Stages in the planning process

1. Scope and cost
2. Identify and involve stakeholders
3. Identify goals
4. Compile data
5. **Set conservation targets**
6. Assess existing conservation areas
7. Select new conservation areas
8. Implement conservation action
9. Maintain and monitor
Examples of biodiversity processes that need to be maintained …

- Population dynamics within patches
- Population dynamics between patches
- Interspecific interactions (pollination, competition, herbivory, predation)
- Patch dynamics of disturbances (e.g. fire, storms)
- Patch dynamics of resources (e.g. rainfall, flowering, flooding)
- Short- and long-distance regular movements
- Adjustment of distributions and persistence in refugia with climate change
- Diversification of lineages
Five approaches to planning for natural processes:

1. Incidentally (through pattern)
<table>
<thead>
<tr>
<th>Process</th>
<th>Size of cons. area</th>
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<tbody>
<tr>
<td></td>
<td>VS</td>
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<tr>
<td>Specialist pollinator relationships</td>
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<tr>
<td>Top predator-prey processes</td>
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</tbody>
</table>
Five approaches to planning for natural processes:

1. Incidentally (through pattern)

   NOTE: the remaining four are limited by our understanding of processes and our ability to interpret them spatially

2. Moveable conservation areas

3. Physical/biophysical templates for processes

4. Generic design criteria

5. Specific design criteria

NOTE: these approaches can be complementary
3. Physical/biophysical templates

- Drought refugia (e.g. run-on areas and gorges)
- Climatic gradients
- Climatic refugia
- Migration routes or staging areas
- Subregional boundaries to reflect biogeographic histories
4. Generic design criteria

- Size, shape, connectivity, replication etc
- No explicit link to design requirements of particular processes in particular parts of a region
- Can be used as preferences for planning new conservation areas
- Difficulties of planning without quantitative targets (how big?, how to combine competing criteria?)
5. Specific design criteria

- Size, shape, proximity, connectivity, replication (+ directional alignment)
- Spatial requirements of particular processes interpreted as quantitative targets for design criteria
Quantitative design criteria for each of 41 mammal species

- Minimum numbers in individual reserves
- Minimum number of separate reserves
- Spacing of reserves
- Complementary habitats in the same reserve(s)
- Species combinations to avoid (e.g. to prevent hybridisation between Burchell’s and Cape Mountain Zebras)
- Obligatory species combinations (e.g. lion with particular prey species, not just any suite of herbivores)
- Alignment (e.g. for adjustment to climate change or seasonal movements between particular habitats)
Irreplaceability -
abundance targets only (no clumping rules)
Irreplaceability - abundance targets + clumping rules