An ecosystem-based spatial conservation plan for the South African sandy beaches

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Valued coastal ecosystems

Highly valuable

Poorly recognised as ecosystems

Legacy of inappropriate management
What about beaches?
Biodiversity planning

1. Key ecological attributes
2. Costs
3. Targets
4. Spatial biodiversity plan
1a. Coastal Habitats

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1b. Biodiversity: Macrofauna

135 sites; 186 sampling events
1b. Biodiversity: Microflora

In collaboration with Eileen Campbell

73 sites; 510 sampling events
<table>
<thead>
<tr>
<th>High groundwater recharge</th>
<th>Free-flowing rivers</th>
<th>Critical habitat areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pristine / large accommodation space</td>
<td>Kelp</td>
<td>Important assemblages and features</td>
</tr>
</tbody>
</table>
1b. Key ecological/biodiversity features

- 148 coastal habitat types
- 26 foredune plants
- 21 birds
- 2 turtles

- key features & special assemblages
- 53 microflora
- 27 macrofauna
- 1 pinniped

... much better than “sand”
2. Costs (threats / socio-economic features)

High use ≈ High threat

(≈ areas of key socio-economic importance)
2. Map threats to beaches

Cumulative Threat Score

- 0.0 - 25.0
- 25.0 - 50.0
- 50.0 - 75.0
- 75.0 - 100.0
- 100.0 - 110.0
3. Set biodiversity targets

Harris et al. 2013 Setting Conservation Targets for Sandy Beach Ecosystems. Estuarine, Coastal and Shelf Science, accepted manuscript.
Ecosystem-based spatial conservation planning

In collaboration with Hugh Possingham

Socio-economic importance

Socio-ecological systems / biodiversity stewardship

4. Spatial biodiversity plan
4. Spatial biodiversity plan

EBSCP Site Prioritization
- **Critical biodiversity area**
- **Conservation-centred goals**
- **Both: conservation-centred goals take precedence**
- **Both: management-centred (social) goals take precedence**
- **Management-centred (social) goals**
- **Not Beach**
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