Progress on developing a method to evaluate protection level for species

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Headline indicators

Threat status
- Critically Endangered
- Endangered
- Vulnerable

Protection levels
- Not protected
- Poorly protected
- Moderately protected
- Well protected

Quantitative criteria

Biodiversity target
- <5%
- 5-49%
- 50-99%
- >100%
Species groups
Conservation target for species

Minimum Viable Population

• derived through a statistical model (Population Viability Analysis) – data intensive
• MVP is between 5000 – 10 000 individuals for most species
• MVP is independent of total population size
Ideal Method

• Convert MVP target to area target
• Map areas of suitable, occupied habitat
• Exclude small, isolated areas
• Calculate overlap with formal protected area network
• Compare area protected to area target
The problem with range-based targets

% of distribution range

Fixed number of units
Testing five target setting methods

Protea Atlas Project: Detailed field counts for 354 species

Benchmark population-based analysis with 10,000 individuals as target
Testing five target setting methods

3 range-based targets

- **Fixed number of sites:**
  10 protected areas

- **Fixed area:**
  20% of distribution range

**Scaled area:**

<table>
<thead>
<tr>
<th>Target Presence in Vegetation Survey Plots</th>
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<tbody>
<tr>
<td><img src="image" alt="Vegetation Survey Plots" /></td>
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</tbody>
</table>

2 relative abundance targets

- **Area target scaled to % presence in vegetation survey plots**

- **Literature-based relative density**

<table>
<thead>
<tr>
<th>Abundance category</th>
<th>Area target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abundant</td>
<td>5 km²</td>
</tr>
<tr>
<td>Common</td>
<td>10 km²</td>
</tr>
<tr>
<td>Occasional</td>
<td>50 km²</td>
</tr>
<tr>
<td>Rare</td>
<td>200 km²</td>
</tr>
</tbody>
</table>
Results

Target: 10 000 individuals

Range-based targets

10 protected areas: 59% well protected, 32% moderately protected, 6% poorly protected, 15% not protected
20% of range: 49% well protected, 71% moderately protected, 7% poorly protected, 4% not protected
Scaled to range: 37% well protected, 30% moderately protected, 11% poorly protected, 12% not protected

Relative abundance-based targets

Vegetation plots: 85% well protected, 4% moderately protected, 5% poorly protected, 4% not protected

Literature: 76% well protected, 10% moderately protected, 10% poorly protected, 4% not protected

Legend:
- Not protected (<5%)
- Poorly protected (5-49%)
- Moderately protected (50-99%)
- Well protected (≥ 100%)
Habitat-abundance relationships are most uncertain for rare species
The diagram shows the number of protected areas species is recorded in, categorized by protection level: Not protected, Poorly protected, Moderately protected, and Well protected. The data indicates that a significant portion of species are recorded in areas that are well protected, with much lower numbers in areas that are not protected or poorly protected.
Conclusion and way forward:
Evaluation of protection levels for species

• Use population data where available
• Relative abundance is a potential best alternative in the absence of population data – use with care (for rare species in particular) and expert input
• Work out rules-of-thumb to identify species that are clearly well-protected/not protected – focus efforts on smaller subset of species