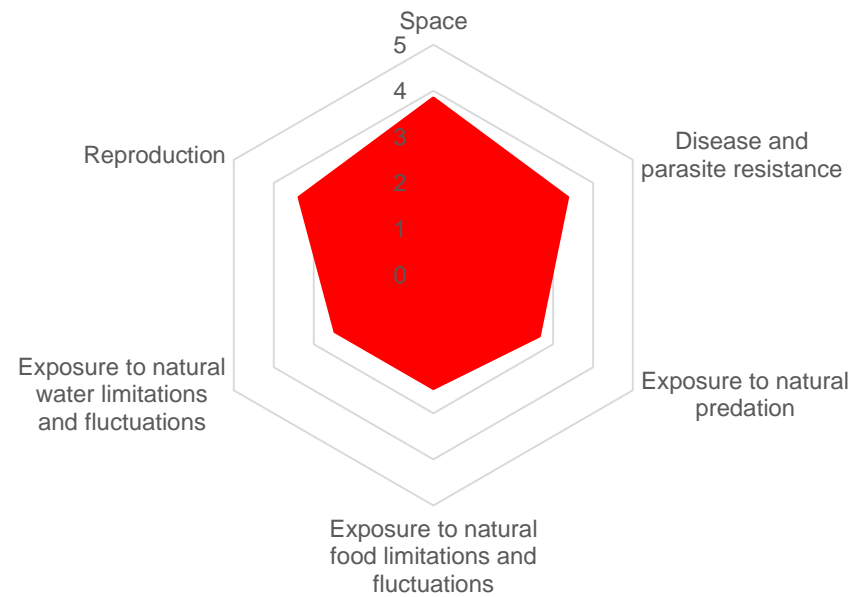
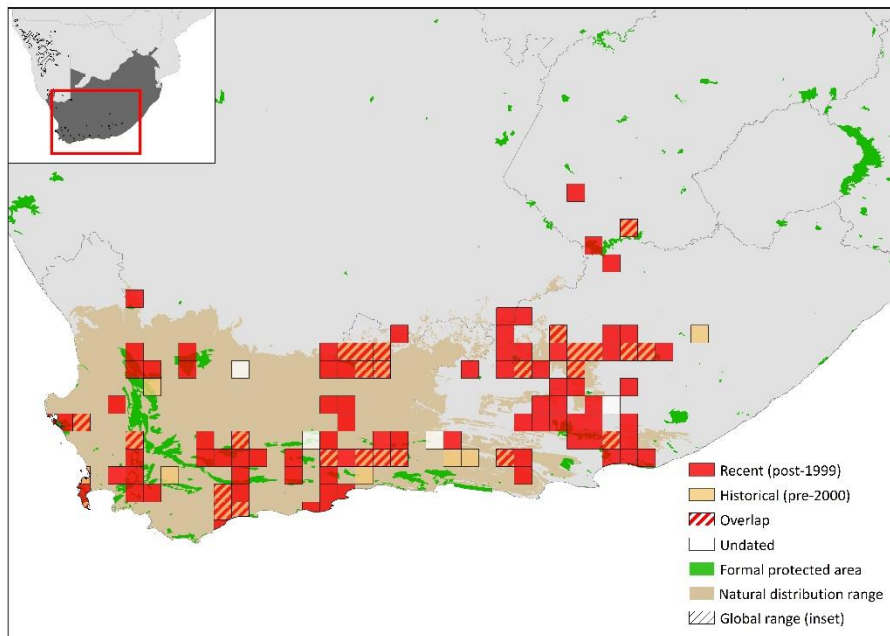


Mate
selection

Analysis methods

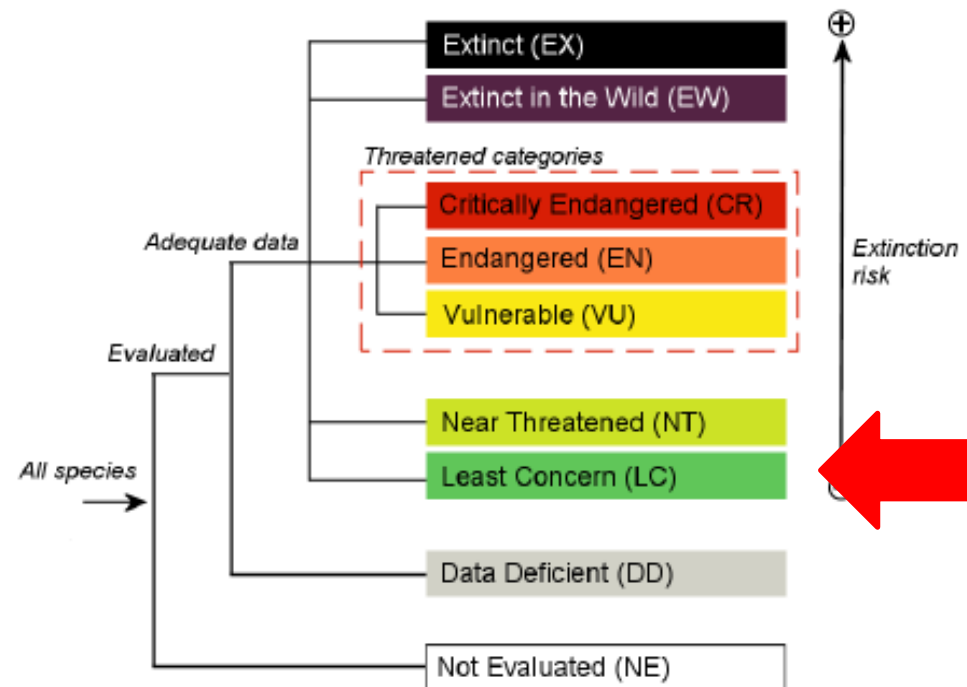
- Scores were assigned on an ordinal scale, where 1 corresponds to Captive Managed and 5 corresponds to Self Sustaining. **Each attribute was assumed to contribute equally to the wildness of a subpopulation.**
- The scores per property were **averaged** and, if >2.5 , was considered wild, which means **low scores on one attribute could be compensated for by high scores on others.**
- The subpopulations identified as wild were summed and calculated as a proportion to the total individual sample size, allowing **extrapolation** to properties with no management information.
- To **control for the ambiguity** resulting from analysing a dataset not designed for the analysis, a second score was produced to accommodate the maximum value (i.e. more wild) that each attribute could be given the range of interpretations possible. This allowed us to generate a range in the proportion of individuals likely to be considered wild.

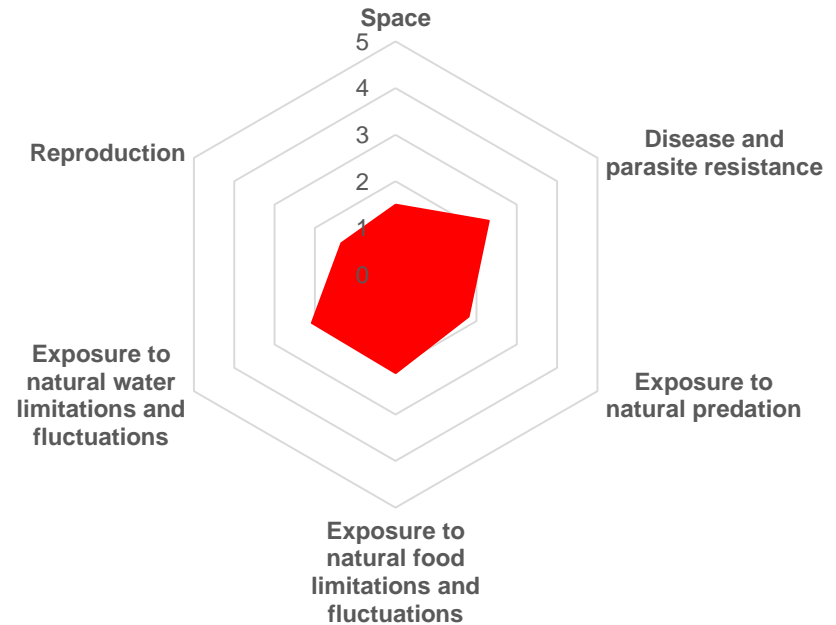
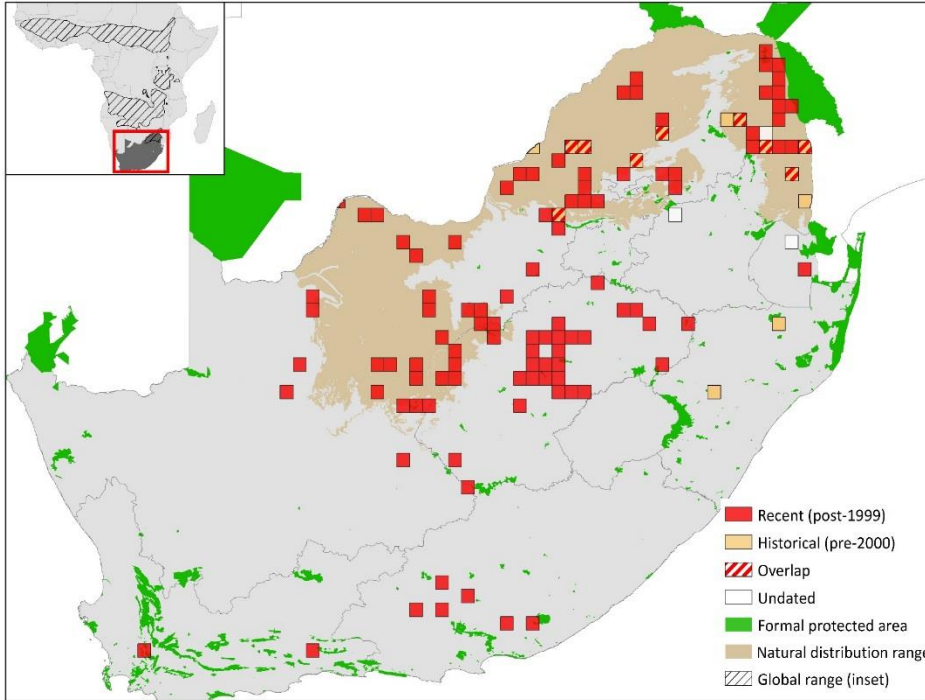




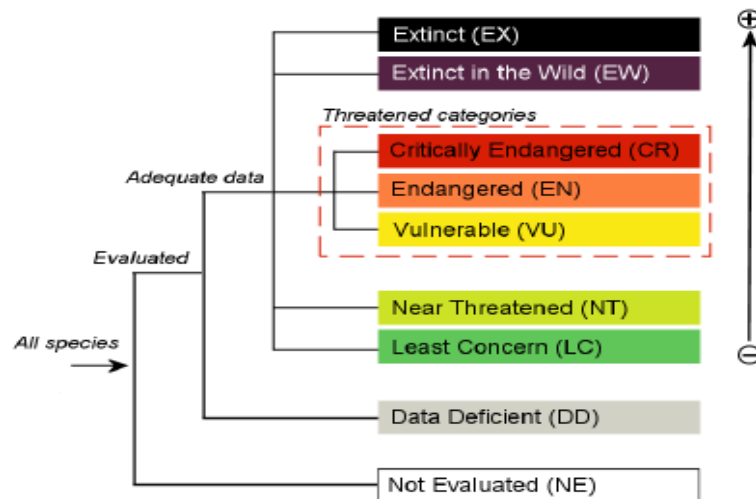
>80% individuals on private land eligible

Total population: 2,381–3,247 mature individuals



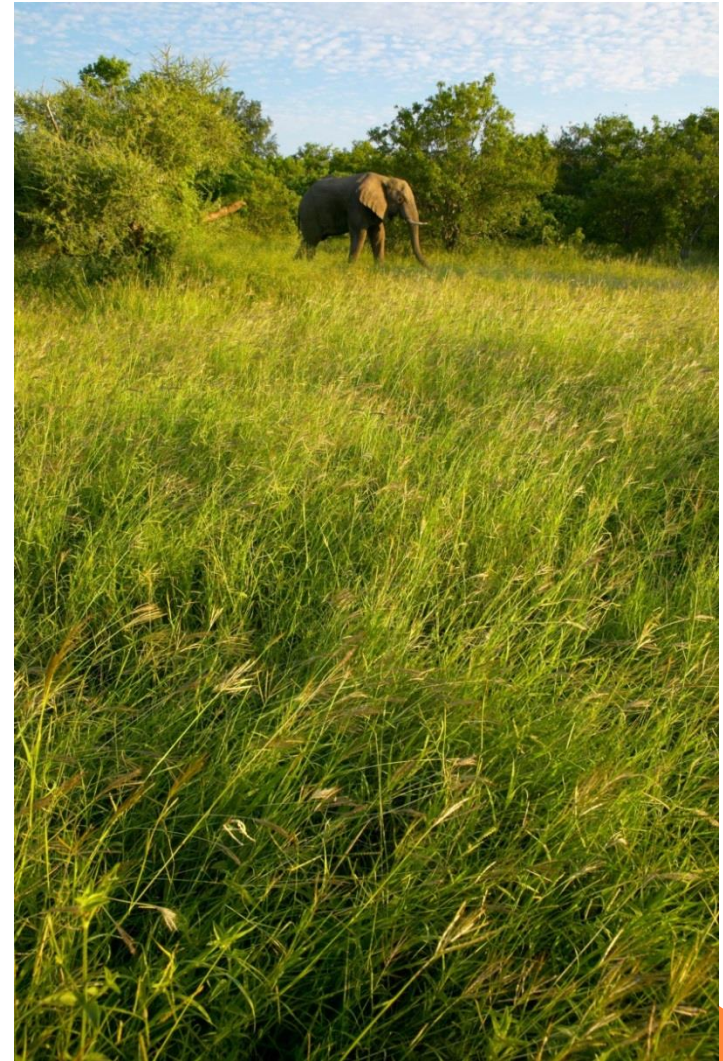


Sample size: 4355 (76)
Total population: 737 within
natural distribution range
2-10% individuals on private
land eligible
Total population estimate: 1386



OBVIOUSLY more work to do...

- Thresholds need calibrating through ground-truthing.
- Specialised survey design.
- Measure formally protected areas for baseline wildness.
- Exhaustive list of management actions allowed in each node.
- Need buy-in from all stakeholders.



THANK YOU

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