Climate change adaptation for biodiversity: an NGO perspective

Bush Heritage Australia

Tasmanian Land Conservancy

Our understanding

- private land sector conservation NGOs
- our approach to CC adaptation
  - landscape scale: large scale and long duration
  - open standards for conservation management
  - mixture of tools
  - persistence of resources
- Midlands case study demonstrates this approach

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Role for Private Conservation

- catalyse regional action
- operate in production landscapes
- collaborate at sufficient scale
- innovate / adapt through novel approaches

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Scale of problem

- climate change operates at the global scale
  - adaptation at largest scale possible
- ecosystems operate over wide areas
  - landscape scale conservation planning
- ecosystems operate over long time scales
  - need to match duration
  - persistence of resources

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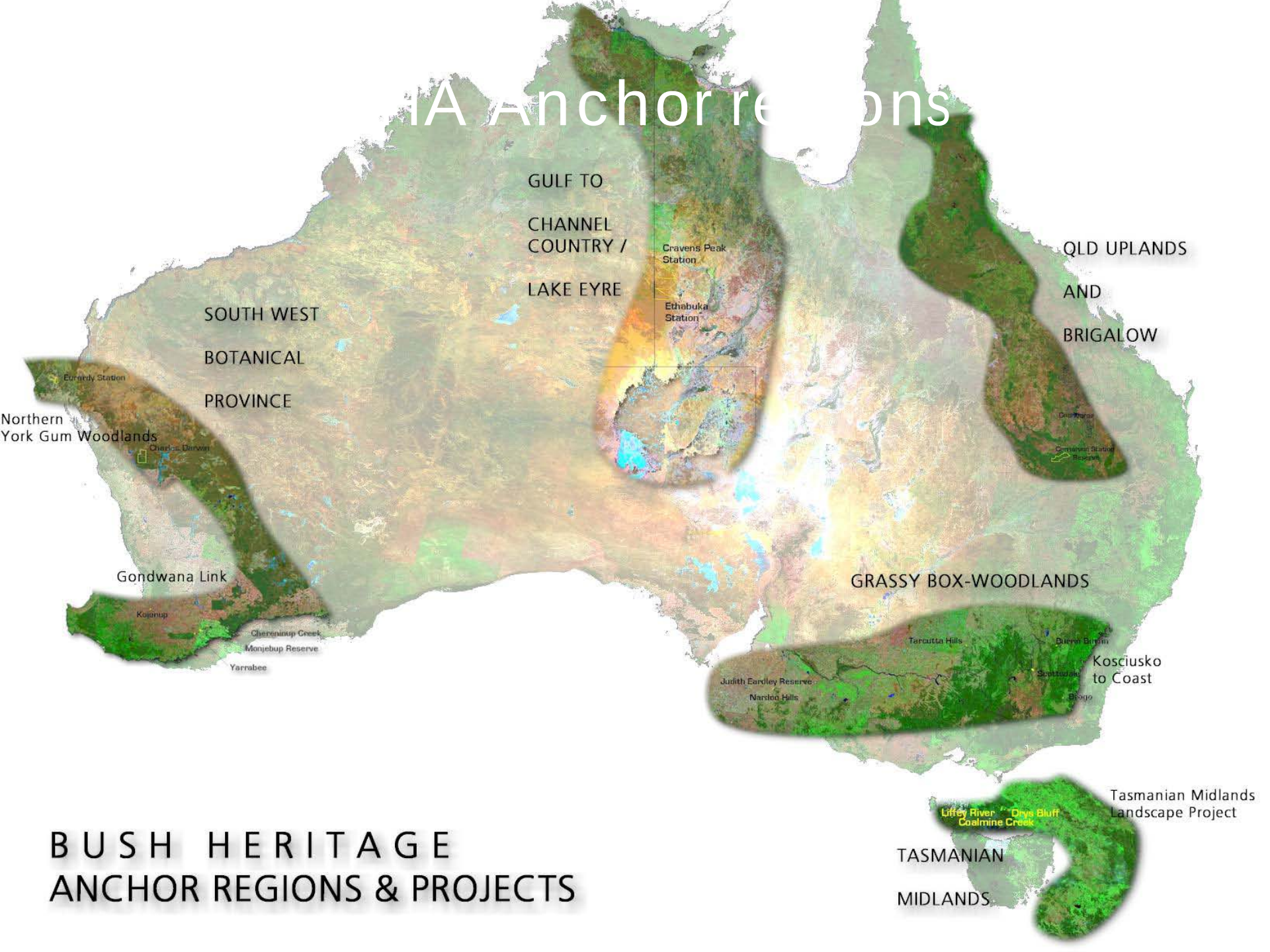

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ANCHOR REGIONS & PROJECTS

TLC/DPIPWE collaboration

- Core biological values
- Landscape function and ecological resilience
- Priorities built up as a spatial Decision Support System (metrics)
- Identify focal landscapes and landscape linkages
- Identify risks
- Prioritise investment
- (strategic opportunism)

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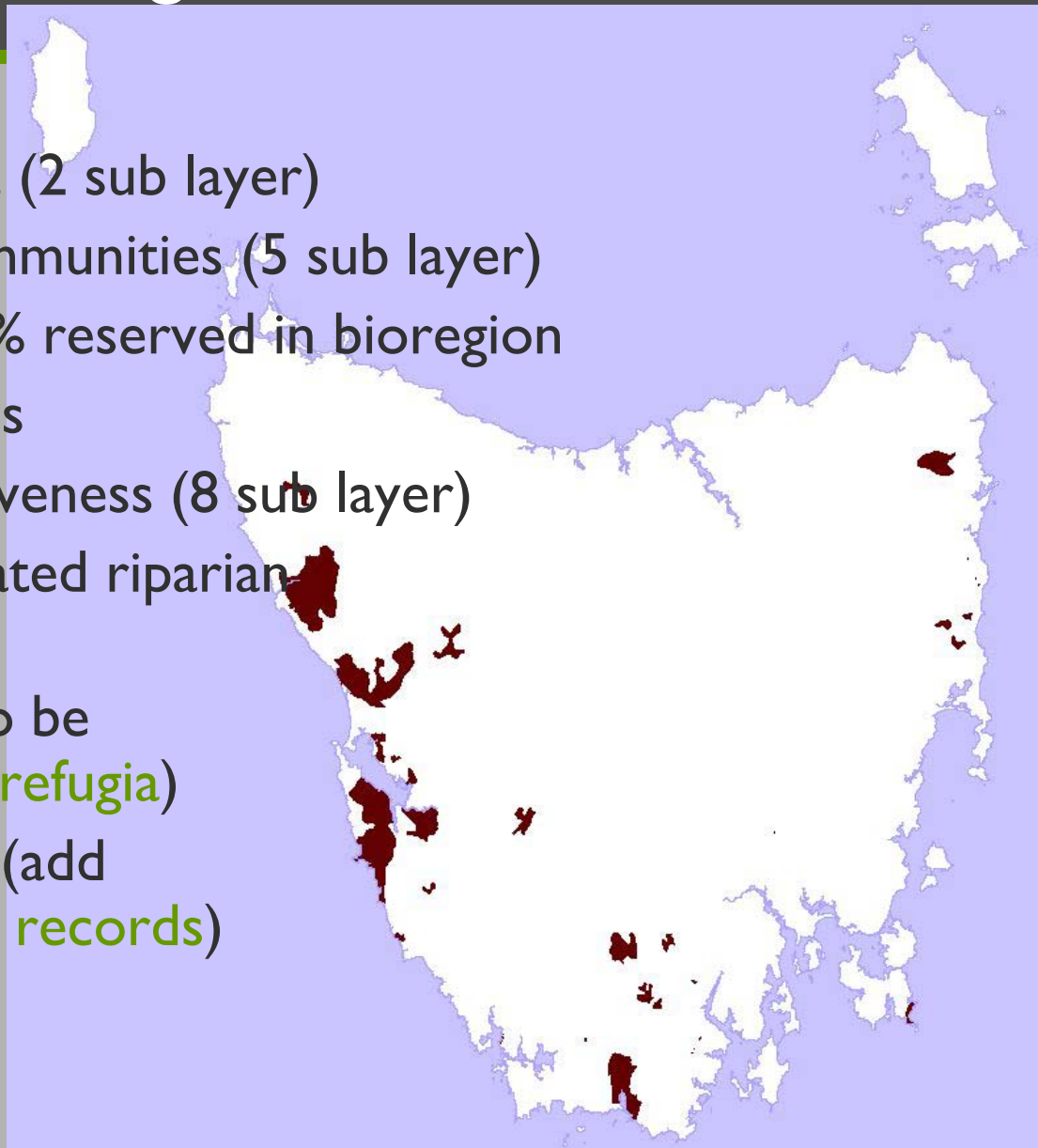
Core biological values

1. Priority fauna and flora (2 sub layer)
2. Priority vegetation communities (5 sub layer)
3. Native vegetation <10% reserved in bioregion
4. Under-reserved biomes
5. Biogeographic distinctiveness (8 sub layer)
6. Freshwater and associated riparian ecosystems
7. Fire+disease refugia (to be contemporary climate refugia)
8. Important bird habitat (add priority woodland bird records)
9. Glacial refugia



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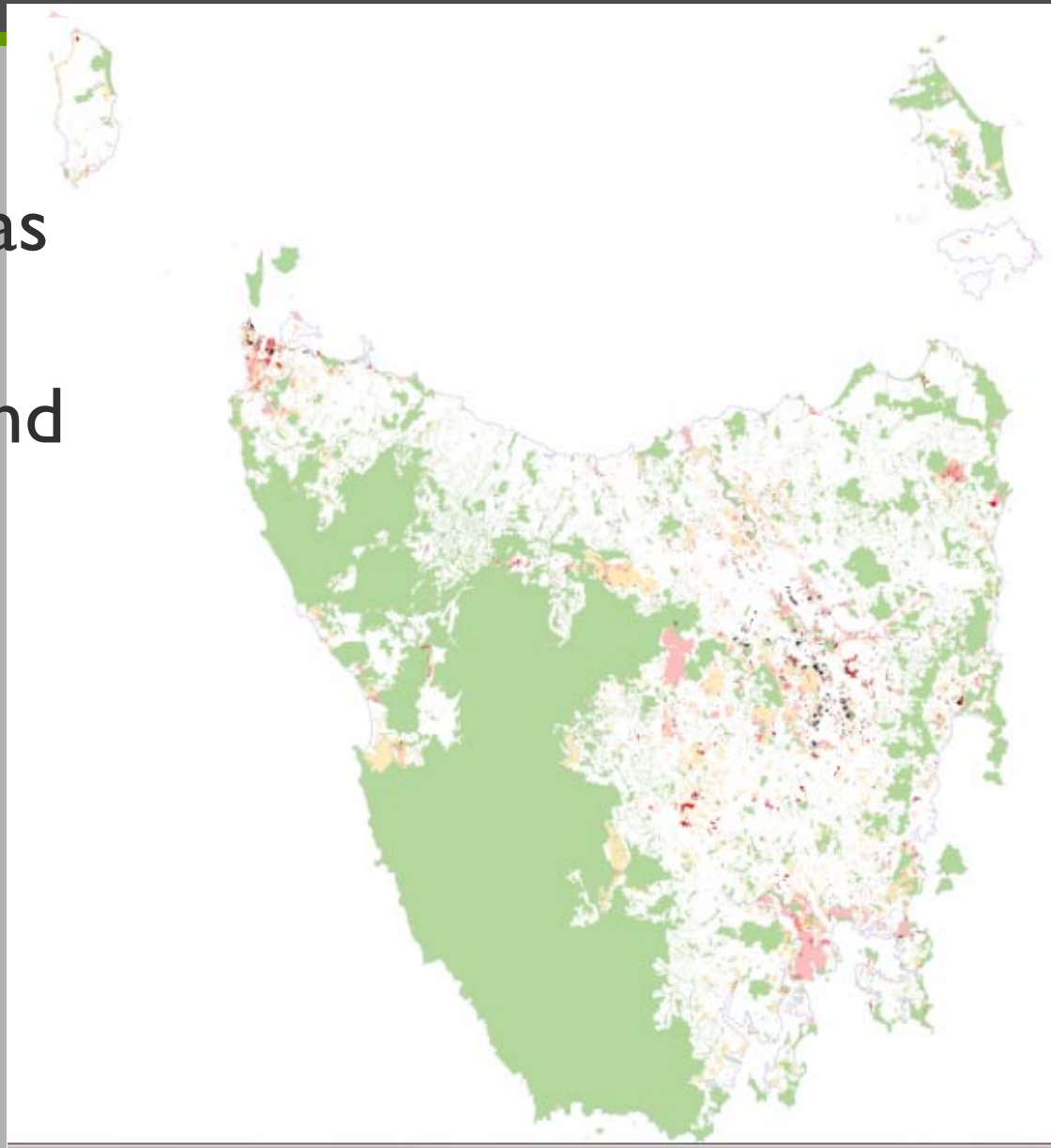
PAPL Priority Metric

- Priorities built up as metrics
- Mask out public land



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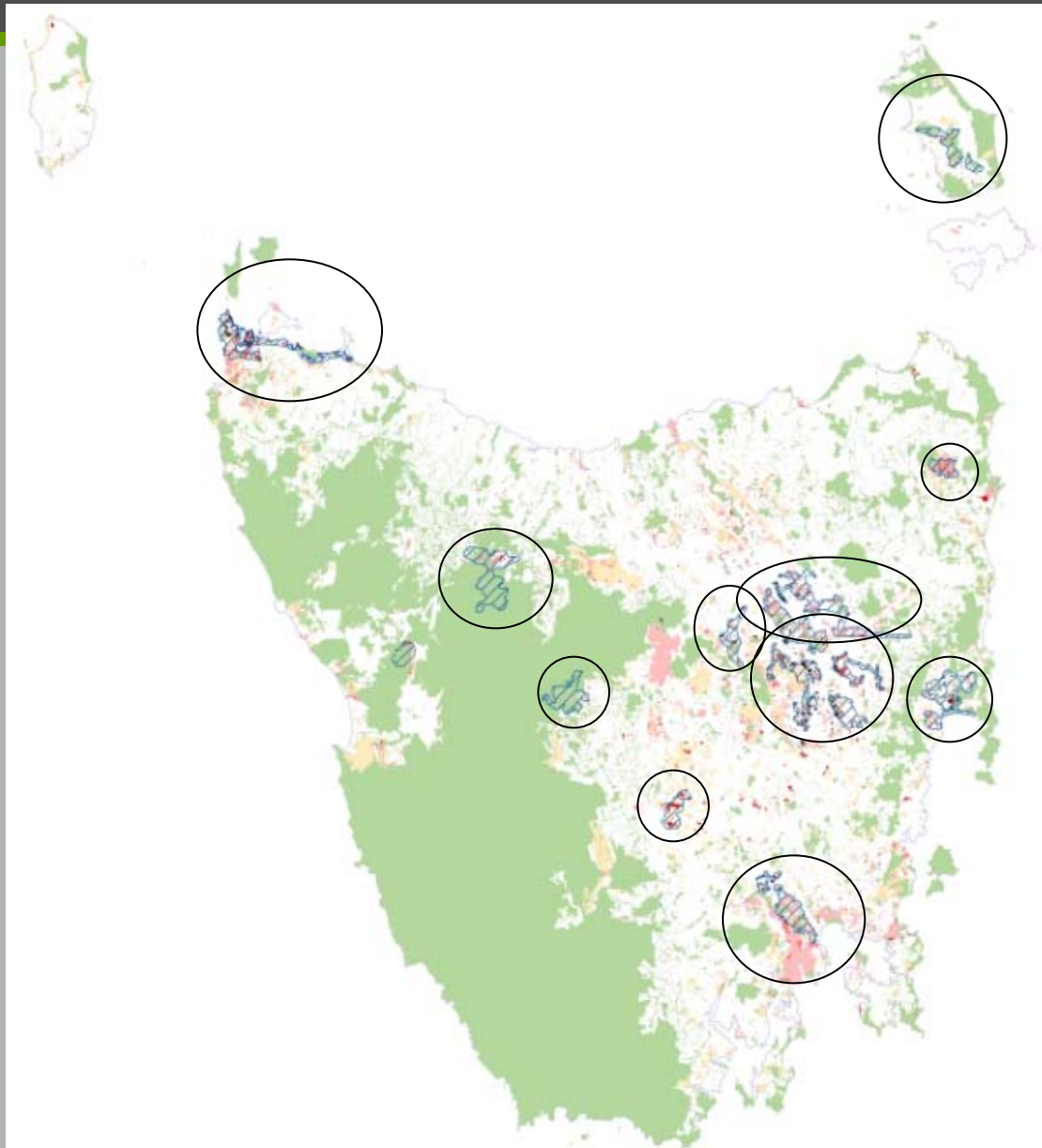
Focal landscapes

- Darling Range
- Far North West
- Blue Tier
- Ross/Campbell Town (The Peppermints, Wolfs Craig & Macquarie Tier)
- Epping Forest (& Ben Lomond foothills)
- Lake River
- Skullbone Plains
- Meehan Range
- Middlesex Plains
- Swan Apsley
- Ouse River



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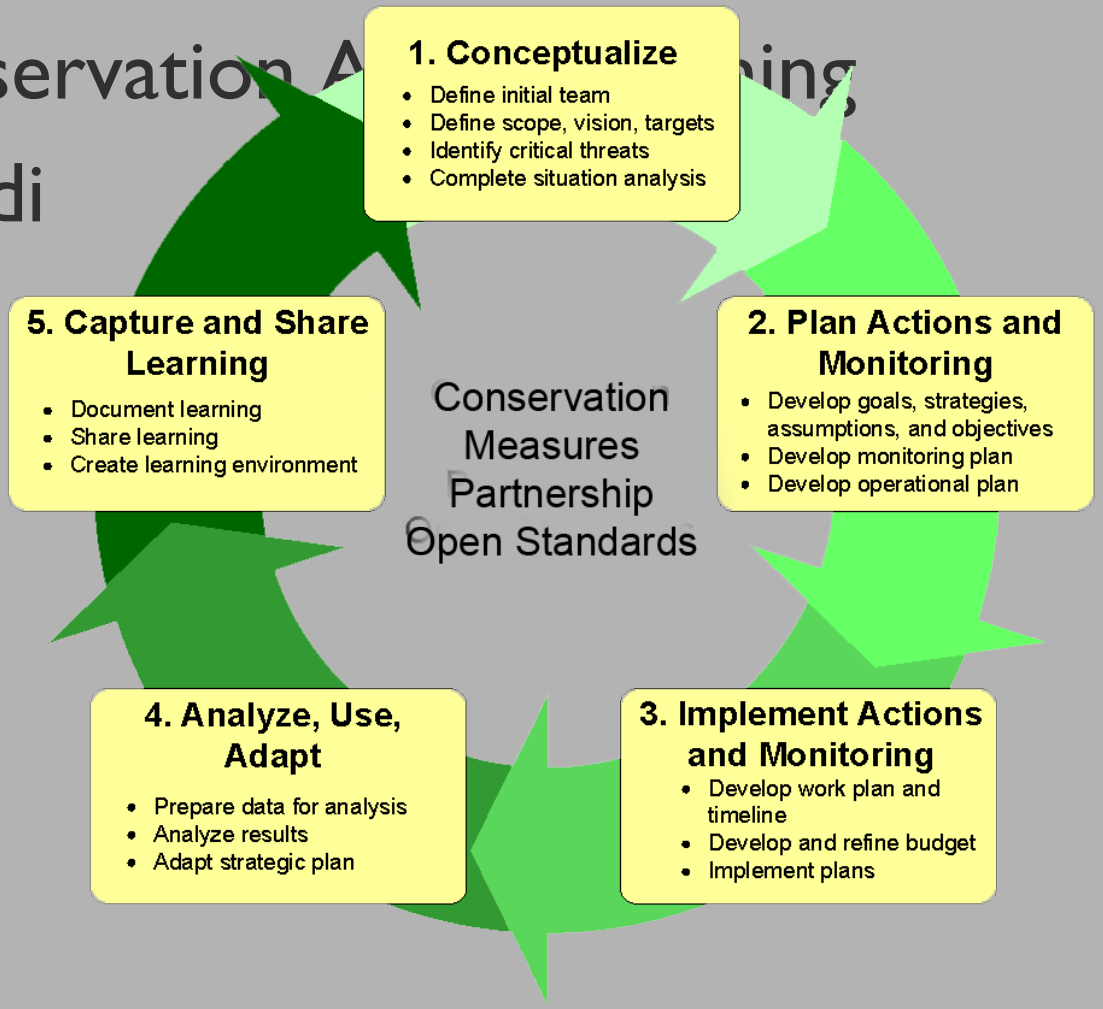
Open Standards

- Conservation A ing
- Miradi



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Variety of tools

- purchase and manage
- trust funds for management
  - internal
  - stewardship
- revolving fund
- covenanting programs
- offsets
- carbon/ecosystem services

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Persistence

- ongoing monitor and adapt actions
- independent institutional structures
  - constitutions and boards
  - trust funds
- ongoing fund raising
- participation
  - engagement
  - passion

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Midlands

- Landscape scale planning
  - Midlands Conservation Action Plan
  - Targeting resources
- Strategies
  - Midlands Conservation Fund
  - Resilience of reserve system
  - Adaptive management
- Monitoring and research input

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Midlands

- Will this region's biodiversity cope with extra pressures associated with climate change?
  - <10% of the region is protected in reserves
  - land clearance & 'improvement' continues to fragment and deteriorate the natural values
- Midlandscapes
  - Tasmanian Land Conservancy,
    Bush Heritage Australia,
    Private Land Conservation Program (DPIPWE)
- Landscape-scale planning process
  - Conservation Action Plan
  - Significant, valuable input from local landowners

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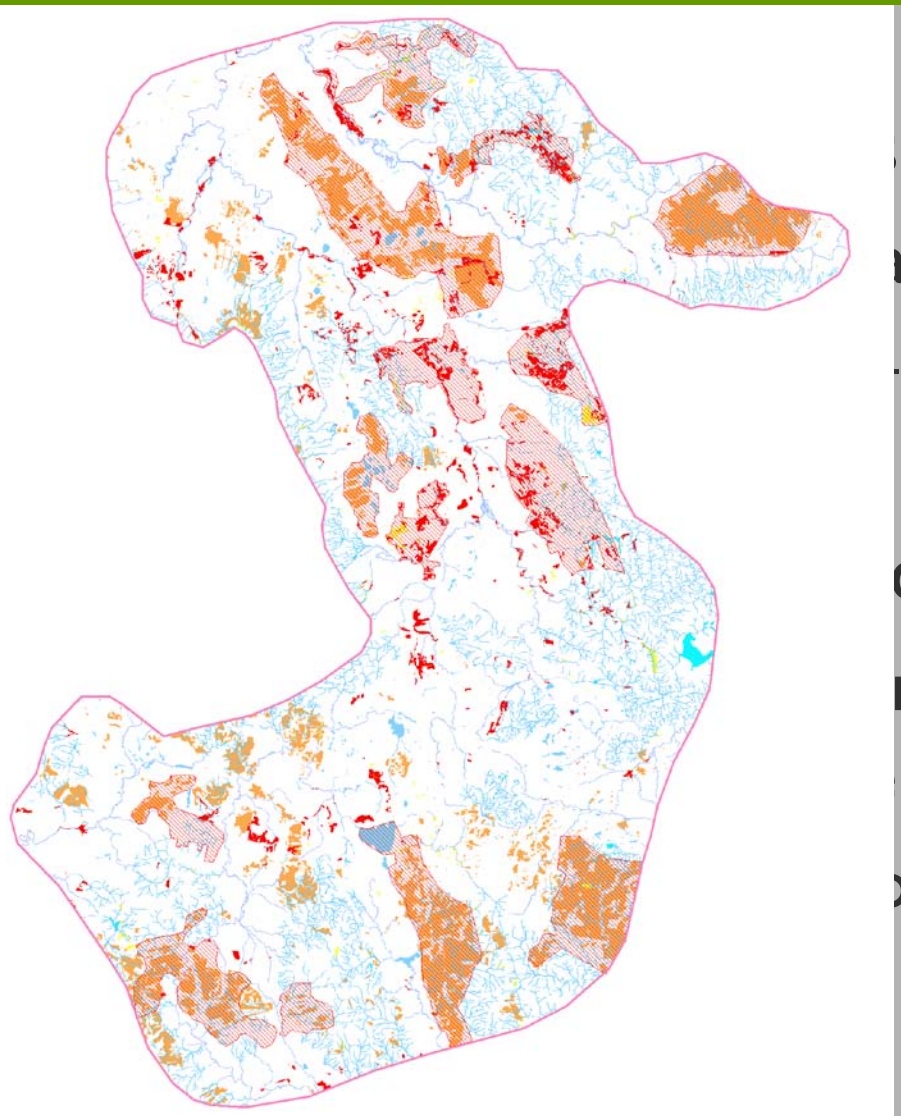
Midlands CAP (cont.)



- Identif ets
  - gras ally endangered
  - wetl - drought refu
- Target dscapes
  - Map rove context of core rent ‘states’
  - Aim od context and in go

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CC and the CAP

- Climate change identified as a high threat
  - Along with land clearance, over-grazing and tree decline
- 2 strategies developed specifically for CC
  - Develop a co-operative plan to address climate change and water development in the Midlands
  - Identify refugia that will help protect the conservation assets in the face of CC

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Conflicting CC strategies

- Midlands Irrigation Scheme
  - Water development / irrigation schemes
  - Increased pressure (direct and indirect) on native grasslands
  - Greater potential for loss and fragmentation of native vegetation
  - Short-sighted project given rainfall predictions for Central Plateau??

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Developing resilience

- A key challenge in the Midlands is to develop a more resilient reserve system
- Increasing resilience and connectivity should reduce stresses that will be amplified by CC
  - build on existing reserves
  - manage and monitor them well, recognising changes induced by CC & adapt management to these conditions

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Enhancing conservation

- Areas under conservation management
  - few public reserves
  - few opportunities for acquisition
  - successful covenant programs
- Establish 'Midland Conservation Fund'
  - To fund Partnership Agreements with landowners
  - Annual payments to landowners (on-going) linked to management outcomes

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Adaptive management

- Adaptive Management under MCF Partnership Agreements will play a key role in dealing with the effects of CC
  - Detailed monitoring (ecologist) to pick up trends in viability measures of conservation assets
  - Info synthesized & passed onto land-managers
  - Landowners will also monitor their land from a conservation perspective, not just the production angle (and adjust management accordingly)

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Adaptive management

- Possible CC scenarios in the Midlands
  - The frequency of frosts expected to decrease and the growing season may start earlier.
    Land-managers need to re-assess grazing regimes to allow native species to flower and set seed.
  - Future climate is expected to favour C4 grasses or increased shrub cover.
    Again, land-managers will need to modify their current grazing practices - but will we be able to tell when we reach the 'tipping point'?
  - Need to re-check whether viability measures are the most appropriate ones, eg. shrub & ground cover characteristics

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Research input

- CC research need to reach land managers
  - How do we best communicate the results of research to the land managers?
  - Better networks? Extension officers?
  - Involve local landowners in process, where possible
  - Use schemes like Midlandscapes for knowledge transfer e.g. conduct experimental work on farms

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CC adaptation

- know what you treasure
- define measurables for their viability
- define actions to reduce threats and/or enhance viability
- monitor the measureables
- adapt actions and/or measureables accordingly
- nurture relationships
- persist

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