KEY INDICATORS TO MONITOR TRENDS IN VELD CONDITION IN LAMBERT’S BAY STRANDVELD.

N Saayman & J C Botha
Introduction

- Veld condition
- Veld condition assessment methods – Karoo
  - Ecological index (Vorster 1982)
  - Grazing index (Du Toit 1995; 2002)
  - Quick rangeland health (Esler et al. 2006)
- Winter rainfall region – no tested method
- Degradation approach
- ID key species - objectively
Objectives

• To identify key indicators that can be used to monitor trends in the veld condition of Lambert’s Bay Strandveld.
Material and Methods

Study site
- Lambert’s Bay Strandveld
- Sandy soils
- Annual rainfall 175mm - winter
Material and Methods

Vegetation sampling:

- 7 Farms
- No cultivation in past
- 3 surveys per camp
  - Different distance from water
- Line-point method
- Identify degradation gradient
  - Key indicators
- Test key indicators
Material and methods

Statistical analysis

- Detrended Correspondence Analysis
- Expert knowledge
- Multiple regression analysis
Results and Discussion

Eigenvalues: Axis 1 = 0.236; Axis 2 = 0.132
Results and Discussion

Key indicators

Decreaser: Grass  Decreaser: non-grass  Increaser

- *Ehrharta calycina*
- *Hermannia scordifolia*
- Opslag_Bare
Results and Discussion

Regression equation: Veld condition

\[ \text{DCA1} = -0.113 + 0.01917(\text{Opslag\_Bare}) - 0.0203(\text{EhrhCaly}) - 0.01916(\text{HermScor}) \]
# Results and Discussion

## Veld condition: Testing key indicators

<table>
<thead>
<tr>
<th>Comparison</th>
<th>r²</th>
<th>r</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data set 1</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>VCIkey vs DCA1</td>
<td>0.9111</td>
<td>0.9545</td>
<td>P&lt;0.001</td>
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<tr>
<td>VCIkey vs VCIpal</td>
<td>0.8487</td>
<td>-0.9213</td>
<td>P&lt;0.001</td>
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<tr>
<td><strong>Data set 2</strong></td>
<td></td>
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<tr>
<td>VCIkey vs VCIpal</td>
<td>0.8354</td>
<td>-0.9140</td>
<td>P&lt;0.001</td>
</tr>
</tbody>
</table>
Results and Discussion

Additional indicators:

- Not part of equation – low maximum abundance
- Indicators of veld in transition zone.

Lycium spp.  

Galenia africana
Conclusion

- Three indicators significantly describe veld condition.
- User-friendly method
Thank you
Contact Us

Nelmarie Saayman
Directorate: Plant Science

Tel: +27(0)21 808 5330  Fax: +27 (0)21 808 5331
nelmaries@elsenburg.com
www.elsenburg.com